

# SYNTHETIC ORGANIC CHEMICALS

United States Production  
and Sales, 1985

(Investigation No. 332-135)



USITC PUBLICATION 1892

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**UNITED STATES INTERNATIONAL TRADE COMMISSION**

**SYNTHETIC ORGANIC CHEMICALS**

**United States Production  
And Sales, 1985**

**U.S. GOVERNMENT PRINTING OFFICE  
WASHINGTON: 1986**

**USITC PUBLICATION 1892**

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## INTRODUCTION

This is the 69th annual report of the U.S. International Trade Commission on domestic production and sales of synthetic organic chemicals and the raw materials from which they are made. The report consists of 15 sections, each covering a specified group (based principally on use) of organic chemicals as follows: Tar and tar crudes; primary products from petroleum and natural gas for chemical conversion; cyclic intermediates; dyes; organic pigments; medicinal chemicals; flavor and perfume materials; plastics and resin materials; rubber-processing chemicals; elastomers; plasticizers; surface-active agents; pesticides and related products; miscellaneous end-use chemicals and chemical products; and miscellaneous cyclic and acyclic chemicals. Data have been supplied by approximately 752 producers.

Each of the 15 sections is headed by a summary of the statistical data. The first table in each section gives statistics on products and groups of products in as great detail as is possible without revealing the operations of individual producers. Statistics for an individual chemical or group of chemicals are given only when there are three or more producers, no one or two of which may be predominant. Moreover, even when there are three or more producers, statistics are not given if there is any possibility that their publication would violate the statutory provisions relating to unlawful disclosure of information accepted in confidence by the Commission.<sup>1</sup>

Data are reported by producers for only those items where the volume of production or sales or value of sales exceeds certain minimums. Those minimums for all sections are 5,000 pounds of production or sales or \$5,000 of value of sales with the following exceptions: Plastics and resin materials—50,000 pounds or \$50,000; pigments, medicinal chemicals, flavor and perfume materials, and rubber-processing chemicals—1,000 pounds or \$1,000. They are usually given in terms of undiluted materials; however, products of 95 percent or greater purity are considered to be 100 percent pure. Commercial concentrations are applicable for dyes, certain plastics and resins, and a few solvents; such concentrations are specifically noted.

The statistics given in this report include data from all known domestic producers of the items covered and include the total output of each company's plants, i.e., the quantities produced for consumption within the producing plant, as well as the quantities produced for domestic and foreign sale. The quantities reported as produced, therefore, generally exceed the quantities reported as sold. Some of these differences, however, are attributable to changes in inventory.

The second table in each section lists all items for which data on production or sales have been reported, by primary manufacturers, identified by manufacturers' codes. Each code consists of not more than three capital letters and is assigned on a permanent basis.

The third table in each section is a directory, alphabetized by the codes of the manufacturers reporting in that section.

Table 1 of the Appendix is a directory, alphabetized by the names of the manufacturers reporting in all sections and which includes their general corporate phone numbers and office addresses.

Table 2 of the Appendix lists synonymous names for cyclic intermediates. Information on synonymous names of the organic chemicals included in this report may be found in the *SOCMA Handbook: Commercial Organic Chemical Names*, published by the Chemical Abstracts Service of the American Chemical Society, or the *Colour Index (Revised Third Edition)*, published jointly by the Society of Dyes and Colourists and the American Association of Textile Chemists and Colorists.

Table 3 of the Appendix presents the data in this report aggregated in the format of the Harmonized System (HS) nomenclature on a 6-digit HS basis.

Table 4 of the Appendix is an alphabetical index of all the products in this edition of the report.

Data contained in this report are compiled primarily from Commission's questionnaires sent to domestic producers and represent the best data available to the Commission. While the data supplied in the questionnaires are checked against data previously supplied by the submitting firm and with data

<sup>1</sup> 18 U.S.C. § 1905 and 44 U.S.C. § 3508.

## INTRODUCTION

supplied by other domestic producers, data are not independently verified by direct Commission examination of the books of companies furnishing information. Data contained in this report should not be used for investment and other purposes without independent verification.

As specified in the reporting instructions sent to manufacturers, production and sales (unless otherwise specified) are defined as follows:

**PRODUCTION** is the total quantity of a commodity made available by **Original Manufacturers Only** within the customs territory of the United States (includes the 50 states, the District of Columbia, and Puerto Rico). It covers synthetic organic chemicals, specified crudes from petroleum and coal tar, and certain chemically described natural products, such as, alkaloids, enzymes, and perfume isolates. It is the sum—expressed in terms of 100% active ingredient unless otherwise specified in the reporting instructions—of the quantities:

Produced, separated, and consumed in the same plant or establishment. A commodity is considered separated either when it is isolated from the reactive system or when it is not isolated, but weighed, analyzed, or otherwise measured. This includes by-products and co-products that are not classifiable as waste materials;

Produced and not isolated, but directly converted to a finished or semifinished item not included in this report (e.g., polyester film, polyurethane tires, nylon fiber, bar soap, etc.). (See specific instructions in individual sections);

Produced and transferred to other plants or establishments of the same firm or 100% owned subsidiaries or affiliates;

Produced and sold to, or bartered with, other firms (including less than 100% owned subsidiaries);

Produced *for others* under toll agreements (see general instructions);

Produced and held in stock.

### PRODUCTION EXCLUDES:

Purification of a commodity, which is purchased by, or transferred from within, the company, unless inclusion of such processing is specifically requested in the reporting instructions for individual sections; Intermediate products which are formed in the manufacturing process, but are not isolated from the reaction system—that is, not weighed, analyzed, or otherwise measured; except such products as described above as being produced and not isolated, but directly converted to a finished or semifinished item.

Materials that are used in the process but which are recovered for re-use or sale;

Waste products having no economic significance.

**SALES** are actual quantities of commodities sold by **Original Manufacturers Only**. Sales include the quantity and value of:

Shipments of a commodity for domestic use or for export, or segregation in a warehouse when title has passed to the purchaser in a bona fide sale;

Shipments of a commodity produced for you *by others* under toll agreement;

Shipments to subsidiary or affiliated companies, provided the ownership is less than 100%.

### SALES EXCLUDES:

All intra-company transfers within a corporate entity;

All shipments to 100% owned subsidiary or affiliated companies;

All resales of imported or purchased material, including materials obtained by barter;

All shipments of commodity produced *for others* under toll agreements.

**VALUE OF SALES** is the net dollar receipts of sales f.o.b. plant or warehouse, or delivered. F.o.b. values are preferred, but if they are not readily available from your records, delivered values are acceptable.



## SUMMARY

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Combined production of all synthetic organic chemicals and primary products from petroleum and natural gas in 1985 was 329,186 million pounds—an decrease of 2.6 percent from the output in 1984 (which also included data on tars) (table 1). Sales of these materials in 1985, which totaled 173,077 million pounds, valued at \$63,783 million, were 3.3 percent smaller than in 1984 in terms of quantity and 2.6 percent less in terms of value. These figures include data on production and sales of chemicals measured at several successive steps in the manufacturing process, and, therefore, they necessarily reflect some duplication. The total output of these products declined from 331,147 million pounds in 1981 to 299,125 million pounds in 1982, then rose each year until 1985 (figure 1). During that period the output of these products generally followed the trend of the Federal Reserve Board Index of U.S. Production.

In 1985, production of all synthetic organic chemicals, including cyclic intermediates and finished products totaled 224,702 million pounds, or 0.2 percent less than the output in 1984. Only three sections showed an increase in production in 1985 over 1984. Pesticides and related products (1,235 million pounds) increased by 3.8 percent; plastics and resin materials (49,998 million pounds) increased by 3.6 percent; miscellaneous cyclic and acyclic chemicals (93,927 million pounds) increased by 2.1 percent; Of the remaining sections, medicinal chemicals (225 million pounds) showed a decrease in 1985 of 19.4 percent from that in 1984; elastomer (synthetic rubber) (3,828 million pounds) decreased 17.0 percent; flavor and perfume materials (152 million pounds) decreased 15.0 percent; rubber-processing chemicals (260 million pounds) decreased 9.5 percent; miscellaneous end-use chemicals and chemical products (22,214 million pounds) decreased 6.4 percent; organic pigments (81 million pounds) decreased 5.6 percent; dyes (222 million pounds) decreased 4.5 percent; plasticizers (1,710 million pounds) decreased 4.3 percent; cyclic intermediates (45,487 million pounds) decreased 3.3 percent; and surface-active agents (5,363 million pounds) decreased 2.8 percent.

Table 1.—Synthetic organic chemicals and their raw materials: U.S. production and sales, 1984 and 1985

Chemical	Production			Sales					
			Increase or decrease (-), 1985 over 1984 <sup>1</sup>	Quantity			Value		
	1984	1985		1984	1985	Increase or decrease (-), 1985 over 1984 <sup>1</sup>	1984	1985	Increase or decrease (-), 1985 over 1984 <sup>1</sup>
	Million pounds	Million pounds	Percent	Million pounds	Million pounds	Percent	Million dollars	Million dollars	Percent
Grand total <sup>2</sup> .....	338,025	329,186	-2.6	179,061	173,077	-3.3	65,493	63,783	-2.6
Tar .....	4,144	( <sup>3</sup> )	...	2,223	( <sup>3</sup> )	...	311	( <sup>3</sup> )	...
Primary products from petroleum and natural gas .....	108,666	104,484	-3.8	51,178	49,885	-2.5	8,256	7,810	-5.4
Synthetic organic chemicals, total <sup>2</sup> .....	225,215	224,702	-0.2	125,659	123,193	-2.0	56,925	55,973	-1.7
Cyclic intermediates .....	47,052	45,487	-3.3	19,957	19,585	-1.9	6,930	6,337	-8.6
Dyes .....	233	222	-4.5	221	267	21.2	691	651	-5.8
Organic pigments .....	86	81	-5.6	76	69	-9.3	493	448	-9.2
Medicinal chemicals .....	279	225	-19.4	152	145	-5.1	1,369	1,339	-2.2
Flavor and perfume materials .....	179	152	-15.0	115	86	-25.0	637	587	-7.9
Plastics and resin materials .....	48,255	49,998	3.6	40,751	42,171	3.5	20,923	20,168	-3.6
Rubber-processing chemicals .....	288	260	-9.5	176	174	-0.9	287	281	-2.0
Plasticizers .....	1,788	1,710	-4.3	1,685	1,470	-12.8	849	741	-12.7
Surface-active agents .....	5,519	5,363	-2.8	3,433	3,328	-3.1	1,874	1,574	-16.0
Pesticides and related product .....	1,189	1,235	3.8	1,108	1,022	-7.8	4,730	4,437	-6.2
Miscellaneous end-use chemicals and chem- ical products .....	23,731	22,214	-6.4	14,931	16,217	8.6	3,834	6,178	61.1
Miscellaneous cyclic and acyclic chemicals .....	92,009	93,927	2.1	40,386	36,431	-9.8	12,043	11,179	-7.2

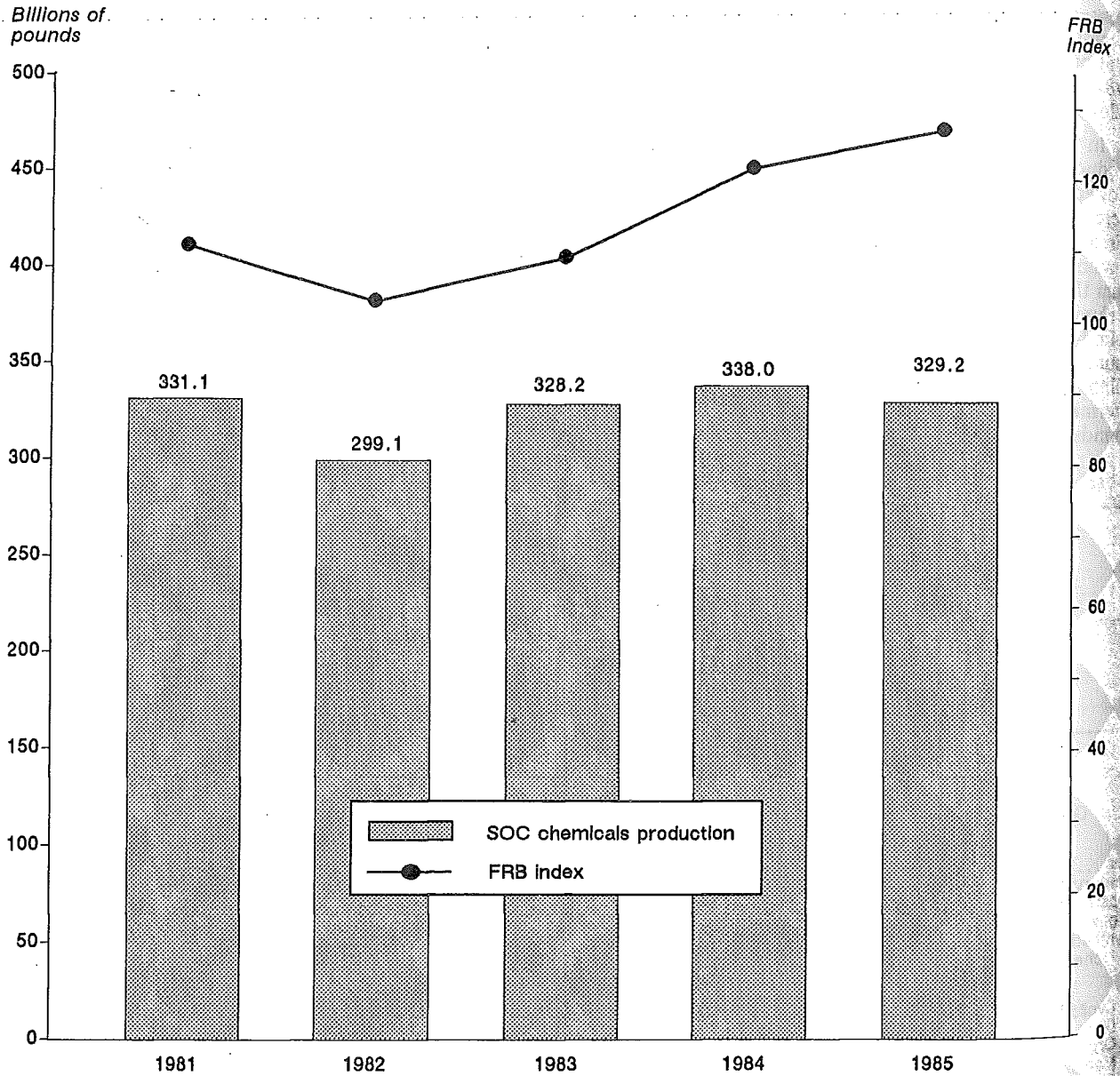
<sup>1</sup> Percentage calculated from figures rounded to thousands.

<sup>2</sup> Because of rounding, figures may not add to the totals shown.

<sup>3</sup> Not available

## SYNTHETIC ORGANIC CHEMICALS, 1985

Figure 1.—Synthetic organic chemicals and their raw materials, total, vs FRB Index.



Source: Production, U.S. International Trade Commission, *Synthetic Organic Chemicals: United States Production and Sales*; FRB Index, The Board of Governors of the Federal Reserve System.

In this report, synthetic organic chemicals are classified on the basis of their principal use as follows: Cyclic intermediates, dyes, organic pigments, medicinal chemicals, flavor and perfume materials, plastics and resin materials, rubber-processing chemicals, elastomers (synthetic rubber), plasticizers, surface-active agents, pesticides and related products, miscellaneous end-use chemicals and chemical products, and miscellaneous cyclic and acyclic chemicals. Most of these groups are further subdivided either by use or by chemical composition. As intermediates, chemicals are used in the manufacture of finished products, aggregate figures that cover both intermediates and finished products necessarily include considerable duplication.

Total production of synthetic organic chemicals (intermediates and finished products combined) in 1985 was 224,702 million pounds, or 0.2 percent less than the output of 225,215 million pounds reported for 1984, and 114.6 percent more than the output of 104,711 million pounds reported in 1967 (see table 2). Sales of synthetic organic chemicals in 1985 amounted to 123,193 million pounds, valued at \$55,973 million, compared with 125,677 million pounds, valued at \$56,926 million, in 1984, and 55,177 million pounds, valued at \$10,438 million, in 1967. Production of all cyclic products (intermediates and finished products combined) in 1985 totaled 72,131 million pounds, or 1.1 percent less than the 72,927 million pounds reported for 1984, and 131.3 percent more than the 31,182 million pounds reported for 1967; however, the transfer of eight items, in 1979 from the primary products from petroleum and natural gas section to the section on cyclic intermediates has caused the output of cyclic products to appear much higher in relation to 1967 than would otherwise have resulted. Production of all acyclic products in 1985 totaled 148,743 million pounds, or 0.7 percent more than the 147,678 million pounds reported for 1984, and 113.4 percent more than the 69,707 million pounds reported for 1967.

Table 2.— Synthetic organic chemicals: Summary of U.S. production and sales of intermediates and finished products, 1967, 1984, and 1985

(Production and sales in thousands of pounds; sales value in thousands of dollars)

Chemical	1967 <sup>1</sup>	1984	1985	Increase or decrease (-)	
				1985 over 1967	1985 over 1984
Organic chemicals, cyclic and acyclic, grand total:					
Production .....	104,711,357	225,214,940	224,702,075	114.6	-0.2
Sales .....	55,176,823	125,676,661	123,193,035	123.3	-2.0
Sales value .....	10,438,453	56,925,687	55,972,673	436.2	-1.7
Cyclic, total: <sup>2</sup>					
Production .....	31,181,832	72,927,149	72,130,700	131.3	-1.1
Sales .....	17,388,529	38,791,816	39,408,923	126.6	1.6
Sales value .....	4,170,713	25,608,446	25,093,594	501.7	-2.0
Acyclic, total: <sup>2</sup>					
Production .....	69,706,980	147,678,486	148,743,434	113.4	0.7
Sales .....	34,526,250	84,199,037	81,556,256	136.2	-3.1
Sales value .....	5,393,503	29,050,916	28,825,019	434.4	-0.8
1. Cyclic Intermediates					
Production .....	20,793,132	47,051,869	45,487,054	118.8	-3.3
Sales .....	9,461,180	19,956,652	19,585,150	107.0	-1.9
Sales value .....	1,000,359	6,930,243	6,336,524	533.4	-8.6
2. Dyes					
Production .....	206,240	232,615	222,127	7.7	-4.5
Sales .....	198,592	220,520	267,283	34.6	21.2
Sales value .....	332,049	690,808	650,580	95.9	-5.8
3. Organic Pigments					
Production .....	53,322	85,664	80,857	51.6	-5.6
Sales .....	42,867	76,154	69,034	61.0	-9.3
Sales value .....	108,354	492,954	447,704	313.2	-9.2

See footnotes at end of table.

## SYNTHETIC ORGANIC CHEMICALS, 1985

Table 2.— Synthetic organic chemicals: Summary of U.S. production and sales of Intermediates and finished products, 1967, 1984, and 1985 —Continued

(Production and sales in thousands of pounds; sales value in thousands of dollars)

Chemical	1967 <sup>1</sup>	1984	1985	Increase or decrease (-)	
				1985 over 1967	1985 over 1984
<b>4. Medicinal Chemicals</b>					
<b>Cyclic:</b>					
Production	110,129	223,730	175,931	59.7	-21.4
Sales	70,120	108,357	100,923	43.9	-6.9
Sales value	348,873	1,240,696	1,199,304	243.8	-3.3
<b>Acyclic:</b>					
Production	69,941	54,910	48,729	-30.3	-11.3
Sales	56,804	44,091	43,695	-23.1	-0.9
Sales value	36,402	128,739	140,018	284.6	8.8
<b>5. Flavors and Perfume Materials</b>					
<b>Cyclic:</b>					
Production	57,978	113,913	101,217	74.6	-11.1
Sales	47,285	83,287	70,464	49.0	-15.4
Sales value	52,866	581,613	546,937	934.6	-6.0
<b>Acyclic:</b>					
Production	53,558	64,806	50,654	-5.4	-21.8
Sales	49,311	31,422	15,611	-68.3	-50.3
Sales value	40,495	55,189	39,623	-2.2	-28.2
<b>6. Plastics and Resin Materials</b>					
<b>Cyclic:</b>					
Production	5,033,497	14,331,668	14,849,367	195.0	3.6
Sales	4,224,121	11,899,168	12,313,993	191.5	3.5
Sales value	1,036,940	8,494,591	8,188,127	689.6	-3.6
<b>Acyclic:</b>					
Production	8,759,452	33,923,108	35,148,502	301.3	3.6
Sales	7,753,242	28,851,408	29,857,216	285.1	3.5
Sales value	1,635,690	12,428,047	11,979,673	632.4	-3.6
<b>7. Rubber-Processing Chemicals</b>					
<b>Cyclic:</b>					
Production	220,139	259,777	237,224	7.8	-8.7
Sales	169,970	153,960	154,709	-9.0	0.5
Sales value	116,318	260,701	258,438	122.2	-0.9
<b>Acyclic:</b>					
Production	43,994	27,802	22,940	-47.9	-17.5
Sales	30,878	21,949	19,564	-36.6	-10.9
Sales value	15,477	25,808	22,242	43.7	-13.8
<b>8. Elastomers (Synthetic Rubber)</b>					
Production	3,822,545	4,609,305	3,827,941	0.1	-17.0
Sales	3,262,044	2,685,808	2,227,856	-31.7	-17.1
Sales value	874,237	2,266,325	2,054,060	135.0	-9.4
<b>9. Plasticizers</b>					
<b>Cyclic:</b>					
Production	929,871	1,338,362	1,285,753	38.3	-3.9
Sales	865,084	1,307,210	1,118,334	29.3	-14.4
Sales value	167,827	577,694	498,761	197.2	-13.7
<b>Acyclic:</b>					
Production	332,908	449,166	424,106	27.4	-5.6
Sales	296,767	377,997	351,414	18.4	-7.0
Sales value	93,142	271,083	242,586	160.4	-10.5
<b>10. Surface-Active Agents</b>					
<b>Cyclic:<sup>2</sup></b>					
Production	1,418,444	2,409,849	2,350,782	( <sup>4</sup> )	-2.5
Sales	852,238	1,843,375	1,814,388	( <sup>4</sup> )	-1.6
Sales value	95,810	790,721	565,176	( <sup>4</sup> )	-28.5

See footnotes at end of table.

# GENERAL

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**Table 2.— Synthetic organic chemicals: Summary of U.S. production and sales of intermediates and finished products, 1967, 1984, and 1985 —Continued**

(Production and sales in thousands of pounds; sales value in thousands of dollars)

Chemical	1967 <sup>1</sup>	1984	1985	Increase or decrease (-)	
				1985 over 1967	1985 over 1984
<b>10. Surface-Active Agents-Continued</b>					
<b>Acyclic:</b>					
Production	2,060,851	3,109,332	3,012,401	(4)	-3.1
Sales	897,786	1,589,835	1,513,440	(4)	-4.8
Sales value	220,877	1,083,626	1,009,134	(4)	-6.9
<b>11. Pesticides and Related Products</b>					
<b>Cyclic:</b>					
Production	823,158	842,703	876,212	6.4	4.0
Sales	681,532	809,033	712,722	4.6	-11.9
Sales value	627,742	3,556,700	3,266,051	420.3	-8.2
<b>Acyclic:</b>					
Production	226,505	346,466	358,702	58.4	3.5
Sales	215,831	298,873	308,993	43.2	3.4
Sale value	159,301	1,173,611	1,170,784	635.0	-0.2
<b>12. Miscellaneous End-Use Chemicals and Chemical Product</b>					
<b>Cyclic:</b>					
Production	(1,535,922)	3,484,611	3,772,190	(5)	8.3
Sales	(775,540)	1,089,144	1,948,643	(5)	78.9
Sales value	(283,575)	901,196	2,039,900	(5)	126.4
<b>Acyclic:</b>					
Production	(58,159,771)	20,246,332	18,442,061	(5)	-8.9
Sales	(25,225,631)	13,842,307	14,268,507	(5)	3.1
Sales value	(3,192,119)	2,932,471	4,137,780	(5)	41.1
<b>13. Miscellaneous Cyclic and Acyclic Chemicals</b>					
<b>Cyclic:</b>					
Production	(5)	2,552,388	2,691,986	(5)	5.5
Sales	(5)	1,244,956	1,253,280	(5)	0.7
Sales value	(5)	1,090,529	1,096,092	(5)	0.5
<b>Acyclic:</b>					
Production	(5)	89,456,564	91,235,339	(5)	2.0
Sales	(5)	39,141,155	35,177,816	(5)	-10.1
Sales value	(5)	10,952,342	10,083,179	(5)	-7.9

<sup>1</sup> Standard reference base period for Federal Government general-purpose index numbers.

<sup>2</sup> Does not include data for elastomers.

<sup>3</sup> Includes Ilninsulfonates.

<sup>4</sup> The data for 1967 are not comparable with current data as a result of a change in accounting procedures.

<sup>5</sup> Items in these two sections were previously included in the section named miscellaneous chemicals.

The following tabulation shows, by chemical groups, the number of companies that reported production in 1984 of one or more of the chemicals included in the groups listed in table 2:

Chemical Group	Number of Companies	Chemical Group	Number of Companies
Cyclic intermediates	182	Elastomers (synthetic rubber)	28
Dyes	37	Plasticizers	45
Organic pigments	35	Surface-active agents	170
Medicinal chemicals	91	Pesticides and related products	82
Flavor and perfume materials	32	Miscellaneous end-use chemicals and chemicals products	156
Plastics and resins materials	273	Miscellaneous cyclic and acyclic chemicals	274
Rubber-processing chemicals	23		

# SYNTHETIC ORGANIC CHEMICALS, 1985

## SECTION I -- TAR AND TAR CRUDES

### STATISTICAL HIGHLIGHTS

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202-523-1230

#### TAR

Coal tar is produced chiefly by the steel industry as a by-product of the manufacture of coke; water-gas tar and oil-gas tar are produced by the fuel-gas industry. Production of coal tar, therefore, depends on the demand for steel; production of water-gas tar and oil-gas tar reflects the consumption of manufactured gas for industrial and household use. Water-gas and oil-gas tars have properties intermediate between those of petroleum asphalts and coal tar. Petroleum asphalts are not usually considered to be raw materials for chemicals.

Collection of data on coal tar by the Energy Information Administration, U.S. Department of Energy was discontinued; however, the U.S. International Trade Commission will begin collection of these data for the 1986 reporting year.

#### TAR CRUDES

Tar crudes are obtained from coke-oven gas and by distilling coal tar, water-gas tar, and oil-gas tar. The most important tar crudes are benzene, toluene, xylene, creosote oil, and pitch of tar. Some of these products are identical with those obtained from petroleum. Data for materials obtained from petroleum are included, for the most part, with the statistics for like materials obtained from coke-oven gas and tars, and are shown in table 1 (see figure 1).

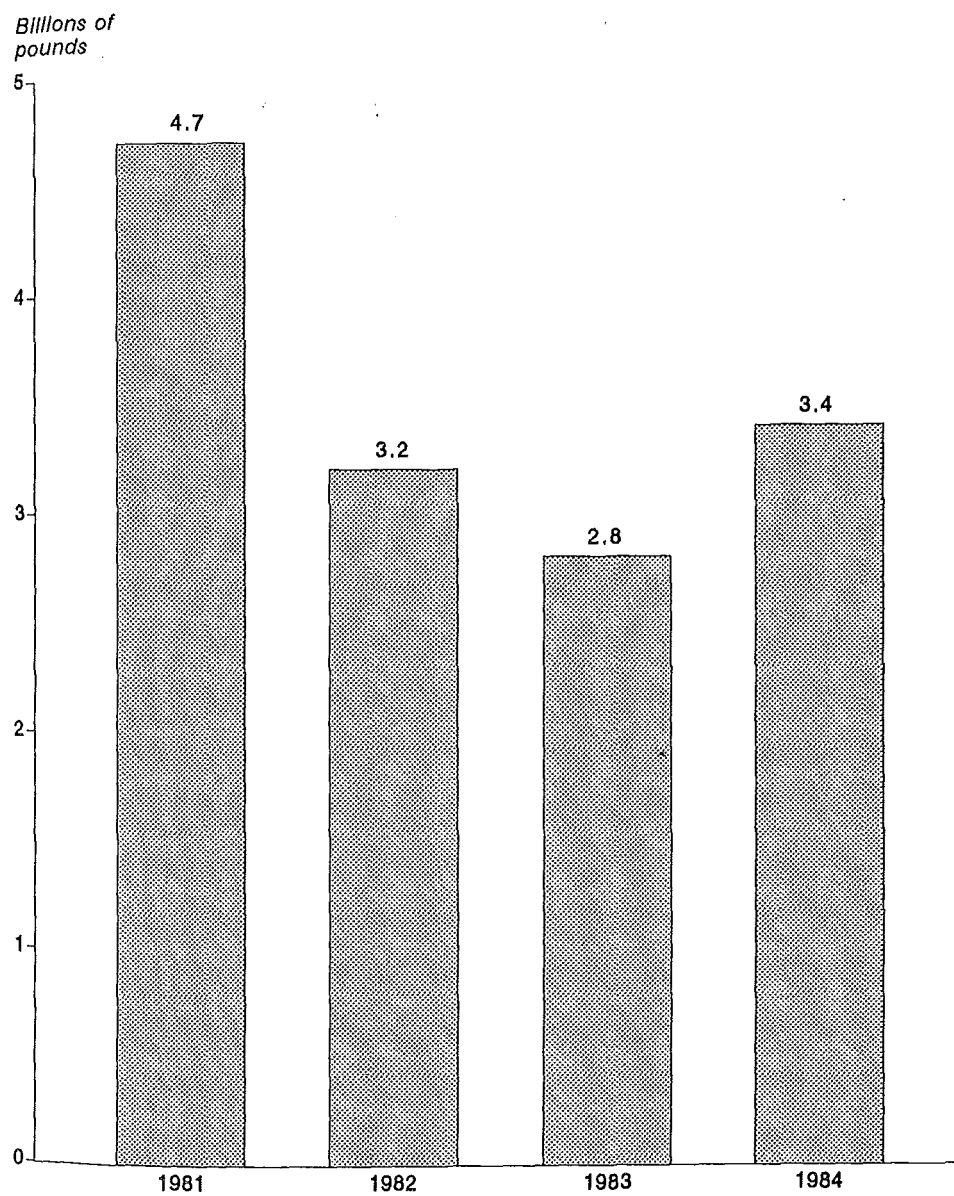
The domestic production by coke-oven operators of industrial and specification grades of benzene, toluene, and xylene cannot be published since to do so would disclose the operations of individual companies. However, the 1985 benzene production by petroleum refiners amounted to 1.3 billion gallons. The output of toluene from petroleum refiners (including material used for blending in aviation fuel) totaled 704 million gallons in 1985; and the refiners' output of xylene (including that produced for blending in motor fuels) was not publishable.

Production figures for road tar for 1985 cannot be published; however, production of tar for use other than as a road tar was 145 million gallons in 1985.

Some of the products obtained from tar and included in the statistics in table 1 are obtained from other products for which data are also included in the table. The statistics, therefore, involve considerable duplication, and for this reason no group totals or grand totals are given.

Data for 1985 tar crudes were supplied by 25 companies and company divisions.

Figure 1.—Crude coal tar.



Note.—Data for 1985 are not available.

Source: U.S. International Trade Commission, *Synthetic Organic Chemicals: United States Production and Sales*.

I -- TAR AND TAR CRUDES

TABLE 1.--TAR AND TAR CRUDES; U.S. PRODUCTION AND SALES, 1985

[Listed below are all tar crudes for which any reported data on production or sales may be published. Table 2 lists all products for which data on production and/or sales were reported and identifies the manufacturers of each]

TAR AND TAR CRUDES	UNIT OF QUANTITY	PRODUCTION	SALES		
			QUANTITY	VALUE	UNIT VALUE <sup>1</sup>
				1,000 dollars	
Coal tar: Coke-oven operators-----	1,000 gal--	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )
Crude light oil: <sup>3</sup> Coke-oven operators--	1,000 gal	72,394	54,744	42,739	\$0.78
Intermediate light oil: Coke-oven operators-----	1,000 gal--	( <sup>4</sup> )	( <sup>4</sup> )	( <sup>4</sup> )	( <sup>4</sup> )
Light-oil distillates:					
Benzene, all grades, total <sup>5</sup> -----	1,000 gal--	( <sup>4</sup> )	( <sup>4</sup> )	( <sup>4</sup> )	( <sup>4</sup> )
Coke-oven operators-----	1,000 gal--	( <sup>4</sup> )	( <sup>4</sup> )	( <sup>4</sup> )	( <sup>4</sup> )
Petroleum refiners <sup>6</sup> -----	1,000 gal--	1,282,760	( <sup>4</sup> )	( <sup>4</sup> )	( <sup>4</sup> )
Toluene, all grades, total-----	1,000 gal--	( <sup>4</sup> )	( <sup>4</sup> )	( <sup>4</sup> )	( <sup>4</sup> )
Coke-oven operator-----	1,000 gal--	( <sup>4</sup> )	( <sup>4</sup> )	( <sup>4</sup> )	( <sup>4</sup> )
Petroleum refiners <sup>7</sup> -----	1,000 gal--	703,740	( <sup>4</sup> )	( <sup>4</sup> )	( <sup>4</sup> )
Xylene, all grades, total <sup>5</sup> -----	1,000 gal--	( <sup>4</sup> )	( <sup>4</sup> )	( <sup>4</sup> )	( <sup>4</sup> )
Coke-oven operators-----	1,000 gal--	( <sup>4</sup> )	( <sup>4</sup> )	( <sup>4</sup> )	( <sup>4</sup> )
Petroleum refiners-----	1,000 gal--	( <sup>4</sup> )	( <sup>4</sup> )	( <sup>4</sup> )	( <sup>4</sup> )
Naphthalene, crude-----	1,000 lbs--	( <sup>4</sup> )	( <sup>4</sup> )	( <sup>4</sup> )	( <sup>4</sup> )
Creosote oil (Dead oil) (100% creosote basis):					
Distillate as such (100% creosote basis)-----	1,000 gal--	64,339	40,015	38,051	.95
Creosote in coal tar solution (100% solution basis)-----	1,000 gal--	66,587	42,311	38,152	.90
Tar, for uses other than road tar-----	1,000 gal--	145,347	154,719	111,698	.72
Pitch of tar: hard-----	1,000 tons--	515	473	125,441	265.04

<sup>1</sup>Unit value per gallon pound, or ton as specified.  
<sup>2</sup>Collection of data on coal tar by the Energy Information Administration, U.S. Department of Energy (Quarterly Coal Report) was discontinued. The U.S. International Trade Commission will begin collection of these data for the 1986 reporting year.  
<sup>3</sup>Data reported by tar distillers are not included because publication would disclose the operations of individual companies.  
<sup>4</sup>Statistics cannot be published; to do so would disclose the operations of individual companies.  
<sup>5</sup>Includes data for material produced for use in blending motor fuels. The annual production statistics for petroleum refiners on benzene, toluene, and xylene are not comparable with the combined monthly production figures because of fiscal year revisions.  
<sup>6</sup>Benzene, specification grades (1°, 2°).  
<sup>7</sup>Sales data for toluene produced by petroleum refiners includes only high purity (98-100%) toluene.

Note 1.--Statistics for materials produced in coke and gas-retort ovens are compiled by the Energy Information Administration, U.S. Department of Energy. Statistics for materials produced in tar and petroleum refineries are compiled by the U.S. International Trade Commission.  
 Note 2.--Data for all other tars and tar crudes are not included in the 1985 report because publication would disclose the operations of individual companies.



TABLE 2.—TAR AND TAR CRUDES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1985

[CHEMICALS FOR WHICH SEPARATE STATISTICS ARE GIVEN IN TABLE 1 ARE MARKED BELOW WITH AN ASTERISK (\*); CHEMICALS NOT SO MARKED DO NOT APPEAR IN TABLE 1 BECAUSE THE REPORTED DATA ARE ACCEPTED IN CONFIDENCE AND MAY NOT BE PUBLISHED. MANUFACTURERS' IDENTIFICATION CODES SHOWN BELOW ARE TAKEN FROM TABLE 3. AN "X" SIGNIFIES THAT THE MANUFACTURER DID NOT CONSENT TO HIS IDENTIFICATION WITH THE DESIGNATED PRODUCT]

TAR AND TAR CRUDES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
LIGHT OIL, LIGHT OIL DISTILLATES, AND TAR BASES:	
CRUDE LIGHT OIL:	
*Crude light oil-----	ABP, ALS, BTS, CHA, EKO, IGC, ILI, INL, LTV, NTS, SGO, USS, WPS.
Intermediate light oil: coke-oven operators-----	EKO, X.
PYRIDINE, TAR BASES:	
BENZENE (BENZOL):	
Tar bases: crude bases (Dry basis)-----	INL, NTS, USS, WPS.
Benzene (Benzol) 90-100%-----	BTS, USS.
TOLUENE (TOLUOL):	
Tar bases: semirefined or denaturing grade-----	USS.
Toluene (Toluol) 90-100%-----	BTS, USS.
XYLENE (XYLOL):	
Xylene (Xylol): 90-100%-----	USS.
SOLVENT NAPHTHA:	
Solvent naphtha-----	IGC.
ALL OTHER:	
Light-oil distillates, all other-----	BTS, USS.
OTHER TAR DISTILLATES:	
NAPHTHALENE, CRUDE:	
Methylnaphthalene-----	KPT.
Naphthalene, crude, solidifying at less than 74° C-----	BTS, IGC, LTV.
Naphthalene, crude, solidifying at 76° C to less than 79° C-----	ACS, KPT.
CRUDE TAR ACID OILS:	
Crude tar acid oils having a tar acid content of: 5 percent to less than 24 percent-----	ACS, X.
CREOSOTE OIL (DEAD OIL):	
Creosote oil (Dead oil): creosote content in solution (100 Percent basis)-----	KPT, RIL.
*Creosote oil (Dead oil): creosote in coal tar solution (100 Percent solution basis)-----	ACS, KPT, RIL, USS, WTC.
*Creosote oil (Dead oil): distillate as such (100 Percent creosote basis)-----	ACS, COP, KPT, RIL, USS, WTC.

TABLE 2.--TAR AND TAR CRUDES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1985--CONTINUED

TAR AND TAR CRUDES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
OTHER TAR DISTILLATES--CONTINUED	:
ALL OTHER DISTILLATE PRODUCTS:	:
Carbon black oil-----	ACS, KPT.
Creosote tar acid oil-----	ACS.
Crude coal tar solvent-----	KPT, ILI.
Priming and refractory oil-----	BTS.
Sodium phenate or carbolate-----	NTS.
Tetralin, crude (Tetrahydronaphthalene)-----	KPT.
Tar distillates, all other-----	GIV, KPT, LYP.
TAR AND TAR PITCHES:	:
TAR, ROAD:	:
Tar, road-----	ACS, RIL.
TAR FOR OTHER USES:	:
*Tar for other uses: crude-----	ABP, ALS, BTS, HUS, IGC, LTV, SGO, USS.
*Tar for other uses: refined-----	ACS, RIL, X.
PITCH OF TAR:	:
*Pitch of tar: hard (M.P. 161° F and Over)-----	ACS, KPT, RIL, WTC.
Pitch of tar: medium (M.P. 110° To 160° F)-----	ACS, COP, KPT, RIL, USS.
Pitch of tar: soft (M.P. 80° To 109° F)-----	KPT, USS.

I -- TAR AND TAR CRUDES

I -- TAR AND TAR CRUDES

TABLE 3.--TAR AND TAR CRUDES: DIRECTORY OF MANUFACTURERS, 1985

ALPHABETICAL DIRECTORY BY CODE

Names of manufacturers that reported production and/or sales of tar and tar crudes to the U.S. International Trade Commission for 1985 are listed below in the order of their identification codes as used in table 2]

CODE :	NAME OF COMPANY	CODE :	NAME OF COMPANY
ABP :	Alabama By-Products Corp.	KPT :	Koppers Co., Inc.
ACS :	Allied Corp., Chemicals Sector	LSS :	Lone Star Steel Co.
AMS :	Armco, Inc.	LTV :	LTV Steel Company
BIS :	Bethlehem Steel Corp.	LYP :	Lyondell Petrochemical Co.
CHA :	Chattanooga Coke & Chemicals Co., Inc.	NTS :	National Steel Corp., Great Lakes Plant
COP :	Coopers Creek Chemical Corp.	RIL :	Reilly Tar & Chemical Corp.
EKO :	Empire Coke Co.	SGO :	Shenango, Inc.
GIV :	Givaudan Corp.	USS :	U.S. Steel Corp.:
HUS :	Husky Industries, Inc.		Clairton Plant
IGC :	Indiana Gas & Chemical Corp.		Gary Works
ILI :	Interlake, Inc.		Geneva Plant
IWL :	Inland Steel Co.		USS Chemicals Div.
		WPS :	Wheeling-Pittsburg Steel Corp.
		WTC :	Witco Chemical Corp.

Note.--Complete names, telephone numbers, and addresses of the above reporting companies are listed in table 1 of the appendix.

SYNTHETIC ORGANIC CHEMICALS, 1985  
SECTION II -- PRIMARY PRODUCTS FROM PETROLEUM AND NATURAL  
GAS FOR CHEMICAL CONVERSION

STATISTICAL HIGHLIGHTS

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202-523-0453

Primary products that are derived from petroleum and natural gas are related to the intermediates and finished products made from such primary materials in much the same way that crude products derived from the distillation of coal tar <sup>1</sup> are related to their intermediates and finished products. Many of the primary products derived from petroleum are identical with those derived from coal tar (e.g., benzene, toluene, and xylene). Considerable duplication exists in the statistics on the production and sales of primary petroleum products because some of these primary chemicals are converted to other primary products derived from petroleum and because data on some production and sales are reported at successive stages in the conversion process. The statistics are sufficiently accurate, however, to indicate trends in the industry. Many of the primary products for which data are included in the statistics may be used either as fuel or as basic materials from which other chemicals are derived. In this report every effort has been made to exclude data on materials that are used as fuel; however, data are included on toluene and xylene, which are used in blending aviation and motor fuel.

The total production of primary products derived from petroleum and natural gas during 1981-85 is shown in figure 1. Production decreased 16,465 million pounds or by 15 percent from 1981-82 as a result of economic conditions. Between 1984-85 production also decreased 4 percent from 108,666 million pounds to 104,484 million pounds.

The output of primary products derived from petroleum and natural gas as a group amounted to 104,484 million pounds in 1985. Production in 1984 was 108,666 million pounds. The output of aromatic and naphthenic products from petroleum amounted to 23,453 million pounds in 1985, compared with 24,563 million pounds in 1984. Sales amounted to \$1,973 million in 1985 and \$2,162 million in 1984. In 1985, production of benzene was 9,390 million pounds; production of toluene was 5,074 million pounds; and production of high purity mixed xylenes were 4,464 million pounds (table 1).

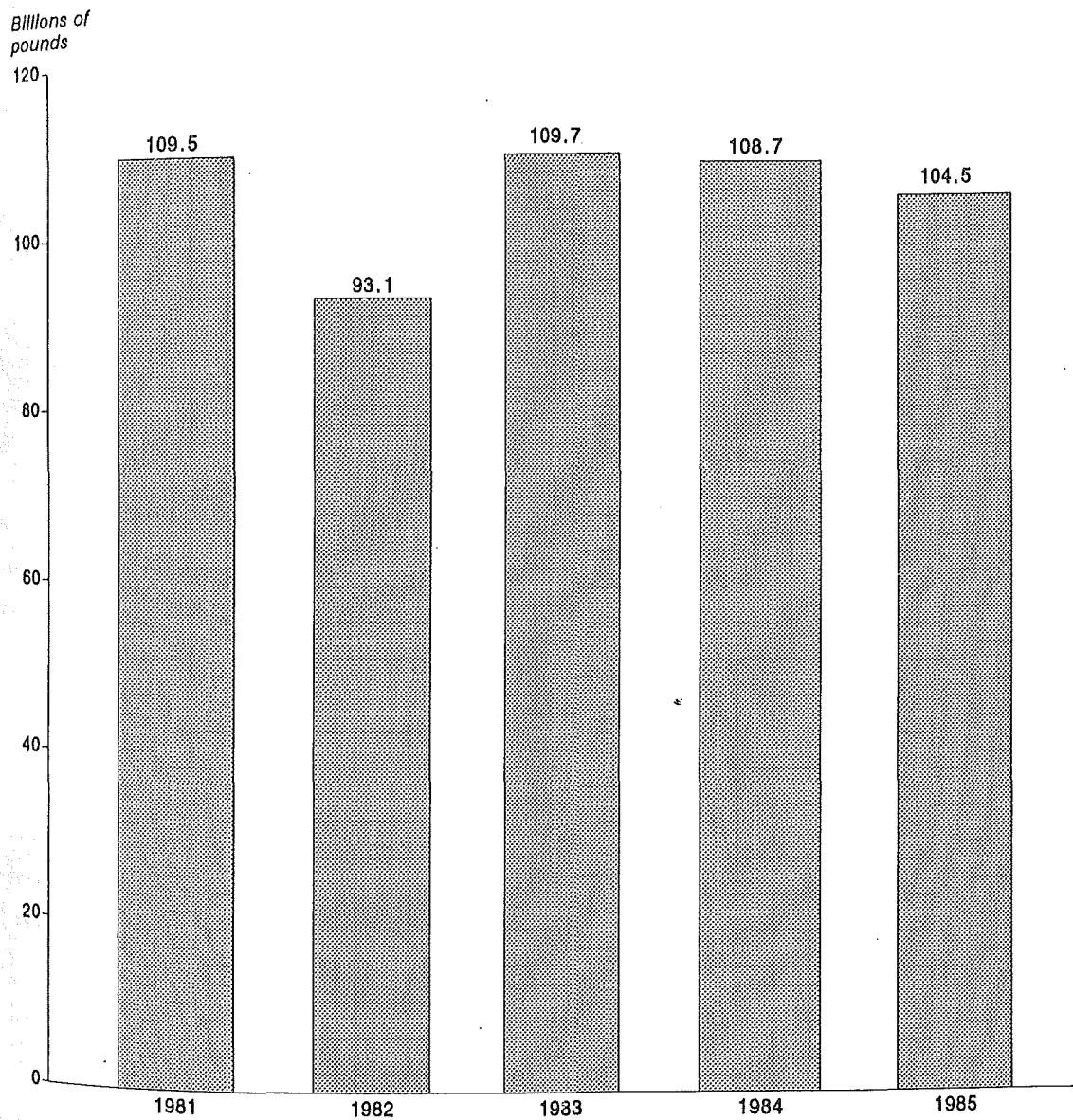
Production of all aliphatic hydrocarbons and derivatives from petroleum and natural gas was 81,031 million pounds in 1985, compared with 84,103 million pounds in 1984. Sales of these products were valued at \$5,837 million in 1985, compared with \$6,094 million in 1984. Production of ethylene was 29,847 million pounds in 1985. The output of 1,3-butadiene in 1985 was 2,340 million pounds. Production of propylene in 1985 was 14,887 million pounds (table 1).

Data for 1985 primary products from petroleum and natural gas for chemical conversion were supplied by 70 companies or company divisions.

<sup>1</sup> Statistics on chemicals from coal tar are given in Section 1 (Tar and Tar Crudes) of this report.

## II -- PRIMARY PRODUCTS FROM PETROLEUM AND NATURAL GAS FOR CHEMICAL CONVERSION

Figure 1.—Primary products from petroleum and natural gas.



Source: U.S. International Trade Commission, *Synthetic Organic Chemicals: United States Production and Sales*.

II -- PRIMARY PRODUCTS FROM PETROLEUM AND NATURAL GAS FOR CHEMICAL CONVERSION

TABLE 1.--PRIMARY PRODUCTS FROM PETROLEUM AND NATURAL GAS FOR CHEMICAL CONVERSION: U.S. PRODUCTION AND SALES, 1985

[Listed below are the primary products from petroleum and natural gas for chemical conversion for which any reported data on production or sales may be published. (Leaders (...)) are used where the reported data are accepted in confidence and may not be published or where no data were reported.) Table 2 lists all primary products from petroleum and natural gas for chemical conversion for which data on production and/or sales were reported and identifies the manufacturers of each]

PRIMARY PRODUCTS FROM PETROLEUM AND NATURAL GAS FOR CHEMICAL CONVERSION	PRODUCTION	SALES		
		QUANTITY	VALUE	UNIT VALUE <sup>1</sup>
	<u>1,000</u> pounds	<u>1,000</u> pounds	<u>1,000</u> dollars	<u>Per</u> pound
Grand total-----	104,483,734	49,885,047	7,810,050	\$0.16
AROMATICS AND NAPHTHENES <sup>2</sup>				
Total-----	23,452,681	13,266,929	1,973,405	.15
Benzene, all grades, total-----	9,389,805	...	...	...
High purity (98-100%)-----	8,251,465	4,051,856	718,904	.18
Other (90-97.9%)-----	1,138,340	...	...	...
Toluene, all grades, total-----	5,073,965	...	...	...
High purity (98-100%)-----	4,008,129	3,658,709	565,335	.15
Other (90-97.9%) <sup>3 4</sup> -----	1,065,836	...	...	...
Xylene, mixed, total-----	...	...	...	...
High purity (98-100%)-----	4,463,807	2,416,928	355,840	.15
Other (90-97.9%) <sup>4</sup> -----	...	...	...	...
All other aromatics and naphthenes <sup>5</sup> -----	4,525,104	3,139,436	333,326	.11
ALIPHATIC HYDROCARBONS				
Total-----	81,031,053	36,618,118	5,836,645	.16
C <sub>2</sub> Hydrocarbons, total-----				
Acetylene <sup>6</sup> (For chemical use only)-----	35,755,546	12,600,541	1,756,289	.14
Ethane-----	277,558	102,781	43,842	.43
Ethylene-----	5,631,262	2,769,057	185,231	.07
Ethylenes-----	29,846,726	9,728,703	1,527,216	.16
C <sub>3</sub> Hydrocarbons, total-----				
Propane-----	25,191,952	13,918,244	1,869,516	.13
Propylene <sup>7</sup> -----	10,305,103	6,240,393	685,713	.11
Propylenes-----	14,886,849	7,677,851	1,183,803	.15
C <sub>4</sub> Hydrocarbons, total-----				
Butadiene and butylene fractions-----	11,650,935	5,957,062	1,272,215	.21
1,3-Butadiene, grade for rubber (elastomers)-----	1,017,666	972,754	159,274	.16
n-Butane-----	2,340,484	2,039,338	682,789	.33
1-Butene-----	2,214,392	1,332,556	153,004	.11
1-Butene and 2-Butene mixed <sup>8</sup> -----	414,248	198,186	45,629	.23
Isobutane-----	639,775	242,814	31,793	.13
Isobutylene-----	1,638,820	686,096	87,837	.13
All other <sup>9</sup> -----	...	303,384	66,057	.22
Isobutylenes-----	3,385,550	181,934	45,832	.25
C <sub>5</sub> Hydrocarbons, total-----				
Isoprene (2-Methyl-1,3-butadiene)-----	2,045,709	557,907	102,737	.18
n-Pentane-----	65,577	44,904	10,679	.24
Pentenes, mixed-----	107,108	...	...	...
All other <sup>10 11</sup> -----	973,397	286,297	43,806	.15
Pentenes, mixed-----	899,627	226,706	48,252	.21
All other aliphatic hydrocarbons, derivatives and mixtures, total-----	6,386,911	3,584,364	835,888	.23
Alpha olefins, C <sub>6</sub> -C <sub>10</sub> -----	517,474	336,445	93,810	.28

See footnotes at end of table.

## SYNTHETIC ORGANIC CHEMICALS, 1985

TABLE 1.--PRIMARY PRODUCTS FROM PETROLEUM AND NATURAL GAS FOR CHEMICAL CONVERSION: U.S. PRODUCTION AND SALES, 1985--CONTINUED

PRIMARY PRODUCTS FROM PETROLEUM AND NATURAL GAS FOR CHEMICAL CONVERSION	PRODUCTION	SALES		
		QUANTITY	VALUE	UNIT VALUE <sup>1</sup>
	<u>1,000</u> pounds	<u>1,000</u> pounds	<u>1,000</u> dollars	Per pound
ALIPHATIC HYDROCARBONS--Continued				
All other aliphatic hydrocarbons, derivatives and mixtures--Continued				
Alpha olefins, C <sub>11</sub> and higher-----	785,336	482,550	121,501	\$0.25
Dodecene (Tetrapropylene)-----	349,989	118,189	25,397	.21
n-Heptane-----	123,948	121,660	26,099	.21
Hexane-----	482,457	306,577	63,505	.21
Nonene (Tripropylene)-----	...	160,672	40,338	.25
n-Paraffins <sup>1,2</sup> -----	1,295,557	913,618	178,908	.20
All other <sup>1,3</sup> -----	2,832,150	1,144,653	286,330	.25

<sup>1</sup>Calculated from rounded figures.

<sup>2</sup>The chemical raw materials designated as aromatics are in some cases identical with those obtained from the distillation of coal tar; however, the statistics given in the table above relate only to such materials as are derived from petroleum and natural gas. Statistics on production and/or sales of benzene, toluene, and xylene from all sources are given in table 1 of the report on "Tar and Tar Crudes."

<sup>3</sup>Includes toluene, solvent grade, 90 percent.

<sup>4</sup>Includes toluene and xylene used as solvents; may include that which is blended in aviation and motor gasolines.

<sup>5</sup>Includes data for alkyl aromatics, crude cresylic acid, cyclopentane, naphthalene, naphthenic acid, carbon black feedstock, distillates, solvents and miscellaneous cyclic hydrocarbons. Includes sales data only for the other than high purity grades of benzene, toluene, and mixed xylenes.

<sup>6</sup>Production figures on acetylene from calcium carbide for chemical synthesis are collected by the U.S. Bureau of the Census.

<sup>7</sup>Includes data for refinery propylene.

<sup>8</sup>The statistics represent principally the butene content of crude refinery gases from which butadiene is manufactured.

<sup>9</sup>Includes production and/or sales data for mixed C<sub>4</sub> streams, and 2-butene. Includes production data only for isobutylene.

<sup>10</sup>Includes data for mixtures of C<sub>5</sub> hydrocarbons, isopentane, 1-pentene, 2-pentene, and piperylene.

<sup>11</sup>Includes sales data only for n-pentane and isoamylene.

<sup>12</sup>Includes data for the following chain lengths: C<sub>6</sub>-C<sub>9</sub>, C<sub>9</sub>-C<sub>15</sub>, C<sub>10</sub>-C<sub>14</sub>, C<sub>10</sub>-C<sub>16</sub>, C<sub>12</sub>-C<sub>18</sub> and others.

<sup>13</sup>Includes production and/or sales data for methane, methylcyclopentadiene, isoheptanes, isohexane, iso-octane, mixed hexenes, mixed heptenes, mixed octenes, n-octane, di-isobutylene, eicosane, nonene, mixtures of C<sub>2</sub> and C<sub>3</sub>, C<sub>5</sub>-C<sub>6</sub>, C<sub>5</sub>-C<sub>7</sub>, C<sub>6</sub>-C<sub>7</sub> hydrocarbons, hydrocarbon derivatives, and other hydrocarbons.

TABLE 2.--PRIMARY PRODUCTS FROM PETROLEUM AND NATURAL GAS FOR CHEMICAL CONVERSION FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1985

[CHEMICALS FOR WHICH SEPARATE STATISTICS ARE GIVEN IN TABLE 1 ARE MARKED BELOW WITH AN ASTERISK (\*); CHEMICALS NOT SO MARKED DO NOT APPEAR IN TABLE 1 BECAUSE THE REPORTED DATA ARE ACCEPTED IN CONFIDENCE AND MAY NOT BE PUBLISHED. MANUFACTURERS' IDENTIFICATION CODES SHOWN BELOW ARE TAKEN FROM TABLE 3.

PRIMARY PRODUCTS FROM PETROLEUM AND NATURAL GAS FOR CHEMICAL CONVERSION	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
<b>AROMATICS AND NAPHTHENES</b>	
ALKYL AROMATICS:	
Cyclosols-----	CXI.
Alkyl aromatics, all other-----	SHC.
*BENZENE:	
*Benzene, High purity (98-100%)-----	AMO, APR, ASH, CRP, CSD, DOW, EKK, ENJ, GRS, HES, LYP, MOC, PLC, PPR, SHC, SIO, SM, SOC, SUN, SWR, TOC, TX, UCC, UOC, USI, VEL.
*Benzene, Other-----	ACU, AMO, DUP, KHI, KLM.
Cresylic acid (Less than 75 percent distilling over 215° C)-----	FER, KHI.
Cyclopentane-----	PLC.
Naphthalene-----	CXI, DUP, TX.
NAPHTHENIC ACID:	
Naphthenic acid, acid number 150-199-----	CPS, HEC, MER, SUN.
Naphthenic acid, acid number 200-224-----	FER, MER.
Naphthenic acid, acid number less than 150-----	ATR, FER, HEC, SHC, SUN.
*TOLUENE:	
*Toluene, High purity (98-100%)-----	APR, ASH, CSD, DOW, EKK, ENJ, GRS, HES, HST, KHI, LYP, MOC, MON, PLC, PPR, SHC, SIO, SM, SUN, SWR, TOC, TX, UCC, UOC.
*Toluene, Other-----	DUP, PPR, SHC, SOC.
*XYLENES, MIXED:	
*Xylene, High purity (98-100%)-----	AMO, ASH, CSD, EKK, ENJ, HES, MOC, PLC, PPR, SHC, SUN, SWR, UCC, UOC.
Xylene, Other-----	AMO, DUP, TOC.
*ALL OTHER AROMATICS AND NAPHTHENES:	
Aromatics, C <sub>9</sub> -----	KHI, MOC.
Benzene, toluene, xylene, mixtures-----	ELP.
Carbon black feedstock-----	ENJ.
All other products from petroleum and natural gas, cyclic-----	AMO, ASH, BAS, BFG, EKK, ELP, ENJ, KHI, LYP, NWP, SHC, SWR, UCC, VST.
<b>ALIPHATIC HYDROCARBONS</b>	
C <sub>1</sub> HYDROCARBONS:	
Methane-----	NWP, SHO.



TABLE 2.--PRIMARY PRODUCTS FROM PETROLEUM AND NATURAL GAS FOR CHEMICAL CONVERSION FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1985--CONTINUED

PRIMARY PRODUCTS FROM PETROLEUM AND NATURAL GAS FOR CHEMICAL CONVERSION	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ALIPHATIC HYDROCARBONS--CONTINUED	
*C <sub>2</sub> HYDROCARBONS:	
*Acetylene (For chemical use only)-----	BAS, BOR, RH, UCC.
*Ethane-----	ACU, AMO, CGO, ENJ, OMC, PLC, SHO, USI.
*Ethylene-----	ACU, AMO, BAS, BFG, CRP, DOW, DUP, EKK, ELP, ENJ, GOC, LYP, MCB, NWP, OMC, PLC, SHC, SM, SNO, TX, UCC, USI, USS, VST.
C <sub>3</sub> HYDROCARBONS:	
Hydrocarbons, C <sub>2</sub> -C <sub>3</sub> , mixtures-----	CLK, TU.
*Propane (Commercial and hd-5)-----	AMO, ASH, CCP, CGO, CSD, CSP, ENJ, EPC, GRS, KHI, MOC, OMC, PLC, SHO, SM, SOG, SUN, TCR, TUS, UOC, USI.
*Propylene-----	ACU, AMO, ASH, BAS, BFG, CCP, CGO, CLK, CRP, CSD, DOW, DUP, EKK, ELP, ENJ, EPC, GOC, KHI, LYP, MCB, MOC, NWP, PLC, SHC, SIO, SM, SOC, SOG, SUN, TCR, TX, UCC, USS, VST.
*C <sub>4</sub> HYDROCARBONS:	
*Butadiene and butylene fractions-----	ACU, BAS, CRP, DOW, EKK, ELP, ENJ, GOC, NWP, PLC, TUS, UCC, VST.
*1,3-Butadiene, grade for rubber (Elastomers)-----	AMO, DOW, DUP, ELP, ENJ, LYP, SHC, SM, TPC, TUS.
*n-Butane-----	AMO, ASH, CSD, CSP, EPC, KHI, OMC, PLC, SHO, SM, SUN, TNA, TUS, USI.
*1-Butene-----	ENJ, GOC, SHC, TNA, TPC.
2-Butene-----	PLC, TPC.
*1-Butene and 2-butene, mixed-----	ATR, DOW, ENJ, LYP, SHC, SM, SOG, TNA.
Hydrocarbons, C <sub>4</sub> , fraction-----	KHI, TX, USS.
Hydrocarbons, C <sub>4</sub> , mixtures-----	EPC, KHI, MCB, PPR.
*Isobutane (2-Methylpropane)-----	AMO, CSP, ENJ, EPC, KHI, OMC, PLC, SHO, SUN, TUS, USI.
*Isobutylene (2-Methylpropene)-----	ATR, ENJ, SHC, TPC, TUS.
Hydrocarbons, C <sub>4</sub> , all other-----	ENJ, LYP, TX, USI.
*C <sub>5</sub> HYDROCARBONS:	
Hydrocarbons, C <sub>5</sub> mixtures-----	LYP.
Isoamylene-----	ENJ.
Isopentane (2-Methylbutane)-----	PLC, SHO.
*Isoprene (2-Methyl-1,3-butadiene)-----	DOW, ENJ, GOC, LYP.
*n-Pentane-----	ASH, PLC, SHO, SOH.
1-Pentene-----	PLC, SOC.
2-Pentene-----	BFG, DOW.
*Pentenes, mixed-----	CSP, ENJ, PLC, SHC, SHO, SM, TUS, USS.

TABLE 2.—PRIMARY PRODUCTS FROM PETROLEUM AND NATURAL GAS FOR CHEMICAL CONVERSION FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1985—CONTINUED

PRIMARY PRODUCTS FROM PETROLEUM AND NATURAL GAS FOR CHEMICAL CONVERSION	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ALIPHATIC HYDROCARBONS—CONTINUED	
C <sub>5</sub> HYDROCARBONS—Continued	
Piperylene (1,3-Pentadiene)-----	DOW.
Hydrocarbons, C <sub>5</sub> , all other-----	ENJ, TX, UCC.
*ALL OTHER ALIPHATIC HYDROCARBONS, DERIVATIVES, AND MIXTURES:	
C <sub>6</sub> HYDROCARBONS:	
Di-isopropane (2,3-Dimethylbutane)-----	PLC.
*Hexane-----	ASH, CXI, ENJ, HMY, PLC, SHO, TX, UOC VST.
Hexenes, mixed-----	ENJ.
Hydrocarbons, C <sub>5</sub> -C <sub>6</sub> , mixtures-----	PLC.
Hydrocarbons, C <sub>5</sub> -C <sub>7</sub> , mixtures-----	ENJ.
Isohexane-----	PLC.
Methylcyclopentadiene-----	ENJ.
Neohexane (2,2-Dimethylbutane)-----	PLC.
Hydrocarbons, C <sub>6</sub> , all other-----	SHC, SM, TX.
C <sub>7</sub> HYDROCARBONS:	
*n-Heptane-----	ENJ, PLC, TX, UOC.
Heptenes, mixed-----	ENJ, TX.
Hydrocarbons, C <sub>6</sub> -C <sub>7</sub> , mixtures-----	PPR, TX.
Isoheptanes-----	PLC.
Hydrocarbons, C <sub>7</sub> , all other-----	EKK.
C <sub>8</sub> HYDROCARBONS:	
Di-isobutylene (Di-isobutene)-----	EKT, TPC.
Octenes, mixed-----	ENJ, TX.
2,2,4-Trimethylpentane (Iso-octane)-----	PLC.
Hydrocarbons, C <sub>8</sub> , all other-----	SHC.
C <sub>9</sub> AND ABOVE HYDROCARBONS (EXCEPT ALPHA OLEFINS):	
*Dodecene-----	ENJ, SOC, SUN, UOC.
Eicosane-----	HMY.
*Nonene (Tripropylene)-----	CSP, ENJ, TX, UOC.
ALPHA OLEFINS:	
*Alpha olefins, C <sub>6</sub> -C <sub>10</sub> -----	GOC, PLC, SHC, SOC, TNA, USI.
*Alpha olefins, C <sub>11</sub> and higher-----	FER, GOC, SHC, SOC, TNA.
*N-PARAFFINS - CARBON CHAIN LENGTH:	
n-Paraffins, C <sub>10</sub> -C <sub>14</sub> -----	ENJ, SHC, UOC.
n-Paraffins, C <sub>10</sub> -C <sub>16</sub> -----	VST.
n-Paraffins, C <sub>12</sub> -C <sub>18</sub> -----	VST.
n-Paraffins, C <sub>6</sub> -C <sub>9</sub> -----	UCC, UOC.
n-Paraffins, C <sub>9</sub> -C <sub>15</sub> -----	SHC, TX, UOC.
n-Paraffins, other-----	ENJ, UOC.

TABLE 2.--PRIMARY PRODUCTS FROM PETROLEUM AND NATURAL GAS FOR CHEMICAL CONVERSION FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1985--CONTINUED

PRIMARY PRODUCTS FROM PETROLEUM AND NATURAL GAS FOR CHEMICAL CONVERSION	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ALIPHATIC HYDROCARBONS--CONTINUED	
ALL OTHER ALIPHATIC HYDROCARBONS, DERIVATIVES, AND MIXTURES, TOTAL--Continued	
Hydrocarbons, C <sub>5</sub> -C <sub>9</sub> , mixtures-----	ELP.
Polybutene-----	AMO, GSD, SOC.
HYDROCARBON DERIVATIVES:	
n-Butyl mercaptan (1-Butanethiol)-----	PAS, PLC.
sec-Butyl mercaptan (2-Butanethiol)-----	HAP, PLC.
tert-Butyl mercaptan (2-Methyl-2-propanethiol)-----	HAP, PAS, PLC.
Di-tert-butyl disulfide-----	PLC.
Diethyl sulfide (Ethyl sulfide)-----	HAP, PAS.
Dimethyl sulfide-----	PAS.
Ethyl mercaptan (Ethanethiol)-----	HAP, PAS.
Ethylthioethanol-----	HAP.
Isopropyl mercaptan (2-Propanethiol)-----	HAP, PAS, PLC.
Methyl ethyl sulfide-----	HAP.
Methyl mercaptan (Methanethiol)-----	PAS.
Octyl mercaptans-----	PAS.
n-Propyl mercaptan (1-Propanethiol)-----	PAS, PLC.
Thiophane (Tetrahydrothiophene)-----	HAP.
Hydrocarbon derivatives: all other hydrocarbon derivatives-----	PAS, PLC, SHC, TX.
Hydrocarbons, C <sub>9</sub> and above, all other, including mixtures-----	GOC, NES, PLC, TNA.

II -- PRIMARY PRODUCTS FROM PETROLEUM AND NATURAL GAS FOR CONVERSION

TABLE 3.--PRIMARY PRODUCTS FROM PETROLEUM AND NATURAL GAS FOR CHEMICAL CONVERSION:  
 DIRECTORY OF MANUFACTURERS, 1985

ALPHABETICAL DIRECTORY BY CODE

Names of manufacturers that reported production and/or sales of crude products from petroleum and natural gas for chemical conversion to the U.S. International Trade Commission for 1985 are listed below in the order of their identification codes as used in table 2]

Code	Name of Company	Code	Name of Company
ACU	Allied Corp., Union Texas Petroleum Corp.	MCB	Borg-Warner Corp., Borg-Warner Chemicals
AMO	Amoco Corp.	MER	Merichem Co.
APR	Atlas Processing Co.	MOC	Marathon Petroleum Co., Texas Refining Div.
ASH	Ashland Oil, Inc., Ashland Petroleum Co.	MON	Monsanto Co.
ATR	Atlantic Richfield Co., Arco Chemical Co.		
		NES	Rutgers Nease Chemical Co.
BAS	BASF Wyandotte Corp.	NWP	Norchem, Inc.
BFG	B. F. Goodrich Co., B. F. Goodrich Chemical Group		
		OMC	Olin Corp.
BOR	Borden, Inc., Borden Chemical Div.		
		PAS	Pennwalt Corp.
CCP	Crown Central Petroleum Corp.	PLC	Phillips Petroleum Co.
CCO	Citgo Petroleum Corp.	PPR	Phillips Puerto Rico Core, Inc.
CLK	Clark Oil & Refining Corp.		
CPS	CPS Chemical Co., Inc.	RH	Rohm & Haas Co.
CRP	Corpus Christi Petrochemical Co.		
CSD	Fina Oil & Chemical Co., Cosden Chemical Div.	SHC	Shell Oil Co., Shell Chemical Co. Div.
CSP	Coastal Refining & Marketing, Inc.	SHO	Shell Oil Co.
CXI	Chemical Exchange Industries, Inc.	SIO	Standard Oil Co. (Ohio)
		SKO	Texaco Refining & Marketing, Inc.
DOW	Dow Chemical Co.	SM	Mobil Oil Corp.:
DUP	E. I. duPont de Nemours & Co., Inc. Petrochemicals Dept.		Gas Liquids Dept.
			Mobil Chemical Co., Petrochemicals Div.
		SNO	SunOlin Chemical Co.
	Eastman Kodak Co.:	SOC	Chevron Corp., Chevron Chemical Co.
EKT	Tennessee Eastman Co. Div.	SOG	Charter International Oil Co.
EXX	Texas Eastman Co. Div.	SOH	Standard Oil Chemical Co.
ELP	El Paso Products Co.	SUN	Sun Company, Inc.
ENJ	Exxon Chemical Americas	SWR	Southwestern Refining Co., Inc.
EPC	Enterprise Products Co. of Mississippi		
		TCR	Texas City Refining, Inc.
FER	Ferro Corp., Productol Chemical Div.	TID	Texaco Refining & Marketing, Inc., Delaware Refinery
		TNA	Ethyl Corp.
CCO	Chevron Chemical Corp.	TOC	Tenneco Oil Co.
CPS	Champlin Petroleum Co.	TPC	Texas Petrochemicals Corp.
		TU	Tenn-USS Chemicals Co.
EAP	Helmerich & Payne, Inc., National Gas Odorizing Div.	TUS	Texaco Butadiene Co.
EZC	Hewchem	TX	Texaco, Inc., Texaco Chemical Co.
HES	Amerada Hess Corp. (Hess Oil Virgin Islands Corp.)		
HNY	Humphrey Chemical Co.	UCC	Union Carbide Corp.
HST	American Hoeshst Corp., Petrochemical/Plastics Group	UOC	Union Oil Co. of California
		USI	National Distillers & Chemicals Corp., U.S. Industrial Chemicals Co.
		USS	U.S. Steel Corp., USS Chemicals Div.
KHI	Koch Refining Co.		
KLM	Kalama Chemical, Inc.	VEL	Velsicol Chemical Corp.
		VST	Vista Chemical Co.
LTP	Lyondell Petrochemical Co.		

Note.--Complete names, telephone numbers, and addresses of the above reporting companies are listed in table 1 of appendix.

# SYNTHETIC ORGANIC CHEMICALS, 1985

## SECTION III -- CYCLIC INTERMEDIATES

### STATISTICAL HIGHLIGHTS

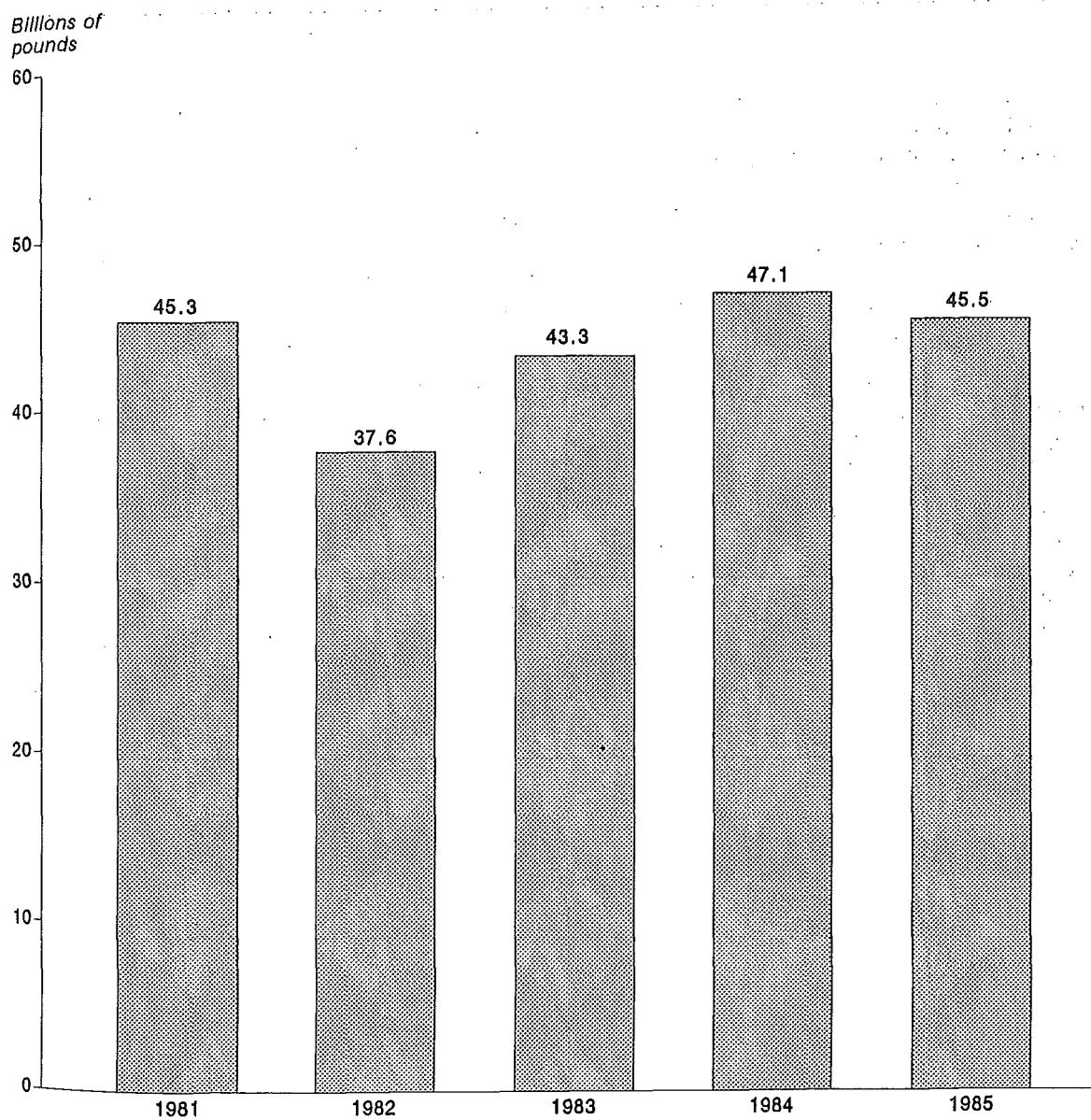
Ed Matusik  
202-523-0492

Cyclic intermediates are synthetic organic chemicals derived principally from petroleum and natural gas and from coal-tar crudes produced by destructive distillation (pyrolysis) of coal. Most cyclic intermediates are used in the manufacture of more advanced synthetic organic chemicals and finished products, such as dyes, medicinal chemicals, elastomers (synthetic rubber), pesticides, and plastics and resin materials. Some intermediates, however, are sold as end products without further processing. For example, refined naphthalene may be used as a raw material in the manufacture of 2-naphthol or of other more advanced intermediates, or may be packaged and sold as a moth repellent or as a deodorant. In 1985, about 43 percent of the total output of cyclic intermediates was sold; the rest was consumed chiefly in the producing plants in the manufacture of more advanced intermediates and finished products.

The total annual production of cyclic intermediates during 1981-85 is shown in figure 1. Total production of cyclic intermediates in 1985 amounted to 45,487 million pounds, a decrease of 3 percent compared with production in 1984. Sales of cyclic intermediates in 1985 were 19,585 million pounds, valued at \$6,337 million, compared with 19,957 million pounds, valued at \$6,930 million, in 1984.

Intermediates that were produced in excess of 1 billion pounds in 1985 were styrene (7,622 million pounds), ethylbenzene (7,386 million pounds), terephthalic acid, dimethyl ester (6,490 million pounds), p-xylene (4,779 million pounds), phenol (2,841 million pounds), cumene (2,627 million pounds), and cyclohexane (1,657 million pounds). These intermediate chemicals produced in excess of 1 billion pounds accounted for about 84 percent of the total output of cyclic intermediates production in 1985.

Figure 1.—Cyclic Intermediates.



Source: U.S. International Trade Commission, *Synthetic Organic Chemicals: United States Production and Sales*.

III -- CYCLIC INTERMEDIATES

TABLE 1.--CYCLIC INTERMEDIATES: U.S. PRODUCTION AND SALES, 1985

(Listed below are all cyclic intermediates for which any reported data on production and sales may be published. (Leaders (...)) are used where the reported data are accepted in confidence and may not be published, or where no data were reported.) Table 2 lists all cyclic intermediates for which data on production and/or sales were reported and identifies the manufacturer of each).

CYCLIC INTERMEDIATES	PRODUCTION		SALES	
	1,000	1,000	1,000	UNIT
	pounds	pounds	dollars	VALUE <sup>1</sup> Per pound
Grand total-----	45,487,054	19,585,150	6,336,524	\$0.34
Acetoacetanilide-----	14,279	10,677	11,211	1.05
o-Acetoacetanisidide-----	518	487	1,089	2.24
o-Acetoacetotoluidide-----	1,707	1,659	2,222	1.34
Alkylbenzenes <sup>2</sup> -----	546,711	516,417	218,862	.42
4-Amino-5-methoxy-2-methylbenzenesulfonic acid (5-Methyl-o-anisidinesulfonic acid)-----	1,411	...	...	...
Aniline (Aniline oil)-----	716,036	309,442	98,132	.32
Biphenyl-----	33,018	6,953	3,283	.47
Butylphenols, mixed-----	19,382	12,496	10,781	.86
Cresols and cresylic acid, total <sup>3</sup> -----	60,413	52,775	34,153	.65
o-Cresol-----	24,014	20,344	11,882	.58
All other <sup>4</sup> -----	36,399	32,431	22,271	.69
Cumene-----	2,626,549	1,228,012	253,970	.21
Cyclohexane-----	1,657,169	1,264,449	317,681	.25
Cyclohexanone-----	790,825	...	...	...
Dicyclopentadiene (including cyclopentadiene)-----	63,607	...	...	...
p-Dodecylphenol-----	13,660	8,712	4,022	.46
Ethylbenzene-----	7,386,037	185,809	32,962	.18
Isocyanic acid derivatives, total-----	1,353,754	1,226,660	948,572	.77
Diphenylmethane-4,4'-diisocyanate (MDI)-----	179,070	151,178	138,438	.92
Polymethylene polyphenylisocyanate-----	544,997	489,475	333,228	.68
Toluene-2,4- and 2,6-diisocyanate (80/20 mixture)---	615,931	575,190	461,812	.80
Other isocyanic acid derivatives-----	13,756	10,817	15,094	1.40
4,4'-Isopropylidenediphenol (Bisphenol A)-----	949,253	329,739	158,439	.48
Nitrobenzene-----	913,450	...	...	...
Nonylphenol-----	185,027	64,154	23,782	.37
Phenol, total <sup>3</sup> -----	2,840,712	1,431,310	403,389	.28
From cumene-----	2,673,387	1,269,785	356,150	.28
All other-----	167,325	161,525	47,239	.29
Phthalic anhydride-----	820,222	523,569	134,447	.26
Salicylic acid, tech-----	29,075	...	...	...
Styrene-----	7,622,245	3,842,582	930,288	.24
Terephthalic acid, dimethyl ester <sup>5</sup> -----	6,490,144	...	...	...
Tetrahydrofuran-----	120,209	46,251	43,279	.94
p-Toluenesulfonic acid-----	11,056	10,800	3,608	.33
o-Xylene-----	674,994	472,702	78,543	.17
p-Xylene-----	4,778,757	2,905,061	642,290	.22
All other cyclic intermediates-----	4,766,834	5,134,434	1,981,519	.39

<sup>1</sup> Calculated from unrounded figures.

<sup>2</sup> Includes straight-chain dodecylbenzene, tridecylbenzene, and other straight-chain alkylbenzenes. Branched-chain alkylbenzenes are included in "All other cyclic intermediates."

<sup>3</sup> Does not include data for coke oven and gas-retort ovens, reported to the Office of Energy Data and Interpretation, Energy Information Administration, Department of Energy.

<sup>4</sup> Figures include (o,m,p)-cresol from coal tar, m-cresol, p-cresol, cresylic acid refined from petroleum and coal tar, and (m,p)-cresol from petroleum.

<sup>5</sup> The figure for terephthalic acid, dimethyl ester (DMT) includes both the acid itself and the dimethyl ester without double counting. The acid production figure was multiplied by the factor 1.16 to convert it to equivalent DMT.

TABLE 2.--CYCLIC INTERMEDIATES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1985

[CHEMICALS FOR WHICH SEPARATE STATISTICS ARE GIVEN IN TABLE 1 ARE MARKED BELOW WITH AN ASTERISK (\*); CHEMICALS NOT SO MARKED DO NOT APPEAR IN TABLE 1 BECAUSE THE REPORTED DATA ARE ACCEPTED IN CONFIDENCE AND MAY NOT BE PUBLISHED. MANUFACTURERS' IDENTIFICATION CODES SHOWN BELOW ARE TAKEN FROM TABLE 3. AN "X" SIGNIFIES THAT THE MANUFACTURER DID NOT CONSENT TO HIS IDENTIFICATION WITH THE DESIGNATED PRODUCT]

CYCLIC INTERMEDIATES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
3-Acetamido-N-(2-succinimidoethyl)-N-ethylaniline	EKT.
Acetanilide, tech.	SAL.
Acetic acid, phenyl ester	BKM.
*Acetoacetanilide	BRD, EKT, HST.
*o-Acetoacetanisidide	BRD, EKT, HST.
*o-Acetoacetotoluidide	BRD, EKT, HST.
p-Acetoacetotoluidide	HST.
2',4'-Acetoacetoxylidide	EKT, HST.
Acetoacet-m-xylidide	BRD.
1'-Acetonaphthone	GIV.
Acetophenone, tech.	CLK.
p-Acetotoluidide	EK.
2-Acetylpyridine	RIL.
5-Acetylsalicylamide	X.
*ALKYLBENZENES:	
Alkylbenzene straight-chain (Except dodecyl and tridecyl)	MON, WTC.
DODECYLBENZENE (INCLUDING TRIDECYLBENZENE):	
Dodecylbenzene, straight-chain	MON, VST, WTC.
Dodecylbenzene, other	SOC, WTC.
Alkylbenzene all other (except dodecyl, tridecyl and straight-chain)	PLC.
Alkylphenols, mixed	FER.
Alkylpyridines, mixed	RIL, X.
3'-Aminoacetanilide	CGY.
4'-Aminoacetanilide (Acetyl-p-phenylenediamine)	HST.
3'-Amino-p-acetanisidide	HST, SDC.
2-(p-Aminoanilino)-5-nitrobenzenesulfonic acid	CGY.
3-Amino-p-anisanilide	PCW.
1-Aminoanthraquinone and salt	SDC.
6-Amino-3,4'-azodibenzenesulfonic acid (C.I. Acid Yellow 9)	CGY.
p-Aminobenzamide	NSC.
3'-Aminobenzanilide	HST.
o-Aminobenzenethiol	FMT.
p-Aminobenzoic acid, tech.	NSC, WYK.
2-Amino-6-benzothiazolesulfonic acid	VPC.
1-Amino-4-bromo-9,10-dihydro-9,10-dioxo-2-anthracenesulfonic acid and sodium salt	VPC.



TABLE 2.--CYCLIC INTERMEDIATES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1985--CONTINUED

CYCLIC INTERMEDIATES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
1-Amino-2-bromo-4-hydroxyanthraquinone-----	VPC.
7-Aminocephalosporanic acid-----	BRS.
2-Amino-5-chlorobenzophenone-----	GNW.
2-Amino-5-chloro-p-toluenesulfonic acid [SO <sub>3</sub> H=1]-----	BAS.
6-Amino-5-chloro-m-toluenesulfonic acid [SO <sub>3</sub> H=1] (2B Acid)-----	CYH, DUP.
4-Amino-N,N-di(8-hydroxyethyl)aniline sulfate-----	WAY.
2-Amino-4,5-dimethoxybenzoic acid, methyl ester-----	PFZ.
5-Amino-2,3-dimethylbenzenesulfethanolamide-----	CGY.
3-Amino-9-ethylcarbazole-----	SDC.
N-Aminohexamethyleneimine-----	X.
4-Amino-3-hydroxy-1-naphthalenesulfonic acid-----	CGY.
2-(2-Amino-5-hydroxy-7-sulfo-1-naphthylazo)-5- nitrobenzoic acid-----	CGY.
3-Amino-4-methoxyacetanilide-----	CGY.
*4-Amino-5-methoxy-2-methylbenzenesulfonic acid (5- methyl-o-anisidinesulfonic acid)-----	PSG, VPC, X.
m-[(4-Amino-3-methoxyphenyl)azo]benzenesulfonic acid-----	CGY, VPC.
2-Amino-2-methylpropyl 8-bromotheophyllinate-----	CHT.
2-Amino-3-methylpyridine-----	RIL.
2-Amino-4-methylpyridine-----	RIL.
2-Amino-5-methylpyridine-----	RIL.
2-Amino-6-methylpyridine-----	RIL.
7-Amino-1,3-naphthalenedisulfonic acid (Amino G acid)-----	CGY.
6-Amino-2-naphthalenesulfonic acid (Broenner's acid)-----	CGY.
5(and 8)-Amino-2-naphthol-----	BUC.
8-Amino-2-naphthol-----	BUC.
2-(4-Amino-2-nitroanilino)ethanol-----	SOL.
2-Amino-6-nitrobenzothiazole-----	VPC.
2-Amino-4-nitrophenol-----	SOL.
2-[(2-Amino-4-nitrophenyl)amino]-2-hydroxymethyl-1,3- propanediol-----	SOL.
4-Amino-4'-nitro-2,2'-stilbenedisulfonic acid-----	CGY.
2-Amino-5-nitrothiazole-----	PCW.
2-Amino-4-nitrotoluene hydrochloride-----	PCW.
3-Amino-2-oxazolidinone-----	PFZ.
6-Aminopenicillanic acid-----	BRS.
p-Aminophenol-----	MAL, SCN.
p-[(p-Aminophenyl)azo]benzenesulfonic acid-----	CGY, VPC.
2-(4-Aminophenylazo)-4-methylphenol-----	VPC.
7-[(4-Aminophenyl)azo]-1,3-naphthalenedisulfonic acid-----	CGY, ACY.
2,2'-(m-Aminophenylimino)diethanol, diacetate ester-----	CGY.
2-(p-Aminophenyl)-6-methyl-7-benzothiazolesulfonic acid and salt-----	CGY.

TABLE 2.--CYCLIC INTERMEDIATES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1985--CONTINUED

CYCLIC INTERMEDIATES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
2-Aminopyridine	RIL.
4-Aminopyridine	RIL.
2-Aminothiazole nitrate	PCW.
4-Amino-m-toluenesulfonic acid [SO <sub>3</sub> H=1]	DUP.
6-Amino-m-toluenesulfonic acid [SO <sub>3</sub> H=1]	CYH, DUP.
m-[(4-Amino-3-tolyl)azo]benzenesulfonic acid	CGY.
5-Amino-2,4-xylenesulfonic acid	USS.
*Aniline (Aniline oil)	DUP, FST, ICI, MAL, RUC, USR, USS.
2-Anilinoethanol	TCH.
7-Anilino-4-hydroxy-2-naphthalenesulfonic acid	CGY.
Anilinomethanesulfonic acid and salt	ACY, CGY, VPC.
o-Anisidinomethanesulfonic acid	CGY, VPC.
Anisole, tech.	CHF.
Anisoyl chloride	SD.
N,N'-(1,5-Anthraquinonylene)dianthranilic acid	CGY.
Benzaldehyde, tech.	KLM.
Benzamidine hydrochloride	EK.
7-Benzamido-4-hydroxy-2-naphthalenesulfonic acid	CGY.
Benzanilide	EK.
7H-Benz[de]anthracen-7-one (Benzanthrone)	SDC.
Benzenamine, 4,4'-[(2-chlorophenyl)-methylene]bis[N,N-dimethyl]	X.
Benzenesulfonic acid	UPF.
Benzenesulfonic acid, 2-formyl-, sodium salt	X.
Benzenesulfonyl chloride	SFS, UPF, USR.
1,2,4-Benzenetricarboxylic acid, 1,2-dianhydride (Trimellitic anhydride)	AMO.
Benzhydrol (Diphenylmethanol)	PD.
Benzil	LEM.
Benzimidazole	EK.
1,3-Benzodioxole	AMB.
Benzoic acid, 2-[4-(dimethylamino)-benzoyl]	X.
Benzoic acid, methyl ester	HCF.
Benzoic acid, tech.	KLM, PFZ, VEL.
Benzoin	SFS.
Benzoin isobutyl ether	SFS.
Benzonitrile	SFS.
2-Benzothiazolethiol, sodium salt	BFG, BKM, GYR, USR.
1H-Benzotriazole	SW.
2-Benzoxazolethiol	EK.
Benzoyl chloride	HK, KLM, VEL.
Benzylamine	HXL, KLM.
2-(Benzylamino)ethanol	HXL.

TABLE 2.—CYCLIC INTERMEDIATES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1985—CONTINUED

CYCLIC INTERMEDIATES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
1-Benzyl-3,4-dimethyl-2-(p-methoxybenzyl)-1,2,5,6-tetrahydropyridine oxalate	SD.
3-(Benzylethylamino)acetanilide	EKT.
2-Benzyl-2'-hydroxy-5,9-dimethyl-6,7-benzomorphanhydrobromide	SD.
p-(Benzylloxy)phenol	FKE.
1-Benzyl-4-phenylisonipecotonitrile	SDW.
Benzyltriethylammonium chloride	HXL.
Benzyltrimethylammonium hydroxide	HXL.
Benzyltrimethylammonium methoxide	HXL.
*Biphenyl	DOW, KHI, MON, TCC.
4,4'-Biphenyldisulfonylazide	PAH.
Bis(p-aminocyclohexyl)methane	ABB, AIP, DUP.
2,6-Bis(p-azidobenzylidene)-4-methylcyclohexanone	X.
4,4'-Bis(dimethylamino)benzhydrol (Michler's hydrol)	X.
Bis(8-dimethylaminoethyl)phenylacetone nitrile	WYT.
1,5-Bis[2,4-dinitrophenoxy]-4,8-dinitroanthraquinone	VPC.
Bis(diphenylsulfonophenyl) sulfide	SOL.
N,N-Bis((4-methylphenyl)sulfonyl)amine, potassium salt	EK.
1,2-Bis(tribromophenoxy)ethane	GTL.
p-Bromoaniline	EK.
Bromobenzaldehyde	TNA.
Bromobenzene, mono	DAZ, GTL.
o-Bromobenzoic acid	PD.
4-Bromo-3,5-dihydroxybenzamide	PCW.
4-Bromo-3,5-dihydroxybenzoic acid	PCW.
2-Bromo-4,6-dinitroaniline	CGY, HST, SDC.
2-(2-Bromo-4,6-dinitrophenylazo)-5-diethylaminoacetanilide	CGY.
1-Bromo-4-ethoxy-2-methylbenzene	TNA, X.
1-Bromonaphthalene	RSA.
α-Bromo-p-nitrotoluene (p-Nitrobenzyl bromide)	SDW.
Bromopheniramine base	HEX.
2-Bromopyridine	DAZ.
5-Bromopyrimidine	LIL.
p-Butoxyphenol	ABB.
p-Butylaniline	TNA.
N-n-Butylaniline	TNA.
p-tert-Butylbenzaldehyde	GIV.
2-tert-Butyl-p-cresol	FER, PSG.
6-tert-Butyl-m-cresol	FER, KPT.
2-[(1-Butyl-2-methylindol-3-yl)carbonyl]benzoic acid	X.
o-sec-Butylphenol	SCN, TNA.

TABLE 2.--CYCLIC INTERMEDIATES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1985--CONTINUED

CYCLIC INTERMEDIATES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
o-tert-Butylphenol	TNA.
p-sec-Butylphenol	SCN.
p-tert-Butylphenol	FER, SCN.
*Butylphenols, mixed	FER, SCN, TNA, X.
p-tert-Butyltoluene	GIV.
5-tert-Butyl-1,2,3-trimethylbenzene	GIV.
5-tert-Butyl-m-xylene	GIV.
6-tert-Butyl-2,4-xyleneol	FER.
1-(Carboethoxy)ethyl-3-(2-chloro-4-(trifluoromethyl)-phenoxy)benzoate	DAZ.
N-Carboxy-N-methylantranilic anhydride	X.
Cephalosporin D	BRS.
4'-Chloroacetophenone	LIL.
o-Chloroaniline	CWN, DUP.
m-Chloroaniline	FST.
p-Chloroaniline	DUP, MON.
2-Chloroanthraquinone	ACY.
p-Chlorobenzaldehyde	PD.
Chloro-7H-benz[de]anthracen-7-one (Chlorobenzanthrone)	SCC.
Chlorobenzene, mono	DOW, PPG, SCC.
p-Chlorobenzenesulfonic acid	UPF.
4-Chloro-2-benzothiazolemine	SDC.
2-Chloro-N,N-disopropylethylamine hydrochloride	SOL.
2-Chloro-1,4-dibutoxybenzene	ALL.
1-Chloro-2,5-dibutoxy-4-nitrobenzene	ALL.
2-Chloro-1,4-diethoxybenzene	ALL.
1-Chloro-2,5-diethoxy-4-nitrobenzene	ALL.
4'-Chloro-2',5'-dimethoxyacetoacetanilide	HST.
5-Chloro-2,4-dimethoxyaniline	ALL.
2-[p-Chloro-α-(2-dimethylaminoethyl)benzyl]pyridine	SK.
2-Chloro-10-[3-(dimethylamino)propyl]phenothiazine	SK.
1-Chloro-2,4-dinitrobenzene (Dinitrochlorobenzene)	SDC.
3-Chlorodiphenylamine	SK.
p-[(2-Chloroethyl)methylamino]benzaldehyde	VPC.
2-Chloroethylphenyl sulfone	PAH.
5-Chloromethyl-1,3-benzodioxole	X.
4-Chloro-N-methyl-3-nitrobenzenesulfonamide	CGY, LAK.
2-Chloro-10-[3(4-methyl-1-piperazinyl)propyl]phenothiazine	SK.
2-[(Chloromethyl)thiol]benzothiazole	BKM.
1-Chloro-2-nitrobenzene (Chloro-o-nitrobenzene)	DUP, MON.
1-Chloro-4-nitrobenzene (Chloro-p-nitrobenzene)	DUP, MON.
4-Chloro-3-nitrobenzenesulfonamide	CGY.

TABLE 2.--CYCLIC INTERMEDIATES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1985--CONTINUED

CYCLIC INTERMEDIATES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
4-Chloro-3-nitrobenzenesulfonanilide	CGY.
2-Chloro-4-nitrobenzoic acid	SAL.
2-Chloro-5-nitrobenzoic acid	CGY.
2-Chloro-4-nitrobenzoic acid, potassium salt	SAL.
4-Chloro-3-nitrobenzotrifluoride	DAZ.
2-Chloro-4-nitrotoluene	DUP, PCW.
2-Chlorophenothiazine	SK.
o-Chlorophenylcyclopentyl ketone	PD.
4-Chloro-o-phenylenediamine	FMT.
4-Chlorophthalic acid	PSG.
2-Chloropyridine	NES, OMC.
4-Chlororesorcinol	PCW.
7-Chloro-1,2,3,4-tetrahydro-2-methyl-3-(2-methylphenyl)- 4-oxo-6-quinazolinesulfonamide	X.
o-Chlorotoluene	HK.
m-Chlorotoluene	HK.
p-Chlorotoluene	HK.
α-Chlorotoluene (Benzyl chloride)	MON, SFS, VEL.
3-Chloro-p-toluidine [NH <sub>2</sub> =1]	DUP.
3-(2-Chloro-4-trifluoromethylphenoxy)toluene	DAZ.
4-Chloro-α,α,α-trifluoro-3-nitrotoluene	PCW, SOL.
p-Chloro-α,α,α-trifluorotoluene	HK.
6-Chloro-α,α,α-trifluoro-m-toluidine	PCW.
4-Chloro-3,5-xylenol	FER.
Copper, [2,2',2'',2'''-[z9H,31H- phthalacyaninепentylpentakis(methylene)]pentakis[1H- isoindole-1,3(2H)-dionato]]	X.
*CRESOLS:	
m-Cresol	KPT, MER.
*O-CRESOL:	
o-Cresol, from petroleum	FER, GE, KPT, MER, PSG.
p-Cresol	MER, PSG.
CRESOLS, MIXED:	
(M,P)-CRESOL:	
(m,p)-Cresol, from petroleum	FER, MER, NPC.
(O,M,P)-CRESOL:	
(o,m,p)-Cresol, from coal tar	KPT.
CRESYLIC ACID, REFINED:	
m-Cresylglycidyl ether	X.
Cresylic acid, refined; from petroleum	FER, MER.
*Cumene (Isopropyl benzene)	ASH, BTL, CLK, GGC, GRS, KHI, SHC, TX.
2-[p-(Cyanoacetamido)phenyl]-6-methyl-7- benzothiazolesulfonic acid	VPC.

TABLE 2.--CYCLIC INTERMEDIATES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1985--CONTINUED

CYCLIC INTERMEDIATES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
4-(Cyanoacetyl)morpholine	DUP.
Cyanoethyl cellulose	FKE.
N-Cyano-s-methyl-N-2(4-methyl-5-imidazolyl)- methylthioethylisothiourea	SK.
*Cyclohexane	DUP, GRS, PLC, PPR, SUN, TX, UOC.
1,2-Cyclohexanedicarboxylic acid anhydride	BCC.
1,3-Cyclohexanedione	PD.
Cyclohexanol	ACS, DBC, DUP, MON.
*Cyclohexanone	ACS, CNP, DBC, DUP, MON.
Cyclohexanone oxime	CNP.
Cyclohexene	USR.
3-Cyclohexene-1-carboxaldehyde	UCC.
4-Cyclohexene-1,2-dicarboxylic anhydride	DKA.
Cyclohexene oxide	USR.
8-(1-Cyclohexenyl)ethylamine	HXL, X.
Cyclohexylamine	VGC.
Cyclooctadiene	DUP.
Cyclopentene	ALD.
p-Cymene	HPC.
Diacenaphtho[1,2-j:1',2'-1]fluoranthene (Decacyclene)	SDC.
3-Diacetoxyethylaminobenzanilide	STC.
Dialkylbenzene	VST.
1,5-Diaminoanthraquinone	SDC.
2,4-Diaminobenzenesulfonic acid SO <sub>3</sub> H=1	CGY.
1,3-Diaminocyclohexane	DUP.
1,5-Diamino-4,8-dihydroxyanthraquinone	VPC.
2,6-Diaminopyridine	RIL.
3,4-Diaminopyridine	RIL.
4,4'-Diamino-2,2'-stilbenedisulfonic acid	CGY.
2,5-Dianilinoterephthalic acid	SDC, VPC.
4-Diazo-2,5-dimethoxyphenolmorpholine	HST.
2-Diazo-1-naphthol-5-sulfonic acid, sodium salt	HST.
N-(4-Diazo phenyl) aniline 1/2 sulfate	HST.
Dibenzylazodicarboxylate	X.
1,3-Dibenzylglycerol	X.
m-Dibromobenzene	DAZ.
p-Dibromobenzene	DAZ.
(1,2-Dibromoethyl)benzene	DAZ.
2,6-Dibromo-4-nitroaniline	HST, SDC.
2,6-Dibromophenol	EK.
3,5-Dibromo-3'-trifluoromethylsalicylanilide (Fluorophene)	PCW.
p-Dibutoxybenzene (DBB)	ALL.

TABLE 2.—CYCLIC INTERMEDIATES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1985—CONTINUED

CYCLIC INTERMEDIATES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
2,5-Dibutoxy-4-morpholinobenzenediazonium sulfate salt (DBB Sulfate)	ALL.
2,5-Dibutoxy-4-morpholinonitrobenzene	ALL.
2,6-Di-tert-butyl-4-nonylphenol	GAF.
2,4-Di-tert-butylphenol	FER.
2,6-Di-sec-butylphenol	TNA.
2,6-Di-tert-butylphenol	TNA.
2,6-Di-tert-4-sec-butylphenol	VTC.
3,4-Dichloroaniline	DUP, MON.
o-Dichlorobenzene	MON, PPG, SCC, SOI.
m-Dichlorobenzene	MON.
p-Dichlorobenzene	MON, PPG, SCC, SOI.
3,3'-Dichlorobenzidine base and salts	CWN, LAK.
2,4-Dichlorobenzotrifluoride	DAZ.
3,4-Dichlorobenzotrifluoride	DAZ, HK.
3,5-Dichlorobenzoyl chloride	HK.
Dichlorobenzyl chloride	SFS.
Dichlorodiphenylsilane	DCC.
4,4'-Dichlorodiphenyl sulfone	UCC.
3,3'-Dichloro-4,4'-(2-hydroxy-3-anilido-1-naphthazo)- biphenyl	LAK.
2,6-Dichloro-3-methylaniline	SDC.
2,5-Dichloro-4-(3-methyl-5-oxo-2-pyrazolin-1-yl)- benzenesulfonic acid	CGY.
Dichloromethylphenylsilane	DCC.
2,6-Dichloro-4-nitroaniline	CWN.
1,2-Dichloro-4-nitrobenzene	DUP, MON.
2,4-Dichloro-5-nitrotrifluoromethylbenzene	DAZ.
2,4-Dichlorophenol	VTC.
2,5-Dichlorosulfanilic acid [SO <sub>3</sub> H=1]	VPC.
p-α-Dichlorotoluene	HK.
Dicyclohexylamine	ABB, VGC.
Dicyclohexylamine, nitrate salt	OMC.
*Dicyclopentadiene (includes Cyclopentadiene)	DOW, ENJ, SHC.
α,α-Diethoxyacetophenone	CWN.
p-Diethoxybenzene	ALL.
p-(Diethylamino)benzaldehyde	MCK, VPC.
2[4-Diethylamino-2-hydroxybenzyl]benzoic acid	X.
m-(Diethylamino)phenol (N,N-Diethyl-3-aminophenol)	ACY.
N,N-Diethylaniline	BCC, DUP.
2,6-Diethylaniline	TNA.
Diethylbenzene	DOW, UPM.
N,N-Diethylcyclohexylamine	ABB.

TABLE 2.--CYCLIC INTERMEDIATES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1985--CONTINUED

CYCLIC INTERMEDIATES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
N,N-Diethyl-3-ethoxyaniline	X.
3,5-Diethyltoluene	TNA.
N,N-Diethyl-m-toluidine	DUP.
N,N-Diethyl-p-toluidine	RSA.
6,11-Dihydrodibenz(b,e)oxepin-11-one	PFZ, SK.
2,3-Dihydro-2,2-dimethyl-7-benzofuranyl	DAZ.
2,3-Dihydro-2,2-dimethyl-7-benzofuranol	FMN.
2-[2-(2,3-Dihydro-1,3-dioxo-1H-inden-2yl)-(quinolinyl)]-6-methylbenzothiazole-7-sulfonic acid	VPC.
2,3-Dihydro-2-[6-methyl-7-sulfo-2-benzothiazolyl]-2-quinolinyl-1,3-dioxo-1H-indene-5-carboxylic acid	VPC.
Dihydrophenylglycine dane salt	SK.
Dihydrophenylglycine sodium methyl dane salt	KAN.
1,2-Dihydro 2,2,4,7-tetramethylquinoline	EKT.
1,4-Dihydroxyanthraquinone	CGY, EKT.
2,4-Dihydroxybenzaldehyde	EK.
2,5-Dihydroxy-p-benzenedisulfonic acid, dipotassium salt	X.
3,4-Dihydroxybenzoic acid, methyl ester	PCW.
2,4-Dihydroxybenzophenone	ACY.
1,5-Dihydroxy-4,8-dinitroanthraquinone	VPC.
1,8-Dihydroxy-4,5-dinitroanthraquinone	EKT, VPC.
N,N-Di(8-hydroxyethyl)-m-chloroaniline	MIL.
Diisopropylaniline	TNA.
Diisopropylbenzene	CLK, GGC.
m-Dimethoxybenzene	ACY.
3,4-Dimethoxytoluene	HEX, TNA.
p-(Dimethylamino)benzaldehyde	ATL, EK.
m-(Dimethylamino)benzoic acid	SDH.
2-[4-(Dimethylamino)benzoyl]benzoic acid	EK.
2-[[2-(Dimethylamino)ethyl](p-methoxybenzyl)amino]pyridine	HEX.
m-Dimethylaminophenol	ACY.
11-[3(Dimethylamino)propyl]-6H-hydroxydibenz(b,e)oxepin	PFZ, SK.
4-Dimethylaminopyridine	NEP.
N,N-Dimethylaniline	BCC, DUP.
7,12-Dimethylbenz[a]anthracene	EK.
N,N-Dimethylbenzylamine	ARS, HXL, PSG.
Dimethyl-1,4-cyclohexanedicarboxylate	EKT.
N,N-Dimethylcyclohexylamine	ABB.
5,5-Dimethylhydantoin	GLY.
2,5-Dimethyl-4(2)-morpholinylmethylphenol, hydrochloride	CGY.
2,6-Dimethylnaphthalene	UPH.
N,N-Dimethyl-p-nitrosoaniline	ALD.



TABLE 2.—CYCLIC INTERMEDIATES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1985—CONTINUED

CYCLIC INTERMEDIATES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
N,N-Dimethyl-o-toluidine	RSA.
N,N-Dimethyl-p-toluidine	FST, RSA.
2,4-Dinitroaniline	HST, SDC.
1,5(and 1,8)-Dinitroanthraquinone	SDC.
m-Dinitrobenzene	DUP.
3,5-Dinitrobenzoyl chloride	ALD.
2,6-Dinitro-4-isopropylphenol	SDC.
2,4-Dinitrophenol, tech.	HML, SDC, VPC.
2,4-Dinitrophenoxyethanol	SDC.
Dinitrophenylacetic acid (mixture)	SOL.
3,5-Dinitrosalicylic acid	SAL.
3,5-Dinitrosalicylic acid, methyl ester	SAL.
p-Dinitrosobenzene	LC.
4,4'-Dinitrostilbene-2,2'-disulfonic acid	CGY.
2,4-Dinitrotoluene	DUP, RUC.
2,4(and 2,6)-Dinitrotoluene	DUP, RUC, X.
3,5-Dinitro-o-toluic acid	SAL.
Dinonylhydroxybenzenesulfonic acid	X.
Dinonylphenol	GAF, TX.
Di-para-benzoquinone dioxime	LC.
2,4-Di-tert-pentylphenol	FER, PAS.
1,5-Diphenoxyanthraquinone	VPC.
1,4-Diphenoxybenzene	TNA.
Diphenylalkane (Mixture)	VST.
Diphenylamine	RUC, USR, USS.
Diphenyldisulfide	PAH.
Diphenylmethane	CWN.
Diphenylsulfide	PAH.
1,3-Di-4-piperidylpropane	RIL.
1,5-Diureidonaphthalene	SOI.
Divinylbenzene	DOW.
Dodecylaniline	MON.
Dodecylmethylbenzyl chloride	RH.
*p-Dodecylphenol	GAF, MCB, MON, SOC.
Doxepin base	SK.
2-Ethanolpiperidine	RIL.
5-Ethanoxy-3-trichloromethyl-1,2,4-thiadiazole	OMC.
2,2'-(1,2-Ethenediyl)bis(5[[4-chloro-6-(phenylamino)-1,3,5-triazin-2-yl]amino]benzenesulfonic acid, disodium salt	X.
4(5)-Ethoxycarbonyl-5(4)-methylimidazole	SK.
1-Ethoxy-3-methylbenzene	X.
4-Ethoxy-2-methyl-N-phenylaniline	X.

TABLE 2.--CYCLIC INTERMEDIATES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1985--CONTINUED

CYCLIC INTERMEDIATES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
2-Ethoxy-1-naphthoic acid-----	WYT.
2-Ethoxy-1-naphthoyl chloride-----	WYT.
3'-(Ethylamino)acetanilide-----	EKT.
o-Ethylaniline-----	TNA.
N-Ethylaniline, refined-----	BCC, FST.
2-(N-Ethylanilino)ethanol-----	MIL, TCH.
3-(N-Ethylanilino)propionitrile-----	MIL, TCH.
α-(N-Ethylanilino)-m-toluenesulfonic acid-----	SDH.
2-Ethylantraquinone-----	ELP.
*Ethylbenzene-----	AMO, ATR, GSD, DOW, DUP, GOC, KHI, KPT, MCB, MON.
Ethylbenzyl chloride-----	SFS.
2-(N-Ethyl-N,8-cyanoethyl)-4-acetaminoanisole-----	CGY, TCH.
N-Ethyl-N-(2,3-dihydroxypropyl)-m-toluidine-----	EKT.
N-Ethylmaleimide-----	REG.
1-Ethyl-3-methylhydantoin-----	GLY.
6-Ethyl-2-methylaniline-----	TNA.
1-Ethyl-2-methylindole-----	X.
9-Ethyl-3-nitrocarbazole-----	SDC.
N-Ethyl-N-phenylbenzylamine-----	SDH.
N-Ethyl-N-(3'-sulfobenzyl)aniline-----	VPC.
N-Ethyl-m-toluidine-----	DUP, FST.
3-(N-Ethyl-m-toluidino)propionitrile-----	TCH.
4-Fluoro-3-nitroaniline-----	OMC.
4-Fluoro-3-nitrobenzotrifluoride-----	DAZ.
4-Fluorothiophenol, sodium salt-----	PAH.
1-Formylpiperidine-----	RIL.
Furan-----	QKO.
Furfuryl alcohol-----	QKO.
Hexachlorocyclopentadiene-----	VEL.
1,4,5,6,7,7-Hexachloro-5-norbornene-2,3-dicarboxylic anhydride (Chlorendic anhydride)-----	VEL.
Hexamethyleneimine-----	CXI, DUP.
Hydroquinone, tech.-----	EKT, GYR.
p-Hydroxybenzenesulfonic acid-----	FER, UPF.
4-Hydroxy-2H-1,2-benzothiazine-3-carboxylic acid, methyl ester, 1,1-dioxide-----	PFZ.
4-Hydroxybenzylbenzene-----	TNA.
2-Hydroxycineole-----	X.
2'-Hydroxy-5,9-dimethyl-6,7-benzomorphan-----	SD.
2,2'-[[4-(2-Hydroxyethylamino)-3-nitrophenyl]imino]- diethanol-----	SOL.
3-[N-(2-Hydroxyethyl)anilino]propionitrile-----	TCH.

TABLE 2.--CYCLIC INTERMEDIATES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1985--CONTINUED

CYCLIC INTERMEDIATES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
N-8-Hydroxyethyl-2,4-dihydroxybenzamide-----	PCW.
N-8-Hydroxyethyl)-N-ethyl-m-toluidine-----	MIL.
4-Hydroxymetanilamide-----	CGY.
4-Hydroxy-2-methyl-2H-1,2-benzothiazine-3-carboxylic acid, methyl ester, 1,1-dioxide-----	PFZ.
2-Hydroxymethylene-17 $\alpha$ -ethinylandrost-17 $\beta$ -ol-4-en-3-one---	SD.
4-Hydroxy-N'-methylmetanilamide-----	CGY.
4(5)-Hydroxymethyl-5(4)-methylimidazole hydrochloride-----	SK.
3-Hydroxy-N-(3-N-morpholino- $\gamma$ -propyl)-2-naphthimide-----	PCW.
7-Hydroxy-1,3-naphthalenedisulfonic acid, disodium salt---	SDH.
3-Hydroxy-2-naphthoic acid (B.O.N.)-----	PCW.
3-Hydroxy-2-naphthoic acid, aminopropylmorpholide-----	HST.
3-Hydroxy-2-naphthoic acid, ethanolamide-----	PCW.
1-Hydroxynaphthoic acid, methyl ester-----	PCW.
3-Hydroxy-2-naphthoic acid, methyl ester-----	PCW.
3-Hydroxy-2-naphthoic acid, sodium salt-----	PCW.
2-Hydroxy-1,4-naphthoquinone-----	SAL.
1-(2-Hydroxy-1-naphthylazo)-6-nitro-2 hydroxynaphthalene-4-sulfonic acid-----	CGY.
p-Hydroxyphenyl-3-methylbutyric acid-----	HEX.
Isatoic anhydride-----	PSG.
Isobutylbenzene-----	FLC, TNA.
*ISOCYANIC ACID DERIVATIVES:	
Bitolylene diisocyanate (TODI)-----	CWN.
*Diphenylmethane-4,4'-diisocyanate (MDI)-----	BAS, DOW, MOB, RUC, UPJ.
Isocyanic acid,p-chlorophenyl ester-----	MOB.
Isocyanic acid, cyclohexyl ester-----	MOB.
Phenylisocyanate-----	MOB.
*Polymethylene polyphenylisocyanate-----	BAS, MOB, RUC, UPJ.
Toluene 2,4-diisocyanate-----	MOB.
*Toluene 2,4-and 2,6-diisocyanate (80/20 Mixture)-----	MOB, OMC, RUC.
Toluene 2,4-and 2,6-diisocyanate (65/35 Mixture)-----	BAS, DOW, MOB.
p-Toluenesulfonyl isocyanate-----	CWN.
Isocyanic acid derivatives, all other-----	UCC.
Isonicotinamide-----	RIL.
Isonicotinic acid-----	RIL.
Isonicotinonitrile-----	RIL.
Isophthalic acid (Benzene-1,3-dicarboxylic acid)-----	AMO.
Isophthalonitrile-----	PSG.
Isophthaloyl chloride-----	DUP, TLC.
Isopropylbiphenyl-----	TCC.
4,4'-Isopropylidenebis[2,6-dibromophenol] (Tetrabromo- bisphenol A)-----	DOW.

TABLE 2.--CYCLIC INTERMEDIATES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1985--CONTINUED

CYCLIC INTERMEDIATES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
5,5'-Isopropylidenebis(2-hydroxy-m-xylene- $\alpha$ , $\alpha'$ -diol)-----	ARK.
*4,4'-Isopropylidenediphenol (Bisphenol A)-----	DOW, GE, SHC, USS.
4,4'-Isopropylidenediphenol, ethoxylated-----	ICI.
4,4'-Isopropylidenediphenol, propoxylated-----	ICI.
o-Isopropylphenol-----	FER, FMC.
p-Isopropylphenol-----	FER.
Isopropylphenol, mixed-----	TNA.
Isothiocyanic acid, phenyl ester-----	EK.
Leuco quinizarin (1,4,9,10-Anthratetrol)-----	CGY.
3,5-Lutidine-----	RIL.
Malonanilide-----	PCW.
d-Mandelic acid-----	HXL.
Melamine-----	ACY, MLC.
dl-p-Mentha-1,8-diene (Limonene)-----	ARZ, NCI.
4-Methoxyacetanilide-----	CGY.
2-[(Methoxycarbonylamino)-(2-nitro-5-N-propylthio)- phenyliminomethylamino]ethanesulfonic acid-----	X.
2-Methoxyethylpiperidine-----	RIL.
N-Methoxymethylmorpholine-----	TX.
N-(4-Methoxy-3-nitrophenyl)acetamide-----	SDC.
(p-Methoxyphenyl)acetic acid-----	HEX.
N[4[1-[(2-Methoxyphenylamino)carbonyl]-2- oxopropylazophenyl]-4-[1[(2-methoxyphenylamino)- carbonyl]-2-oxopropylazo]-benzamide]-----	X.
2-Methyl-5-acetylpyridine-----	RIL.
2-(N-Methylanilino)ethanol-----	TCH.
3-(N-Methylanilino)propionitrile-----	TCH.
2-Methylanthraquinone-----	ACY.
3-Methylbenzo[f]quinoline-----	OMC.
2-Methylbenzothiazole-----	FMT.
N-Methylbenzylamine-----	HXL.
o-Methylbenzyl chloride-----	SFS.
p-Methylbenzyl chloride-----	SFS.
Methyl benzyl ether-----	GRS.
Methyl N-( $\alpha$ -carboxydihydrobenzyl)- $\beta$ -aminocrotonate, sodium salt-----	TRD.
1-Methyl-4-(3-chloropropyl)piperazine-----	SK.
1-Methyl-4-(3-chloropropyl)piperazine hydrochloride-----	SK.
Methylcyclohexane-----	PLC.
N-Methylcyclohexylamine-----	ABB.
Methyl 3-(2,2-dichlorovinyl)-2,2-dimethylcyclopropane carboate-----	FMN.
N-Methyldicyclohexylamine-----	ABB.

TABLE 2.--CYCLIC INTERMEDIATES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1985--CONTINUED

CYCLIC INTERMEDIATES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
2-Methyl-4,6-dinitrophenol (4,6-Dinitro-o-cresol)-----	CPS.
4-Methyl-2,6-dinitrophenol-----	PSG.
4,4'-Methylenebis (2,6-di-tert-butylphenol)-----	TNA.
4,4'-Methylenebis[N,N-diethylaniline]-----	ACY.
4,4'-Methylenebis[N,N-dimethylaniline] (Methane base)-----	ACY, SDH.
2,2'-Methylenebis(4-methyl-6-nonyl-p-cresol)-----	PSG.
4,4'-Methylene-bis-orthoethylaniline-----	TNA.
4,4'-Methylenedianiline-----	CRT, OMC, RUC, USR.
5,5'-Methylenedisalicylic acid-----	KLM.
Methylhydroquinone-----	EKT.
(2,4-Methyl-5-imidazolyl)methylthioethylamine dihydrochloride-----	SK.
4-Methyl-2-imino-1,3-dithiolane hydrochloride-----	LAK.
4-Methyl-N-((4-methylphenyl)sulfonyl)benzenesulfonamide----	EK.
N-Methyl-p-nitroaniline-----	ACY.
4-Methyl-2-nitroanisole-----	PSG.
3-Methyl-2-nitrobenzoic acid-----	SAL.
2-Methyl-5-norbornene-2,3-dicarboxylic anhydride-----	BCC.
m-(3-Methyl-5-oxo-2-pyrazolin-1-yl) benzenesulfonic acid----	CGY.
2-Methyl-5-phenylbenzoxazole-----	EK.
1-Methyl-4-phenylisonipecotic acid-----	WYT.
1-Methyl-4-phenylisonipecotonitrile-----	WYT.
4-Methylphthalic acid-----	EK.
4-Methylphthalic anhydride-----	SFS.
α-Methylstyrene-----	CLK, GGC, USS.
ar-Methylstyrene (Vinyltoluene)-----	BTL, DOW.
Methylthiobenzoic acid-----	X.
1-Naphthaldehyde-----	GNW.
1,5-Naphthalenedisulfonic acid, 2-amino-, monosodium salt-----	X.
2-Naphthalenesulfonic acid-----	ACY, SDC.
1-Naphthalenesulfonic acid, 8-(phenylamino)-monosodium salt-----	SDC.
1-Naphthalenesulfonic acid, sodium salt-----	CGY.
2-Naphthalenesulfonic acid, sodium salt-----	GNW.
Naphthalimide-----	SDC, VPC.
1-Naphthol (α-Naphthol)-----	UCC.
Naphth[1,2-d][1,2,3]oxadiazole-5-sulfonic acid-----	CGY.
1-Naphthylamine (α-Naphthylamine)-----	DUP.
p-(2-Naphthylamino)phenol (N-(p-Hydroxyphenyl)-2- naphthylamine)-----	SDC.
Nicotinonitrile (3-Cyanopyridine)-----	NEP, RIL.
3-Niro-6-pyrrolodinytoluene-----	ALL.

TABLE 2.—CYCLIC INTERMEDIATES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1985—CONTINUED

CYCLIC INTERMEDIATES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
3'-Nitroacetanilide	EKT.
o-Nitroaniline	BUC, DUP, MON.
p-Nitroaniline	DUP, MON.
5-Nitroanthranilic acid	CGY.
1-Nitroanthraquinone	SDC.
p-Nitrobenzamide	PD.
*Nitrobenzene	DUP, FST, ICI, MOB, RUC.
m-Nitrobenzenesulfonic acid, sodium salt	USM.
o-Nitrobenzoic acid	SAL.
m-Nitrobenzoic acid	SAL, SDH.
p-Nitrobenzoic acid	DUP.
m-Nitrobenzoic acid, sodium salt	SAL.
p-Nitro benzyl alcohol	SDW.
p-Nitrobenzylmalonate magnesium salt	X.
2-Nitro-p-cresol	PSG.
Nitrodiphenylamine	ACY, MON.
5-Nitroisophthalic acid	SAL.
4-Nitro-N-methylphthalimide	LAK.
1-Nitronaphthalene	DUP.
7(and 8)-Nitronaphth[1,2-d][1,2,3]oxadiazole-5-sulfonic acid	CGY.
p-Nitrophenethyl alcohol	PCW.
o-Nitrophenol	MON.
p-Nitrophenol	DUP, MON.
p-Nitrophenol, sodium salt	DUP.
2-(o-Nitrophenylazo)-p-cresol (OH=1)	CGY.
2-(o-Nitrophenylazo)-4,6-di-tert-pentylphenol (OH=1)	CGY.
4-Nitro-o-phenylenediamine	FMT.
5-Nitrosalicylaldehyde	EK.
p-Nitrosophenol	LC, SDC, VPC.
4-Nitrosophenol, sodium salt	SDC.
o-Nitrotoluene	DUP, FST.
m-Nitrotoluene	DUP, FST.
p-Nitrotoluene	DUP, FST.
Nitrotoluene mixtures	FST.
p-Nitrotoluene-o-sulfonic acid	CGY.
Nonyl-dinonylphenol, mixture	USR.
*Nonylphenol	GAF, KLM, MCB, MON, RH, SCN, TX.
n-Octylglucamine	X.
Octylphenol	PSG, RH, SCN.
Octylphenoxydiethoxy chloride	RH.
3-Oxo-1,2-benzisothiazoline-2-acetic acid, methyl ester, 1,1-dioxide	PFZ.

TABLE 2.--CYCLIC INTERMEDIATES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1985--CONTINUED

CYCLIC INTERMEDIATES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
Oxyaluminum benzoate-----	: CHT.
4,4'-Oxydianiline-----	: DUP.
Parahydroxyphenylglycine potassium methyl dane salt-----	: KAN.
para-Pentyloxyphenol-----	: EK.
para-Phenoxy benzoyl chloride-----	: OMC.
Pentabromochlorocyclohexane-----	: DOW.
Pentabromoethylbenzene-----	: TNA.
Pentamethylaniline-----	: X.
1,1,3,3,5-Pentamethylindan-----	: GIV.
o-Pentylphenol (o-Amylphenol)-----	: PAS, X.
p-tert-Pentylphenol-----	: PAS.
2(3-Pentyl)pyridine-----	: RIL.
Permethrin acid chloride-----	: VTC.
3,4,9,10-Perylenetetracarboxylic-3,4:9,10-dianhydride-----	: VPC.
3,4,9,10-Perylenetetracarboxylic-3,4:9,10-diimide-----	: SDC, VPC.
Perylo[3,4-cd:9,10-c'd']dipyran-1,3,8,10-tetrone-----	: SDC.
1,10-Phenanthroline-----	: VNC.
α-Phenethylamine-----	: HXL.
2-Phenethylamine-----	: HXL.
p-Phenetidine-----	: MON.
Phenetole-----	: RSA.
*PHENOL:	:
NATURAL:	:
FROM PETROLEUM:	:
Phenol, natural, from petroleum, U.S.P.-----	: MER.
Phenol, natural, from petroleum, all other-----	: FER.
SYNTHETIC:	:
Phenol, benzylated-----	: MIL.
Phenol, styrenated-----	: MIL.
Phenol, synthetic, from chlorobenzene by vapor-phase hydrolysis, U.S.P.-----	: BTL, TX.
*Phenol, synthetic, from cumene by oxidation, U.S.P.---	: ACS, CLK, DOW, GCC, GE, SHC, USS.
Phenol, synthetic, from toluene by oxidation, U.S.P.---	: KLM.
Phenolsulfonaphthalein, sodium salt-----	: EK.
phenolsulfonic acid-----	: SAL.
Phenolsulfonic acid, sodium salt-----	: SAL.
Phenoxyacetic acid, sodium salt-----	: NCC.
3-Phenoxybenzaldehyde-----	: TNA.
3-Phenoxybenzaldehyde acetal-----	: TNA.
3-Phenoxybenzaldehyde cyanohydrin-----	: TNA.
3-Phenoxybenzenemethanol-----	: TNA.
2-(Phenoxyethyl)benzoic acid-----	: PFZ, SOL.
m-Phenoxytoluene-----	: MER.

TABLE 2.--CYCLIC INTERMEDIATES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1985--CONTINUED

CYCLIC INTERMEDIATES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
Phenylacetic acid, potassium salt	SFS.
4-(Phenylazo)diphenylamine	EK.
4-Phenyl-1-butene	X.
o-Phenylenediamine	DUP, PSG.
m-Phenylenediamine	DUP, FST.
p-Phenylenediamine	DUP, NES, SDC.
d-Phenylephrine	SDW.
dl-Phenylephrine base	SDW.
Phenyl ether (Diphenyl oxide)	DOW, MON.
d(+) $\alpha$ -Phenylethylamine	HXL.
dl-2-Phenylglycine (racemic)	KF.
d(-)-2-Phenylglycine potassium ethyl dane salt	KAN.
Phenylglycine, potassium salt	BCC.
Phenylglycine, sodium salt	BCC, LIL.
Phenylhydroquinone	EKT.
2,2'-[(Phenyl)imino]diethanol (N-Phenyldiethanolamine)	EKT, TCH.
2,2'-[(Phenyl)imino]diethanol, diacetate ester	MIL, TCH.
Phenylmalonic acid	X.
Phenylmercuric carboxylate	COS.
3-Phenyl-5-methylisoxazole-4-carbonyl chloride	TCH.
Phenyl- $\alpha$ -naphthylamine	UCC.
o-Phenylphenol	DOW.
p-Phenylphenol	DOW.
o-Phenylphenol, sodium salt	DOW.
N-Phenyl-p-phenylenediamine	USR.
Phenylphosphinic acid	FER.
Phenylphosphorous dichloride	FER.
1-Phenyl-1,2-propanedione, 2-oxime	ORT.
4-Phenylpropylpyridine	RIL.
1-Phenyl-2-tetrazoline-5-thione	EK.
4-Phenylthiomorpholine-1,1-dioxide	EKT.
Phthalic acid	EK.
*Phthalic anhydride	DBC, ENJ, KPT, MON, STP, TU.
Phthalimide	PSG.
Phthalocyaninato(2-)copper	PHC.
Phthalocyaninebissulfonyl chloride, copper derivative	VPC.
[Phthalocyaninetetramethanaminato]copper	X.
Phthalocyaninetetrasulfonyl chloride, copper derivative	VPC.
Phthaloyl chloride (Phthalyl chloride)	TLC.
PICOLINES:	:
Picoline (3,4-mixture)	RIL.
2-Picoline ( $\alpha$ -Picoline)	RIL.
3-Picoline ( $\beta$ -Picoline)	NEP, RIL.

III -- CYCLIC INTERMEDIATES



TABLE 2.--CYCLIC INTERMEDIATES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1985--CONTINUED

CYCLIC INTERMEDIATES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
4-Picoline ( $\gamma$ -Picoline)-----	RIL.
3-Picoline-N-oxide-----	RIL.
4-Picoline-N-oxide-----	RIL.
Picolinic acid-----	NEP.
Picolinonitrile (2-Cyanopyridine)-----	NEP.
2-Picolylamine-----	RIL.
3-Picolylamine-----	RIL, SDC.
Picric acid (Trinitrophenol)-----	SDC.
2-Pipecoline-----	RIL.
Piperazine mixture, crude-----	TX.
Piperidine-----	ABB, RIL.
Polyethylbenzene (80 percent diethylbenzene)-----	ELP.
4-Propanolpyridine-----	RIL.
Propiophenone-----	HEX, ORT.
8,16-Pyranthredione-----	PCW.
1,3,6,8-Pyrenetetrasulfonic acid-----	X.
PYRIDINE, REFINED:	
2° Pyridine, refined-----	NEP, RIL.
Pyridine, refined all other grades-----	CGY, RIL.
Pyridine hydrochloride-----	RSA.
3-Pyridinemethanol-----	RIL.
2 Pyridinethiol-1-oxide, sodium salt-----	OMC.
2 Pyridinethiol-1-oxide, zinc salt-----	OMC.
4-Pyridylacetone-----	RIL.
N-(2-Pyridyl)-4-hydroxy-2-methyl-2H-1,2-benzothiazine-3- carboxamide, 1,1-dioxide-----	PFZ.
2-Pyrimidinol-----	CGY.
2-Pyrrolidinone (2-Pyrrolidone)-----	GAF.
Pyrvinium pamoate-----	X.
Quinaldine-----	ACY.
QUINOLINE:	
Quinoline, 1° and 2°-----	KPT.
Quinoline-2,3-dicarboxylic acid-----	NES.
Quinoline, other grades-----	KPT.
8-Quinolinol-----	SOL.
8-Quinolinol zinc salt-----	SOL.
Quinone dioxime-----	LC.
Resorcinol, tech-----	KPT.
8-Resorcylic acid, lead salt-----	KPT.
Salicylaldehyde-----	RDA.
Salicylaldehyde oxime-----	EK.
Salicylanilide-----	PCW.
*Salicylic acid, tech-----	DOW, KLM, MON, SDH.

TABLE 2.--CYCLIC INTERMEDIATES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1985--CONTINUED

CYCLIC INTERMEDIATES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
Sodium p-sulfophenylmethallyl ether-----	SAL.
Sodium trichlorobenzenesulfate-----	UPF.
*Styrene (Vinylbenzene)-----	AMO, ATR, CSD, DOW, ELP, GOC, HST, MCB, MON, PLC, SHC, USS.
Sulfaguanidine-----	SAL.
5-Sulfoisophthalic acid, 1,3-dimethyl ester-----	PCW.
5-Sulfoisophthalic acid, 1,3-dimethyl ester, sodium salt--	DUP.
5-Sulfoisophthalic acid, lithium salt-----	PCW.
5-Sulfoisophthalic acid, sodium salt-----	PCW.
4,4'-Sulfonyldiphenol (4,4'-Dihydroxydiphenyl sulfone)---	CRZ.
4-Sulfoophthalic acid-----	CWN.
Terephthalic acid-----	AMO, HCF.
*Terephthalic acid, dimethyl ester-----	DUP, EKT, HCF.
Terephthaloyl chloride-----	DUP.
Terephthaloyldiacetic acid, diethyl ester-----	PCW, TLC.
Terphenyl (Phenylbiphenyl) (m-,o-,and p-isomers)-----	MON.
Terpinene-4-ol-----	X.
Tetrabromophthalic anhydride-----	TNA.
2,4,4',5'-Tetrachlorophenylsulfone-----	SDH.
Tetrachlorophthalic anhydride-----	MON.
Tetrahydrobenzyl alcohol-----*	UCC.
*Tetrahydrofuran-----	BAS, DUP, GAF, QKO.
1,2,3,4-Tetrahydronaphthalene-----	UCC.
1,2,3,4-Tetrahydro-2,2,4,7-Tetramethylquinoline-----	EKT.
1,2,4,5-Tetramethylbenzene (Durene)-----	KHI.
p-(1,1,3,3-Tetramethylbutyl)phenol-----	GAF.
1,3,6,8-Tetranitro-9H-carbazole-----	SDC.
Tetrahydrofurfurylamine-----	HXL.
Thiodiphenol-----	CRZ.
2-Thiopheneacetic acid-----	SFS.
2-Thiopheneacetonitrile-----	SFS.
2-Thiopheneacetyl chloride-----	SFS.
2-Thiophenecarboxaldehyde-----	TNA.
Thiophenol-----	SFA, SFS.
Toluene-2,3-(and 3,4)-diamine (35/65 Mixture)-----	OMC.
Toluene-2,4-diamine (4-m-Tolylenediamine)-----	RUC, UCC, X.
Toluene-2,4-(and 2,6)-diamine (80/20 Mixture)-----	OMC.
Toluene-3,4-diamine-----	X.
Toluenediamine-bis-maleimide-----	NES.
*p-Toluenesulfonic acid-----	NES, TEN, UPF.
p-Toluenesulfonic acid, aniline salt-----	NES.
p-Toluenesulfonic acid, copper salt-----	NES.
p-Toluenesulfonyl chloride-----	MON.
m-Toluic acid-----	WTC.
p-Toluic acid, methyl ester-----	HCF.

TABLE 2.--CYCLIC INTERMEDIATES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1985--CONTINUED

CYCLIC INTERMEDIATES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
o-Toluidine	DUP, FST.
m-Toluidine	DUP, FST.
p-Toluidine	DUP, FST.
2-o-Toluidinoethanol	TCH.
o-Toluidinomethanesulfonic acid	CGY.
2,2'-(m-Tolylimino)diethanol	MIL, TCH.
2,2'-(m-Tolylimino)diethanol, diacetate ester	SDC.
Tolyltriazole	PGG.
Tolyltriazine, sodium salt	DLX.
2,4,6-Triamino-5-nitrosopyrimidine	SK.
N,N,N-Tribenzylamine	HKL.
ar-Tribromoethyl benzene	DAZ.
2,4,6-Tribromophenol	GTL.
3,4',5-Tribromosalicylanilide	PCW.
1,2,3(and 1,2,4)-Trichlorobenzene	PPG, SCC.
1,2,4-Trichlorobenzene	SCC.
3-Trichloromethyl-1,2,4-thiadiazole	OMC.
Trichlorophenylsilane	DCC.
$\alpha,\alpha,\alpha$ -Trichlorotoluene (Benzotrichloride)	HK, VEL.
2,4,6-Trichloro-s-triazine (Cyanuric chloride)	DGC.
Tri(dimethylaminomethyl)phenol	PEL.
Trimellitic trichloride	TLC.
Trimesic acid	AMB.
1,2,4-Trimethylbenzene (Pseudocumene)	KHI.
1,3,3-Trimethyl- $\xi^2$ , $\alpha$ -indolineacetaldehyde	VPC.
Trimethylphenylammonium chloride	X.
Triphenylmethane	EK.
Triphenylphosphine	X.
Triphenylsulfonium chloride	SOL.
Triphenylsulfonium hexafluorophosphate	SOL.
$\alpha,\alpha',\alpha''$ -Tris(dimethylamino)mesitol	RH.
Tris(2-methyl-1-aziridinyl)phosphine oxide	ARS.
7,7'-Ureylenebis[4-hydroxy-2-naphthalenesulfonic acid] (J-Acid urea)	CGY.
Veratraldehyde (3,4-Dimethoxybenzaldehyde)	GIV.
Vinylcyclohexane	DUP.
Vinylcyclohexene monoxide	UCC.
2-Vinylpyridine	RIL.
4-Vinylpyridine	RIL.
*o-Xylene (90-100% of o-xylene isomer)	ATR, DUP, ENJ, KHI, PPR, SHC, TCH, TOC.
m-Xylene (90-100% of m-xylene isomer)	AMO.
*p-Xylene (90-100% of p-xylene isomer)	AMO, ATR, ENJ, KHI, PPX, SOC, STX, TOC.

TABLE 2.--CYCLIC INTERMEDIATES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1985--CONTINUED

CYCLIC INTERMEDIATES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
2,4-Xylenesulfonic acid-----	: UPF.
2,5-Xylenesulfonic acid-----	: NES.
2,6-Xylenol-----	: GE.
3,5-Xylenol-----	: FER.
XYLENOLS:	:
Xylenol, low boiling point-----	: MER.
XYLIDINES:	:
Xylidine, original mixture-----	: DUP.
Cyclic intermediates, all other-----	: ACY, ANG, ARA, CGY, DUP, FER, HCF, HEX, HK, : HST, HXL, LC, MCK, MIL, MRT, NES, NOD, OMC, : PAH, PCW, PD, PFZ, PSG, RIL, SCH, SDC, SD, : SDW, SFS, SOL, SRL, STC, TCH, TNA, UCC, UPJ, : VPC, WTC, X, X, X, X, X, X, X, X, X, X.

## SYNTHETIC ORGANIC CHEMICALS, 1985

TABLE 3.--CYCLIC INTERMEDIATES: DIRECTORY OF MANUFACTURERS, 1985

## ALPHABETICAL DIRECTORY BY CODE

[Names of manufacturers that reported production and/or sales of cyclic intermediates to the U.S. International Trade Commission for 1985 are listed below in the order of their identification codes as used in table 2]

CODE :	NAME OF COMPANY	CODE :	NAME OF COMPANY
ABB :	Abbott Laboratories	GGC :	Georgia-Gulf Corp.:
ACY :	American Cyanamid Co.		Boundbrook Div.
ACS :	Allied Corp., Chemical Sector		Houston Div.
AIP :	Air Products & Chemicals, Inc.		Plaquemine Div.
ALD :	Aldrich Chemical Co., Inc.	GIV :	Givaudan Corp.
ALL :	Alliance Chemical, Inc.	GLY :	Glyco, Inc.
AMB :	American Bio-Synthetics Corp.	GNW :	Greenwood Chemical Co.
AMO :	Amoco Corp.	GOC :	Chevron Chemical Corp.
ANG :	Angus Chemical Co.	GP :	Georgia-Pacific Corp.:
ARA :	Syntex Chemicals, Inc.		Houston Div.
ARK :	Armstrong World Industries, Inc.		Plaquemine Div.
ARS :	Arsynco, Inc.	GRS :	Champlin Petroleum Co.
ARZ :	Arizona Chemical Co.	GTL :	Great Lakes Chemical Corp.
ASH :	Ashland Oil, Inc., Ashland Petroleum Co.	GYR :	Goodyear Tire & Rubber Co.
ATL :	Atlantic Industries, Inc.		
ATR :	Atlantic Richfield Co., Arco Chemical Co.	HCF :	Cape Industries
		HEX :	Hexagon Laboratories, Inc.
BAS :	BASF Corp.	HK :	Occidental Chemical Corp., Industrial & Specialty
BCC :	Buffalo Color Corp.		Chemical Div.
BFG :	B. F. Goodrich Co., B. F. Goodrich Chemical Group	HML :	Hummel Chemical Co.
BKM :	Buckman Laboratories, Inc.	HPC :	Hercules, Inc.
BRD :	Lonza, Inc.	HST :	American Hoechst Corp.:
BRS :	Bristol-Myers Co.		Petrochemicals/Plastics Group
BTL :	BTL of Illinois, Inc.		Specialty Products Group, Rhode Island Works
		HXL :	Hexcel Corp., Hexcel Chemical Products
CGY :	Ciba-Geigy Corp.		
CHF :	Kincaid Enterprises, Inc.	ICI :	ICI Americas, Inc., Chemicals Div.
CHT :	Chattem, Inc.		
CLK :	Clark Oil & Refining Corp.	KAN :	Kanasco, Ltd
CNP :	Nipro, Inc.	KF :	Dynamit Nobel of America Dynamit Nobel
COS :	Cosan Chemical Corp.		Chemical Div.
CPS :	CPS Chemical Co., Inc.	KHI :	Koch Refining Co.
CRZ :	Crown Zellenback Corp., Chemical Products Div.	KLM :	Kalama Chemical, Inc.
		KPT :	Koppers Co., Inc.
CSD :	Fina Oil & Chemicals Co., Cosden Chemical Div.		
		LAK :	Bofors Nobel, Inc.
CWN :	Upjohn Co., Fine Chemical	LC :	Lord Corp., Chemical Products Group
CXI :	Chemical Exchange Industries, Inc.	LEM :	Napp Chemicals, Inc.
CYH :	Cychem, Inc.	LIL :	Eli Lilly & Co.
		LYP :	Lyondell Petrochemical Co.
DAZ :	Diaz Chemical Corp.	MAL :	Mallinckrodt, Inc.
DBC :	Badische Corp.	MGB :	Borg-Warner Corp., Borg-Warner Chemicals
DGC :	Dow Corning Corp.	MCK :	MacKenzie Chemical Works, Inc.
DGG :	Degussa Corp.	MER :	Merichem Co.
DIX :	Dixie Chemical Co., Inc.	MET :	M & T Chemical, Inc.
DKA :	Denka Chemical Corp.	MIL :	Milliken & Co., Milliken Chemical Co.
DOW :	Dow Chemical Co.	MLC :	Melamine Chemicals, Inc.
DUP :	E. I. duPont de Nemours & Co., Inc.	MOB :	Mobay Chemical Corp., Pittsburgh Div.
		MON :	Monsanto Co.
EK :	Eastman Kodak Co.:	MRT :	Morton-Thiokol, Inc., Morton Chemical
EKT :	Tennessee Eastman Co. Div.		Div.
ELP :	El Paso Products Co.		
ENJ :	Exxon Chemical Americas	NCC :	Niacet, Inc.
		NCI :	Union Camp Corp., Terpene & Aromatics Div.
FER :	Ferro Corp.:	NEP :	Nepera, Inc.
	Ferro Chemical Div.	NES :	Ruetgers-Nease Chemical Co.
	Grant Chemical Div.	NOD :	Nuodex, Inc.
	Productol Chemical Div.	NPC :	Northwest Petrochemical Corp.
FKE :	Frank Enterprises, Inc.	NSC :	National Starch & Chemical Corp.
FMC :	FMC Corp.:		
FMN :	Agricultural Chemical Group	OMC :	Olin Corp.
FMT :	Fairmount Chemical Co., Inc.	ORT :	Roehr Chemicals, Inc.
FST :	First Chemical Corp.	OSX :	Oxsynex, Inc.
GAF :	GAF Corp., Chemical Group	PAH :	Parish Chemical Co.
GE :	General Electric Co.	PAS :	Pennwalt Corp.

III -- CYCLIC INTERMEDIATES

TABLE 3.--CYCLIC INTERMEDIATES: DIRECTORY OF MANUFACTURERS, 1985--Continued

CODE :	NAME OF COMPANY	CODE :	NAME OF COMPANY
PCW :	Pfister Chemical, Inc.	SRL :	G. D. Searle & Co.
PD :	Parke-Davis Div. of Warner-Lambert Co.	STC :	American Hoechst Corp., Sou-Tex Works
PEL :	Pelron Corp.	STP :	Stepan Chemical Co.
PFZ :	Pfizer, Inc., & Pfizer Pharmaceuticals, Inc.	STX :	St. Croix Petrochemical Corp.
PHC :	Phthalchem, Inc.	SUN :	Sun Company, Inc.
PLC :	Phillips Petroleum Co.		
PLN :	Disogrin Industries Corp.	TCC :	Sybron Chemical, Inc.
PPG :	PPG Industries, Inc.	TCH :	Emery Industries, Inc., Tylon Div.
PPR :	Phillips Puerto Rico Core, Inc.	TEN :	Tennessee Chemical Co.
PPX :	Phillips Paraxylene, Inc.	TIL :	Tillett Chemical Co.
PRL :	Petrolite Corp.	TLC :	Twin Lake Chemical, Inc.
PSG :	PMC Specialities Group Inc.	TNA :	Ethyl Corp.
		TOC :	Tenneco Oil Co.
QKO :	QO Chemicals, Inc.	TRD :	Squibb Manufacturing, Inc.
		TU :	Tenn-USS Chemicals Co.
RDA :	Rhone-Poulenc, Inc.	TX :	Texaco, Inc., Texaco Chemical Co.
REG :	Regis Chemical Co.		
RH :	Rohm & Haas Co.	UCC :	Union Carbide Corp.
RIL :	Reilly Tar & Chemical Corp.	UOC :	Union Oil Co., of California
RSA :	R.S.A. Corp.	UPF :	Jim Walter Resources, Inc., CIC Div.
RUC :	Rubicon, Inc.	UPJ :	Upjohn Co. & Polymer Chemical Div.
		UPM :	UOP, Inc., UOP Process Div.
SAL :	Salsbury Laboratories, Inc.	USM :	Crown Metro, Inc.
SGC :	Standard Chlorine of Delaware, Inc.	USR :	Uniroyal, Inc., Uniroyal Chemical Div.
SCH :	Schering Corp.	USS :	U.S. Steel Corp., USS Chemicals Div.
SCN :	Schenectady Chemicals, Inc.		
SD :	Sterling Drug, Inc., Sterling Pharmaceuticals, Inc.	VEL :	Velsicol Chemical Corp.
SDC :	Sandoz Chemicals Corp.	VGC :	Virginia Chemicals, Inc.
	Sterling Drug, Inc.:	VNC :	Vanderbilt Chemical Corp.
SDH :	Hilton Davis Chemical Co.	VPC :	Mobay Chemical Corp., Dyes & Pigments Div.
SDW :	Sterling Organics Div.	VST :	Vista Chemical Co.
	Stauffer Chemical Co.:	VTC :	Vertac Chemical Corp.
SFA :	Agricultural Products Div.		
SFS :	Specialty & Intermediates Div.	WAY :	Philip A. Hunt Chemical Corp., Organic Chemical Div.
SHC :	Shell Oil Co., Shell Chemical Co. Div.	WTC :	Witco Chemical Corp.
SK :	SmithKline Beckman Corp., SmithKline Chemicals Div.	WYK :	Wyckoff Chemical Co., Inc.
SOC :	Chevron Corp., Chevron Chemical Co.	WYT :	Wyeth Laboratories, Inc., Wyeth Laboratories Div. of American Home Products Corp.
SOI :	Specialty Organics, Inc.	ZOC :	Zoecon Corp. (Bosch)
SOL :	Southland Corp., Fine Chemical Div.		

Note.--Complete names, telephone numbers, and addresses of the above reporting companies are listed in table 1 of the appendix.

# SYNTHETIC ORGANIC CHEMICALS, 1985

## SECTION IV -- DYES

### STATISTICAL HIGHLIGHTS

Stephen Wanser

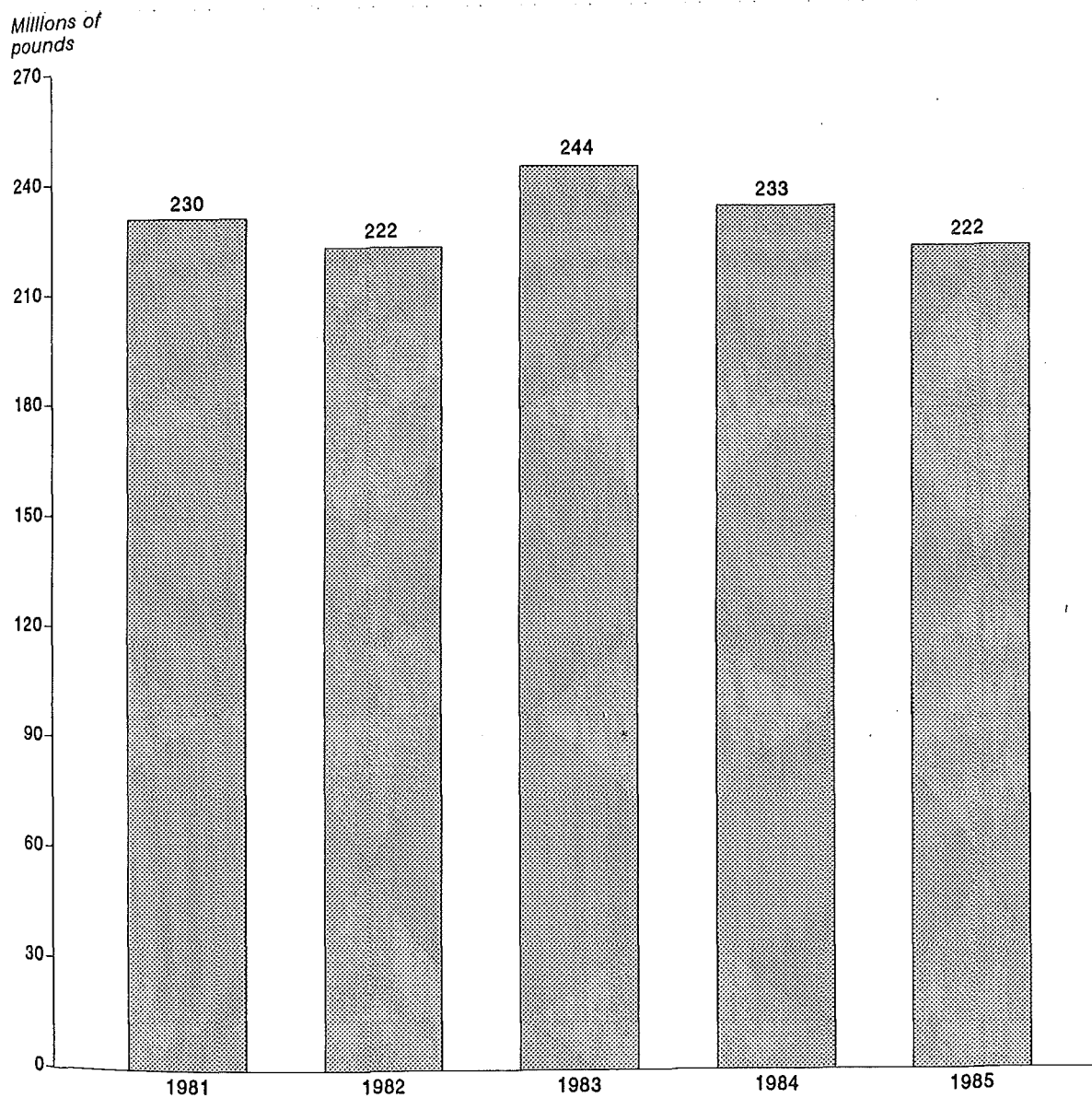
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Synthetic dyes are derived in whole or in part from cyclic intermediates. Approximately two-thirds of the dyes consumed in the United States are used by the textile industry to dye natural and synthetic fibers or fabrics; about one-sixth is used for coloring paper; and the rest is used chiefly in the production of organic pigments and in dyeing leather and plastics. Of the several thousand different synthetic dyes that are known, more than one thousand are manufactured by domestic producers, collectively. The large number of dyes results from the many different types of materials to which dyes are applied, the different conditions of service for which dyes are required, and the cost that a particular use can bear. Commercial dyes are formulated products which are sold in a variety of physical forms (e.g.) granular, powders, liquids, and pastes) containing concentrations of colorant ranging from 6 percent (approximately) to 100 percent. In the statistical tables, production and sales quantities are expressed in terms of a standard strength of product (based on dyeing performance) and not in terms of the amount of actual colorant.

Total domestic production of dyes in 1985 amounted to 222 million pounds, or 4.6 percent less than the 233 million pounds produced in 1984 (table 1). Sales of dyes in 1985 amounted to 267 million pounds, valued at \$651 million, compared with 221 million pounds, valued at \$691 million, in 1984. In terms of quantity, sales of dyes in 1985 were 21 percent more than in 1984 and in terms of value, 5.8 percent less. The average unit value of sales of all dyes in 1985 was \$2.43 per pound, compared with \$3.13 per pound in 1984.

Production of two classes of dyes increased in 1985, while the remaining eight major classes registered slight to moderate decreases in their production. Mordant dyes increased by 39 percent from 286 thousand pounds in 1984 to 339 thousand pounds in 1985; acid dyes decreased by 24.0 percent to 19.1 million pounds in 1985 from 25.1 million pounds in 1984. Changes in U.S. production of synthetic dyes followed overall changes in U.S. economic activity during 1981-85 (see figure 1).

Figure 1.—Dyes.



Source: U.S. International Trade Commission, *Synthetic Organic Chemicals: United States Production and Sales*.



TABLE 1.--DYES: U.S. PRODUCTION AND SALES, 1985

[Listed below are all dyes for which any reported data on production or sales may be published. (Leaders (...) are used where the reported data are accepted in confidence and may not be published or where no data were reported.) Table 2 lists all dyes for which data on production and/or sales were reported and identifies the manufacturers of each]

DYES	PRODUCTION		SALES	
		QUANTITY	VALUE	UNIT
	<u>1,000</u> <u>pounds</u>	<u>1,000</u> <u>pounds</u>	<u>1,000</u> <u>dollars</u>	<u>Per</u> <u>pound</u>
Grand total-----	222,127	267,283	650,580	\$2.43
ACID DYES				
Total-----	19,116	32,916	83,438	2.53
Acid yellow dyes, total-----	3,114	7,775	10,424	1.34
Acid Yellow 17-----	97	105	609	5.81
Acid Yellow 23-----	46	79	338	4.26
Acid Yellow 36-----	...	40	232	5.72
Acid Yellow 49-----	...	190	517	2.72
Acid Yellow 151-----	902	...	...	...
All other-----	2,069	7,361	8,728	1.19
Acid orange dyes, total-----	4,322	6,899	8,855	1.28
Acid Orange 7-----	180	119	310	2.60
Acid Orange 156-----	2,252	...	...	...
All other-----	1,890	6,780	8,545	1.28
Acid red dyes, total-----	4,131	8,216	23,592	2.87
Acid Red 1-----	155	127	391	3.09
Acid Red 73-----	89	...	...	...
Acid Red 137-----	65	69	465	6.74
Acid Red 151-----	126	215	362	1.69
Acid Red 182-----	355	314	1,502	4.78
All other-----	3,341	7,491	20,872	2.79
Acid violet dyes-----	76	106	805	7.67
Acid blue dyes total-----	4,841	7,189	28,358	3.94
Acid Blue 145-----	...	25	299	11.96
Acid Blue 324-----	1,224	1,424	7,232	5.08
All other-----	3,617	5,740	20,827	3.63
Acid green dyes-----	107	153	1,355	8.83
Acid brown dyes-----	399	431	2,140	4.96
Acid black dyes, total-----	2,126	2,147	7,909	3.68
Acid Black 1-----	236	207	583	2.81
Acid Black 52-----	634	...	...	...
All other-----	1,256	1,940	7,326	3.78
BASIC DYES (CLASSICAL AND MODIFIED)				
Total-----	11,661	11,156	56,146	5.03
Basic yellow dyes-----	3,198	3,035	10,144	3.34
Basic orange dyes, total-----	628	622	2,822	4.54
Basic Orange 2-----	211	189	498	2.64
All other-----	417	433	2,324	5.35
Basic red dyes, total-----	1,550	1,520	6,466	\$4.26
Basic Red 12-----	242	245	1,302	5.31
Basic Red 15-----	444	421	1,122	2.67
All other-----	864	854	4,042	4.73

See footnotes at end of table.

## SYNTHETIC ORGANIC CHEMICALS, 1985

TABLE 1.--DYES: U.S. PRODUCTION AND SALES, 1985--CONTINUED

DYES	PRODUCTION	SALES		
		QUANTITY	VALUE	UNIT
		1,000 pounds	1,000 dollars	Per pound
<b>BASIC DYES (CLASSICAL AND MODIFIED)--Continued</b>				
Basic violet dyes, total-----	3,393	3,089	10,208	3.30
Basic Violet 1-----	1,773	1,621	3,610	2.23
Basic Violet 3-----	1,117	953	3,566	3.74
All other-----	503	515	3,032	5.88
Basic blue dyes, total-----	1,641	1,524	12,006	7.88
Basic Blue 1-----	56	51	365	7.20
All other-----	1,585	1,473	11,641	7.90
All other basic dyes-----	1,251	1,366	14,500	10.69
<b>DIRECT DYES</b>				
Total-----	29,661	56,415	79,394	1.41
Direct yellow dyes, total-----	11,335	11,683	23,273	1.99
Direct Yellow 4-----	558	501	1,528	3.05
Direct Yellow 127-----	700	932	1,641	1.76
All other-----	10,077	10,250	20,104	1.96
Direct orange dyes, total-----	1,560	2,561	4,376	1.71
Direct Orange 15-----	...	733	662	...
Direct Orange 102-----	458	...	...	...
All other-----	1,102	1,828	3,714	2.03
Direct red dyes, total-----	5,084	7,320	17,219	2.35
Direct Red 72-----	491	528	2,054	3.89
Direct Red 81-----	396	441	1,537	3.49
Direct Red 83-----	90	146	344	2.36
Direct Red 236-----	978	1,167	2,350	2.01
Direct Red 254-----	1,140	...	...	...
All other-----	1,989	5,038	10,934	2.17
Direct violet and green dyes-----	252	730	1,110	1.52
Direct blue dyes, total-----	5,317	13,198	19,216	1.46
Direct Blue 80-----	228	221	821	3.71
Direct Blue 86-----	497	736	2,600	3.53
Direct Blue 199-----	398	420	1,657	3.94
Direct Blue 218-----	734	1,676	3,089	1.84
All other-----	3,460	10,145	11,049	1.09
Direct brown dyes-----	194	419	1,715	4.10
Direct black dyes, total-----	5,919	20,504	12,485	...
Direct Black 22-----	1,216	...	...	...
Direct Black 80-----	1,190	1,162	2,511	2.16
All other-----	3,513	19,342	9,974	...

See footnotes at end of table

IV -- DYES

TABLE 1.--DYES: U.S. PRODUCTION AND SALES, 1985--CONTINUED

DYES	PRODUCTION		SALES	
	1,000 pounds	1,000 pounds	QUANTITY	UNIT
			1,000 dollars	VALUE <sup>1</sup> Per pound
<b>DISPERSE DYES</b>				
Total-----	25,091	25,735	94,318	\$3.66
Disperse yellow dyes-----	1,666	2,129	6,195	2.91
Disperse orange dyes, total-----	3,742	3,226	8,152	2.47
Disperse Orange 25 and 25:1-----	253	237	563	2.38
Disperse Orange 30-----	1,991	1,599	3,505	2.19
Disperse Orange 37-----	191	165	449	2.72
Disperse Orange 44 and 44:1-----	300	184	523	2.84
All other-----	1,007	1,041	3,112	2.99
Disperse red dyes, total-----	4,705	4,932	25,889	5.25
Disperse Red 1-----	...	141	411	2.91
Disperse Red 5-----	39	48	135	2.83
Disperse Red 73-----	422	305	1,158	3.80
Disperse Red 133-----	...	172	1,574	9.17
Disperse Red 177-----	297	481	1,872	3.89
Disperse Red 179-----	204	188	727	3.86
All other-----	3,743	3,597	20,012	5.56
Disperse violet dyes-----	294	354	2,133	6.05
Disperse blue dyes, total-----	12,647	12,236	42,762	3.49
Disperse Blue 3-----	...	436	1,976	4.54
Disperse Blue 64-----	...	118	639	5.43
Disperse Blue 79 <sup>2</sup> -----	6,316	6,008	7,757	1.29
All other-----	6,331	5,674	32,390	5.71
Disperse black, brown and green dyes, total-----	2,037	2,858	9,187	3.25
Disperse Brown 1-----	753	478	1,455	3.04
Disperse Black 9-----	542	...	...	...
All other-----	742	2,380	7,732	3.25
<b>FIBER-REACTIVE DYES</b>				
Total-----	6,839	7,166	51,357	7.17
<b>FLUORESCENT BRIGHTENING AGENTS</b>				
Total-----	58,028	61,370	73,884	1.20
<b>FOOD, DRUG, AND COSMETIC COLORS</b>				
Total-----	6,049	5,837	58,749	10.07
Food, Drug and Cosmetic Dyes, Total-----	5,681	5,484	50,774	10.06
FD&C Red No. 3-----	412	369	5,505	14.93
FD&C Yellow No. 5-----	1,308	1,294	6,639	5.13
FD&C Yellow No. 6-----	987	1,024	4,811	4.70
All other food, drug, and cosmetic, dyes-----	2,974	2,797	33,819	12.09

See footnotes at end of table.

## SYNTHETIC ORGANIC CHEMICALS, 1985

TABLE 1.--DYES: U.S. PRODUCTION AND SALES, 1985--CONTINUED

DYES	PRODUCTION	SALES		
		QUANTITY	VALUE	UNIT VALUE <sup>1</sup>
		1,000 pounds	1,000 dollars	Per pound
FOOD, DRUG, AND COSMETIC COLORS--Continued				
Drug and Cosmetic Dyes, Total-----	363	349	7,810	\$22.38
D&C Red No. 6-----	59	58	761	13.13
D&C Red No. 7-----	100	111	1,147	10.36
D&C Red No. 27-----	...	6	230	41.56
D&C Red No. 33-----	...	7	261	39.04
D&C Yellow No. 10-----	61	65	2,997	45.42
All other drug and cosmetic dyes-----	143	102	2,414	23.73
DRUG AND COSMETIC DYES EXTERNAL				
	5	4	165	37.79
MORDANT DYES				
Total-----	339	1,284	1,183	.92
SOLVENT DYES				
Total-----	10,740	7,505	32,019	4.27
Solvent yellow dyes-----	1,534	1,242	6,289	5.05
Solvent orange dyes-----	813	738	2,994	4.04
Solvent red dyes-----	2,768	2,391	11,293	4.72
Solvent blue dyes-----	2,901	625	4,160	6.65
All other solvent dyes-----	2,724	2,509	7,283	2.90
VAT DYES				
Total-----	36,330	39,091	84,095	2.15
Vat yellow dyes-----	48	182	1,357	7.46
Vat orange dyes-----	99	194	1,163	5.99
Vat red dyes-----	738	806	5,457	6.77
Vat blue dyes-----	33,554	34,070	58,329	1.71
Vat green dyes-----	504	832	3,401	4.09
Vat brown dyes-----	893	1,533	6,674	4.35
Vat black dyes-----	184	1,155	5,457	4.73
Vat violet dyes-----	310	319	2,257	7.06
All other dyes <sup>3</sup> -----	18,273	18,808	35,997	2.62

<sup>1</sup>Calculated from unrounded figures.

<sup>2</sup>Several close chemical analogs are marketed as Disperse Blue 79 or Disperse Blue 79 similar products. All of these analogs are aggregated in the statistics under the heading Disperse Blue 79.

<sup>3</sup>The data include azoic compositions, azoic coupling components, azoic diazo components (bases and salts), sulfur dyes, and miscellaneous dyes. Statistics for those groups of dyes may not be published separately because publication would disclose information received in confidence.

TABLE 2.--DYES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED,  
IDENTIFIED BY MANUFACTURER, 1985.

[CHEMICALS FOR WHICH SEPARATE STATISTICS ARE GIVEN IN TABLE 1 ARE MARKED BELOW WITH AN ASTERISK (\*);  
CHEMICALS NOT SO MARKED DO NOT APPEAR IN TABLE 1 BECAUSE THE REPORTED DATA ARE ACCEPTED IN CONFIDENCE AND  
MAY NOT BE PUBLISHED. MANUFACTURERS' IDENTIFICATION CODES SHOWN BELOW ARE TAKEN FROM TABLE 3. AN "X"  
SIGNIFIES THAT THE MANUFACTURER DID NOT CONSENT TO HIS IDENTIFICATION WITH THE DESIGNATED PRODUCT]

DYES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACID DYES	
*ACID YELLOW DYES:	
Acid Yellow 3-----	: ACY.
*Acid Yellow 17-----	: ATL, CGY, CK, SDH.
Acid Yellow 19-----	: ATL, CK.
*Acid Yellow 23-----	: BAS, CK, LVR, MRX, WJ.
Acid Yellow 34-----	: ATL, FAB.
*Acid Yellow 36-----	: ATL, CGY, VPC.
Acid Yellow 40-----	: CGY.
*Acid Yellow 49-----	: CK, FAB, S, VPC.
Acid Yellow 54-----	: CGY.
Acid Yellow 59-----	: BAS.
Acid Yellow 65-----	: ATL.
Acid Yellow 73-----	: SDH.
Acid Yellow 87-----	: CK.
Acid Yellow 99-----	: CGY.
Acid Yellow 119-----	: BAS.
Acid Yellow 127-----	: CK.
Acid Yellow 129-----	: CGY, CK.
Acid Yellow 135-----	: ICI.
*Acid Yellow 151-----	: CGY, CK, S, VPC.
Acid Yellow 159-----	: CGY, CK.
Acid Yellow 174-----	: FAB.
Acid Yellow 198-----	: CK.
Acid Yellow 200-----	: CK.
Acid Yellow 216-----	: VPC.
Acid Yellow 219-----	: CGY, CK, S.
Acid Yellow 226-----	: BAS.
Acid Yellow 239-----	: DGO.
Acid yellow dyes, all other-----	: ATL, CK.
*ACID ORANGE DYES:	
*Acid Orange 7-----	: ATL, BAS, CK, VPC.
Acid Orange 8-----	: ATL, CK.
*Acid Orange 10-----	: ATL, BAS, CGY, CK.
*Acid Orange 24-----	: CGY, CK, S.
Acid Orange 47-----	: CGY.
Acid Orange 51-----	: CGY.
Acid Orange 60-----	: CGY, CK.
Acid Orange 64-----	: ATL.

TABLE 2.--DYES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED,  
IDENTIFIED BY MANUFACTURER, 1985--CONTINUED

DYES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACID DYES--CONTINUED	
*ACID ORANGE DYES--CONTINUED	
Acid Orange 69-----	ATL, FAB.
Acid Orange 86-----	CGY.
Acid Orange 89-----	BAS.
Acid Orange 116-----	CGY, CK.
Acid Orange 128-----	CK.
Acid Orange 152-----	CK.
*Acid Orange 156-----	CGY, CK, S, VPC.
Acid Orange 161-----	ATL.
Acid orange dyes, all other-----	CK, VPC.
*ACID RED DYES:	
*Acid Red 1-----	ATL, BAS, CGY, CK, FAB.
Acid Red 4-----	ATL, CGY.
Acid Red 14-----	ATL, BAS, WJ.
Acid Red 18-----	ATL.
Acid Red 57-----	CGY, CK.
*Acid Red 73-----	ATL, CK, PSC.
Acid Red 85-----	FAB.
Acid Red 87-----	SDH.
Acid Red 88-----	ATL, BAS, CGY, FAB.
Acid Red 97-----	ATL.
Acid Red 114-----	CGY, CK, VPC.
Acid Red 119-----	CK.
*Acid Red 137-----	BAS, CGY, CK, VPC.
*Acid Red 151-----	ATL, CGY, CK.
Acid Red 167-----	ATL, CGY.
Acid Red 174-----	CGY.
*Acid Red 182-----	VPC.
Acid Red 186-----	CGY.
Acid Red 194-----	CGY.
Acid Red 213-----	CGY.
Acid Red 226-----	BAS.
Acid Red 257-----	CGY.
Acid Red 266-----	CK, ICI, VPC.
Acid Red 296-----	BAS.
Acid Red 299-----	ATL, CK, VPC.
Acid Red 337-----	CK, S, VPC.
Acid Red 361-----	CGY, CK.
Acid Red 364-----	CK.
Acid Red 392-----	VPC.
Acid Red 396-----	ICI.
Acid Red 408-----	CGY.
*Acid red dyes, all other-----	ATL, CGY, CK, EKI.

TABLE 2.--DYES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED,  
IDENTIFIED BY MANUFACTURER, 1985--CONTINUED

DYES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACID DYES--CONTINUED	
*ACID VIOLET DYES:	
Acid Violet 3-----	: ATL, FAB.
Acid Violet 7-----	: ATL, FAB.
Acid Violet 12-----	: ATL, FAB.
Acid Violet 17-----	: SDH.
Acid Violet 49-----	: SDH.
*ACID BLUE DYES:	
Acid Blue 9-----	: BAS, SDH, WJ.
Acid Blue 15-----	: BAS.
Acid Blue 25-----	: CGY, CK, VPC.
Acid Blue 27-----	: ATL, FAB.
Acid Blue 29-----	: FAB.
Acid Blue 40-----	: CK, VPC.
Acid Blue 41-----	: CK.
Acid Blue 45-----	: BAS, CGY.
Acid Blue 80-----	: CGY.
Acid Blue 104-----	: ATL, BAS.
Acid Blue 113-----	: CK.
Acid Blue 118-----	: CGY.
*Acid Blue 145-----	: ATL, CK, VPC.
Acid Blue 158, 158:1, and 158:2-----	: CGY.
Acid Blue 231-----	: CK.
Acid Blue 277-----	: CGY.
Acid Blue 283-----	: S.
Acid Blue 298-----	: CK.
Acid Blue 321-----	: ATL.
*Acid Blue 324-----	: CK, S, VPC.
Acid Blue 330-----	: ATL.
Acid Blue 336-----	: ICI.
Acid Blue 595-----	: VPC.
*Acid blue dyes, all other-----	: BAS, CGY, CK, VPC, X.
*ACID GREEN DYES:	
Acid Green 1-----	: LVR.
Acid Green 5-----	: WJ.
Acid Green 20-----	: ATL, FAB.
Acid Green 25-----	: ATL, CGY, CK.
Acid green dyes, all other-----	: CK.
*ACID BROWN DYES:	
*Acid Brown 14-----	: ATL, CGY, CK, S.
Acid Brown 19-----	: CK.
Acid Brown 45-----	: CGY.
Acid Brown 50-----	: BAS.

TABLE 2.--DYES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED,  
IDENTIFIED BY MANUFACTURER, 1985--CONTINUED

DYES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACID DYES--CONTINUED	
*ACID BROWN DYES--CONTINUED	
Acid Brown 97-----	BAS, FAB.
Acid Brown 98-----	CGY.
Acid Brown 147-----	CK.
Acid Brown 160-----	BAS.
Acid Brown 161-----	BAS.
Acid Brown 165-----	BAS.
Acid Brown 227-----	BAS.
Acid Brown 239-----	CGY, CK.
Acid Brown 264-----	BAS.
Acid brown dyes, all other-----	BAS, CK, FAB.
*ACID BLACK DYES:	
*Acid Black 1-----	ATL, BAS, CGY, CK.
*Acid Black 52-----	CGY, CK, FAB, S.
Acid Black 58-----	CGY.
Acid Black 60-----	CGY, CK.
Acid Black 63-----	BAS.
Acid Black 92-----	FAB.
Acid Black 107-----	CGY, CK, VPC.
Acid Black 172-----	CGY, ICI, VPC.
Acid Black 194-----	BAS.
*Acid black dyes, all other-----	ATL, CGY, CK, VPC.
AZOIC DYES AND COMPONENTS	
AZOIC COMPOSITIONS:	
AZOIC RED COMPOSITIONS:	
Azoic Red 1-----	ALL.
AZOIC DIAZO COMPONENTS, BASES:	
Azoic Diazo Component 4, base-----	ALL.
Azoic Diazo Component 5, base-----	ALL.
Azoic Diazo Component 13, base-----	ALL.
Azoic Diazo Component 14, base-----	ALL.
Azoic Diazo Component 32, base-----	ALL.
AZOIC DIAZO COMPONENTS, SALTS:	
Azoic Diazo Component 1, salt-----	ALL.
Azoic Diazo Component 3, salt-----	ALL.
Azoic Diazo Component 5, salt-----	ALL.
Azoic Diazo Component 8, salt-----	ALL.
Azoic Diazo Component 9, salt-----	ALL.
Azoic Diazo Component 10, salt-----	ALL, ATL.
Azoic Diazo Component 11, salt-----	ALL.



TABLE 2.--DYES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED,  
IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

DYES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
AZOIC DYES AND COMPONENTS--CONTINUED	
AZOIC DIAZO COMPONENTS, SALTS--CONTINUED	
Azoic Diazo Component 12, salt-----	ALL.
Azoic Diazo Component 13, salt-----	ALL.
Azoic Diazo Component 14, salt-----	ALL.
Azoic Diazo Component 20, salt-----	ATL.
Azoic Diazo Component 32, salt-----	ALL.
Azoic Diazo Component 34, salt-----	ALL.
Azoic Diazo Component 35, salt-----	ALL.
Azoic Diazo Component 42, salt-----	ALL.
Azoic Diazo Component 48, salt-----	ATL.
Azoic Diazo Component 49, salt-----	ALL.
Azoic diazo components, salt, all other-----	ALL.
AZOIC COUPLING COMPONENTS:	
Azoic Coupling Component 3-----	PCW.
Azoic Coupling Component 7-----	PCW.
Azoic Coupling Component 8-----	PCW.
Azoic Coupling Component 12-----	PCW.
Azoic Coupling Component 21-----	PCW.
Azoic Coupling Component 29-----	PCW.
Azoic Coupling Component 35-----	PCW.
Azoic Coupling Component 43-----	ALL.
BASIC DYES (CLASSICAL AND MODIFIED)	
*BASIC YELLOW DYES:	
Basic Yellow 2-----	ACY.
Basic Yellow 11-----	ATL, CK, VPC.
Basic Yellow 13-----	ATL, VPC.
Basic Yellow 15-----	CK.
Basic Yellow 21-----	VPC.
Basic Yellow 24-----	BAS.
Basic Yellow 25-----	BAS.
Basic Yellow 28-----	BAS.
Basic Yellow 29-----	BAS, CK, VPC.
Basic Yellow 37-----	ACY.
Basic Yellow 49-----	BAS.
Basic Yellow 53-----	CK.
Basic Yellow 58-----	VPC.
Basic Yellow 65-----	BAS.
Basic Yellow 78-----	ACY.
Basic Yellow 79-----	CK.

TABLE 2.--DYES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED,  
IDENTIFIED BY MANUFACTURER, 1985--CONTINUED

DYES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
BASIC DYES--CONTINUED	
*BASIC YELLOW DYES--CONTINUED	
Basic Yellow 83-----	CK.
Basic Yellow 96-----	BAS.
Basic yellow dyes, all other-----	X.
Basic yellow dyes, all other, modified-----	CGY, CK.
*BASIC ORANGE DYES:	
Basic Orange 1-----	CK, PSC.
*Basic Orange 2-----	ATL, CGY, CK, PSC.
Basic Orange 21-----	ATL, VPC.
Basic orange dyes, all other-----	X.
Basic orange dyes, all other, modified-----	VPC.
*BASIC RED DYES:	
*Basic Red 12-----	ACY, ATL, VPC.
Basic Red 14-----	BAS, VPC.
*Basic Red 15-----	ATL, BAS, CK.
Basic Red 17-----	CK.
Basic Red 18-----	VPC.
Basic Red 22-----	CGY.
Basic Red 23-----	VPC.
Basic Red 29-----	BAS.
Basic Red 46-----	CK.
Basic Red 49-----	BAS, CK.
Basic Red 51-----	BAS.
Basic Red 54-----	BAS.
Basic Red 73-----	CK.
Basic Red 104-----	CK.
Basic red dyes, all other-----	CGY, X.
Basic red dyes, all other, modified-----	VPC.
*BASIC VIOLET DYES:	
*Basic Violet 1-----	ACY, BAS, BCC, DSC.
*Basic Violet 3-----	ACY, BAS, CK, DSC.
Basic Violet 4-----	ACY, DSC.
Basic Violet 10-----	ACY, BAS.
Basic Violet 16-----	BAS, VPC.
*BASIC BLUE DYES:	
Basic Blue 1-----	ACY, SHC, VPC.
Basic Blue 2-----	DSC.
Basic Blue 3-----	BAS, CK, VPC.
Basic Blue 7-----	DSC.
Basic Blue 21-----	CK.
Basic Blue 26-----	DSC.
Basic Blue 41-----	BAS, VPC.

TABLE 2.—DYES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED,  
IDENTIFIED BY MANUFACTURER, 1985—CONTINUED

DYES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
BASIC DYES (CLASSICAL AND MODIFIED)—CONTINUED	
*BASIC BLUE—CONTINUED	
Basic Blue 54-----	BAS.
Basic Blue 60-----	BAS.
Basic Blue 69-----	VPC.
Basic Blue 77-----	VPC.
Basic Blue 94 and 94:1-----	CK.
Basic Blue 140-----	VPC.
Basic blue dyes, all other-----	CGY, X.
Basic blue dyes, all other, modified-----	BAS, CK, VPC.
BASIC GREEN DYES:	
Basic Green 1-----	DSC.
Basic Green 4-----	ACY, BAS, DSC.
Basic green dyes, all other-----	X.
BASIC BROWN DYES:	
Basic Brown 1-----	CGY, PSC.
Basic Brown 4-----	ATL, CGY, PSC.
Basic brown dyes, all other-----	BAS.
BASIC BLACK DYES:	
Basic black dyes, all other-----	BAS, CGY, X.
Basic black dyes, all other, modified-----	CK, VPC.
DIRECT DYES	
*DIRECT YELLOW DYES:	
*Direct Yellow 4-----	ATL, BAS, CGY, CK, VPC.
Direct Yellow 5-----	ACY, BAS.
Direct Yellow 6-----	CGY, VPC.
Direct Yellow 11-----	BAS, VPC.
Direct Yellow 28-----	ATL, CK.
Direct Yellow 34-----	CGY, CK.
Direct Yellow 44-----	CGY, CK.
Direct Yellow 50-----	CGY.
Direct Yellow 84-----	CGY, S.
Direct Yellow 105-----	CGY.
Direct Yellow 106-----	CGY, CK.
Direct Yellow 107-----	CGY, CK.
Direct Yellow 118-----	CGY, CK.
Direct Yellow 119-----	VPC.
*Direct Yellow 127-----	BAS, CGY, CK, VPC.
Direct Yellow 132-----	S.
Direct Yellow 133-----	S.
Direct Yellow 137-----	VPC.

TABLE 2.—DYES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED,  
IDENTIFIED BY MANUFACTURER, 1985—CONTINUED

DYES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
DIRECT DYES—CONTINUED	
*DIRECT YELLOW—CONTINUED	
Direct Yellow 147	BAS, VPC.
Direct Yellow 148	S.
Direct Yellow 150	S.
Direct Yellow 152	S.
*Direct yellow dyes, all other	ATL, BAS, CGY, CK, SDC, VPC.
*DIRECT ORANGE DYES:	
Direct Orange 6	ATL.
*Direct Orange 15	BAS, CGY, FAB, VPC.
Direct Orange 26	CK.
Direct Orange 29	CGY.
Direct Orange 34	ATL, FAB.
Direct Orange 39	CGY, CK, FAB.
Direct Orange 72	ATL, CGY, CK.
Direct Orange 80	ATL.
*Direct Orange 102	ATL, BAS, CGY, VPC.
Direct Orange 105	CK.
Direct Orange 118	CGY, S.
*Direct orange dyes, all other	ATL, BAS, CGY, CK.
*DIRECT RED DYES:	
Direct Red 4	CK.
Direct Red 9	CK.
Direct Red 16	ATL, CGY.
Direct Red 23	ATL.
Direct Red 24	ATL, FAB.
Direct Red 26	ATL, CGY.
Direct Red 28	FAB.
Direct Red 39	ATL, CK.
*Direct Red 72	ATL, BAS, CGY, CK.
Direct Red 73	ATL, CGY.
Direct Red 79	CK.
Direct Red 80	ATL, CGY, CK.
*Direct Red 81	ATL, CGY, CK, LVR, VPC.
*Direct Red 83	ATL, CGY, CK, FAB.
Direct Red 149	ATL.
Direct Red 153	ATL.
*Direct Red 236	BAS, CGY, CK, VPC.
Direct Red 238	VPC.
Direct Red 239	CGY, S.
Direct Red 253	S.
*Direct Red 254	BAS, CGY, VPC.
*Direct red dyes, all other	ACY, ATL, BAS, CK, VPC.

TABLE 2.--DYES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED,  
IDENTIFIED BY MANUFACTURER, 1985--CONTINUED

DYES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
DIRECT DYES--CONTINUED	
DIRECT VIOLET DYES:	
Direct Violet 9-----	: ATL, CGY.
Direct Violet 14-----	: ATL.
Direct Violet 66-----	: ATL.
Direct Violet 99-----	: VPC.
*DIRECT BLUE DYES:	
Direct Blue 1-----	: ATL.
Direct Blue 2-----	: FAB.
Direct Blue 8-----	: ATL.
Direct Blue 14-----	: ATL, CGY.
Direct Blue 15-----	: ATL, S, VPC.
Direct Blue 22-----	: VPC.
Direct Blue 25-----	: CK.
Direct Blue 67-----	: ATL.
Direct Blue 71-----	: CK.
*Direct Blue 75-----	: CGY, CK, S.
Direct Blue 76-----	: BAS, CK.
Direct Blue 79-----	: S.
*Direct Blue 80-----	: ATL, BAS, CGY, CK, FAB.
*Direct Blue 86-----	: ATL, CGY, CK, S, VPC.
Direct Blue 91-----	: CGY.
Direct Blue 98-----	: ATL, CK, FAB.
Direct Blue 108-----	: ATL.
Direct Blue 120, 120:1, 120:2, and 120:3-----	: FAB.
Direct Blue 160-----	: CGY, CK.
Direct Blue 189-----	: CGY, CK.
Direct Blue 191-----	: CK.
*Direct Blue 199-----	: BAS, CGY, VPC.
*Direct Blue 218-----	: CGY, CK, FAB, VPC.
Direct Blue 261-----	: S.
Direct Blue 267-----	: S.
Direct Blue 269-----	: VPC.
Direct Blue 279-----	: VPC.
Direct Blue 281-----	: CGY.
Direct Blue 283-----	: ATL.
Direct Blue 286-----	: ATL.
*Direct blue dyes, all other-----	: ATL, BAS, CGY, CK, FAB, VPC.
DIRECT GREEN DYES:	
Direct Green 1-----	: FAB.
Direct Green 92-----	: ATL.
Direct green dyes, all other-----	: FAB.

TABLE 2.--DYES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED,  
IDENTIFIED BY MANUFACTURER, 1985--CONTINUED

DYES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
DIRECT DYES--CONTINUED	
*DIRECT BROWN DYES:	
Direct Brown 44-----	FAB.
Direct Brown 229-----	ATL.
Direct Brown 230-----	ATL.
Direct Brown 231-----	ATL.
Direct Brown 232-----	ATL.
Direct Brown 238-----	ATL.
Direct brown dyes, all other-----	BAS, CK, FAB.
*DIRECT BLACK DYES:	
Direct Black 4-----	FAB.
Direct Black 19-----	ATL, CGY.
*Direct Black 22-----	ATL, CGY, CK, FAB, VPC.
*Direct Black 80-----	ATL, CGY, CK, FAB.
Direct Black 165-----	ATL.
Direct Black 170-----	ATL.
*Direct black dyes, all other-----	ATL, CGY, CK, FAB, VPC.
DISPERSE DYES	
*DISPERSE YELLOW DYES:	
Disperse Yellow 3-----	CGY, CK.
Disperse Yellow 23-----	CGY, CK, S.
Disperse Yellow 34-----	EKT.
Disperse Yellow 42-----	CGY, SDC.
Disperse Yellow 54-----	BAS, CGY, VPC.
Disperse Yellow 58-----	BAS.
Disperse Yellow 64-----	CGY.
Disperse Yellow 67-----	CGY.
Disperse Yellow 77-----	VPC.
Disperse Yellow 86-----	EKT.
Disperse Yellow 88-----	EKT.
Disperse Yellow 99-----	EKT.
Disperse Yellow 108-----	EKT.
Disperse Yellow 125-----	SDC.
Disperse Yellow 126-----	ICI.
Disperse Yellow 198-----	BAS.
Disperse Yellow 200-----	EKT.
Disperse Yellow 210-----	S.
Disperse Yellow 219-----	S, SDC.
Disperse yellow dyes, all other-----	BAS, CK, ICI, VPC.

TABLE 2.--DYES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED,  
IDENTIFIED BY MANUFACTURER, 1985--CONTINUED

DYES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
DISPERSE DYES--CONTINUED	
*DISPERSE ORANGE DYES:	
Disperse Orange 3-----	: CK.
Disperse Orange 5-----	: ATL.
Disperse Orange 17-----	: ATL.
*Disperse Orange 25 and 25:1-----	: ATL, CGY, CK, EKT, ICI, VPC.
Disperse Orange 29-----	: ATL, CK, S, SDC.
*Disperse Orange 30-----	: ATL, CGY, CK, S.
*Disperse Orange 37-----	: ATL, CGY, CK, EKT.
Disperse Orange 41-----	: CGY, S.
*Disperse Orange 44 and 44:1-----	: CGY, CK, S, SDC.
Disperse Orange 73-----	: BAS.
Disperse Orange 79-----	: CGY.
Disperse Orange 88-----	: SDC.
Disperse Orange 89-----	: CK.
Disperse Orange 94-----	: S, SDC.
Disperse Orange 129-----	: SDC.
Disperse Orange 136-----	: EKT.
Disperse Orange 138-----	: EKT.
Disperse Orange 145-----	: EKT.
Disperse orange dyes , all other-----	: CGY, CK.
*DISPERSE RED DYES:	
*Disperse Red 1-----	: ATL, CGY, CK, EKT.
*Disperse Red 5-----	: ATL, CGY, CK.
Disperse Red 9-----	: CGY.
Disperse Red 13-----	: ATL.
Disperse Red 15-----	: CGY.
Disperse Red 17-----	: ATL, CGY, CK.
Disperse Red 22-----	: MRT.
Disperse Red 30-----	: CGY, EKT.
Disperse Red 35-----	: EKT.
Disperse Red 50-----	: CGY, CK.
Disperse Red 55-----	: BAS, CGY, VPC.
Disperse Red 60-----	: BAS, CGY, VPC.
Disperse Red 65-----	: CGY, CK.
*Disperse Red 73-----	: ATL, CK, ICI, S.
Disperse Red 82-----	: CGY, VPC.
Disperse Red 86-----	: CGY.
Disperse Red 88-----	: EKT.
Disperse Red 90-----	: VPC.
Disperse Red 91-----	: BAS.
Disperse Red 117-----	: EKT.
Disperse Red 128-----	: CGY.

TABLE 2.--DYES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED,  
IDENTIFIED BY MANUFACTURER, 1985--CONTINUED

DYES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
DISPERSE DYES--CONTINUED	
*DISPERSE RED DYES--CONTINUED	
*Disperse Red 133-----	: CGY, EKT, VPC.
Disperse Red 135-----	: CGY, CK.
Disperse Red 136-----	: EKT.
Disperse Red 137-----	: EKT.
Disperse Red 153-----	: FAB, S, SDC.
Disperse Red 159-----	: VPC.
Disperse Red 167aNd 167:1-----	: BAS, CGY, CK, S.
*Disperse Red 177-----	: CK, ICI, S, SDC, VPC.
*Disperse Red 179-----	: BAS, CGY, CK, S.
Disperse Red 195-----	: S, SDC.
Disperse Red 207-----	: CGY.
Disperse Red 263-----	: BAS.
Disperse Red 273-----	: S, SDC.
Disperse Red 274-----	: S, SDC.
Disperse Red 278-----	: ICI.
Disperse Red 305-----	: EKT.
Disperse Red 307-----	: EKT.
Disperse Red 309-----	: EKT.
Disperse Red 311-----	: ICI.
Disperse Red 313-----	: S, SDC.
Disperse Red 316-----	: S.
Disperse Red 319-----	: CK.
Disperse Red 325-----	: CGY, CK.
Disperse Red 333-----	: S, SDC.
Disperse Red 339-----	: EKT.
Disperse Red 340-----	: EKT.
Disperse Red 341-----	: EKT.
Disperse Red 345-----	: CK.
Disperse red dyes, all other-----	: BAS, CGY, CK, EKT, VPC.
*DISPERSE VIOLET DYES:	
Disperse Violet 1-----	: CK.
Disperse Violet 27-----	: CGY.
Disperse Violet 28-----	: CK.
Disperse Violet 33-----	: ICI, S.
Disperse Violet 36-----	: S, SDC.
Disperse Violet 40-----	: VPC.
Disperse Violet 60-----	: S, SDC.
Disperse Violet 64-----	: SDC.
Disperse Violet 91-----	: CGY.
Disperse violet dyes, all other-----	: CGY.



TABLE 2.--DYES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED,  
IDENTIFIED BY MANUFACTURER, 1985--CONTINUED

DYES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
DISPERSE DYES--CONTINUED	
*DISPERSE BLUE DYES:	
*Disperse Blue 3-----	CGY, CK, EKT.
Disperse Blue 7-----	CGY.
Disperse Blue 26-----	VPC.
Disperse Blue 27-----	EKT.
Disperse Blue 56-----	S, VPC.
Disperse Blue 60-----	BAS, CGY, VPC.
Disperse Blue 62-----	EKT.
*Disperse Blue 64-----	CGY, EKT, S.
Disperse Blue 72-----	BAS.
Disperse Blue 73-----	S.
Disperse Blue 77-----	EKT.
*Disperse Blue 79-----	ATL, BAS, CGY, EKT, HST, ICI, S, SDC, STC, VPC.
Disperse Blue 81-----	VPC.
Disperse Blue 86-----	VPC.
Disperse Blue 95-----	HST.
Disperse Blue 102-----	CK, EKT.
Disperse Blue 118-----	EKT.
Disperse Blue 122-----	ICI.
Disperse Blue 148-----	BAS.
Disperse Blue 165-----	CGY, VPC.
Disperse Blue 183-----	S.
Disperse Blue 200-----	ICI.
Disperse Blue 281-----	CGY, S, SDC.
Disperse Blue 284-----	ICI.
Disperse Blue 291-----	S, SDC.
Disperse Blue 337-----	EKT.
Disperse Blue 338-----	EKT.
*Disperse blue dyes, all other-----	BAS, CGY, CK, EKT, ICI, VPC.
DISPERSE GREEN DYES:	
Disperse Green 9-----	ICI.
Disperse green dyes, all other-----	CGY, CK.
DISPERSE BROWN DYES:	
*Disperse Brown 1-----	ATL, CK, ICI, S, SDC.
Disperse Brown 2-----	CK, SDC.
Disperse Brown 10-----	SDC.
Disperse Brown 18-----	S, SDC.
Disperse Brown 22-----	EKT.
Disperse brown dyes, all other-----	CK, EKT, ICI.
DISPERSE BLACK DYES	
Disperse Black 1-----	CGY.
*Disperse Black 9-----	ATL, CGY, EKT.

TABLE 2.--DYES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED,  
IDENTIFIED BY MANUFACTURER, 1985--CONTINUED

DYES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
DISPERSE DYES--CONTINUED	
DISPERSE BLACK DYES--CONTINUED	
Disperse Black 33-----	CGY.
*Disperse black dyes, all other-----	BAS, CGY, CK, VPC.
FIBER-REACTIVE DYES	
REACTIVE YELLOW DYES	
Reactive Yellow 6-----	CGY.
Reactive Yellow 7-----	ICI.
Reactive Yellow 15-----	HST.
Reactive Yellow 17-----	HST.
Reactive Yellow 18-----	ICI.
Reactive Yellow 22-----	ICI.
Reactive Yellow 37-----	HST.
Reactive Yellow 42-----	HST.
Reactive Yellow 57-----	HST.
Reactive Yellow 86-----	ICI.
Reactive Yellow 133-----	ICI.
Reactive Yellow 135-----	ICI.
Reactive yellow dyes, all other-----	HST, ICI, STC.
REACTIVE ORANGE DYES:	
Reactive Orange 1-----	ICI.
Reactive Orange 4-----	ICI.
Reactive Orange 11-----	S.
Reactive Orange 12-----	ICI.
Reactive Orange 13-----	ICI.
Reactive Orange 14-----	ICI.
Reactive Orange 16-----	ATL, CK, HST.
Reactive Orange 20-----	CK.
Reactive Orange 78-----	HST.
Reactive Orange 84-----	ICI.
Reactive Orange 86-----	ICI.
Reactive orange dyes, all other-----	ICI.
REACTIVE RED DYES:	
Reactive Red 2-----	CK, ICI.
Reactive Red 5-----	ICI.
Reactive Red 11-----	CK, ICI.
Reactive Red 21-----	HST, STC.
Reactive Red 29-----	ICI.
Reactive Red 31-----	ICI.
Reactive Red 33-----	ICI.
Reactive Red 35-----	HST, STC, ICI.

TABLE 2.--DYES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED,  
IDENTIFIED BY MANUFACTURER, 1985--CONTINUED

DYES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
FIBER REACTIVE DYES--CONTINUED	
REACTIVE RED DYES--CONTINUED	
Reactive Red 43-----	CK.
Reactive Red 49-----	HST, STC.
Reactive Red 94-----	HST.
Reactive Red 106-----	HST.
Reactive Red 120-----	CK, ICI.
Reactive Red 141-----	ICI.
Reactive Red 180-----	HST.
Reactive red dyes, all other-----	CGY, HST, ICI, STC.
REACTIVE VIOLET DYES:	
Reactive Violet 5-----	HST, STC.
Reactive violet dyes, all other-----	HST, ICI.
REACTIVE BLUE DYES:	
Reactive Blue 3-----	ICI.
Reactive Blue 4-----	CK, ICI.
Reactive Blue 5-----	ICI.
Reactive Blue 7-----	CGY.
Reactive Blue 13-----	ICI.
Reactive Blue 19-----	HST.
Reactive Blue 21-----	HST.
Reactive Blue 38-----	HST, STC.
Reactive Blue 71-----	ICI.
Reactive Blue 89-----	HST, ICI.
Reactive Blue 173-----	ICI.
Reactive Blue 174-----	ICI.
Reactive Blue 199-----	ICI.
Reactive blue dyes, all other-----	CGY, HST, ICI, STC.
REACTIVE GREEN DYES:	
Reactive Green 12-----	S.
Reactive Green 19-----	ICI.
Reactive green dyes, all other-----	HST.
REACTIVE BROWN DYES:	
Reactive Brown 1-----	ICI.
Reactive Brown 17-----	ICI.
Reactive Brown 18-----	HST.
REACTIVE BLACK DYES:	
Reactive Black 5-----	ATL, CK, HST, STC.
Reactive Black 9-----	ICI.

TABLE 2.—DYES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED,  
IDENTIFIED BY MANUFACTURER, 1985—CONTINUED

DYES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
<b>FLUORESCENT BRIGHTENERS</b>	
Fluorescent Brightener 22-----	: CGY.
Fluorescent Brightener 24-----	: CGY.
Fluorescent Brightener 28-----	: CGY, SDH, VPC.
Fluorescent Brightener 46-----	: CGY.
Fluorescent Brightener 49-----	: S.
Fluorescent Brightener 52-----	: S.
Fluorescent Brightener 61-----	: ACY.
Fluorescent Brightener 71-----	: CGY.
Fluorescent Brightener 102-----	: CGY.
Fluorescent Brightener 128-----	: SDH.
Fluorescent Brightener 134-----	: CGY.
Fluorescent Brightener 191-----	: VPC.
Fluorescent Brightener 200-----	: VPC.
Fluorescent Brightener 290-----	: S.
Fluorescent brighteners, all other-----	: ACY, CGY, S, VPC, X.
<b>FOOD DRUG, AND COSMETIC COLORS</b>	
<b>*FOOD, DRUG, AND COSMETIC DYES:</b>	
Food, Drug, and Cosmetic Blue 1-----	: KON, SDH, WJ.
Food, Drug, and Cosmetic Blue 2-----	: KON, SDH, WJ.
Food, Drug, and Cosmetic Green 3-----	: WJ.
Food, Drug, and Cosmetic Red 2-----	: WJ.
*Food, Drug, and Cosmetic Red 3-----	: KON, SDH, STG, WJ.
Food, Drug, and Cosmetic Red 4-----	: CK, WJ.
Food, Drug, and Cosmetic Red 40-----	: KON, SDH, STG, WJ.
*Food, Drug, and Cosmetic Yellow 5-----	: KON, MRX, STG, WJ.
Food, Drug, and Cosmetic Yellow 6-----	: CK, KON, SDH, STG, WJ.
<b>*DRUG AND COSMETIC DYES</b>	
Drug and Cosmetic Green 5-----	: CK, KON.
Drug and Cosmetic Green 6-----	: KON.
Drug and Cosmetic Green 8-----	: SDH.
Drug and Cosmetic Orange 4-----	: KON.
Drug and Cosmetic Orange 5-----	: SDH, SNA, TMS.
Drug and Cosmetic Orange 17-----	: SNA.
*Drug and Cosmetic Red 6-----	: KON, MRX, SDH, SNA, TMS.
*Drug and Cosmetic Red 7-----	: KON, MRX, SDH, SNA, TMS.
Drug and Cosmetic Red 9-----	: SNA.
Drug and Cosmetic Red 17-----	: KON.
Drug and Cosmetic Red 19-----	: SNA.
Drug and Cosmetic Red 21-----	: KON, SNA.
Drug and Cosmetic Red 22-----	: SDH, WJ.

TABLE 2.--DYES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED,  
IDENTIFIED BY MANUFACTURER, 1985--CONTINUED

DYES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
FOOD DRUG, AND COSMETIC COLORS--CONTINUED	
*DRUG AND COSMETIC DYES--CONTINUED	
*Drug and Cosmetic Red 27-----	MRX, SDH, SNA, TMS.
Drug and Cosmetic Red 28-----	SDH.
Drug and Cosmetic Red 30-----	KON, MRX, SNA, WJ.
*Drug and Cosmetic Red 33-----	CK, KON, SNA, WJ.
Drug and Cosmetic Red 34-----	KON, SNA.
Drug and Cosmetic Red 36-----	SDH, SNA, TMS, WJ.
Drug and Cosmetic Yellow 5-----	KON.
Drug and Cosmetic Yellow 6-----	KON.
Drug and Cosmetic Yellow 8-----	KON.
*Drug and Cosmetic Yellow 10-----	CK, KON, SDH, WJ.
Drug and Cosmetic Yellow 11-----	KON.
*DRUG AND COSMETIC DYES, EXTERNAL:	
External Drug and Cosmetic Orange 3-----	CK, KON.
External Drug and Cosmetic Yellow 7-----	KON.
MORDANT DYES	
MORDANT YELLOW DYES:	
Mordant Yellow 8-----	FAB.
Mordant Yellow 20-----	FAB.
MORDANT ORANGE DYES:	
Mordant Orange 1-----	FAB.
Mordant Orange 6-----	ATL.
MORDANT RED DYES:	
Mordant Red 7-----	ATL.
Mordant Red 9-----	MRX.
Mordant Red 11-----	VPC.
MORDANT BROWN DYES:	
Mordant Brown 1-----	ATL, FAB.
Mordant Brown 18-----	FAB.
Mordant Brown 33-----	ATL, FAB.
Mordant Brown 40-----	FAB.
Mordant Brown 70-----	FAB.
MORDANT BLACK DYES:	
Mordant Black 9-----	ATL.
Mordant Black 11-----	CGY.
SOLVENT DYES	
*SOLVENT YELLOW DYES:	
Solvent Yellow 3-----	PSC.
Solvent Yellow 13-----	FAB.

IV -- DYES

TABLE 2.—DYES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED,  
IDENTIFIED BY MANUFACTURER; 1985—CONTINUED

DYES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
SOLVENT DYES—CONTINUED	
*SOLVENT YELLOW DYES—CONTINUED	
Solvent Yellow 14	ATL, PSC.
Solvent Yellow 16	PSC.
Solvent Yellow 33	ACY, CIC.
Solvent Yellow 40	CK.
Solvent Yellow 42	ATL, CK.
Solvent Yellow 43	DGO, MRT.
Solvent Yellow 44	DGO.
Solvent Yellow 56	PSC.
Solvent Yellow 72	PSC.
Solvent Yellow 94	SDH.
Solvent Yellow 107	MRT.
Solvent Yellow 109	MRT.
Solvent Yellow 131	DGO.
Solvent Yellow 135	X.
Solvent Yellow 143	MRT.
Solvent Yellow 160	X.
Solvent Yellow 161	MRT.
Solvent Yellow 163	MRT.
Solvent Yellow 166	CIC.
Solvent Yellow 167	CIC.
Solvent yellow dyes, all other	CK, MIL, MRT.
*SOLVENT ORANGE DYES:	
Solvent Orange 2	ATL, PSC.
Solvent Orange 3	ATL, PSC.
Solvent Orange 7	PSC.
Solvent Orange 20	ATL, FAB.
Solvent Orange 23	CK.
Solvent Orange 25	MRT.
Solvent Orange 31	PSC.
Solvent Orange 60	CIC.
Solvent Orange 73	MRT.
Solvent Orange 74	MRT.
Solvent Orange 76	MRT.
Solvent Orange 77	MRT.
Solvent Orange 97	MRT.
Solvent orange dyes, all other	MIL, MRT, PSC.
*SOLVENT RED DYES:	
Solvent Red 1	PSC.
Solvent Red 5	ATL.
Solvent Red 23	PSC.
Solvent Red 24	ATL, PSC.

TABLE 2.--DYES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED,  
IDENTIFIED BY MANUFACTURER, 1985--CONTINUED

DYES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
SOLVENT DYES--CONTINUED	
SOLVENT RED DYES--CONTINUED	
Solvent Red 26-----	PSC.
Solvent Red 27-----	PSC.
Solvent Red 49-----	ACY.
Solvent Red 68-----	ATL, CK, MRT.
Solvent Red 74-----	ATL.
Solvent Red 111-----	MRT.
Solvent Red 125-----	CK.
Solvent Red 164-----	MRT.
Solvent Red 165-----	MRT.
Solvent Red 166-----	MRT.
Solvent Red 168-----	MRT.
Solvent Red 169-----	MRT.
Solvent Red 172-----	MRT.
Solvent Red 173-----	MRT.
Solvent Red 175-----	MRT.
Solvent Red 207-----	MRT.
Solvent Red 208-----	MRT.
Solvent Red 209-----	MRT.
Solvent Red 210-----	MRT.
Solvent Red 222-----	CIC.
Solvent red dyes, all other-----	MIL, SDH.
SOLVENT VIOLET DYES:	
Solvent Violet 8-----	DSC.
Solvent Violet 9-----	DSC, MRT.
Solvent Violet 13-----	CK.
Solvent Violet 14-----	MRT.
Solvent violet dyes, all other-----	MIL.
*SOLVENT BLUE DYES:	
Solvent Blue 3-----	PSG.
Solvent Blue 4-----	DSC.
Solvent Blue 5-----	DSC.
Solvent Blue 23-----	BAS.
Solvent Blue 35-----	MRT.
Solvent Blue 36-----	MRT.
Solvent Blue 38-----	TNI.
Solvent Blue 43-----	ATL.
Solvent Blue 56-----	VPC.
Solvent Blue 59-----	VPC.
Solvent Blue 98-----	MRT.
Solvent Blue 99-----	MRT.
Solvent Blue 100-----	MRT.

TABLE 2.—DYES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED,  
IDENTIFIED BY MANUFACTURER, 1985—CONTINUED

DYES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
SOLVENT DYES—CONTINUED	
*SOLVENT BLUE DYES—CONTINUED	
Solvent Blue 102-----	MRT.
Solvent Blue 128-----	MRT.
Solvent Blue 129-----	MRT.
Solvent blue dyes, all other-----	CK, MIL.
SOLVENT GREEN DYES:	
Solvent Green 1-----	DSC.
SOLVENT BROWN DYES:	
Solvent Brown 12-----	PSC.
Solvent Brown 20-----	ATL.
Solvent Brown 22-----	PSC.
Solvent Brown 38-----	FAB.
Solvent Brown 51-----	MRT.
Solvent Brown 52-----	MRT.
SOLVENT BLACK DYES:	
Solvent Black 7-----	OCC, PSC.
Solvent Black 13-----	CK.
Solvent Black 26-----	ATL, FAB.
Solvent Black 47-----	MRT.
Solvent Black 48-----	MRT.
Solvent Black 49-----	MRT.
SULFUR DYES	
SULFUR YELLOW DYES:	
Leuco Sulfur Yellow 1-----	SDC.
Leuco Sulfur Yellow 17-----	SDC.
Leuco Sulfur Yellow 21-----	SDC.
Leuco Sulfur Yellow 22-----	SDC.
SULFUR ORANGE DYES:	
Sulfur Orange 1-----	SDC.
SULFUR RED DYES:	
Leuco Sulfur Red 14-----	SDC.
SULFUR BLUE DYES:	
Leuco Sulfur Blue 7-----	SDC.
Leuco Sulfur Blue 13-----	SDC.
Sulfur blue dyes, all other-----	VPC.
SULFUR GREEN DYES:	
Leuco Sulfur Green 2-----	SDC.
Leuco Sulfur Green 3-----	SDC.
Leuco Sulfur Green 16-----	SDC.
Leuco Sulfur Green 34-----	SDC.
Leuco Sulfur Green 35-----	SDC.
Leuco Sulfur Green 36-----	SDC.



TABLE 2.--DYES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED,  
IDENTIFIED BY MANUFACTURER, 1985--CONTINUED

DYES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
SULFUR DYES--CONTINUED	
SULFUR BROWN DYES:	
Leuco Sulfur Brown 1, 1:1-----	SDC.
Leuco Sulfur Brown 3-----	SDC.
Leuco Sulfur Brown 10-----	SDC.
Leuco Sulfur Brown 31-----	SDC.
Leuco Sulfur Brown 37-----	SDC.
Leuco Sulfur Brown 52-----	SDC.
Leuco Sulfur Brown 95-----	SDC.
Leuco Sulfur Brown 96-----	SDC.
SULFUR BLACK DYES:	
Leuco Sulfur Black 1-----	SDC.
Leuco Sulfur Black 2-----	SDC.
Leuco Sulfur Black 18-----	SDC.
Solubilized Sulfur Black 2-----	SDC.
Sulfur Black 11, 11:1-----	SDC.
Sulfur black dyes, all other-----	VPC.
VAT DYES	
*VAT YELLOW DYES:	
Vat Yellow 2, 8-1/2%-----	SDC, VPC.
Vat Yellow 22, 10%-----	VPC.
Vat Yellow 33, 15%-----	CGY.
Vat Yellow 51-----	SDC.
*VAT ORANGE DYES:	
Vat Orange 1, 20%-----	CGY, SDC.
Vat Orange 2, 12%-----	BAS, CGY.
Vat Orange 7, 11%-----	CGY.
Vat Orange 15, 10%-----	VPC.
Vat orange dyes, all other-----	CGY.
*VAT RED DYES:	
Vat Red 10, 18%-----	BAS.
Vat Red 13, 11%-----	CGY, SDC.
Vat Red 15, 10%-----	HST.
Vat Red 29, 18%-----	SDC.
Vat Red 32, 20%-----	VPC.
Vat red dyes, all other-----	HST.
VAT VIOLET DYES:	
Vat Violet 1, 11%-----	CGY, VPC.
Vat Violet 13, 6-1/4%-----	BAS, CGY.
Vat Violet 21-----	VPC.

TABLE 2.--DYES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED,  
IDENTIFIED BY MANUFACTURER, 1985--CONTINUED

DYES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
VAT DYES--CONTINUED	
*VAT BLUE DYES:	
Vat Blue 1, 20%	BAS, BCC, PSC.
Vat Blue 6, 8-1/3%	BAS, CGY, SDC.
Vat Blue 16, 16%	BAS, CGY.
Vat Blue 18, 13%	CGY.
Vat Blue 19	BAS.
Vat Blue 20, 14%	CGY.
Vat Blue 29	BAS.
Vat Blue 43	SDC.
Vat Blue 66	BAS.
Vat blue dyes, all other	BAS, CGY
*VAT GREEN DYES:	
Vat Green 1, 6%	BAS, CGY, SDC.
Vat Green 3, 10%	BAS, CGY, SDC.
Vat Green 7	SDC.
Vat Green 9, 12-1/2%	CGY.
Vat Green 32	VPC.
Vat green dyes, all other	CGY.
*VAT BROWN DYES:	
Vat Brown 1, 11%	CGY, SDC, VPC.
Vat Brown 3, 11%	CGY, SDC, VPC.
Vat Brown 11, 12%	CGY.
Vat Brown 13, 17%	CGY.
Vat Brown 57, 12.8%	CGY, HST.
Vat brown dyes, all other	CGY, VPC.
*VAT BLACK DYES:	
Vat Black 16	CGY.
Vat Black 22, 19%	CGY.
Vat Black 25, 12-1/2%	BAS, CGY, SDC.
Vat Black 27, 12-1/2%	CGY.
Vat black dyes, all other	CGY.
MISCELLANEOUS DYES	
*All other dyes	CGY, DAN, MIL, MRT.

TABLE 3.--DYES: DIRECTORY OF MANUFACTURERS, 1985

## ALPHABETICAL DIRECTORY BY CODE

[Names of manufacturers that reported production and/or sales of dyes to the U.S. International Trade Commission for 1985 are listed below in the order of their identification codes as used in table 2]

CODE :	NAME OF COMPANY	CODE :	NAME OF COMPANY
ACY :	American Cyanamid Co.	LVR :	C. Lever Co., Inc.
ALL :	Alliance Chemical, Inc.		
ATL :	Atlantic Industries, Inc.	MRX :	Johnson Mattney, Inc., Pigments Dept.
		MIL :	Milliken & Co., Milliken Chemical Co.
BAS :	BASF Corp.	MRT :	Morton-Thiokol, Inc., Morton Chemical Div.
BCG :	Buffalo Color Corp.		
		OGC :	Orient Chemical Corp.
CGY :	Ciba-Geigy Corp.		
CIG :	Color Chem International Corp.	PCW :	Pfister Chemical, Inc.
CK :	Crompton & Knowles Corp.	PSC :	Passaic Color & Chemical Co.
		PSG :	PMC Specialities Group, Inc.
DAN :	Dan River, Inc., Chemical Products Div.		
DCO :	Day-Glo Color Corp.	S :	Sandoz, Inc., Colors & Chemicals Div.
DSC :	Dye Specialties, Inc.	SDC :	Sandoz Chemical Corp.
		SDH :	Sterling Drug, Inc., Hilton Davis Chemical Co.
EKT :	Eastman Kodak Co., Tennessee Eastman Co. Div.	SNA :	Sun Chemical Corp., Pigments Div.
		STC :	American Hoechst Corp., Sou-Tex Works
FAB :	Fabricolor Manufacturing Corp.	STG :	McCormick & Co., Inc., McCormick/Strange Flavor Div
HST :	American Hoechst Corp., Specialty Products Group, Rhode Island Works	TMS :	Sterling Drug, Inc., Hilton Davis Chemical Co.
		TNI :	Gillette Co., Chemical Div.
ICI :	ICI Americas, Inc., Chemical Div.		
		VPC :	Mobay Chemical Corp., Dyes & Pigments Div.
KOH :	H. Kohnstamm & Co., Inc.		
		WJ :	Warner-Jenkinson Co.

Note.--Complete names, telephone numbers, and addresses of the above reporting companies are listed in table 1 of the appendix.

SYNTHETIC ORGANIC CHEMICALS, 1985  
SECTION V -- ORGANIC PIGMENTS

## STATISTICAL HIGHLIGHTS

Stephen Wanser

202-523-0496

Organic pigments are toners and lakes<sup>1</sup> derived in whole or in part from benzenoid chemicals and colors.

Statistics on production and sales of all organic pigments in 1985 are given in table 1.<sup>2</sup> Individual toners and lakes are identified in this report by the names used in the third edition of the *Colour Index*.

Total production of organic pigments in 1985 was 80.9 million pounds—5.6 percent less than the 85.7 million pounds produced in 1984. Total sales of organic pigments in 1985 amounted to 69.0 million pounds, valued at \$447.7 million, compared with 76.1 million pounds, valued at \$493.0 million, in 1984. In terms of quantity, sales of organic pigments in 1985 were 9.3 percent lower than in 1984; in terms of value, sales in 1985 were 9.2 percent lower than in 1984. Changes in U.S. production of pigment has followed overall changes in U.S. economic activity during 1981-85 (see figure 1).

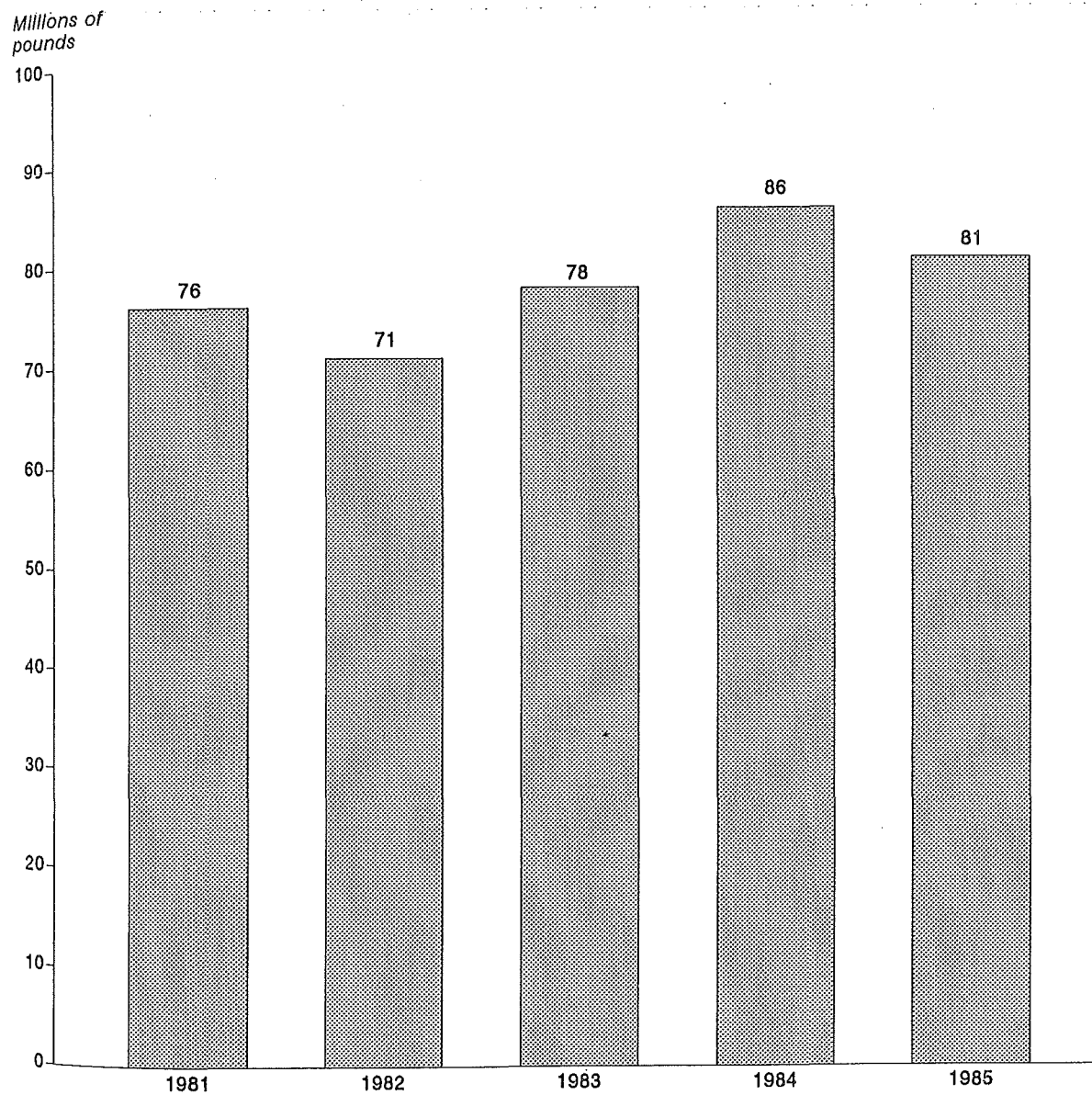
Production of toners in 1985 amounted to 80.3 million pounds—5.5 percent less than the 84.9 million pounds reported in 1984. Sales in 1985 were 68.5 million pounds, valued at \$440.8 million, compared with 75.5 million pounds valued at \$488.6 million, in 1984. Sales in 1985 were 9.3 percent lower than those in 1984 in terms of quantity, and 9.8 percent lower in terms of value. The individual toners listed in the report which were produced in the largest quantities in 1985 were Pigment Yellow 12, 13.9 million pounds; Pigment Blue 15.3, beta form, 9.5 million pounds; Pigment Red 49:1 barium toner, 6.0 million pounds; Pigment Red 57:1 calcium toner, 8.5 million pounds; Pigment Red 53:1, barium toner, 4.3 million pounds; and Pigment Yellow 14, 4.4 million pounds.

Production of lakes totaled 595,000 pounds in 1985, 24 percent lower than the 782,000 pounds reported for 1984. Sales of lakes in 1985 amounted to 495,000 pounds, valued at \$3.9 million. In terms of quantity, sales of lakes in 1985 were 19 percent lower than in 1984; in terms of value, sales in 1985 were 10 percent lower than in 1984.

<sup>1</sup> Toners and lakes are essentially the same in their final form; they differ in the method of preparation. A lake is an organic pigment produced by the interaction of a soluble dye, a precipitant, and an absorptive inorganic substrate. A toner is an insoluble dye produced as a powder; some toners are extended by the inclusion of a solid diluent.

<sup>2</sup> See also table 2 which lists these products and identifies the manufacturers by codes. The codes are listed in table 1.

Figure 1.—Organic pigments.



Source: U.S. International Trade Commission, *Synthetic Organic Chemicals: United States Production and Sales*.

V -- ORGANIC PIGMENTS

TABLE 1.--ORGANIC PIGMENTS: U.S. PRODUCTION AND SALES, 1985

[Listed below are the organic pigments for which any reported data on production or sales may be published. (Leaders (...)) are used where the reported data are accepted in confidence and may not be published or where no data were reported.) Table 2 lists all organic pigments for which data on production and/or sales were reported and identifies the manufacturers of each]

ORGANIC PIGMENT	PRODUCTION		SALES	
		QUANTITY	Value <sup>1</sup>	UNIT VALUE <sup>2</sup>
	<u>1,000 pounds dry basis<sup>3</sup></u>	<u>1,000 pounds dry basis<sup>3</sup></u>	<u>1,000 dollars</u>	<u>Per pound</u>
Grand Total-----	80,858	69,034	447,709	\$6.44
<b>TONERS</b>				
Total-----	80,263	68,539	440,849	6.43
Yellow toners, total-----	22,516	17,627	84,116	4.47
Acetoacetarylide yellows:				
Pigment Yellow 1, C.I. 11 680-----	99	115	663	5.76
Pigment Yellow 3, C.I. 11 710-----	177	175	992	5.65
Pigment Yellow 65, C.I. 11 740-----	106	116	942	8.11
Pigment Yellow 74, C.I. 11 741-----	938	986	6,639	6.73
Diarylide yellows:				
Pigment Yellow 12, C.I. 21 090-----	13,892	9,695	39,674	4.09
Pigment Yellow 13, C.I. 21 100-----	313	250	1,609	6.43
Pigment Yellow 14, C.I. 21 095-----	4,359	3,549	14,948	4.21
Pigment Yellow 17, C.I. 21 105-----	570	513	3,085	6.02
Pigment Yellow 83, C.I. 21 108-----	776	835	7,420	8.88
All other-----	1,287	1,393	8,144	5.85
Orange toners, total-----	2,407	2,296	15,014	6.54
Pigment Orange 5, C.I. 21 075-----	759	725	3,893	5.37
Pigment Orange 13, C.I. 21 110-----	128	118	1,113	9.42
Pigment Orange 16, C.I. 21 160-----	680	572	3,617	6.32
Pigment Orange 46, C.I. 15 602-----	615	680	3,298	4.85
All other-----	225	201	3,093	15.35
Red toners, total-----	29,171	24,358	164,623	6.76
Naphthol reds, total-----	1,756	1,828	12,932	7.07
Pigment Red 2, C.I. 12 120-----	47	48	505	10.59
Pigment Red 5, C.I. 12 490-----	22	...	...	...
Pigment Red 17, C.I. 12 390-----	45	...	...	...
Pigment Red 23, C.I. 12 355-----	87	81	970	12.04
All other naphthol reds-----	1,555	1,699	11,457	6.74
Pigment Red 3, C.I. 12 120-----	851	888	4,876	5.49
Pigment Red 4, C.I. 12 085-----	79	101	477	4.74
Pigment Red 38, C.I. 12 120-----	150	134	1,495	11.19
Pigment Red 48:1 barium toner, C.I. 15 865-----	721	661	4,141	6.27
Pigment Red 48:2, calcium toner, C.I. 15 865-----	1,441	1,385	8,854	6.40
Pigment Red 48:4, manganese toner, C.I. 15 865-----	214	227	1,804	7.94
Pigment Red 49:1 barium toner, C.I. 15 630-----	5,987	4,529	16,507	3.64
Pigment Red 49:2, calcium toner, C.I. 15 630-----	832	760	3,543	4.66
Pigment Red 52:1, calcium toner, C.I. 15 860-----	703	731	4,584	6.27
Pigment Red 53:1, barium toner, C.I. 15 585-----	4,451	3,943	15,968	4.05
Pigment Red 57:1, calcium toner, C.I. 15 850-----	8,533	6,416	31,069	4.84
Pigment Red 81, PMA, C.I. 45 160-----	363	344	5,352	15.54
All other-----	3,090	2,411	53,021	21.99

See footnotes at end of table.

## SYNTHETIC ORGANIC CHEMICALS, 1985

TABLE 1.--ORGANIC PIGMENTS: U.S. PRODUCTION AND SALES, 1985--CONTINUED

ORGANIC PIGMENT	PRODUCTION	SALES		
		QUANTITY	VALUE <sup>1</sup>	UNIT VALUE <sup>2</sup>
	<u>1,000</u> pounds <u>dry basis</u> <sup>3</sup>	<u>1,000</u> pounds <u>dry basis</u> <sup>3</sup>	<u>1,000</u> dollars	<u>Per</u> pound
TONERS--Continued				
Violet toners, total-----	3,084	2,907	52,030	\$17.90
Pigment Violet 1, PTA, C.I. 45 170-----	43	27	424	15.61
Pigment Violet 3, (PTA)-----	8	8	117	15.41
Pigment Violet 19, C.I. 46 500-----	...	1,758	35,052	19.94
Pigment Violet 23, C.I. 46 500-----	313	304	7,663	25.20
All other-----	2,720	810	8,774	10.83
Blue toners, total-----	20,671	18,856	106,200	5.63
Pigment Blue 1 (PMA)-----	65	51	813	15.85
Pigment Blue 15, alpha form, C.I. 74 160-----	805	733	6,213	8.47
Pigment Blue 15:1, alpha form, C.I. 74 160-----	1,028	977	10,172	10.41
Pigment Blue 15:2, alpha form, C.I. 74 160-----	587	561	5,862	10.44
Pigment Blue 15:3, beta form, C.I. 74 160-----	9,536	8,477	46,490	5.48
All other-----	8,650	8,057	36,650	4.55
Green toners, total-----	2,004	2,094	17,347	8.25
Pigment Green 7, C.I. 74 260-----	...	1,849	14,781	7.99
All other-----	2,004	245	2,566	10.72
Brown and Black toners, total-----	410	401	1,519	3.80
Pigment Brown 5-----	29	...	...	...
All other-----	381	401	1,519	3.80
LAKES				
Total-----	595	495	3,860	7.80
Pigment Red 83, C.I. 58 000-----	27	26	315	12.05
Pigment Violet 5:1, C.I. 58 055-----	72	59	520	8.81
All other lakes-----	496	410	3,025	7.38

<sup>1</sup>The value of sales for toners is reported on a dry-full strength basis and the value of sales for lakes is reported on a dry form basis. All sales value data exclude the additional cost of processing or packaging in commercial forms other than the dry full-strength or dry form.

<sup>2</sup>Calculated from unrounded figures.

<sup>3</sup>Quantities for toners are reported as dry full-strength toner content, excluding the weight of any dispersing agent, vehicle, or extender. Quantities for lakes are reported as dry lake content, excluding the weight of any dispersing agent or vehicle.

Note.--The C.I. (Colour Index) number shown in this report are the identifying number given in the third edition of the *Colour Index*.

The abbreviations PMA and PTA stand for phosphomolybdic and phosphotungstic (including phosphotungstomolybdic) acids, respectively.

TABLE 2.—ORGANIC PIGMENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1985

[CHEMICALS FOR WHICH SEPARATE STATISTICS ARE GIVEN IN TABLE 1 ARE MARKED BELOW WITH AN ASTERISK (\*); CHEMICALS NOT SO MARKED DO NOT APPEAR IN TABLE 1 BECAUSE THE REPORTED DATA ARE ACCEPTED IN CONFIDENCE AND MAY NOT BE PUBLISHED. MANUFACTURERS' IDENTIFICATION CODES SHOWN BELOW ARE TAKEN FROM TABLE 3. AN "X" SIGNIFIES THAT THE MANUFACTURER DID NOT CONSENT TO HIS IDENTIFICATION WITH THE DESIGNATED PRODUCT]

ORGANIC PIGMENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
TONERS	
YELLOW TONERS:	
ACETOACETARYLIDE YELLOWS:	
*Pigment Yellow 1-----	: AMS, BAS, CGY, DUP, GLX, HSH, HST, KCW, KON, : MRX, ROM, SDH, SNA, VPC.
Pigment Yellow 2-----	: KCW.
*Pigment Yellow 3-----	: BNS, HEU, HSH, HST, KCW, SNA, VPC.
Pigment Yellow 42-----	: VPC.
Pigment Yellow 49-----	: ROM.
Pigment Yellow 60-----	: HSH.
Pigment Yellow 65-----	: HSH, SNA, VPC.
Pigment Yellow 73-----	: HSH, HST, SNA, VPC.
*Pigment Yellow 74-----	: BAS, HEU, HSH, HST, SDH, SNA, VPC.
Pigment Yellow 75-----	: HST.
Pigment Yellow 97-----	: HST, STC.
Pigment Yellow 98-----	: HST.
Pigment Yellow 116-----	: VPC.
Acetoacetarylide yellows, all others-----	: HST, KCW, VPC.
DIARYLIDE YELLOWS:	
*Pigment Yellow 12-----	: AMS, APO, BAS, GLX, HSH, HST, ICC, IDC, : IND, POP, ROM, SDH, SNA.
*Pigment Yellow 13-----	: AMS, APO, BAS, GLX, HST, IDC, IND, : ROM, SDH, SNA, VPC.
*Pigment Yellow 14-----	: AMS, BAS, BNS, CGY, GLX, HSH, HST, ICC, IDC, : IND, ROM, SDH, SNA, VPC.
*Pigment Yellow 17-----	: AMS, APO, BAS, CGY, GLX, HSH, HST, ICC, IDC, : IND, ROM, SDH, SNA, VPC.
Pigment Yellow 55-----	: GLX.
*Pigment Yellow 83-----	: BAS, GLX, HST, ICC, IND, ROM, SNA, VPC.
Pigment Yellow 124-----	: GLX.
Pigment Yellow 126-----	: HST.
Pigment Yellow 152-----	: HST.
Diarylide yellows, other-----	: CGY, GLX, ROM, VPC.
YELLOW PIGMENTS, OTHER:	
(Basic Yellow 2), fugitive-----	: MRX.
Pigment Yellow 62-----	: CGY.



TABLE 2.--ORGANIC PIGMENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE  
REPORTED, IDENTIFIED BY MANUFACTURER, 1985--CONTINUED

ORGANIC PIGMENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
TONERS--CONTINUED	
YELLOW TONERS--CONTINUED	
YELLOW PIGMENTS, OTHER--CONTINUED	
Pigment Yellow 110-----	: CGY.
Pigment Yellow 139-----	: VPC.
Pigment Yellow 150-----	: CGY.
ORANGE TONERS:	
Pigment Orange 1-----	: KCW.
Pigment Orange 2-----	: UHL.
*Pigment Orange 5-----	: CGY, HSH, HST, SDH, SNA.
*Pigment Orange 13-----	: BAS, CGY, HSH, IND, ROM, SNA, VPC.
Pigment Orange 15-----	: BNS, CGY.
*Pigment Orange 16-----	: BNS, CGY, GLX, HSH, IND, ROM, VPC.
Pigment Orange 34-----	: GLX, IND, ROM.
Pigment Orange 36-----	: HST, SNA.
Pigment Orange 38-----	: HST, IND.
Pigment Orange 43-----	: HST.
Pigment Orange 46-----	: BAS, SDH, SNA, VPC.
Pigment Orange 48-----	: DUP.
Pigment Orange 49-----	: DUP.
Pigment orange toners, all other-----	: CGY, GLX, VPC.
RED TONERS:	
NAPHTHOL REDS:	
Pigment Red 2-----	: GLX, HSH, HST, KCW.
*Pigment Red 5-----	: CGY, GLX, HSH, ROM.
Pigment Red 7-----	: GLX.
Pigment Red 9-----	: HST.
Pigment Red 13-----	: KCW.
*Pigment Red 17-----	: BNS, IND, ROM, SNA, UHL.
Pigment Red 21-----	: BNS.
Pigment Red 22-----	: CGY, SNA.
*Pigment Red 23-----	: GLX, HSH, KCW, ROM, SNA, UHL.
Pigment Red 31-----	: ROM, SDH.
Pigment Red 112-----	: HST.
Pigment Red 147-----	: HSH.
Pigment Red 170-----	: GLX, HST.
Naphthol reds, all other-----	: GLX, IND, KCW, ROM, SNA, VPC, X.

TABLE 2.--ORGANIC PIGMENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE  
REPORTED, IDENTIFIED BY MANUFACTURER, 1985--CONTINUED

ORGANIC PIGMENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
TONERS--CONTINUED	
RED TONERS--CONTINUED	
RED PIGMENTS, OTHER:	
Pigment Red 1, (dark)-----	GLX.
Pigment Red 1, (light)-----	HSH.
*Pigment Red 3-----	BAS, CGY, HSH, KCW, MRX, SDH, SNA, UHL.
*Pigment Red 4-----	ALE, BAS, CGY, HSH, KCW, MRX, SDH, UHL.
*Pigment Red 38-----	GLX, HSH, HST, SNA, VPC.
Pigment Red 41-----	VPC.
Pigment Red 48-----	CGY, DUP.
*Pigment Red 48:1, (barium)-----	AMS, BAS, CMC, HEU, HSH, MGR, MRX, SNA, UHL.
*Pigment Red 48:2, (calcium)-----	AMS, BAS, CIK, HEU, HSH, MGR, MRX, SDH, SNA, UHL, VPC.
Pigment Red 48:3, (strontium)-----	CGY, HSH.
*Pigment Red 48:4, (manganese)-----	CGY, HEU, HSH, SNA, VPC.
*Pigment Red 49, (sodium)-----	VPC.
Pigment Red 49:1, (barium)-----	AMS, BAS, BNS, BOR, CIK, ICC, IDC, MGR, SDH, SNA, UHL.
*Pigment Red 49:2, (calcium)-----	AMS, BNS, CMC, CIK, ICC, IDC, MGR, SDH, SNA, UHL.
*Pigment Red 52:1, (calcium)-----	BAS, MGR, SNA, UHL.
Pigment Red 52:2, (manganese)-----	BAS, HSH, UHL.
Pigment Red 53, (sodium)-----	ICC.
*Pigment Red 53:1, (barium)-----	ALE, AMS, APO, BAS, BOR, CIK, HSH, ICC, IDC, MGR, MRX, SDH, SNA, UHL.
Pigment Red 57-----	BNS.
*Pigment Red 57:1, (calcium)-----	AMS, APO, BAS, BNS, BOR, CGY, CIK, HEU, HSH, ICC, IDC, KON, MGR, SDH, SNA, UHL.
Pigment Red 63-----	HSH.
*Pigment Red 81, (PMA)-----	MGR, MRX, SNA, UHL.
Pigment Red 81, (PTA)-----	MGR, MRX, UHL.
Pigment Red 88-----	VPC.
Pigment Red 119-----	VPC.
Pigment Red 122-----	SNA.
Pigment Red 123-----	SNA, VPC.
Pigment Red 168-----	VPC.
Pigment Red 179-----	VPC.
Pigment Red 181-----	HST.

V -- ORGANIC PIGMENTS

TABLE 2.--ORGANIC PIGMENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE  
REPORTED, IDENTIFIED BY MANUFACTURER, 1985--CONTINUED

ORGANIC PIGMENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
TONERS--CONTINUED	
RED TONERS--CONTINUED	
PIGMENT RED--CONTINUED	
Pigment Red 188-----	HST.
Pigment Red 190-----	VPC.
Pigment Red 200-----	BAS, SNA.
Pigment Red 202-----	CGY, SNA.
Pigment Red 206-----	CGY.
Pigment Red 207-----	CGY.
Pigment Red 211-----	VPC.
Pigment Red 224-----	VPC.
Pigment red toners, all other-----	CGY, HST, STC, VPC.
VIOLET TONERS:	
Pigment Violet 1, (fugitive)-----	KCW, UHL.
Pigment Violet 1, (PMA)-----	MGR, MRX, UHL.
*Pigment Violet 1, (PTA)-----	MGR, MRX, SNA, UHL.
Pigment Violet 3, (fugitive)-----	KCW, MGR, UHL.
Pigment Violet 3, (PMA)-----	BAS, KON, MGR, MRX, SDH, UHL.
Pigment Violet 3, (PTA)-----	MGR, MRX, UHL.
Pigment Violet 3-----	VPC.
Pigment Violet 4, (fugitive)-----	KCW.
*Pigment Violet 19-----	SNA, VPC.
*Pigment Violet 23-----	HST, IPP, ROM, SDC, SNA, VPC.
Pigment Violet 29-----	VPC.
Pigment Violet 38-----	HST.
Pigment Violet 42-----	CGY.
Pigment violet toners, all other-----	VPC, X.
BLUE TONERS:	
(Basic Blue 7)-----	KCW.
*Pigment Blue 1, (PMA)-----	BNS, MGR, MRX, SDH, UHL.
Pigment Blue 1, (PTA)-----	MRX.
Pigment Blue 2, (PMA)-----	LVR, UHL.
Pigment Blue 9, (PMA)-----	LVR.
Pigment Blue 14, (PMA)-----	LVR, UHL, VPC.
*Pigment Blue 15, (α form)-----	BAS, CGY, HSH, SDH, SNA, USM, VPC.
*Pigment Blue 15:1, (α form)-----	BAS, CGY, SDH, SNA, VPC.
*Pigment Blue 15:2, (α form)-----	BAS, CGY, SDH, SNA, VPC.
*Pigment Blue 15:3, (β form)-----	ALE, AMS, APO, BAS, BMX, CGY, CIK, CUS, DUP, IDC, IPP, MGR, POP, ROM, SDH, SNA, VPC.
Pigment Blue 15:4, (β form)-----	BAS, CGY, CUS, SNA.

TABLE 2.--ORGANIC PIGMENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE  
 REPORTED, IDENTIFIED BY MANUFACTURER, 1985--CONTINUED

ORGANIC PIGMENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
TONERS--CONTINUED	
BLUE TONERS--CONTINUED	
Pigment Blue 19-----	PSG.
Pigment Blue 25-----	GLX.
Pigment Blue 61-----	BAS.
Pigment blue toners, all other-----	VPC.
GREEN TONERS:	
Pigment Green 1, (PMA)-----	MRX, UHL.
Pigment Green 2, (PMA)-----	MRX.
Pigment Green 2, (PTA)-----	UHL.
Pigment Green 4, (PMA)-----	UHL.
*Pigment Green 7-----	ALG, CIK, HEU, POP, SDH, SNA.
Pigment Green 8-----	CGY, KCW.
Pigment Green 10-----	HEU.
Pigment Green 36-----	SNA, VPC.
Pigment green toners, all other-----	UHL, VPC, X.
BROWN TONERS:	
Pigment Brown 1-----	GLX, ROM, VPC.
*Pigment Brown 5-----	GLX, ICC, VPC.
Pigment brown toners, all other-----	SDH, UHL, VPC.
BLACK TONERS:	
Pigment Black 7-----	STC.
Pigment black toners, all other-----	UHL, VPC.
LAKES	
YELLOW LAKES:	
(Acid Yellow 1)-----	KCW.
(Acid Yellow 23)-----	KON, MRX.
ORANGE LAKES:	
Pigment Orange 17-----	KCW.
RED LAKES:	
(Basic Red 1)-----	BNS.
(Basic Red 81, PMA)-----	LVR.
Pigment Red 60:1-----	HSH, MRX, SNA.
*Pigment Red 83-----	CGY, HSH, MRX, UHL.

TABLE 2.--ORGANIC PIGMENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE  
REPORTED, IDENTIFIED BY MANUFACTURER, 1985--CONTINUED

ORGANIC PIGMENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
LAKES--CONTINUED	
VIOLET LAKES:	
(Basic Violet 1)-----	BNS.
(Basic Violet 4)-----	BNS.
(Basic Violet 10)-----	BNS.
(Basic Violet 3, (PMA)-----	LVR.
*Pigment Violet 5:1-----	HSH, MRX, UHL, VPC.
BLUE LAKES:	
(Basic Blue 9)-----	LVR.
(Basic Blue 14, (PMA)-----	LVR.
(Basic Blue 1, (PTA)-----	LVR.
Pigment Blue 24-----	SDH.
GREEN LAKES:	
(Acid Green 3)-----	KCW.
(Basic Green 1, (PMA)-----	LVR.

V -- ORGANIC PIGMENTS

TABLE 3.--ORGANIC PIGMENTS: DIRECTORY OF MANUFACTURERS, 1985

ALPHABETICAL DIRECTORY BY CODE

[Names of manufacturers that reported production and/or sales of organic pigments to the U.S. International Trade Commission for 1985 are listed below in the order of their identification codes as used in table 2]

CODE :	NAME OF COMPANY	CODE :	NAME OF COMPANY
ALC :	Alex Chemical Co.	KCW :	Keystone Color Works, Inc.
ALG :	Allegheny Chemical Corp.	KON :	H. Kohnstamm & Co., Inc.
AHS :	Ridgway Color Co.		
APO :	Apollo Colors, Inc.	LVR :	C. Lever Co., Inc.
BAS :	BASF Corp.	MGR :	Magruder Color Co., Inc.
BHX :	Blu-Max Pigments, Inc.	MRX :	Johnson Mattney, Inc., Pigment Dept.
BUS :	Binney and Smith, Inc.		
		POP :	Pope Chemical Corp.
CGY :	Ciba-Geigy Corp.	PSG :	PMC Specialities Group, Inc.
CIK :	Flint Ink Corp., Cal/Ink Div.		
CHC :	Chromatic Color Corp.	ROM :	Roma Color, Inc.
CUS :	Customs Pigments Corp.		
		SDC :	Sandoz Chemicals Corp.
GLX :	Galaxie Chemical Corp.	SDH :	Sterling Drug, Inc., Hilton Davis Chemical Co.
HEU :	Heubach, Inc.	SNA :	Sun Chemical Corp., Pigment Div.
HSB :	Harshaw/Filtrol Partnership	STC :	American Hoechst Corp., Sou-Tex Works
HST :	American Hoechst Corp., Specialty Products Group, Rhode Island Works		
		TMS :	Sterling Drug, Inc., Hilton Davis Chemical Co.
ICC :	BASF Corp Inmont Div.	UHL :	Paul Uhlich & Co., Inc.
IDC :	Industrial Color, Inc.		
IND :	Indol Color Co., Inc.	VPC :	Mobay Chemical Corp., Dyes & Pigments Div.
IPP :	Spectrachem Corp.		

Note.--Complete names, telephone numbers, and addresses of the above reporting companies are listed in table 1 of the appendix.

SYNTHETIC ORGANIC CHEMICALS, 1985  
SECTION VI -- MEDICINAL CHEMICALS

## STATISTICAL HIGHLIGHTS

Elizabeth R. Nesbitt

202-523-1768

Medicinal chemicals include the medicinal and feed grades of all organic chemicals having therapeutic value, whether obtained by chemical synthesis, by fermentation, by extraction from naturally occurring plant or animal substances, or by refining a technical grade product. They include antibiotics and other anti-infective agents, antihistamines, autonomic drugs, cardiovascular agents, central nervous system depressants and stimulants, hormones and synthetic substitutes, vitamins, and other therapeutic agents for human or veterinary use, and for animal feed supplements. Data for the production of these products during 1981-85 are shown in figure 1.

The table shows statistics for production and sales of medicinal chemicals grouped by pharmacological class. The statistics shown are for bulk chemicals only. Finished pharmaceutical preparations and products put up in pills, capsules, tablets, or other measured doses are excluded.<sup>1</sup> The difference between production and sales reflects inventory changes, processing losses, and captive consumption of medicinal chemicals processed into ethical and proprietary pharmaceutical products by the primary manufacturer. In some instances, the difference may also include quantities for medicinal grade products used as intermediates; for example, penicillin V used as an intermediate in the manufacture of other antibiotics. All quantities are given in terms of 100 percent content of the pure bulk drug.

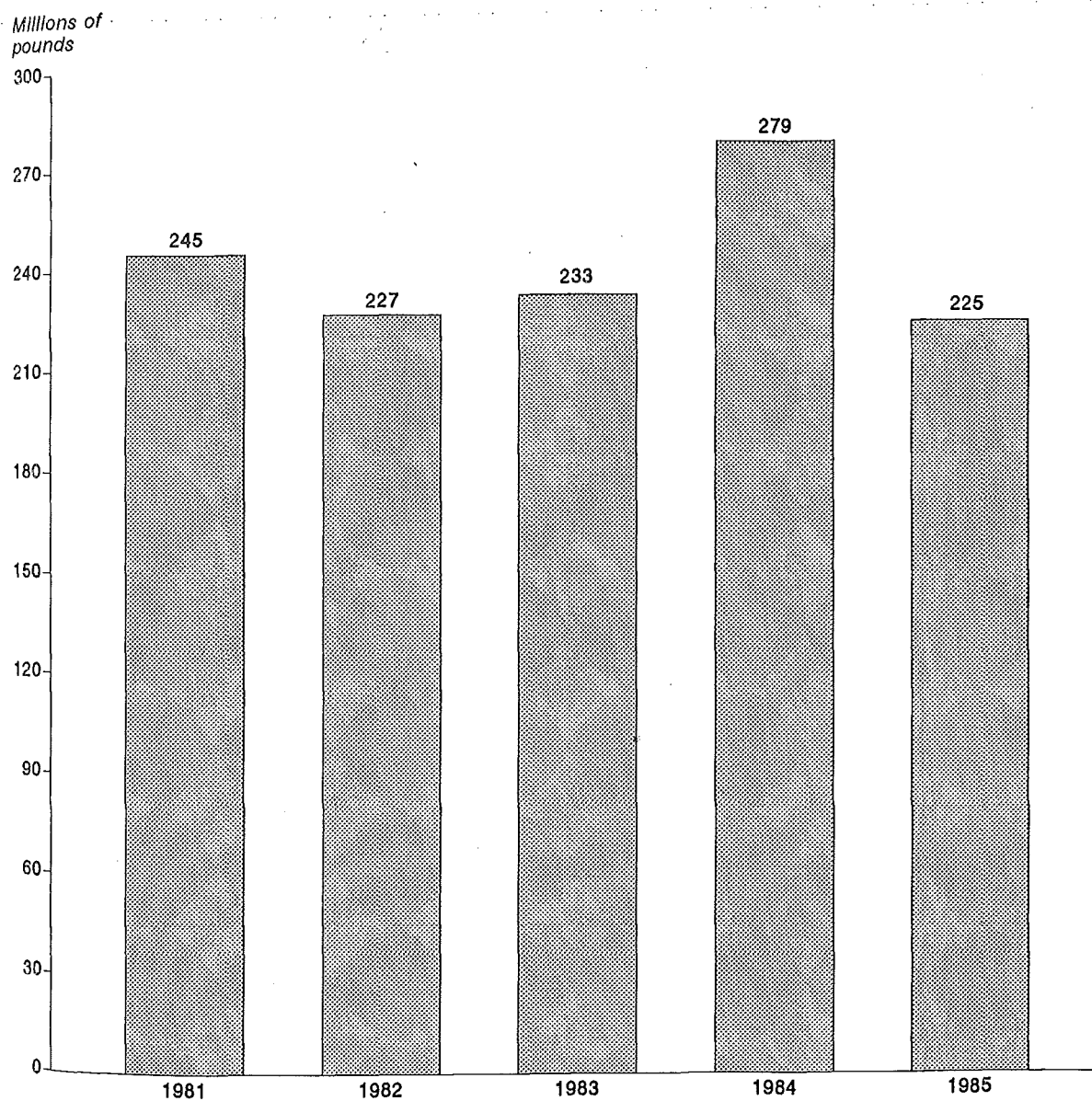
Total U.S. production of bulk medicinal chemicals in 1985 amounted to 224.7 million pounds. Total sales of bulk medicinal chemicals in 1985 amounted to 144.6 million pounds, valued at \$1,339.3 million. Beginning in 1980, methionine and most other amino acids and their salts are reported in the section on Miscellaneous End-Use Chemicals and Chemical Products. Section totals are not, therefore, comparable with years prior to 1980.

Production of the larger groups of medicinal chemicals in 1985 was as follows: Antibiotics, 31.9 million pounds, 5.0 percent higher than in 1984; anti-infective agents other than antibiotics, 25.1 million pounds, 8.0 percent less than in 1984; central nervous system depressants and stimulants, 63.2 million pounds, 9.0 percent less than in 1984; gastrointestinal agents and therapeutic nutrients, 48.5 million pounds, 11 percent less than in 1984; and vitamins, 37.6 million pounds, 25 percent less than in 1984.

Production of some of the more important individual products in the table was as follows: Choline chloride, 44.2 million pounds, 11 percent less than in 1984; aspirin, 28.2 million pounds, 17 percent less; and vitamin E, 13.7 million pounds, 18 percent more.

<sup>1</sup> Complementary statistics on the dollar value of manufacturers' shipments of finished pharmaceutical preparations, except biologicals, are published annually by the U.S. Department of Commerce, Bureau of the Census, in Current Industrial Reports, Series MA-28G. Many pharmaceutical manufacturers that report to the Bureau of the Census are excluded from the U.S. International Trade Commission report because they are not primary producers of medicinal chemicals; that is, they do not themselves produce the bulk drugs which go into their pharmaceutical products, but purchase their drug requirements from domestic or foreign producers.

Figure 1.—Medicinal chemicals.



Source: U.S. International Trade Commission, *Synthetic Organic Chemicals: United States Production and Sales*.



## VI -- MEDICINAL CHEMICALS

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TABLE 1.--MEDICINAL CHEMICALS: U.S. PRODUCTION AND SALES, 1985

[Listed below are all synthetic organic medicinal chemicals for which any reported data on production or sales may be published. (Leaders (...)) are used where the reported data are accepted in confidence and may not be published or where no data were reported.] Table 2 lists all medicinal chemicals for which data on production and/or sales were reported and identifies the manufacturers of each]

MEDICINAL CHEMICALS	SALES			
	PRODUCTION <sup>1</sup>	QUANTITY	VALUE	UNIT VALUE <sup>2</sup>
	<u>1,000</u> <u>pounds</u>	<u>1,000</u> <u>pounds</u>	<u>1,000</u> <u>dollars</u>	<u>Per</u> <u>pound</u>
Grand total-----	224,660	144,618	1,339,322	\$9.26
Acyclic-----	48,729	43,695	140,018	3.20
Benzenoid <sup>3</sup> -----	125,591	75,672	648,419	8.57
Cyclic nonbenzenoid <sup>4</sup> -----	50,340	25,251	550,885	21.82
Antibiotics, total-----	31,922	11,636	429,786	36.94
Penicillins, total <sup>5</sup> -----	6,800	1,626	37,526	23.08
Other antibiotics, total-----	25,122	10,010	392,260	39.19
For medicinal use <sup>6</sup> -----	6,727	3,545	329,127	92.84
For nonmedicinal uses <sup>7</sup> -----	18,395	6,465	63,133	9.77
Antihistamines-----	211	103	5,491	53.31
Anti-infective agents (except antibiotics), total-----	25,088	7,833	34,114	4.36
Anthelmintics-----	9,013	3,497	4,926	1.41
Antiprotozoan agents-----	10,691	713	4,258	5.97
Other anti-infective agents <sup>8</sup> -----	5,384	3,623	24,930	6.88
Autonomic drugs, total-----	991	800	17,289	21.61
Sympathomimetic (adrenergic) agents-----	958	800	17,289	21.61
Other autonomic drugs-----	33	...	...	...
Central depressants and stimulants, total-----	63,234	43,451	298,625	6.87
Analgesics, antipyretics, and nonhormonal anti-inflammatory agents, total-----	55,714	38,890	112,846	2.90
Aspirin-----	28,160	...	...	...
All other <sup>9</sup> -----	27,554	38,890	112,846	2.90
Anticonvulsants, hypnotics, and sedatives-----	1,636	286	6,307	22.08
Antidepressants-----	218	24	3,110	129.58
Antitussives-----	342	280	53,065	189.55
Tranquilizers-----	75	9	6,197	690.14
Other central depressants and stimulants <sup>10</sup> -----	5,249	3,962	117,100	29.56
Expectorants and mucolytic agents-----	1,162	980	7,756	7.91
Gastrointestinal agents and therapeutic nutrients, total <sup>11</sup> -----	48,457	42,381	25,603	.60
Choline chloride, all grades-----	44,238	39,752	16,469	.41
All other-----	4,219	2,629	9,134	.60
Renal-acting and edema-reducing agents-----	...	202	10,725	53.46
Smooth muscle relaxants <sup>12</sup> -----	40	...	...	...
Vitamins, total-----	37,631	32,650	172,920	5.30
Vitamin E-----	13,732	8,364	86,370	10.33
All other vitamins <sup>13</sup> -----	23,899	24,286	86,550	3.56
Miscellaneous medicinal chemicals <sup>14</sup> -----	15,924	4,582	337,013	30.71

See footnotes at end of table.

## FOOTNOTES

<sup>1</sup>The data on production and sales are for bulk medicinal chemicals only. Methionine and most other amino acids and their salts are now reported in the section on Miscellaneous End-Use Chemicals and Chemical Products. Section totals are not, therefore, comparable with years prior to 1980.

<sup>2</sup>Calculated from rounded figures.

<sup>3</sup>Benzenoid, as used in this report, describes any cyclic medicinal chemical whose molecule contains either a 6-membered carbocyclic ring with conjugated double bonds or a 6-membered heterocyclic ring with 1 or 2 hetero atoms and conjugated double bonds, except the pyrimidine ring.

<sup>4</sup>Includes antibiotics of unknown structure.

<sup>5</sup>Includes semisynthetic penicillins and all other penicillins.

<sup>6</sup>Includes production and sales of antifungal and antitubercular antibiotics, tetracyclines, and cephalosporins.

<sup>7</sup>Includes production and sales of tetracyclines.

<sup>8</sup>Includes production and sales of urinary antiseptics; does not include production of sulfaguanidine used as an intermediate in the production of anti-infective sulfonamides; also includes sulfonamides.

<sup>9</sup>Includes sales quantity and value of aspirin; also production and sales of acetaminophen.

<sup>10</sup>Includes production and sales of amphetamines, general anesthetics, respiratory and cerebral stimulants, and skeletal muscle relaxants.

<sup>11</sup>Methionine and its salts are now reported in the section in Miscellaneous End-Use Chemicals and Chemical Products under amino acids.

<sup>12</sup>Includes theophylline derivatives.

<sup>13</sup>Includes production and sales of vitamin A, vitamin B, vitamin C, vitamin D, and vitamin K.

<sup>14</sup>Includes production and sales of antineoplastic agents, cardiovascular agents, diagnostic agents, hematological agents, and unclassified medicinal chemicals. Also includes production and sales of local anesthetics, dermatological agents, hormones and synthetic substitutes, sales quantity and value of smooth muscle relaxants and production of renal-acting and edema-reducing agents.

TABLE 2.--MEDICINAL CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1985

[CHEMICALS FOR WHICH SEPARATE STATISTICS ARE GIVEN IN TABLE 1 ARE MARKED BELOW WITH AN ASTERISK (\*); CHEMICALS NOT SO MARKED DO NOT APPEAR IN TABLE 1 BECAUSE THE REPORTED DATA ARE ACCEPTED IN CONFIDENCE AND MAY NOT BE PUBLISHED. MANUFACTURERS' IDENTIFICATION CODES SHOWN BELOW ARE TAKEN FROM TABLE 3. AN "X" SIGNIFIES THAT THE MANUFACTURER DID NOT CONSENT TO HIS IDENTIFICATION WITH THE DESIGNATED PRODUCT]

MEDICINAL CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
<b>*ANTIBIOTICS:</b>	
<b>*CEPHALOSPORINS:</b>	
Cefaclor-----	LIL.
Cefamandole-----	LIL.
Cefazolin, sodium-----	LIL.
Cefoxitin-----	MRK.
Cephalexin-----	LIL.
Cephaloridine-----	LIL.
Cephalothin, sodium-----	BRS, LIL.
Cephapirin-----	BRS.
Cephapirin, sodium-----	BRS.
Cephradine-----	SK, TRD.
<b>*PENICILLINS:</b>	
<b>PENICILLINS, SEMISYNTHETIC:</b>	
<b>AMOXICILLIN:</b>	
Amoxicillin (trihydrate)-----	BEE, BOC, BRS.
Amoxicillin (anhydrous)-----	BRS, WYT.
<b>AMPICILLIN:</b>	
Ampicillin (anhydrous)-----	BRS, WYT.
Ampicillin (trihydrate)-----	BEE, BOC, BRS.
<b>OTHER SEMISYNTHETIC PENICILLINS:</b>	
Ampicillin, sodium-----	BEE, BRS, WYT.
Carbenicillin, disodium-----	BEE, PFZ.
Carbenicillin indanyl, sodium-----	PFZ.
Carbenicillin, sodium-----	BEE.
Cloxacillin, benzathine-----	BEE, BRS.
Cloxacillin, sodium-----	BEE, BOC, BRS.
Cyclacillin-----	BRT, WYT.
Dicloxacillin, sodium-----	BEE, BOC, BRS, WYT.
Hetacillin, potassium-----	BRS.
Methicillin, sodium-----	BRS.
Nafcillin, sodium-----	BEE, BRS, WYT.
Oxacillin, sodium-----	BEE, BOC, BRS.
Piperacillin-----	BRS.
Ticarcillin, disodium-----	BEE.
Ticarcillin, sodium-----	BEE.
<b>PENICILLINS (EXCEPT SEMISYNTHETIC):</b>	
<b>FOR MEDICINAL USE:</b>	
Penicillin V-----	PFZ, WYT.
Penicillin G, benzathine-----	WYT.

TABLE 2.—MEDICINAL CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1985—CONTINUED

MEDICINAL CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
*ANTIBIOTICS—CONTINUED	
PENICILLINS:	
PENICILLINS (EXCEPT SEMISYNTHETIC)—CONTINUED	
FOR MEDICINAL USE—CONTINUED	
Penicillin G, potassium	PFZ, WYT.
Penicillin V, potassium	BRS, LIL.
Penicillin G, procaine (medicinal grade)	PFZ.
Penicillins, other than semisynthetic, all other	BRS.
FOR NONMEDICINAL USES:	
Penicillin G, procaine (animal feed grade)	MRK, PFZ.
TETRACYCLINES:	
FOR MEDICINAL USE:	
Chlortetracycline (medicinal grade)	ACY.
Doxycycline	PFZ.
Minocycline	ACY.
Oxytetracycline (medicinal grade)	PFZ.
Tetracycline	ACY.
FOR NONMEDICINAL USES:	
Chlortetracycline (animal feed grade)	ACY.
Oxytetracycline (animal feed grade)	PFZ.
*OTHER ANTIBIOTICS:	
*FOR MEDICINAL USE:	
ANTIFUNGAL ANTIBIOTICS:	
Amphotericin B	PEN, TRD.
Nystatin (medicinal grade)	ACY, TRD.
Tobramycin	LIL.
ANTITUBERCULAR ANTIBIOTICS:	
Dihydrostreptomycin	PFZ.
Streptomycin (medicinal grade)	PFZ.
OTHER ANTIBIOTICS FOR MEDICINAL USE:	
Amikacin sulfate	BRS.
Azetreonam	TRD.
Bacitracin (medicinal grade)	IMC.
Cefonicid	SK.
Chloramphenicol	PD.
Chloramphenicol, monosuccinic acid ester	PD.
Clindamycin	UPJ.
Erythromycin	ABB, UPJ.
Erythromycin estolate	LIL.
Erythromycin stearate	UPJ.
Gentamycin	SCH.
Imipenem	MRK.
Kanamycin	BRS.

TABLE 2.--MEDICINAL CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1985--CONTINUED

MEDICINAL CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
*ANTIBIOTICS--CONTINUED	:
*OTHER ANTIBIOTICS--CONTINUED	:
*FOR MEDICINAL USE--CONTINUED	:
OTHER ANTIBIOTICS FOR MEDICINAL USE--CONTINUED	:
Lincomycin (medicinal grade)-----	UPJ.
Moxalactam-----	LIL.
Neomycin (medicinal grade)-----	UPJ.
Netilmicin-----	SCH, UPJ.
Novobiocin, sodium-----	UPJ.
Polymyxin B-----	PFZ.
Sisomycin-----	SCH.
Spectinomycin (medicinal grade)-----	ABB, UPJ.
Thiostrepton-----	TRD.
Vancomycin-----	LIL.
*FOR NONMEDICINAL USES:	:
Bacitracin (animal feed grade)-----	IMC.
Cycloheximide-----	UPJ.
Hygromycin B-----	LIL.
Lasalocid-----	HOF, X.
Lincomycin (animal feed grade)-----	UPJ.
Lincomycin hydrochloride-----	UPJ.
Monesin-----	LIL.
Neomycin (animal feed grade)-----*	PFZ, UPJ.
Spectinomycin (animal feed grade)-----	UPJ.
Streptomycin-----	LIL, PFZ.
Tylosin-----	LIL.
*ANTIHISTAMINES:	:
ANTINAUSEANTS:	:
Cyclizine hydrochloride-----	BUR.
Dimenhydrinate-----	GAN.
Meclizine hydrochloride-----	PFZ.
Metoclopramide hydrochloride-----	LLI.
Trimethobenzamide hydrochloride-----	HOF.
OTHER ANTIHISTAMINES:	:
Brompheniramine maleate-----	HEX, LLI.
Chlorpheniramine maleate-----	HEX, SK.
Cyproheptadine hydrochloride-----	MRK.
Dexbrompheniramine maleate-----	HEX.
Dimethindene maleate-----	CGY.
Diphenhydramine citrate-----	WYK.
Diphenhydramine hydrochloride-----	PD, WYK.
Doxylamine succinate-----	BKC, HOF.
Phenindamine tartrate-----	HOF.

TABLE 2.—MEDICINAL CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1985—CONTINUED

MEDICINAL CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
*ANTI-HISTAMINES—CONTINUED	:
OTHER ANTI-HISTAMINES—CONTINUED	:
Phenyltoloxamine citrate	: GAN.
Pyrilamine maleate	: HEX.
Tripeleannamine	: CGY.
Tripeleannamine citrate	: CGY.
Tripeleannamine hydrochloride	: CGY.
Triprolidine hydrochloride	: BUR.
*ANTI-INFECTIVE AGENTS (EXCEPT ANTIBIOTICS):	:
*ANTHELMINTICS:	:
Diethylcarbamazine citrate	: SK.
Ivermectin	: MRK.
Phenothiazine	: WAG.
Piperazine	: TX, UCC.
Piperazine dihydrochloride	: FLM.
Piperazine hydrochloride	: DAN, FLM, TX, WHL.
Piperazine phosphate	: TX.
Pyrantel pamoate	: PFZ.
Pyrantel tartrate	: PFZ.
Thenium ciosylate	: SFS.
Thiabendazole	: MRK.
*ANTI-PROTOZOAN AGENTS:	:
ARSENIC AND BISMUTH COMPOUNDS:	:
Arsanilic acid	: FLM, WHL.
Bismuth subsalicylate	: NOR.
Carbarsone	: WHL.
Glycobiarsol	: RSA.
Nitarsonsone	: SAL.
Roxarsone	: SAL.
Roxarsone, sodium	: SAL.
Sodium arsanilate	: WHL.
Antiprotozoan agents, arsenic and bismuth compounds, all other	: RSA.
OTHER ANTI-PROTOZOAN AGENTS:	:
Aklomide	: SAL.
Amodiaquine hydrochloride	: PD.
Amprolium	: MRK.
Dinitolmide	: SAL.
Ethopabate	: MRK.
Hydroxychloroquine sulfate	: SDW.
Iodochlorhydroxyquin	: CGY.
Ipronidazole	: HOF.
Metronidazole	: SRL.
Nitromide	: SAL.
Primaquine phosphate	: SDW.

TABLE 2.--MEDICINAL CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1985--CONTINUED

MEDICINAL CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
*ANTI-INFECTIVE AGENTS (EXCEPT ANTIBIOTICS)--CONTINUED	
SULFONAMIDES	
Mafenide	SDW.
Mafenide acetate	SDW.
Sulfabenzamide	ACY.
Sulfacetamide	SCH.
Sulfadiazine	ACY.
Sulfadimethoxine	HOF.
Sulfamethazine	SAL.
Sulfamethazine, sodium	SAL.
Sulfamethizole	ACY.
Sulfamethoxazole	HOF.
Sulfanitran	SAL.
Sulfasalazine	SAL.
Sulfathiazole, sodium	SAL.
Sulfisoxazole	HOF.
Sulfisoxazole, acetyl	HOF.
*URINARY ANTISEPTICS:	
Methenamine hippurate	RIK.
Methenamine mandelate	ARN, PD.
*OTHER ANTI-INFECTIVE AGENTS:	
ANTIFUNGAL AGENTS:	
Benzoic acid	KLM.
Calcium undecylenate	WTL.
Sodium caprylate	LEM.
Zinc undecylenate	WTL.
Antifungal agents, all other	SCH.
ANTILEPROTIC AND ANTITUBERCULAR AGENTS:	
Aminosalicyclic acid	HXL.
Sulfoxone, sodium	ABB.
GENERAL ANTISEPTICS AND ANTIBACTERIAL AGENTS:	
Bromchlorenone	MHI.
Capreomycin	LIL.
Ceftazidime	LIL.
Cetylpyridinium chloride	HEX, HXL.
Chlorhexidine gluconate	WHL.
Chlorobutanol	SFS.
m-Cresyl acetate	ADC.
8-Hydroxy-5-quinolinesulfonic acid	MRK, RSA.
Iodoform	DPW.
Ormetoprim	HOF.
Povidone - iodine	GAF.
Pyrrithione, zinc	NES.
Resorcinol	KPT, LEM.
Trimethoprim	BUR.
Anti-infective agents, all other	LIL.

TABLE 2.—MEDICINAL CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1985—CONTINUED

MEDICINAL CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
*AUTONOMIC DRUGS:	:
*SYMPATHOMIMETIC AGENTS:	:
Methoxyphenamine hydrochloride-----	HKL.
Naphazoline hydrochloride-----	CGY.
Phenylephrine-----	SDW.
Phenylephrine bitartrate-----	GAN.
Phenylephrine hydrochloride-----	GAN, LLI, SDW.
Phenylpropanolamine hydrochloride-----	ARS, GAN, NEP, ORT.
Propylhexedrine-----	PD, SK.
Pseudoephedrine hydrochloride-----	BUR, GAN.
Pseudoephedrine sulfate-----	GAN.
Terbutaline sulfate-----	CGY.
Tetrahydrozoline hydrochloride-----	PFZ.
Sympathomimetic (adrenergic) agents, all other-----	SCH, SD.
*OTHER AUTONOMIC DRUGS:	:
PARASYMPATHOLYTIC QUATERNARY AMMONIUM COMPOUNDS (EXCEPT TROPANE DERIVATIVES):	:
Glycopyrrolate-----	LLI.
Isopropamide iodide-----	SK.
Propantheline bromide-----	SRL.
Tridihexethyl chloride-----	ACY.
PARASYMPATHOLYTIC TERTIARY AMINES (EXCEPT TROPANE DERIVATIVES):	:
Oxybutynin chloride-----	PD.
Oxyphencylimine hydrochloride-----	PFZ.
Trihexyphenidyl hydrochloride-----	ACY.
PARASYMPATHOLYTIC TROPANE DERIVATIVES:	:
Anisotropine methylbromide-----	ARA.
Benztropine mesylate-----	ARA.
PARASYMPATHOMIMETIC AGENTS:	:
Bethanechol chloride-----	GAN.
Neostigmine methylsulfate-----	HOF.
Pyridostigmine bromide-----	HOF.
SYMPATHOLYTIC AGENTS:	:
Timolol maleate-----	MRK.
*CENTRAL DEPRESSANTS AND STIMULANTS:	:
*ANALGESICS, ANTIPYRETICS, AND NONHORMONAL ANTI- INFLAMMATORY AGENTS:	:
Acetaminophen-----	MAL MON, PEN, SWD.
Aminobenzoic acid-----	WYK.
*Aspirin-----	DOW, MON, NOR, SD.



TABLE 2.—MEDICINAL CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1985—CONTINUED

MEDICINAL CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
*CENTRAL DEPRESSANTS AND STIMULANTS:	:
*ANALGESICS, ANTIPYRETICS, AND NONHORMONAL ANTI- INFLAMMATORY AGENTS—CONTINUED	:
Aurothioglucose-----	SCH.
Choline magnesium salicylate-----	LEM.
Diflunisal-----	MRK.
Fenoprofen-----	LIL.
Ibuprofen-----	TNA.
Indomethacin-----	MRK.
Isoxicam-----	PD.
Meclofenamate, sodium-----	PD.
Meclofenamic acid-----	PD.
Mefenamic acid-----	PD.
Meperidine hydrochloride-----	PEN, SDW, WYT.
Methadone hydrochloride-----	MAL.
Morphine sulfate-----	MAL, PEN.
Oxycodone hydrochloride-----	DUP, MAL, PEN.
Oxyphenbutazone-----	CGY.
Pentazocine-----	SD.
Pentazocine hydrochloride-----	SD.
Piroxicam-----	PFZ.
Potassium aminobenzoate-----	GAN.
Potassium salicylate-----	KLM.
Propoxyphene hydrochloride-----	GAN, LIL.
Propoxyphene napsylate-----	GAN, LIL.
Salsalate-----	WYK.
Sodium aminobenzoate-----	GAN.
Sodium salicylate-----	KLM.
Sulindac-----	MRK.
Analgesics and antipyretics, other than salicylates, all other-----	SCH, X.
*ANTICONVULSANTS, HYPNOTICS, AND SEDATIVES:	:
ANTICONVULSANTS (EXCEPT BARBITURATES):	:
Aminoglutethimide-----	CGY.
Ethosuximide-----	PD.
Ethotoin-----	ABB.
Phenytoin-----	PD.
Phenytoin, sodium-----	PD.
Valproic acid-----	ABB.

TABLE 2.—MEDICINAL CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1985—CONTINUED

MEDICINAL CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
*CENTRAL DEPRESSANTS AND STIMULANTS—CONTINUED	
*ANTICONSULSANTS, HYPNOTICS, AND SEDATIVES:	
BARBITURATES:	
Amobarbital	GAN.
Amobarbital, sodium	GAN.
Butobarbital	GAN.
Butobarbital, sodium	ABB, GAN.
Butalbital	GAN.
Pentobarbital	GAN.
Pentobarbital, sodium	ABB, GAN.
Phenobarbital	GAN.
Phenobarbital, sodium	GAN.
Secobarbital, sodium	GAN.
Talbutal	GAN.
Thiamylal, sodium	ABB, PD.
Thiopental, sodium	ABB.
HYPNOTICS AND SEDATIVES (EXCEPT BARBITURATES):	
Alprazolam	UPJ.
Ethchlorvynol	ABB.
Glutethimide	CGY, GAN.
*ANTIDEPRESSANTS:	
Amitriptyline	MRK.
Amitriptyline hydrochloride	GAN, MRK.
Doxepin hydrochloride	PFZ, SK.
Fluoxetine hydrochloride	LIL.
Imipramine hydrochloride	CGY.
Maprotiline hydrochloride	CGY.
Nortriptyline hydrochloride	LIL.
*ANITUSSIVES:	
Benzonatate	CGY.
Caramiphen edisylate	SK.
Codeine	MAL, MRK, PEN.
Dextromethorphan hydrobromide	AMD, HOF.
Hydrocodone bitartrate	MAL.
Noscapine	MAL, PEN.
Thebaine	MAL, PEN.
*TRANQUILIZERS:	
PHENOTHIAZINE DERIVATIVES:	
Chlorpromazine hydrochloride	SK.
Fluphenazine hydrochloride	TRD.
Perphenazine	SCH.

TABLE 2.--MEDICINAL CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1985--CONTINUED

MEDICINAL CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
*CENTRAL DEPRESSANTS AND STIMULANTS--CONTINUED	:
*TRANQUILIZERS:	:
PHENOTHIAZINE DERIVATIVES--CONTINUED	:
Prochlorperazine edisylate-----	SK.
Prochlorperazine maleate-----	SK.
Promazine hydrochloride-----	WYT.
Promethazine hydrochloride-----	WYT.
Trifluoperazine-----	SK.
Trifluoperazine hydrochloride-----	SK.
OTHER TRANQUILIZERS:	:
Clorazepate dipotassium-----	ABB.
Hydroxyzine pamoate-----	LEM, PFZ.
Meprobamate-----	ABB.
Molindone hydrochloride-----	PD.
Oxazepam-----	WYT.
Prazepam-----	NEP.
Thiothixene hydrochloride-----	PFZ.
Triazolam-----	UPJ.
*OTHER CENTRAL DEPRESSANTS AND STIMULANTS:	:
AMPHETAMINES:	:
Amphetamine-----	ARN.
Amphetamine sulfate-----	ARN.
Dextroamphetamine-----	ARN.
Dextroamphetamine sulfate-----	ARN, SK.
Methamphetamine-----	ARN.
Methamphetamine hydrochloride-----	ARN.
GENERAL ANESTHETICS:	:
Enflurane-----	OH.
Isoflurane-----	OH.
Ketamine hydrochloride-----	PD.
RESPIRATORY AND CEREBRAL STIMULANTS:	:
CAFFEINE (NATURAL AND SYNTHETIC):	:
Caffeine, natural-----	CPR, GNF.
Caffeine, synthetic-----	PFZ.
OTHER RESPIRATORY AND CEREBRAL STIMULANTS:	:
Benzphetamine hydrochloride-----	UPJ.
Diethylpropion hydrochloride-----	BKC, GAN.
Doxapram hydrochloride-----	LLI.
Methylphenidate hydrochloride-----	CGY.
Nikethamide-----	CGY.
Phendimetrazine tartrate-----	GAN.
Phentermine-----	GAN, HEX, SWD.
Phentermine hydrochloride-----	GAN, HEX, SWD.

TABLE 2.—MEDICINAL CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED  
BY MANUFACTURER, 1985—CONTINUED

MEDICINAL CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
*CENTRAL DEPRESSANTS AND STIMULANTS—CONTINUED	
SKELETAL MUSCLE RELAXANTS:	
Chlorphenesin carbamate	UPJ.
Cyclobenzaprine hydrochloride	MRK.
Methocarbamol	LLI.
Orphenadrine citrate	RIK.
Succinylcholine chloride	ABB, BUR.
DERMATOLOGICAL AGENTS:	
Aluminum phenolsulfonate	SAL.
Ammonium phenolsulfonate	SAL.
Salicylic acid	DOW, KLM, MON.
Zinc phenolsulfonate	MAL, SAL.
*EXPECTORANTS AND MUCOLYTIC AGENTS:	
Ethylenediamine dihydroiodide	AJY, DPW, WAG, WHL.
Guaifenesin	LLI.
Iodinated glycerol	X.
*GASTROINTESTINAL AGENTS AND THERAPEUTIC NUTRIENTS:	
GASTROINTESTINAL AGENTS:	
CHOLINE CHLORIDE (ALL GRADES):	
*Choline chloride (animal feed grade)	CHO, HFT, IMC, NUT, TMH.
Choline chloride (medicinal grade)	HFT.
OTHER GASTROINTESTINAL AGENTS:	
Betaine hydrochloride	HFT.
Calcium polycarbophil	LLI.
Choleretics and hydrocholeretics, all other	UPJ.
Choline bicarbonate	HFT, IMC.
Choline bitartrate	HFT.
Choline dihydrogen citrate	HFT.
Cimetidine	SK.
Cimetidine hydrochloride	SK.
Colestipol hydrochloride	UPJ.
Dextrothyroxine, sodium	BAX.
Dihydroxyaluminum aminoacetate	CHT.
Diphenoxylate	MAL.
Docusate, calcium	ACY.
Docusate, potassium	ACY.
Docusate, sodium	ACY, MAL.
Gemfibrozil	PD.
Phenolphthalein	SCH.
Sitosterols	UPJ.

TABLE 2.—MEDICINAL CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1985—CONTINUED

MEDICINAL CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
*GASTROINTESTINAL AGENTS AND THERAPEUTIC NUTRIENTS:	
THERAPEUTIC NUTRIENTS:	
Calcium gluceptate	PFN.
Copper gluconate	PFZ.
Magnesium gluconate	PFZ.
Manganese gluconate	PFZ.
Potassium gluconate	PFZ.
Zinc gluconate	PFZ.
Therapeutic nutrients, all other	LEM.
HORMONES AND SYNTHETIC SUBSTITUTES:	
ANABOLIC AGENTS AND ANDROGENS:	
Fluoxymesterone	UPJ.
Methyltestosterone	UPJ.
Stanozolol	SD.
Testosterone	UPJ.
Testosterone cypionate	UPJ.
Testosterone enanthate	UPJ.
Testosterone propionate	UPJ.
Zeranol	IMC.
Anabolic agents and androgens, all other	X.
CORTICOSTEROIDS:	
Aclomethasone	SCH.
Betamethasone	SCH.
Betamethasone dipropionate	SCH.
Betamethasone sodium phosphate	SCH.
Betamethasone valerate	SCH.
Cortisone acetate	UPJ.
Dexamethasone	MRK, SCH, UPJ.
Dexamethasone acetate	MRK.
Dexamethasone sodium phosphate	MRK.
Diflorasone diacetate	UPJ.
Fludrocortisone acetate	UPJ.
Fluorometholone	UPJ.
Halcinonide	TRD.
Hydrocortisone	UPJ.
Hydrocortisone acetate	UPJ.
Medrysone	UPJ.
Meprednisone	UPJ.
Meprednisone acetate	UPJ.
Methylprednisolone	ABB, UPJ.
Prednisolone	UPJ.
Prednisolone acetate	UPJ.
Prednisone	UPJ.

TABLE 2.--MEDICINAL CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED  
BY MANUFACTURER, 1985--CONTINUED

MEDICINAL CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
HORMONES AND SYNTHETIC SUBSTITUTES--CONTINUED	
CORTICOSTEROIDS--CONTINUED	
Triamcinolone	TRD, X.
Triamcinolone acetonide	TRD, UPJ.
Triamcinolone diacetate	TRD, UPJ.
Corticosteroids, all other	X.
ESTROGENS AND PROGESTOGENS:	
ESTROGENS:	
Dienestrol	X.
Estradiol cypionate	UPJ.
Estrogens, conjugated	ORG.
Estrogens, esterified	ORG.
Estrone	SRL.
Estrogens, all other	ORG, X.
PROGESTOGENS:	
Alprostadiol	UPJ.
Carboprost tromethamine	UPJ.
Dinoprostone tromethamine	UPJ.
Hydroxyprogesterone caproate	UPJ.
Medroxyprogesterone acetate	SRL, UPJ.
Megestrol acetate	UPJ.
Melengestrol acetate	UPJ.
Progesterone	UPJ.
SYNTHETIC HYPOGLYCEMIC AGENTS:	
Acetohexamide	LIL.
Chlorpropamide	PFZ.
Tolazamide	UPJ.
Tolbutamide	UPJ.
Synthetic hypoglycemic agents, all other	X.
THYROID HORMONE AND ANTITHYROID AGENTS:	
Levothyroxine, sodium	BAX.
Methimazole	LIL.
Thyroglobulin	NEP.
Thyroid	ARP.
OTHER HORMONES AND SYNTHETIC SUBSTITUTES:	
Calcitonin	ARP.
Corticotropin	ARP, ORG.
Danazol	SD.
Dinoprost tromethamine	UPJ.
Glucagon	LIL.
Gonadorelin	BIB.
Insulin	LIL.

TABLE 2.--MEDICINAL CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1985--CONTINUED

MEDICINAL CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
<b>*LOCAL ANESTHETICS:</b>	
Benzocaine-----	WYK.
Butamben-----	ABB.
Dibucaine-----	CGY.
Dibucaine hydrochloride-----	CGY.
Lidocaine-----	LEM, SDW, WYK.
Lidocaine hydrochloride-----	LEM, WYK.
Mepivacaine hydrochloride-----	LEM.
Pramoxine hydrochloride-----	ABB.
Prilocaine hydrochloride-----	WYK.
<b>*RENAL-ACTING AND EDEMA-REDUCING AGENTS:</b>	
<b>BENZOTHIADIAZINE DERIVATIVES:</b>	
Benzthiazide-----	PFZ.
Chlorothiazide-----	MRK.
Hydrochlorothiazide-----	ABB, CGY, MRK, SK.
Methyclothiazide-----	ABB.
Trichlormethiazide-----	SCH.
<b>OTHER RENAL-ACTING AND EDEMA-REDUCING AGENTS:</b>	
Acetazolamide-----	ACY.
Amiloride hydrochloride-----	MRK.
Canrenoate, potassium-----	MRK.
Dichlorphenamide-----	MRK.
Ethacrynic acid-----	MRK.
Probenecid-----	MRK, SAL.
Spirolactone-----	SRL.
Sulfapyrazone-----	CGY.
Triamterene-----	SK.
<b>*SMOOTH MUSCLE RELAXANTS:</b>	
Atracurium besylate-----	BUR.
Flavoxate hydrochloride-----	SK.
Oxtriphylline-----	NEP, PD.
Papaverine hydrochloride-----	PEN.
Theophylline sodium glycinate-----	CHT.
<b>*VITAMINS:</b>	
<b>VITAMIN A:</b>	
Beta carotene (provitamin A)-----	HOF.
Tretinoin (vitamin A acid)-----	EK.
Vitamin A acetate (animal feed grade)-----	BAS, HOF.
Vitamin A acetate (medicinal grade)-----	HOF.
Vitamin A alcohol-----	HOF.
Vitamin A palmitate (medicinal grade)-----	HOF.
Vitamin A propionate-----	HOF.
Vitamin A, all other-----	EK.

TABLE 2.--MEDICINAL CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1985--CONTINUED

MEDICINAL CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
*VITAMINS--CONTINUED	:
VITAMIN B-COMPLEX:	:
NIACIN AND DERIVATIVES:	:
Niacin (animal feed grade)-----	NEP.
Niacin (medicinal grade)-----	NEP.
Niacinamide (medicinal grade)-----	NEP, RIL.
Niacinamide (animal feed grade)-----	RIL.
PANTOTHENIC ACID DERIVATIVES:	:
Dexpanthenol-----	HOF.
Panthenol-----	HOF.
OTHER B-COMPLEX VITAMINS:	:
Biotin-----	HOF.
Cyanocobalamin (animal feed grade)-----	MRK.
Cyanocobalamin (U.S.P. crystalline)-----	MRK.
Pyridoxine-----	HOF.
Riboflavin (animal feed grade)-----	MRK.
Riboflavin (medicinal grade)-----	HOF, MRK.
Thiamine hydrochloride-----	HOF.
Thiamine mononitrate-----	HOF.
VITAMIN C:	:
Ascorbic acid-----	HOF.
Calcium ascorbate-----	HOF.
Sodium ascorbate-----	HOF.
VITAMIN D:	:
Cholecalciferol (vitamin D)-----	VTM.
Ergocalciferol (vitamin D)-----	VTM.
*VITAMIN E:	:
DL-ALPHA TOCOPHERYL ACETATE (ALL GRADES):	:
dl- $\alpha$ Tocopheryl acetate (animal feed grade)-----	BAS, HOF.
dl- $\alpha$ Tocopheryl acetate (medicinal grade)-----	BAS, HOF.
OTHER VITAMIN E:	:
d- $\alpha$ Tocopherol-----	EKT, SCP.
dl- $\alpha$ Tocopherol-----	HOF.
d- $\alpha$ Tocopheryl acetate-----	EKT, SCP.
d- $\alpha$ Tocopheryl acid succinate-----	EKT, SCP.
VITAMIN K:	:
MENADIONE SODIUM BISULFITE:	:
Menadione sodium bisulfite (anhydrous)-----	ABB.
Menadione sodium bisulfite (trihydrate)-----	HET.
*MISCELLANEOUS MEDICINAL CHEMICALS:	:
ANTINEOPLASTIC AGENTS:	:
Azathioprine-----	BUR.
Cytarabine-----	UPJ.



TABLE 2.—MEDICINAL CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1985—CONTINUED

MEDICINAL CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
*MISCELLANEOUS MEDICINAL CHEMICALS—CONTINUED	
ANTINEOPLASTIC AGENTS—CONTINUED	
Mercaptopurine	BUR.
Methotrexate	BRS.
Thioguanine (hemihydrate)	BUR, LIL.
Vinblastine sulfate	BUR.
Vincristine sulfate	LIL.
Antineoplastic agents, all other	SCH.
CARDIOVASCULAR AGENTS:	
ANTIHYPERTENSIVE AGENTS:	
Captopril	TRD.
Diazoxide	SCH.
Guanabenz	SCH.
Guanethidine sulfate	CGY.
Hydralazine hydrochloride	CGY.
Methyldopa	MRK.
Metoprolol tartrate	CGY.
Minoxidil	UFJ.
Nadolol	TRD.
Enalapril maleate	MRK.
VASODILATORS:	
Amyl nitrite	BUR, FKE.
Flecainide acetate	RIK.
Nifedipine	PFZ.
Vasodilators, all other	LIL.
OTHER CARDIOVASCULAR AGENTS:	
Acecinide	PD.
Digoxin	BUR.
Disopyramide phosphate	SRL.
Procainamide hydrochloride	PD, WYK.
Tocainide	MRK.
DIAGNOSTIC AGENTS:	
ROENTGENOGRAPHIC CONTRAST MEDIA:	
Diatrizoate, meglumine	SDW.
Diatrizoate, sodium	SDW.
Iopanoic acid	SDW.
Iothalamate, meglumine	MAL.
Tyropoate, sodium	SDW.
Roentgenographic contrast media, all other	SDW.
OTHER DIAGNOSTIC AGENTS:	
Albumin	SPR.
Aminhippuric acid	SPR.
Glutamyl-p-nitroaniline (liver function test)	REG.
Indocyanine green	HYN.
Metyrapone	CGY.
Phenolsulfonphthalein	HYN.

TABLE 2.--MEDICINAL CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1985--CONTINUED

MEDICINAL CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
*MISCELLANEOUS MEDICINAL CHEMICALS--CONTINUED	
HEMATOLOGICAL AGENTS:	
ANTICOAGULANTS:	
Ammonium heparin-----	RIK, SPR.
Anisindione-----	SCH.
Benzalkonium heparin-----	RIK.
Lithium heparin-----	RIK, SPR.
Potassium warfarin-----	X.
Sodium heparin-----	SPR.
Warfarin-----	SDW.
OTHER HEMATOLOGICAL AGENTS:	
Cellulose, oxidized-----	EKT.
Dextran-----	PHR.
UNCLASSIFIED MEDICINAL CHEMICALS:	
Allopurinol-----	BUR.
Carbidopa-----	MRK.
Etidronate, disodium-----	NOR.
Levodopa-----	MON.
Medicinal chemicals, all other-----	BIB.

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## VI -- MEDICINAL CHEMICALS

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TABLE 3.--MEDICINAL CHEMICALS: DIRECTORY OF MANUFACTURERS, 1985

## ALPHABETICAL DIRECTORY BY CODE

(Names of manufacturers that reported production and/or sales of medicinal chemicals to the U.S. International Trade Commission for 1985 are listed below in the order of their identification codes as used in table 2)

CODE :	NAME OF COMPANY	CODE :	NAME OF COMPANY
ABB :	Abbott Laboratories	MAL :	Mallinckrodt, Inc.
ACY :	American Cyanamid Co.	MHI :	Morton-Thiokol, Inc., Ventrón Div.
ADC :	Anderson Development Co.	MON :	Monsanto Co.
AJY :	Ajay Chemicals, Inc.	MRK :	Merck & Co., Inc.
AHD :	Cyclo Products, Inc.	NEP :	Nepera, Inc.
ARA :	Syntex Chemicals, Inc.	NES :	Ruetgers-Nease Chemical Co.
ARN :	Arenol Chemical Corp.	NOR :	Norwich Eaton Pharmaceutical, Inc.
ARP :	Armour Pharmaceutical Co.	NUT :	Nutrius, Inc.
ARS :	Arsynco, Inc.	OH :	Anaquest
BAS :	BASF Corp.	ORG :	Organics/LaGrange, Inc.
BAX :	Baxter Travenol Laboratories, Inc.	ORT :	Roehr Chemicals, Inc., Div. of Aceto Corp.
BEE :	Beecham, Inc.:	PD :	Parke-Davis Div. of Warner-Lambert Co.
	Beecham Laboratories Div.	PEN :	CPC International, Inc., Penick Corp.
	Beecham Western Hemisphere Inc.	PFN :	Pfanstiehl Laboratories, Inc.
BIB :	Beckman Instruments, Inc., Spinco Div.	PFZ :	Pfizer, Inc. & Pfizer Pharmaceuticals, Inc.
BKC :	J. T. Baker Chemical Co.	PHR :	Pharmachem Corp.
BOC :	Biocraft Laboratories, Inc.	REG :	Regis Chemical Co.
BRS :	Bristol-Myers Co.	RIK :	Riker Laboratories, Inc. Sub of 3M Co.
BUR :	Burroughs Wellcome Co.	RIL :	Reilly Tar & Chemical Corp.
CGY :	Ciba-Geigy Corp.	RSA :	R.S.A. Corp.
CHT :	Chattem, Inc.	SAL :	Salsbury Laboratories, Inc.
CPR :	Certified Processing Corp.	SCH :	The Schering Corp.
DAN :	Dan River, Inc., Chemical Products Div.	SCP :	Henkel Corp.
DOW :	Dow Chemical Co.	SD :	Sterling Drug, Inc.:
DPW :	Deepwater, Inc.	SD :	Sterling Pharmaceuticals, Inc.
DUP :	E. I. duPont de Nemours & Co., Inc.	SDW :	Sterling Organics Div.
EK :	Eastman Kodak Co.:	SFS :	Stauffner Chemical Co., Specialty Group
EKT :	Tennessee Eastman Co. Div.	SK :	SmithKline Beckman Corp., SmithKline Chemicals Div.
FRE :	Frank Enterprises, Inc.	SPR :	Scientific Protein Laboratories
FLM :	Fleming Laboratories, Inc.	SRL :	G.D. Searle & Co.
GAF :	GAF Corp., Chemical Group	TMH :	Thompson-Hayward Chemical Co.
GAN :	Gane's Chemicals, Inc.	TNA :	Ethyl Corp.
GNF :	General Foods Manufacturing Corp., Maxwell House Coffee Div.	TRD :	Squibb Manufacturing, Inc.
HET :	Heterochemical Corp.	TX :	Texaco, Inc., Texaco Chemical Co.
HEX :	Hexagon Laboratories, Inc.	UCC :	Union Carbide Corp.
HFT :	Syntex Agribusiness, Inc., Nutrition & Chemical Div.	UPJ :	Upjohn Co.
HOF :	Hoffmann-LaRoche, Inc.	VTM :	Vitamins, Inc.
HXL :	Hexcel Corp., Hexcel Chemical Products	WAG :	West Design-Chemical, Inc.
HYN :	Hynson, Westcott & Dunning, Inc.	WHL :	Whitmoyer Laboratories, Inc.
INC :	International Minerals & Chemical Corp.	WTK :	Whittaker Corp., Heico Chemicals Div.
KAN :	Kanasco, LTD	WTL :	Pennwalt Corp., Lucidol Div.
KLM :	Kalama Chemical, Inc.	WYK :	Wyckoff Chemical Co., Inc.
KPT :	Koppers Co., Inc.	WYT :	Wyeth Laboratories, Inc., Wyeth Laboratories Div. of American Home Products Corp.
LEH :	Napp Chemicals, Inc.		
LIL :	Eli Lilly & Co., U.S. and Puerto Rico		
LLI :	Lee Laboratories, Inc.		

Note.—Complete names, telephone numbers, and addresses of the above reporting companies are listed in table 1 of the appendix.

SYNTHETIC ORGANIC CHEMICALS, 1985  
SECTION VII -- FLAVOR AND PERFUME MATERIALS

STATISTICAL HIGHLIGHTS

Eric Land

202-523-0491

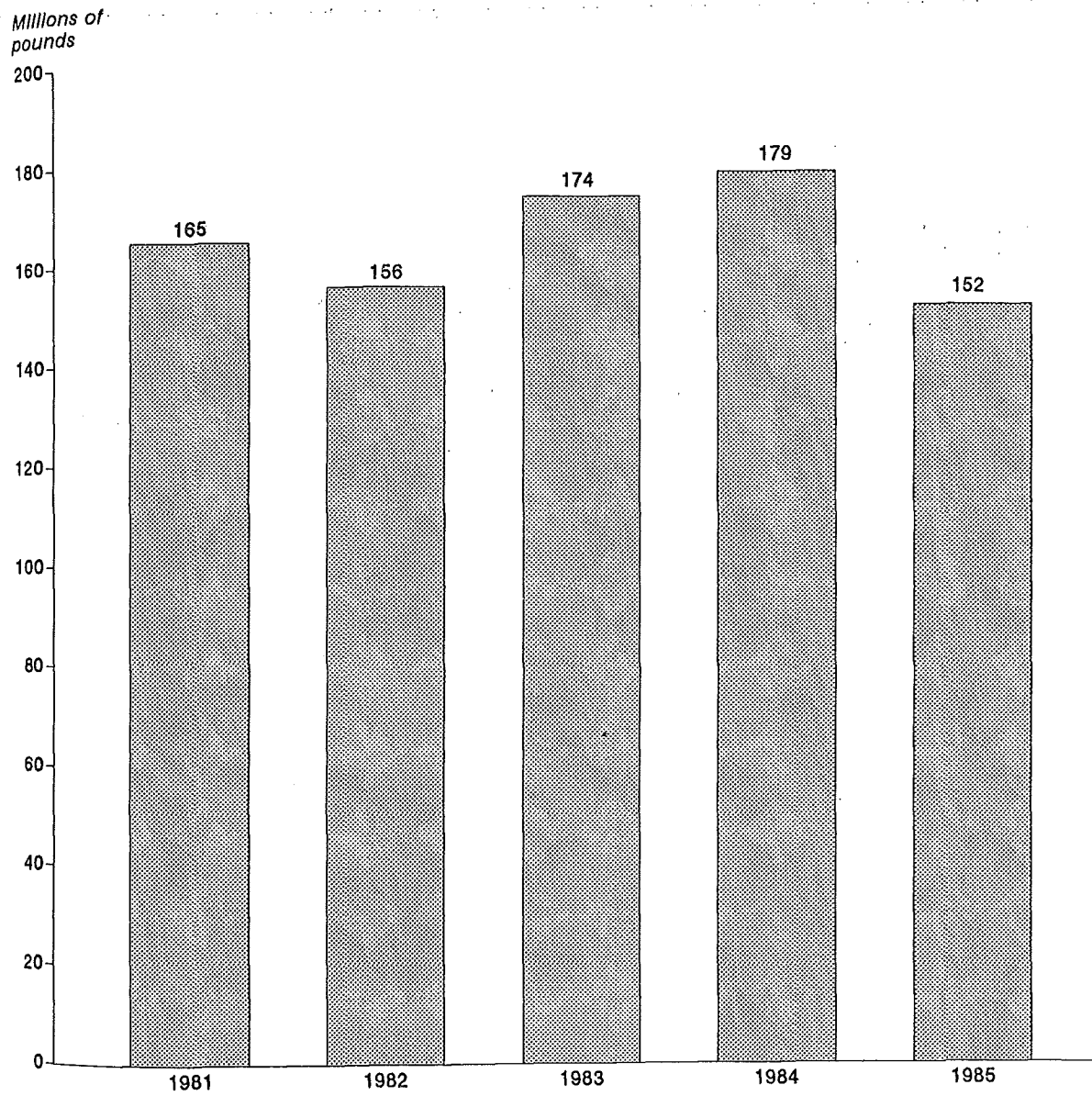
Flavor and perfume materials are organic chemicals used to impart flavors and aromas to foods, beverages, cosmetics, and soaps. These aroma chemicals are also utilized to neutralize or mask unpleasant odors in industrial processes and products, as well as in consumer products.

Total domestic production of flavor and perfume materials in 1985 amounted to 151.9 million pounds. Sales of these materials in 1985 amounted to 86.1 million pounds, valued at \$586.6 million, compared with 114.7 million pounds, valued at \$636.8 million, in 1984. U.S. production of flavor and perfume materials in 1985 decreased by 15.0 percent from the level in 1984 while the quantity of sales decreased by 25.0 percent, primarily owing to declines in production and sales of two major chemicals in this section, monosodium glutamate and saccharin.

Production of cyclic flavor and perfume materials in 1985 amounted to 101.2 million pounds; sales amounted to 70.5 million pounds, valued at \$546.9 million. Individual publishable chemicals in the cyclic group produced in the greatest volume in 1985 were anethole, q-methylionone, and eugenol.

U.S. output of acyclic flavor and perfume materials in 1985 amounted to 50.7 million pounds; sales of these materials amounted to 15.6 million pounds, valued at \$39.6 million. Monosodium glutamate, formerly the most important of the acyclic chemicals was no longer produced domestically.

Figure 1.—Flavor and perfume chemicals.



Source: U.S. International Trade Commission, *Synthetic Organic Chemicals: United States Production and Sales*.

VII -- FLAVOR AND PERFUME MATERIALS

TABLE 1.--FLAVOR AND PERFUME MATERIALS: U.S. PRODUCTION AND SALES, 1985

[Listed below are all synthetic organic flavor and perfume materials for which any reported data on production or sales may be published. (Leaders (...)) are used where the reported data are accepted in confidence and may not be published or where no data were reported.) Table 2 lists all flavor and perfume materials for which data on production and/or sales were reported and identifies the manufacturers of each]

FLAVOR AND PERFUME MATERIALS	PRODUCTION	SALES		
		QUANTITY	VALUE	UNIT VALUE <sup>1</sup>
		1,000 pounds	1,000 pounds	1,000 dollars Per pound
Grand total-----	151,871	86,075	586,560	\$6.81
CYCLIC				
Total-----	101,217	70,464	546,937	7.76
Benzenoid and Naphthalenoid				
Total-----	86,835	60,151	502,466	8.35
4-Allyl-2-methoxyphenol (Eugenol)-----	292	231	775	3.35
Phenethyl isobutyrate-----	10	...	...	...
2-Phenethyl phenylacetate-----	32	20	117	5.87
Phenylacetaldehyde, dimethyl acetal-----	107	108	461	4.27
p-Propenylanisole (Anethole)-----	2,695	2,302	5,649	2.45
All other benzenoid and naphthalenoid materials-----	83,699	57,490	495,464	8.62
Terpenoid, Metaracyclic, and Acyclic				
Total-----	14,382	10,313	44,471	4.31
Cedryl acetate-----	197	125	668	5.34
Ionones-----	89	111	948	8.55
γ-Methylionone-----	651	468	3,020	6.45
α-Terpinyl acetate-----	* 1,231	...	...	...
Vetiveryl acetate-----	28	13	643	48.94
All other terpenoid, heterocyclic, and alicyclic materials-----	12,186	9,596	39,192	4.08
ACYCLIC				
Total-----	50,654	15,611	39,623	2.54
Allyl hexanoate-----	23	42	149	3.58
Citronellyl formate-----	21	16	138	8.78
3,7-Dimethyl-cis-2,6-octadien-1-ol acetate (Neryl acetate)-----	22	19	95	4.88
3,7-Dimethyl-1,6-octadien-3-yl propionate (Linalyl propionate)-----	17	5	108	23.93
3,7-Dimethyloctanol-1 (Tetrahydrogeraniol)-----	368	...	...	...
3,7-Dimethyl-6-octen-1-ol (Citronellol)-----	1,568	1,558	4,442	2.85
Ethyl hexanoate-----	...	8	38	4.65
Geranyl acetate-----	130	98	435	4.42
Geranyl formate-----	...	9	68	7.77
2-Hexenal-----	...	3	54	18.03
cis-3-Hexen-1-yl acetate-----	4	...	...	...
7-Hydroxy-3,7-dimethyl-1-octanal (Hydroxycitronellal)-----	249	...	...	...
Isopentyl butyrate-----	...	81	167	2.06
1,3-Nonanediol acetate-----	90	67	362	5.42
N-Octyl acetate-----	3	...	...	...
All other acyclic materials-----	48,159	13,705	33,567	2.45

<sup>1</sup>Calculated from unrounded figures.

TABLE 2.--FLAVOR AND PERFUME MATERIALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE  
EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1985

[CHEMICALS FOR WHICH SEPARATE STATISTICS ARE GIVEN IN TABLE 1 ARE MARKED BELOW WITH AN ASTERISK (\*);  
CHEMICALS NOT SO MARKED DO NOT APPEAR IN TABLE 1 BECAUSE THE REPORTED DATA ARE ACCEPTED IN CONFIDENCE AND  
MAY NOT BE PUBLISHED. MANUFACTURERS' IDENTIFICATION CODES SHOWN BELOW ARE TAKEN FROM TABLE 3. AN "X"  
SIGNIFIES THAT THE MANUFACTURER DID NOT CONSENT TO HIS IDENTIFICATION WITH THE DESIGNATED PRODUCT]

FLAVOR AND PERFUME MATERIALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
CYCLIC	
BENZENOID AND NAPHTHALENOID:	
2'-Acetonaphthone (8-Methyl naphthyl ketone)-----	GIV.
1-Acetoxy-2-sec-butyl-1-ethylcyclohexane-----	GIV, IFF.
p-Allylanisole-----	SCM, X.
Allyl anthranilate-----	RT(E).
4-Allyl-1,2-dimethoxybenzene (4-Allylveratrole)-----	CI, X.
*4-Allyl-2-methoxyphenol (Eugenol)-----	BDS, CI, ELN, GIV, IFF, UNG.
4-Allyl-2-methoxyphenol acetate (Eugenol acetate)-----	CI.
α-Amyl cinnamic aldehyde-----	IFF.
Amyl cinnamyl acetate-----	IFF.
Amyl cinnamyl alcohol-----	IFF.
p-Anisaldehyde-----	GIV, FB.
Anisyl acetate-----	ELN, GIV.
Anisyl butyrate-----	RT(E).
Aurantiol-----	BDS.
Benzal acetone-----	FB.
Benzaldehyde glyceryl acetal-----	GIV.
Benzophenone-----	CWN, PD.
Benzyl acetate-----	GIV, MON.
Benzyl benzoate-----	MON, MRF.
Benzyl butyrate-----	ELN, FB.
Benzyl cinnamate-----	FB.
Benzyl formate-----	ELN.
Benzyl isobutyrate-----	ELN.
Benzyl isopentyl ether-----	GIV.
Benzyl isovalerate-----	ELN.
Benzyl laurate-----	GIV.
1-(Benzyloxy)-2-methoxy-4-propenylbenzene (Benzyl isoeugenyl ether)-----	GIV.
Benzyl phenylacetate-----	ELN, GIV.
Benzyl propionate-----	ELN, IFF, FB.
Benzyl salicylate-----	FB, GIV, MON.
4-tert-Butyl-2',6'-dimethyl-3',5'- dinitroacetophenone (Musk ketone)-----	GIV.
p-tert-Butyl-α-methylhydrocinnamaldehyde-----	GIV, RDA.

TABLE 2.--FLAVOR AND PERFUME MATERIALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1985--CONTINUED

FLAVOR AND PERFUME MATERIALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
CYCLIC--CONTINUED	
BENZENOID AND NAPHTHALENOID--CONTINUED	
1-tert-Butyl-3,4,5-trimethyl-2,6-dinitrobenzene (Musk tibetene)-----	GIV.
5-tert-Butyl-2,4,6-trinitro-m-xylene (Musk xylol)-----	GIV.
Carvacrol-----	GIV.
Cineole (Eucalyptol)-----	NCI.
Cinnamaldehyde-----	CI, FB.
Cinnamyl acetate-----	ELN, FB.
Cinnamyl alcohol-----	FB.
Cinnamyl butyrate-----	FB.
Cinnamyl cinnamate-----	FB.
Cinnamyl nitrile-----	IFF.
Cinnamyl propionate-----	ELN.
Coumarin-----	RDA.
Cuminyl acetate-----	IFF.
Cuminyl alcohol-----	IFF.
Cuminyl formate-----	IFF.
trans-Decahydro-8-naphthol-----	IFF.
trans-Decahydro-8-naphthyl acetate-----	IFF.
2-4-Dibromo-6-nitro-m-cresyl methyl ether-----	GIV.
1,2-Dimethoxy-4-propenylbenzene (4-Propenylveratrol)-----	FB.
3,7-Dimethyl-2,6-octadienyl phenylacetate (Geranyl phenylacetate)-----	GIV.
$\alpha,\alpha$ -Dimethylphenethyl acetate-----	IFF.
$\alpha,\alpha$ -Dimethylphenethyl alcohol-----	IFF.
Dimethyl phenylethyl carbinol-----	IFF.
p-Ethoxybenzaldehyde-----	GIV.
2-Ethoxynaphthalene-----	GIV.
Ethyl anthranilate-----	FB.
Ethyl benzoate-----	ELN.
Ethyl cinnamate-----	ELN.
Ethyl- $\alpha,\beta$ -epoxy- $\beta$ -methylhydrocinnamate-----	ELN.
2-Ethyl hexyl salicylate-----	ELN, FEL, MON.
Ethyl phenylacetate-----	ELN, GIV.
Ethyl salicylate-----	FB.
Geranyl benzoate-----	GIV.
Heliotropyl acetate-----	IFF.
$\alpha$ -Hexylcinnamaldehyde-----	CI, IFF.
Hexyl salicylate-----	IFF.
Hydratropaldehyde-----	CI, GIV.
Hydratropaldehyde, dimethyl acetal-----	GIV, IFF.
Hydrocinnamic acid-----	ELN.
Hydrocoumarin-----	ELN, GIV.



TABLE 2.--FLAVOR AND PERFUME MATERIALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE  
EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1985--CONTINUED

FLAVOR AND PERFUME MATERIALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
CYCLIC--CONTINUED	
BENZENOID AND NAPHTHALENOID--CONTINUED	
Hydroxycitronellal methyl anthranilate-----	GIV, IFF.
4-Hydroxy-3-ethoxybenzaldehyde (Ethylvanillin)-----	RDA.
4-Hydroxy-3-methoxybenzaldehyde (Vanillin)-----	MON.
4(4-Hydroxy-3-methoxyphenyl)-2-butanone (Vanillyacetone)-----	GIV.
Isoamyl phenylacetate-----	ELN.
Isoamyl salicylate-----	IFF.
Isobutyl benzoate-----	ELN.
Isobutyl phenylacetate-----	ELN, FB.
Isobutylquinoline-----	IFF.
Isobutyl salicylate-----	FB.
Isohexenyl tetrahydrobenzaldehyde (Myrac aldehyde)-----	IFF.
Isopentyl benzoate-----	GIV.
Isopentyl salicylate-----	FB, MON.
p-Isopropyl- $\alpha$ -methylhydrocinnamaldehyde (Cyclamen- aldehyde)-----	RDA.
d-Limonene-----	RT(E).
l-Limonene-----	SCM.
Linalyl anthranilate-----	BDS, FMT.
p-Mentha-1,8-diene (Limonene)-----	IFF.
p-Methoxybenzyl alcohol (Anisyl alcohol)-----	ELN, GIV.
o-Methoxycinnamic aldehyde crystals-----	CI.
2-Methoxynaphthalene-----	GIV.
1-p-Methoxyphenyl penten-1-one-3 ( $\alpha$ -Methyl- anisylacetone)-----	GIV.
2-Methoxy-4-propenylphenol (Isoeugenol)-----	CI.
2-Methoxy-4-propenylphenol, acetate-----	ELN.
4'-Methylacetophenone-----	CWN.
p-Methylanisole-----	GIV, PSG.
Methyl anthranilate-----	FB, PSG, UNG.
Methyl benzoate-----	KLM, MRF.
$\alpha$ -Methylbenzyl acetate (Styralyl acetate)-----	CI, IFF.
$\alpha$ -Methylcinnamaldehyde-----	CI, FB.
Methyl cinnamate-----	FB.
6-Methylcoumarin-----	GIV.
1,2-Methylenedioxy-4-propylene benzene (isoSafrole)-----	AMB.
p-Methylhydratropaldehyde-----	GIV.
1-Methyl-isohexyl-hexahydrobenzaldehyde-----	GIV.
Methyl N-methylanthranilate-----	AMB.
Methyl phenylacetate-----	ELN.

TABLE 2.--FLAVOR AND PERFUME MATERIALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE  
EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1985--CONTINUED

FLAVOR AND PERFUME MATERIALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
CYCLIC--CONTINUED	
BENZENOID AND NAPHTHALENOID--CONTINUED	
3-Methyl-5-phenyl-1-pentanol-----	IFF.
Methyl salicylate-----	KLM, MON.
Musk 89-----	IFF.
1,1,3,3,5-Pentamethyl-4,6-dinitroindan (Moskene)-----	GIV.
α-Pentylcinnamaldehyde-----	CI, FB.
Phenethyl acetate-----	BDS, FB, IFF.
Phenethyl benzoate-----	IFF.
Phenethyl formate-----	ELN, IFF.
*Phenethyl isobutyrate-----	ELN, GIV, IFF.
Phenethyl isovalerate-----	ELN, FB.
*2-Phenethyl phenylacetate-----	BDS, ELN, FB, GIV, IFF.
Phenethyl propionate-----	ELN.
Phenethyl salicylate-----	GIV.
2-Phenoxyethyl isobutyrate-----	ELN, FB.
Phenylacetaldehyde-----	GIV.
*Phenylacetaldehyde, dimethyl acetal-----	CI, ELN, GIV.
Phenylacetic acid-----	GIV.
Phenylacetic acid, isopentyl ester-----	GIV.
α-Phenylanisole-----	GIV.
Phenylethyl anthranilate-----	RT(E).
Phenylethyl 2-methyl butyrate-----	SCM.
Phenylethyl tiglate-----	FB.
3-Phenylpropyl acetate-----	ELN, GIV.
3-Phenylpropyl cinnamate-----	FB.
Piperonal (Heliotropin)-----	AMB.
*p-Propenylanisole (Anethole)-----	ARZ, FB, HPC, NCI, SCM.
4-Prophenyl-1,2-dimethoxybenzene (Methyl isoeugenol)-----	CI.
p-Propylanisol (Dihydroanethole)-----	FB, GIV.
SWEETENERS, SYNTHETIC:	
Aspartame-----	NSW.
Cyclohexanesulfamic acid, calcium salt (Calcium cyclamate)-----	ABB.
Cyclohexanesulfamic acid, sodium salt (Sodium cyclamate)-----	ABB.
Saccharin (1,2-Benzisothiazolin-3-one,-1,1-dioxide)-----	PSG.
Saccharin, sodium salt-----	PSG.
Tetramethyl, octahydro acetophenone-----	IFF.
Tetramethyl octahydro acetyl naphthalene-----	IFF.
Synthetic sweetner material, all other-----	NSW.

V -- FLAVOR AND PERFUME MATERIALS

TABLE 2.—FLAVOR AND PERFUME MATERIALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE  
EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1985—CONTINUED

FLAVOR AND PERFUME MATERIALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
<b>CYCLIC—CONTINUED</b>	
<b>BENZENOID AND NAPHTHALENOID—CONTINUED</b>	
p-Tolualdehyde	GIV.
p-Tolylacetaldehyde	GIV.
p-Tolylacetate	ELN.
p-Tolylisobutyrate	GIV, IFF.
p-Tolyl octanoate	IFF.
p-Tolylphenylacetate	GIV.
$\alpha$ -(Trichloromethyl)benzyl acetate (Rosetone)	ARS.
Trimethyl benzyl dioxane	IFF.
Trimethylcyclohexyl salicylate	ARS.
All other benzenoid or naphthalenoid chemicals	IFF.
<b>TERPENOID, HETEROCYCLIC, AND ALICYCLIC:</b>	
4-Acetoxyethyl-4-nonene	FB.
Acetyl-n-butyryl (2,3-Hexanedione)	FB.
Acetyl cedrene (Vertoflex)	BDS.
Acetyl isovaleryl (5-Methyl-2,3-hexanedione)	FB.
N-Acetyl methyl anthranilate	AMB.
Acetyl propionyl (2,3-Pentanedione)	FB.
Allo-ocimene	GIV, IFF, SCM, X.
Allyl cyclohexyl propionate	GIV.
Amyl cyclohexyl acetate	IFF.
Amyris acetate	GIV.
Beta methyl ionone coeur	IFF.
2-tert-Butylcyclohexanol	IFF.
p-tert-Butylcyclohexanone	IFF.
2-sec-Butylcyclohexanone	GIV.
p-tert-Butylcyclohexyl acetate (Verbeniax)	GI, IFF.
Cadinene	FB.
$\alpha$ -Campholenic aldehyde	SCM.
Canrenoate, potassium	IFF.
l-Carvone	SCM.
$\beta$ -Caryophyllene	BDS, GIV, SCM.
Caryophyllene oxide	GIV.
$\beta$ -Cedrene epoxide (Andrane)	BDS, IFF.
Cedrenol	ELN, IFF.
Cedrol	ELN.
*Cedryl acetate	BDS, ELN, IFF.
Cedryl formate	IFF.
Cyclohexadecen-7-olide	IFF.

TABLE 2.--FLAVOR AND PERFUME MATERIALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1985--CONTINUED

FLAVOR AND PERFUME MATERIALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
CYCLIC--CONTINUED	
TERPENOID, HETEROCYCLIC, AND ALICYCLIC--CONTINUED	
2-Cyclohexylcyclohexanone-----	GIV, IFF.
Cyclohexyl ethyl acetate-----	IFF.
Cyclohexyl methanol dimethyl acetate-----	FB.
p-Cymene-----	SCM.
Dihydro-iso-jasmone-----	FB.
Dihydronordicyclopentadienyl acetate (Cyclacet)-----	BDS, CI, IFF.
Dihydronordicyclopentadienyl propionate (Cyclaprop) (Verdyl propionate extra)-----	BDS, CI.
Dihydro terpineol-----	IFF, SCM.
Dihydroterpinyl acetate-----	SCM, X.
Dimethyl cyclohexane methanol-----	IFF.
Dimethyl pseudo ionone-----	FB.
Galaxolide (1,3,4,6,7,8-Hexahydro-4,6,6,7,8,8- hexamethyl-cyclopenta-γ-2-benzopyran)-----	IFF.
Guaiacwood acetate-----	ELN, FB, GIV.
Guaiene-----	FB.
Hexadecanolide-----	IFF.
Hexahydro dimethyl methano-indenol-----	IFF.
2-Hexyl-2-cyclopenten-1-one-----	FB.
3-Hydroxy-2-ethyl-4-pyrone (Ethylmaltol)-----	PFZ.
4-(4-Hydroxy-4-methyl pentyl)-3-cyclohexene-10- carboxaldehyde (Lyral)-----	IFF.
3-Hydroxy-2-methyl-4-pyrone (Maltol)-----	PFZ.
4-Hydroxynonanonic acid, γ-lactone (γ-Nonalactone)-----	ELN.
4-Hydroxyundecanoic acid, γ-lactone (γ-Undecalactone)-----	ELN.
Ionone(α- and β-)-----	BDS, GIV, NCI.
α-Ionone-----	BDS, GIV, HOF, IFF.
β-Ionone-----	HOF.
Isobornyl acetate-----	NCI, RDA.
Isobornyl methyl ether-----	SCM.
Isobornyl propionate-----	ELN.
Isocampyl cyclohexanols-----	GIV.
Isomenthone-----	GIV.
2-Isopropylcyclohexanol-----	GIV.
Isopulegyl acetate-----	GIV.
p-Mentha-1,3-diene (α-Terpinene)-----	SCM.
p-Mentha-1,4-diene (γ-Terpinene)-----	SCM.
p-Mentha-6,8-dien-z-ol (Carveol)-----	FB.
p-Mentha-6,8-dien-z-one (Carvone, Carvol)-----	FB.

TABLE 2.—FLAVOR AND PERFUME MATERIALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE  
EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1985—CONTINUED

FLAVOR AND PERFUME MATERIALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
CYCLIC—CONTINUED	
TERPENOID, HETEROCYCLIC, AND ALICYCLIC—CONTINUED	
1-p-Mentha-6,8-dien-2-yl acetate (Carvyl acetate)-----	FB.
p-Menth-8-en-3-ol (Isopulegol)-----	GIV.
p-Menth-1-en-3-one (Piperitone)-----	GIV.
p-Menth-4-(8)-en-3-one (Pulegone)-----	GIV.
1-1-p-Menthen-6-yl-1-propanone-----	GIV.
d-Menthol-----	HAR, SCM.
dl-Menthol, synthetic-----	GIV, HAR, NCI, SCM.
Menthyl acetate-----	FB, GIV, SCM.
1-Menthyl acetate-----	SCM.
Methylionone( $\alpha$ - and $\beta$ -)-----	GIV, IFF, NCI.
* $\gamma$ -Methylionone-----	BDS, GIV, NCI.
6-Methyl- $\alpha$ -ionone-----	BDS, GIV.
6-Methyl- $\beta$ -ionone-----	BDS.
Nopol-----	NCI.
Nopyl acetate-----	NCI.
Rose oxide-----	FB.
$\alpha$ -Santalol-----	GIV.
Sassafrass oil, hydrogenated-----	GIV.
Terpinene-ol-----	SCM.
Terpineol ( $\alpha$ - and $\beta$ -)-----	SCM.
$\alpha$ -Terpineol-----	HPC, NCI.
* $\alpha$ -Terpinyl acetate-----	GIV, IFF, NCI, SCM.
$\alpha$ -Terpinyl propionate-----	ELN.
3,3,5-Trimethyl cyclohexanol (m-Homomenthol)-----	ARS.
Trimethyl cyclohexene carboxaldehyde-----	IFF.
Trimethyl cyclohexaenyl butenone-----	IFF.
1-(2,6,6-Trimethyl-2-cyclohexen-1-yl)-1,6-heptadien 3-one (Allyl- $\alpha$ -ionone)-----	IFF.
Trimethyl norborane methanol-----	IFF.
Vetivenol-----	GIV.
*Vetivenyl acetate-----	BDS, ELN, FB, GIV, IFF.
All other terpenoid, heterocyclic, or alicyclic flavor and perfume chemicals-----	IFF, SCM.
ACYCLIC	
Allyl disulfide-----	IFF.
Allyl heptanoate-----	ELN, FB.

TABLE 2.—FLAVOR AND PERFUME MATERIALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE  
EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1985—CONTINUED

FLAVOR AND PERFUME MATERIALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC—CONTINUED	
*Allyl hexanoate-----	ELN, FB, UNG.
Allyl isovalerate-----	RT(E).
Allyl mercaptan-----	RT(E).
Allyl octanoate (Allyl caprylate)-----	RT(E).
Allyl sulfide-----	RT(E).
Amyl vinyl carbonyl acetate-----	IFF.
Butter acids-----	RT(E).
Butter esters-----	RT(E).
3-Bromo-propyl-amine hydrobromide-----	HPC.
Butyl butyryl lactate-----	ELN, RT(E).
Butyl undecylenate-----	FB, GIV.
Citral dimethyl acetal-----	CI, IFF.
Citronellic acid-----	HPC.
Citronellyl acetate-----	BDS, ELN, GIV, IFF, NCI.
Citronellyl butyrate-----	GIV.
Citronellyl ethyl ether-----	IFF.
*Citronellyl formate-----	BDS, ELN, GIV, IFF.
Citronellyl isobutyrate-----	ELN, GIV, IFF.
Citronellyl propionate-----	IFF.
Crude acetate mixture (Linalyl, neryl, geranyl acetates, main components)-----	X.
Crude caryophyllene mixture ( $\alpha$ , $\beta$ , and $\gamma$ isomers)-----	NCI.
Decanal (Capraldehyde)-----	CI, GIV.
9-Decenyl acetate-----	IFF.
Decyl acetate-----	GIV.
Diethyl acetal-----	FB.
Diethyl isobutylidene malonate-----	HPC.
Diethyl sebacate-----	ELN.
Diethyl succinate-----	MRF.
Dihexyl fumarate-----	FB.
d-Dihydrocarveol-----	SCM.
Dihydrocarvone-----	SCM.
Dihydrolinalool-----	SCM.
Dihydro myrcenol-----	IFF, SCM.
Dihydro pentamethyl indanone-----	IFF.
Dihydroterpinyl acetate-----	IFF.
1,1-Dimethoxy octane-----	IFF.
2,6 Dimethyl-5-hepten-1-ol-----	GIV.
Dimethyl hexanediol-----	X.

TABLE 2.—FLAVOR AND PERFUME MATERIALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE  
EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1985—CONTINUED

FLAVOR AND PERFUME MATERIALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC—CONTINUED	
2,5-Dimethyl-3-hexyne-2,5-diol-----	X.
3,7-Dimethyl-trans-2,6-octadienal (Citral A, Geranial)---	BDS, FB.
3,7-Dimethyl-2,6-octadienal (Citral A&B)-----	NCI, SCM.
3,7-Dimethyl-cis-2,6-octadien-1-ol (Nerol)-----	ELN, FB, GIV, IFF, NCI, SCM.
3,7-Dimethyl-trans-2,6-octadien-1-ol (Geraniol)-----	ELN, FEL, GIV, IFF, NCI, SCM.
3,7-Dimethyl-1,6-octadien-3-ol (Linalool) (Linalyl alcohol)-----	ELN, FB, FEL, GIV, IFF, NCI, SCM.
*3,7-Dimethyl-cis-2,6-octadienol, acetate (Neryl acetate)-----	ELN, GIV, IFF.
3,7-Dimethyl-1,6-octadien-3-ol, acetate (Linalyl acetate)-----	ELN, FB, GIV, NCI, SCM(E).
3,7-Dimethyl-1,6-octadien-3-yl isobutyrate (Linalyl isobutyrate)-----	ELN.
*3,7-Dimethyl-1,6-octadien-3-yl propionate (Linalyl propionate)-----	ELN, FB, GIV.
Dimethyloctanal-----	GIV, SCM.
*3,7-Dimethyloctanol-1 (Tetrahydrogeraniol)-----	GIV, IFF, NCI, SCM.
3,7-Dimethyl-3-octanol-----	GIV, SCM.
Dimethyloctanyl acetate-----	FB, IFF.
3,7-Dimethyl-6-octen-1-ol (Citronellal)-----	GIV, SCM.
*3,7-Dimethyl-6-octen-1-ol (Citronellol)-----	ELN, FB, GIV, IFF, NCI, SCM.
3,7-Dimethyl-7-octenol 70%, 6-octenol isomer 30%-----	GIV.
Dimethyl succinate-----	FB.
Dimyrcetol-----	IFF.
Dioxolane-2-acetate-----	IFF.
Dodecane nitrile-----	IFF.
Ethylacetate-----	FB.
Ethyl butyrate-----	ELN, FB, NW.
Ethyl caprate-----	ELN, FB.
Ethyl crotonate-----	RT(E).
Ethyl formate-----	FB.
Ethyl heptanoate-----	ELN, FB, FEL.
*Ethyl hexanoate-----	ELN, FB, NW.
Ethyl isovalerate-----	ELN, FB.
Ethyl laurate-----	ELN, FB.
Ethyl-2-methyl butyrate-----	HPC, SCM.
Ethyl-2 methyl pentanoate-----	HPC.
Ethyl myristate-----	ELN, HPC.
Ethyl nonanoate-----	ELN, FB.

TABLE 2.--FLAVOR AND PERFUME MATERIALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE  
EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1985--CONTINUED

FLAVOR AND PERFUME MATERIALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
Ethyl octanoate	ELN, FB.
Ethyl propionate	FB, NW.
Ethyl trimethyl cyclopentenyl buterol	IFF.
Ethyl valerate	ELN.
*Geranyl acetate	BDS, ELN, FEL, GIV, HPC, IFF, NCI, NW, SCM.
Geranyl butyrate	ELN, FB, GIV.
Geranyl crotonate	FB.
Geranyl ethyl ether	IFF.
*Geranyl formate	BDS, ELN, GIV.
Geranyl isobutyrate	IFF.
Geranyl isovalerate	FB.
Geranyl and methyl tiglate	FMT.
Geranyl nitrile (Citralva)	CI, IFF.
Geranyl propionate	ELN, FB.
Geranyl tiglate	FB.
Glyceryl tripropionate	HPC.
Heptanolide	FB.
Hexanoic acid (Caproic acid)	SCM.
*2-Hexenal	FB, GIV, SCM.
2-Hexenol	FB, SCM.
*cis-3-Hexen-1-yl acetate	BDS, GIV, IFF.
cis-3-Hexenyl benzoate	BDS.
cis-3-Hexenyl butyrate	IFF, SCM.
cis-3-Hexenyl methyl carbonate	IFF.
cis-3-Hexenyl salicylate	BDS, IFF.
cis-3-Hexenyl tiglate	BDS.
Hexoxyacetaldehyde dimethyl acetal	FB.
Hexyl caproate	FB.
Hexyl 2-methylbutyrate	SCM.
Hydroxycitronellol	SCM.
*7-Hydroxy-3,7-dimethyl-1-octanal (Hydroxycitronellal)	FB, GIV, IFF, SCM.
7-Hydroxy-3,7-dimethyl octanal, dimethyl acetal (Hydroxycitronellal, dimethyl acetal)	GIV.
Isobutyl acetate	FB, NW.
Isobutyl butyrate	FB.
Isodecyl neopentanoate	SBC.
Isononyl acetate	IFF.
Isopentyl acetate (Isoamyl acetate)	ELN, FB, HPC.
*Isopentyl butyrate	FB, GIV, HPC, NW.



TABLE 2.--FLAVOR AND PERFUME MATERIALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE  
EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1985--CONTINUED

FLAVOR AND PERFUME MATERIALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
Isopentyl caproate	: FB.
Isopentyl caprylate	: FB.
Isopentyl formate	: ELN, FB.
Isopentyl isovalerate	: ELN, FB, HPC.
Isopentyl propionate	: FB.
Lauraldehyde	: GIV, SCM.
3-Methyl-2-butenyl acetate	: IFF.
2-Methylbutyl isovalerate	: SCM.
Methyl butynol	: X.
Methyl crotonate	: RT(E).
2-Methyl decanal	: IFF.
Methyl hexyl ether	: SCM.
Methyl isobutyrate	: HPC.
Methyl isovalerate	: FB.
Methyl-2-methyl butyrate	: SCM.
3-Methyl-2-[and3]nonene nitrile	: GIV.
Methyl nonen-3-oate	: HPC.
Methyl-octyl aldehyde	: CI.
Methylol methyl hexyl ketone	: GIV.
Methyl pentynol	: X.
8-Methyl thiopropionaldehyde	: RT(E).
Methyl thiobutyrate	: STG
2-Methylundecanal	: CI, GIV.
2-Methyl undecanal dimethylacetal	: CI.
Myrcenyl acetate	: IFF.
Myristaldehyde	: GIV.
Nonanal	: CI, GIV.
*1,3-Nonanediol acetate	: ELN, GIV, IFF.
1,3-Nonanediol diacetate	: SBC.
4-Nonene-4-carboxaldehyde	: FB.
Nonyl acetate	: IFF.
Nonylenic acid	: HPC.
Ocimene	: IFF.
Octanal	: GIV, IFF.
Octanal dimethylacetal	: CI.
3-Octanone (Ethyl amyl ketone)	: GIV.
*N-Octyl acetate	: ELN, FB, SCM.
Octyl formate	: FB.

TABLE 2.—FLAVOR AND PERFUME MATERIALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE  
EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1985--CONTINUED

FLAVOR AND PERFUME MATERIALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
Octyl isobutyrate-----	FB.
Octyl isovalerate-----	GIV.
Pseudo linalyl acetate (Neobergamate)-----	IFF.
Rhodinol-----	FB, FEL, GIV, IFF.
Rhodinyl acetate-----	IFF.
Tepyl acetate-----	ELN.
Tetrahydromyrcenol-----	SCM.
Trimethyl-cyclododeca-trienyl ethanone-----	IFF.
3,5,5-Trimethyl hexanal-----	IFF.
Undecanal-----	GIV.
9-Undecenal-----	GI, GIV.
Undecenal-10-----	IFF.
All other acyclic flavor and perfume materials-----	IFF.

VII -- FLAVOR AND PERFUME MATERIALS

TABLE 3.--FLAVOR AND PERFUME MATERIALS: DIRECTORY OF MANUFACTURERS, 1985

ALPHABETICAL DIRECTORY BY CODE

Names of manufacturers that reported production and/or sales of flavor and perfume materials to the U.S. International Trade Commission for 1985 are listed below in the order of their identification codes as used in table 2]

CODE	NAME OF COMPANY	CODE	NAME OF COMPANY
ABB	Abbott Laboratories	IFF	International Flavors & Fragrances, Inc.
AMB	American Bio-Synthetics Corp.		
ARS	Arsynco, Inc.	KLM	Kalama Chemical, Inc.
ARZ	Arizona Chemical Co.		
BOS	Biddle Sawyer Corp.	MON	Monsanto Co.
		MRF	Morflex Chemical Co., Inc.
CI	Chem-Fluer, Inc.	NGI	Union Camp Corp., Terpene and Aromatics Div.
CWN	Upjohn Co., Fine Chemical Div.	NSW	Nutrasweet Co.
		NW	Northwestern Chemical Co.
ELW	Elan Chemical Co.		
		PD	Parke-Davis, Div. of Warner-Lambert Co.
FB	Fritzsche Dodge & Olcott, Inc.	PFZ	Pfizer, Inc.
FEL	Felton International, Inc.	PSG	PMC Specialities Group, Inc.
FMT	Fairmount Chemical Co., Inc.		
		RDA	Rhone-Poulenc, Inc.
GIV	Givaudan Corp.		
		SBC	Scher Chemicals, Inc.
HAR	Haarmann & Reimer Corp.	SCM	SCM Corp., Organic Chemicals Div.
HOF	Hoffmann-LaRoche, Inc.	STG	McCormick & Co., Inc. McCormick-Strange Div.
HPC	Hercules, Inc.		
		UNG	Ungerer & Co.

Note.--Complete names, telephone numbers, and addresses of the above reporting companies are listed in table 1 of the appendix.

# SYNTHETIC ORGANIC CHEMICALS, 1985

## SECTION VIII -- PLASTICS AND RESIN MATERIALS

### STATISTICAL HIGHLIGHTS

Edward J. Taylor

202-523-3709

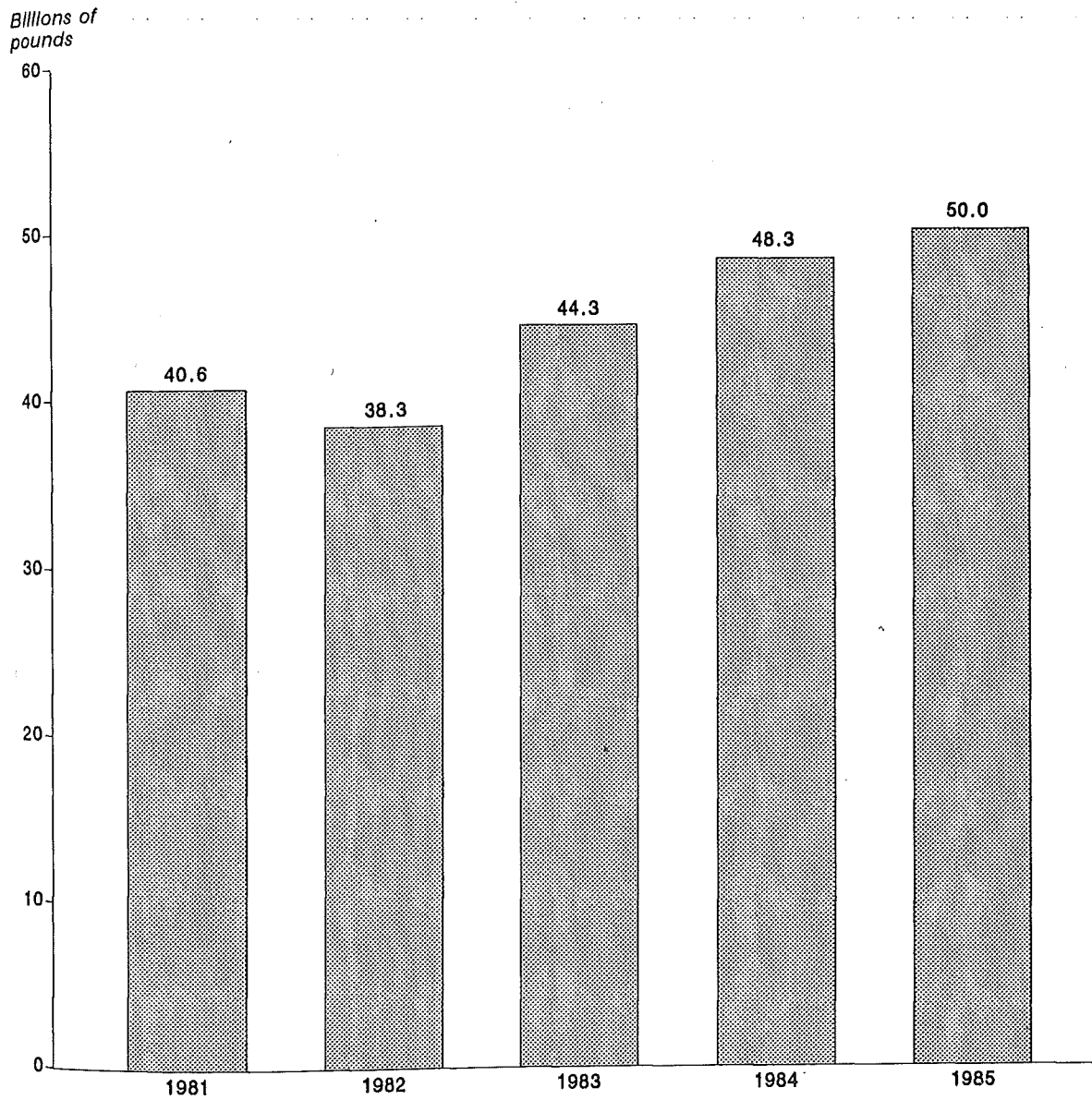
Plastics and resin materials are high molecular weight polymers which, at some stage in their manufacture, exist in such physical condition that they can be shaped or otherwise processed by the application of heat and pressure. The terms "plastics," "resin," and "polymers," can be (and often are) used interchangeably by the trade. Depending on the chemical composition, manufacturing process, or intended use, the commercial products may contain plasticizers, fillers, extenders, stabilizers, coloring agents, or other additives. There are about 40 to 50 basic plastics and resins which are available commercially. These basic materials are available in literally thousands of individual compounds each with its distinct properties depending on the molecular weight of the resin and the types and amounts of the additives present. Plastics materials may be molded, cast, or extruded into semifinished or finished solid forms. Resin materials may be in the form of solutions, pastes, or emulsions for applications such as protective coatings, adhesives, or paper and textile treatment.

Statistics on U.S. production and sales of synthetic plastics and resin materials for 1985 are given in table 1. U.S. production of plastics and resin materials in 1985 totaled 49,998 million pounds, or 3.6 percent more than the 48,255 million pounds produced in 1984. From 1981-85, the production of plastics and resin materials increased irregularly from 40,601 million pounds in 1981 to 49,998 million pounds in 1985, or at an average, annual rate of growth of 5.3 percent (see figure 1). Sales in 1985 totaled 42,171 million pounds, valued at \$20,168 million, compared with 40,751 million pounds, valued at \$20,923 million, in 1984.

Thermosetting materials are those which harden with a change in composition in the final treatment so that in their final state as finished articles they are substantially infusible and insoluble; that is, they cannot again be softened by heat or solvents. U.S. production of thermosetting materials totaled 8,243 million pounds in 1985, compared with 7,997 million pounds in 1984. Production of the most important products in 1985 included phenolic (1,714 million pounds), amino (or urea and melamine) resins (1,624 million pounds), polyester resins, unsaturated (1,336 million pounds), and alkyd resins (830 million pounds).

Thermoplastic materials are those which in their final state as finished articles can be repeatedly softened by heat and hardened by a decrease in temperature. U.S. production of thermoplastic materials totaled 41,755 million pounds in 1985 (or 83.5 percent of the total plastics and resin materials output for 1985), compared with 40,257 million pounds in 1984. Production of the most important products in 1985 included polyethylene (15,799 million pounds), polypropylene (5,654 million pounds), vinyl resins (8,107 million pounds), and styrene type materials (7,229 million pounds).

Figure 1.—Plastics and resin materials.



Source: U.S. International Trade Commission, *Synthetic Organic Chemicals: United States Production and Sales*.

TABLE 1.--PLASTICS AND RESIN MATERIALS: U.S. PRODUCTION AND SALES, 1985

Quantities and values are given in terms of the total weight of the materials (dry basis). Listed below are all plastics and resin materials, urethane type elastomers, and certain precursors for which any reported data on production or sales may be published. (Leaders (...) are used where the reported data are accepted in confidence and may not be published or where no data were reported.) Table 2 lists all products for which data on production and/or sales were reported and identifies the manufacturers of each

PLASTICS AND RESIN MATERIALS	PRODUCTION	SALES		
		QUANTITY	VALUE	UNIT VALUE <sup>1</sup>
	1,000 pounds dry basis <sup>2</sup>	1,000 pounds dry basis <sup>2</sup>	1,000 dollars	Per pound
Grand total-----	49,997,869	42,171,209	20,167,800	\$0.48
<b>THERMOSETTING RESINS</b>				
Total-----	8,242,728	6,448,642	3,889,722	.60
Alkyd resins, total-----	830,372	458,565	296,297	.65
Phthalic anhydride type-----	713,521	397,522	244,961	.62
Polybasic acid type-----	42,369	23,579	21,105	.90
Styrenated-alkyds or copolymer alkyds-----	15,617	6,495	5,380	.83
Vinyl toluene alkyds-----	25,661	25,492	17,549	.69
Other copolymer alkyds-----	33,204	5,477	7,302	1.33
Epoxy resins: <sup>3 4</sup>				
Unmodified-----	420,760	323,332	389,781	1.21
Advanced-----	(342,451)	(136,718)	(189,657)	(1.39)
Furfuryl type resins-----	23,307	23,116	17,997	.78
Glyoxal-formaldehyde resins-----	19,047	...	...	...
Melamine-formaldehyde resins (an amino resin)-----	208,316	177,354	154,623	.87
Phenolic and other tar acid resins-----	1,713,618	1,206,766	659,773	.55
Polyester resins, unsaturated <sup>5</sup> -----	1,336,107	1,261,775	797,107	.63
Polyether and polyester polyols for urethanes <sup>6</sup> -----	1,760,621	1,401,153	807,751	.58
Polyurethane elastomers and plastics products,				
total-----	339,718	230,954	373,572	1.62
Elastomers-----	180,863	148,550	269,107	1.81
Plastics-----	158,855	82,404	104,465	1.27
Urea-formaldehyde resins (an amino resin)-----	1,415,683	1,214,104	220,515	.18
Other thermosetting resins <sup>8</sup> -----	175,179	151,523	172,306	1.14
<b>THERMOPLASTIC RESINS</b>				
Total-----	41,755,141	35,722,567	16,278,078	.46
Acrylic resins, total <sup>9</sup> -----	1,427,113	1,015,106	1,061,514	1.05
Butyl acrylate-ethyl acrylate copolymers resins-----	78,862	63,851	52,769	.83
Homopolymer resins, except PMMA, of acrylic or methacrylic acid esters-----	97,045	24,572	30,743	1.25
Polymethyl methacrylate (PMMA) resins-----	482,612	336,887	358,136	1.05
Thermosetting acrylic resins-----	127,691	26,126	30,966	1.19
Other acrylic resins-----	640,903	563,670	588,900	1.04
Engineering plastics <sup>10</sup> -----	778,774	599,568	969,044	1.62
Petroleum hydrocarbons resins-----	254,437	223,143	109,130	.49
Polyamide resins, total-----	409,205	378,631	598,131	1.58
Nylon type <sup>10 11</sup> -----	346,475	316,884	527,292	1.66
Non-nylon type-----	62,730	61,747	70,839	1.15

See footnote at end of table.

TABLE 1.--PLASTICS AND RESIN MATERIALS: U.S. PRODUCTION AND SALES, 1985--CONTINUED

PLASTICS AND RESIN MATERIALS	PRODUCTION	SALES		
		QUANTITY	VALUE	UNIT VALUE <sup>1</sup>
	1,000 pounds dry basis	1,000 pounds dry basis	1,000 dollars	Per pound
<b>THERMOPLASTICS RESINS--Continued</b>				
Polyester resins, saturated, total <sup>9 12</sup>	1,285,440	991,386	789,120	\$0.80
Polyethylene terephthalate (PET)	1,115,792	858,110	613,424	.71
Other saturated polyesters, including Polybutylene terephthalate, (PBT) resins	169,648	133,276	175,696	1.32
Polyethylene resins, total	15,799,107	14,274,932	4,728,834	.31
Ethylene-vinyl acetate and other copolymer resins	481,049	415,095	203,939	.49
Specific gravity 0.940 and below <sup>13</sup>	8,804,593	7,687,157	2,645,416	.31
Specific gravity over 0.940	6,513,465	6,172,680	1,879,479	.30
Polypropylene resins	5,654,450	4,393,155	1,489,418	.31
Polyterpene resins	28,112	27,602	22,965	.81
Polytetrafluoroethylene (PTFE) resins	25,494	20,017	126,933	6.31
Rosin modifications, total	340,397	316,061	158,567	.50
Modified rosin (unesterified)	169,421	150,709	49,188	.31
Modified rosin esters	131,756	128,446	84,978	.65
Rosin esters, unmodified (Ester gums)	39,220	36,906	24,401	.61
Styrene plastics materials, total	7,228,967	5,994,319	3,087,867	.51
Acrylonitrile-butadiene-styrene terpolymer (ABS) resins	1,347,658	1,038,889	846,228	.61
Expandable polystyrene beads	513,238	479,757	227,027	.47
Methyl methacrylate-butadiene-styrene (MBS) resins and certain other styrene copolymer and terpolymer resins	339,846	276,840	230,137	.68
Rubber modified polystyrene	1,421,435	1,116,338	415,947	.37
Straight polystyrene	1,994,230	1,682,841	566,186	.31
Styrene-acrylonitrile copolymer (SAN) resins	769,562	598,129	251,563	.47
Styrene latexes, total	681,279	665,233	394,081	.58
Styrene-butadiene latexes	627,995	626,489	367,763	.59
All other styrene latexes	53,284	38,744	26,318	.60
All other styrene plastics materials <sup>14</sup>	161,719	136,292	156,698	1.15
Vinyl resins, total <sup>15</sup>	8,106,722	7,243,367	2,724,697	.31
Polyvinyl acetate <sup>16</sup>	635,589	495,603	301,834	.48
Polyvinyl alcohol <sup>17</sup>	166,819	143,391	119,638	.71
Polyvinyl chloride and copolymers	6,667,869	6,058,705	1,868,820	.31
Polyvinylidene chloride resins, latex type	19,197	18,508	16,822	.91
Vinyl acetate-acrylate copolymers	345,173	309,780	126,462	.41
Other vinyl and vinylidene resins <sup>18</sup>	272,075	217,380	291,121	1.31
All other thermoplastic resins <sup>19</sup>	416,923	245,280	411,858	1.00

<sup>1</sup>Calculated from unrounded figures.

<sup>2</sup>Dry weight basis unless otherwise specified. Dry weight basis is the total weight of the materials including resin and coloring agents, extenders, fillers, plasticizers, and other additives, but excluding water and other liquid diluents unless they are an integral part of the materials.

<sup>3</sup>Includes reactive diluents which are an integral part of the resin. Excludes the weight of hardeners sold in association with the resin as part of a two-component system.

<sup>4</sup>Data shown for advanced epoxy resins are that part of the unmodified epoxy resins which is further processed; therefore, the total in parentheses are not included in the grand total.

<sup>5</sup>Polyester resins are unsaturated alkyd resins, later to be copolymerized with a monomer (Such as styrene or methyl methacrylate), and polyallyl resins (such as diallyl phthalate and diglycol carbonate). Data are on an "as sold" basis, including monomer if part of the resin system.

<sup>6</sup>In addition to the polyols, the other principal starting materials used in the production of urethane products are the isocyanic acid derivatives, mainly the 80/20 mixture of toluene-2,4- and 2,6-diisocyanate. Statistics for the isocyanic acid derivatives are reported in the "Cyclic Intermediates" section of the Synthetic Organic Chemicals report.

<sup>7</sup>The data on urethane elastomers are believed to be not fully representative of the total urethane market in view of the very large number of urethane elastomer producers.

<sup>8</sup>Includes acetone-formaldehyde resins, dicyandiamide resins, glyoxal-formaldehyde resins/sales only, polybutadiene resins, silicone resins, thiourea resins, and certain other thermosetting resins.

<sup>9</sup> Does not include production or sales for fiber use.

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## FOOTNOTES--CONTINUED

<sup>10</sup>Engineering plastics: Includes acetal, polycarbonate, polyimide and amide-imide polymers, polyphenylene oxide, polyphenylene sulfide and polysulfone. Engineering plastics are defined in Whittington's Dictionary of Plastics, as "All plastics, with or without fillers or reinforcements, which have mechanical, chemical and thermal properties suitable for use in construction, machine components and chemical processing equipment." The above list of plastics (all of which are thermoplastic) was selected from a larger group in this source. Certain other plastics named in Whittington's Dictionary as engineering plastics, such as ABS resins, acrylic resins, and nylon resins, are not included in the above list as they are published separately.

<sup>11</sup>Statistics for nylon 6 and nylon 6/6 which are used in plastics applications (e.g., molding, etc.) are included here.

<sup>12</sup>Statistics are included here for polyethylene terephthalate used in plastics applications (e.g., molding, etc.) Statistics also are included here for production only when the starting materials are converted directly to a finished product (i.e., "in situ" production), polyester film and tape are examples of such a conversion.

<sup>13</sup>Combines conventional low density polyethylene (LDPE) resins with linear low density polyethylene (LLDPE) resins, because several of the leading producers of LLDPE continue to aggregate these data with that of LDPE.

<sup>14</sup>Includes data for  $\alpha$ -methyl styrene polymers, p-methyl styrene polymers, styrene-allyl alcohol copolymer resins, styrene-divinylbenzene copolymer resins, styrene-maleic anhydride copolymers resins, styrene-methyl methacrylate copolymers resins, and other styrene type plastics material.

<sup>15</sup>Data are on the basis of dry resin content, excluding the weight of plasticizers, extenders, fillers coloring agents, stabilizers, or impact modifiers, unless otherwise noted.

<sup>16</sup>Data for polyvinyl acetate produced and sold in latex form includes the weight of any protective colloids which are used as emulsion stabilizers and form an integral part of the resin system. Production and sales do not include polyvinyl acetate used as a reactive intermediate for polyvinyl alcohol or other vinyl resins.

<sup>17</sup>Production and sales do not include polyvinyl alcohol used as a reactive intermediates for polyvinyl butyral or other vinyl resins.

<sup>18</sup>Includes polyvinyl butyral, polyvinyl formal, polyvinylidene chloride (solid type), and other vinyl resins.

<sup>19</sup>Includes cellulose plastics, coumarone-indene resins, fluorocarbon resins (except PTFE), phenoxy resins, polybutylene type resins, polyphenyl aromatic ester resins, and other thermoplastic materials.

Note.--Data reported to the U.S. International Trade Commission do not necessarily coincide with that reported to the Society of the Plastics Industry (SPI) because of differences in both the reporting instructions and in the coverage of certain resins.



TABLE 2.--PLASTICS AND RESIN MATERIALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1985--CONTINUED

[CHEMICALS FOR WHICH SEPARATE STATISTICS ARE GIVEN IN TABLE 1 ARE MARKED BELOW WITH AN ASTERISK (\*); CHEMICALS NOT SO MARKED DO NOT APPEAR IN TABLE 1 BECAUSE THE REPORTED DATA ARE ACCEPTED IN CONFIDENCE AND MAY NOT BE PUBLISHED. MANUFACTURERS' IDENTIFICATION CODES SHOWN BELOW ARE TAKEN FROM TABLE 3. AN "X" SIGNIFIES THAT THE MANUFACTURER DID NOT CONSENT TO HIS IDENTIFICATION WITH THE DESIGNATED PRODUCT

PLASTICS AND RESIN MATERIALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
THERMOSETTING RESINS	
Acetone-formaldehyde resins-----	ACY, CEL, FLH, GP.
*ALKYD RESINS:	
Alkyd-Acrylate copolymer resins-----	FRE, KMC, OBC, PPG, SCM.
Alkyl phenol-----	X.
*Phthalic anhydride type alkyd resins-----	ACO, ASH, AZS, BAL, BLC, BRU, CCC, CEI, CEL, CGL, CJO, CPV, DRC, DSO, DUP, ENP, EW, FJI, FMO, FOC, FRE, GAI, GEI, GRG, GRV, HAN, HJR, ICF, IOV, JOB, JSC, KMC, KMP, LIC, MCC, MID, MNP, MCP, NTL, OBC, PER, PPG, PRT, QCP, RCI, REL, SCM, SDH, SRY, SW, TNA, UNO, USS, VSP, X, X, X.
*Polybasic acid type alkyd resins-----	ACY, BEN, CJO, CPV, DSO, FOC, FRE, GAI, GEI, GRV, HAN, ICF, IOV, MCC, NTL, PPG, RCI, REL, SCM, SCN, SW.
*Styrenated-alkyds, or copolymer alkyds-----	ACY, BEN, CJO, CPV, DSO, EW, FRE, GEI, HAN, HJR, MNP, MRT, OBC, RUO, SCM, SW.
*Vinyl toluene alkyds-----	CGL, CPV, GSD, FJI, FRE, GEI, JOB, MCC, MNP, OBC, PPG, PRT, REL, SCM, SW.
Alkyd copolymers, all other-----	CGL, GEI, HJR, MCC, MNP, OBC, PPG, SW.
Dicyandiamide resins-----	APX, ECC, JSC, PPG, S, SNW, STC.
AMINO RESINS:	
*Melamine-formaldehyde resins-----	ACY, ADC, AUX, BOR, CBD, CEL, CGL, CPV, DGO, DRC, GAI, GRS, JSC, LIC, MID, MNP, MOM, NCJ, NVM, PLS, PMC, PPG, PPL, PST, RCI, REL, SCH, SNW, STC, WPG, WRD, X.
Thiourea resins-----	CMP.
*Urea-formaldehyde resins-----	ACY, APX, AUX, BOR, CBD, CCC, CEL, CGL, CMP, CPV, DAN, DSO, GAF, GP, GRV, JSC, MMM, MNP, MOM, PKI, PMC, PPG, PPL, PST, RBI, RCI, REL, SAC, SNW, SOR, VAL, VPC, X.
Amino resins, all other-----	X.
*EPOXY RESINS:	
*Epoxy, resins advanced-----	ASH, BEN, CEL, CGL, CGY, CJO, CNI, DSO, ENP, EW, FMO, GAI, GE, GRG, GRV, ICF, MCC, MID, MNP, MRT, OCF, PPG, RCI, SCM, SCN, SMO.

TABLE 2.--PLASTICS AND RESIN MATERIALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1985--CONTINUED

PLASTICS AND RESIN MATERIALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
<b>THERMOSETTING RESINS--CONTINUED</b>	
EPOXY RESINS--Continued	
*Epoxy, resins unmodified-----	: ADC, AZS, CEL, CGY, CLU, CMP, DOW, DSO, : JOB, PPG, PRT, RCI, SHC, UCC, WLN, X.
*Furfuryl type resins-----	: ACR, CEI, CLU, DRR, HVG, MCP, UNO, WRD.
*Glyoxal-formaldehyde resins-----	: AUX, RBI, RTC, SNW, WPG.
*Phenolic and other tar acid resins-----	: ABS, ACR, ASH, BME, BOR, BSC, BTL, CBD, CEI, CLK, : CLU, CPV, DRR, DSO, EW, GE, GEI, GP, GRG, HER, : HKD, HPC, HVG, ICF, INL, IRI, KPT, LIL, MCA, : MID, MMM, NCI, NCP, NTC, NTL, OBC, OCF, PAI, : PKI, PLS, PPG, PPL, PSG, PSL, PYZ, RAB, RCI, : RH, SPL, STC, SW, UCC, UNO, USR, VPC, VSV, : WCA, WRD, X, X, X.
Polybutadiene resins-----	: ATR, CCS, CNI, CRS, LC, SCN.
*POLYESTER RESINS, UNSATURATED, AND ALLYL RESINS:	
Allyl resins-----	: DRC, FMC, GEI, MCC, PPG.
Diallyl isophthalate-----	: FMC, GEI.
Polyester resins, unsaturated-----	: ACS, ACY, ADC, APH, ASH, AZS, CGL, CJO, CPV, DRC, : DSO, ENP, EW, FJI, FRE, GEI, GRG, ICF, ICI, : IPC, KPT, MCC, MRT, OCF, PPG, RCI, SCM, SIC, : SLC, SW, USS,.
*Polyether and polyester polyols for urethanes-----	: ARK, BAS, BMC, BPT, CEI, CHC, CJO, CPV, CXI, : DOW, FRE, GRG, ICI, JOB, MCC, MMM, MOB, MRT, : NCP, OCF, OMC, PLN, PPG, PPL, RCI, RUO, SHX, : TX, UCC, UPJ, WM, WTC.
*POLYURETHANE ELASTOMER AND PLASTIC PRODUCTS:	
*Polyurethane elastomers-----	: ACY, ADC, ARO, BFG, BPT, CAS, CNI, DCC, DOW, : EEP, EPI, GRD, HXL, ICF, INP, MMM, MOB, MON, : MRT, PPG, PRC, PYI, RUO, SBG, SLC, SMO, : UPJ, USR.
*Polyurethane resins-----	: ACO(E), ARO, CGL, DSO, DUP, ENP, EW, FRE, GEI, : HYC, INP, LC, MCC, MID, MOB, OMC, PEL, PVI, : QUN, RBI, RCI, SCM, SCN, SIF, SW, UPJ, USM, : WTC.
Silicone resins-----	: CJO, DCC, LIC, MCC, PEL, SCM, SPD,
Thiourea-formaldehyde resins-----	: APX.
Thermosetting resins, benzenoid, all other-----	: ACY, BAS, DSO, ENP, GRG, MCC, MID, REL, SCM, : VAL, WLN, WPG, X.

TABLE 2.—PLASTICS AND RESIN MATERIALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1985—CONTINUED

PLASTICS AND RESIN MATERIALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
THERMOPLASTIC RESINS	
*ACRYLIC RESINS:	
COPOLYMER RESINS OF ACRYLIC AND/OR METHACRYLIC ACID RESINS:	
*Butyl acrylate-ethyl acrylate copolymer resins-----	BFG, DSO, FLH, QBC, QUN, RH, SYT, UOC, VAL.
Butyl methacrylate-ethyl methacrylate copolymer resins-----	UOC, WTC.
Ethyl acrylate-----	DSO.
2-Ethylhexyl acrylate-methyl acrylate copolymer resins-----	DSO, SYT, UOC.
Lauryl methacrylate-stearyl methacrylate copolymer resins-----	HJR, TX.
Other copolymer resins of acrylic and/or methacrylic acid esters-----	ACO(E), AZS, BPT, DRB, DRC, DSO, GAF, ICF, JNS, JSC, MID, NSC, PPG, PRT, PYI, RH, SCM, SCP, SYT, UCC, VAL, WTC.
HOMOPOLYMER RESINS OF ACRYLIC AND/OR METHACRYLIC ACID RESINS:	
*Homopolymer resins of acrylic or methacrylic acid esters, except PMMA-----	AZS, CPV, CYR, DA, DUP, GLC, GRV, ICF, PVI, PYI, RH, SAR, SW, UOC.
*Polymethyl methacrylate (PMMA)-----	CTP, CYR, DUP, ICF, IOC, JOB, MRT, PKL, PPG, PTC, PVI, RH, SAR, SNW, SYT, USS, WTC.
Polyethyl methacrylate-----	TX.
*Thermosetting acrylate resins-----	ACY, CEL, CHP, CPV, DA, DSO, DUP, EFH, FMO, FRE, GAI, GRV, HAN, ICF, LIC, MCC, MID, PPG, SM.
CELLULOSE PLASTICS AND RESINS:	
Cellulose acetate-----	EKT.
Cellulose acetate butyrate-----	EKT.
Cellulose acetate propionate-----	EKT.
Ethyl cellulose-----	X.
Cellulose plastics, all other-----	DOW, DUP.
Coumarone-indene resins-----	HPC, NEV.
*ENGINEERING PLASTICS:	
Acetal resins-----	CEL, DRR, DUP, MCC, MNP, PPG, RAS, REL, WPG.
Polycarbonate resins-----	DOW, GE, GRG, HJR, MCC, MOB, PPG, SNW.
Polyimides and amide-imide polymers-----	AMO, DUP, EW, GE, GEI, GRG, PDI.
Polyphenylene oxide type resins-----	GE, REL.
Polyphenylene sulfide resins-----	PLC.
Polysulfone resins-----	UCC.

TABLE 2.--PLASTICS AND RESIN MATERIALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1985--CONTINUED

PLASTICS AND RESIN MATERIALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
<b>THERMOPLASTIC RESINS--CONTINUED</b>	
<b>FLUOROCARBON RESINS:</b>	
*Polytetrafluoroethylene (PTFE)-----	ACS, DUP, ICI.
Polyvinylidene fluoride resin-----	PAS.
Fluorocarbon resins, all other-----	DUP.
*Petroleum hydrocarbon resins-----	CFX, CXI, EKX, ENJ, GYR, HPC, ICF, LII, NEV, RCI, X.
Phenoxy (R) resin (other than for coating and adhesives)-----	UCC.
<b>*POLYAMIDE RESINS:</b>	
*Non-nylon type, polyamide resins-----	COO, EFH, EMR, ENJ, HYA, HYC, LII, MON, NCI, PAC, S, SCP, SNW, USM.
*Nylon type, polyamide resins-----	ACS, AGI, BCM, CEL, CTR, DGO, DUP, GRG, MON, RSN, SCP, SKR, USM.
Polybutylene type resins-----	SHC.
<b>*POLYESTER RESINS, SATURATED:</b>	
Polybutylene terephthalate (PBT)-----	AGI, CEL, GAF, GE, USM.
*Polyethylene terephthalate (PET)-----	DUP, EK, EKT, GEI, GYR, HST, ICI, USM.
*Polyester resins, saturated, all other-----	AZS, BPT, COO, CPV, DUP, EKT, GAI, HYC, ICI, LII, MNP, PPG, SCM, UCC.
<b>*POLYETHYLENE AND COPOLYMERS RESINS:</b>	
Ethylene-acrylic acid resins (EAA)-----	DOW.
*Ethylene-vinyl acetate (EVA) copolymer resins-----	ENJ, NSC, USI.
Other ethylene copolymer resins-----	EKT, EKX, PPG, SNW.
*Specific gravity 0.940 and below (Conventional low density)-----	ACS, DOW, DUP, EKX, ELP, ENJ, GOC, NWP, SM, SNW, UCC, USI, X.
*Specific gravity 0.940 and below (Linear low density)---	AZS, ENJ, NWP, PLC, SM, USI.
*Specific gravity over 0.940-----	ACS, AMO, DOW, DUP, ENJ, GOC, HST, NWP, PLC, SLT, USI.
Polyphenyl aromatic ester resins-----	HPC.
*Polypropylene polymer and copolymer resins-----	AMO, CSD, EKX, ELP, ENJ, GOC, HIM, MIL, NWP, PLC, SHC, SLT, USS.
*Polyterpene resins-----	ARZ, BLC, HPC, RCI, SCN.
<b>*ROSIN MODIFICATIONS:</b>	
*Modified rosin (Unesterified)-----	ARZ, CJO, HPC, MON, NCI, OBC, SYL.
*Modified rosin esters-----	AZS, EW, FJI, FRP, GRV, HPC, LIL, MCC, NCI, OBC, RCI, SCM, STC, SW, SYL, X.
*Rosin esters, unmodified (Ester gums)-----	ARZ, ENP, FRP, HPC, LII, NCI, PRT, RCI, SYL.
<b>*STYRENE TYPE PLASTICS MATERIALS:</b>	
*Acrylonitrile-butadiene-styrene (ABS) terpolymer resins-----	DOW, GRD, GYR, MCB, MON.
p-Methyl styrene polymers-----	SM.

TABLE 2.--PLASTICS AND RESIN MATERIALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1985--CONTINUED

PLASTICS AND RESIN MATERIALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
THERMOPLASTIC RESINS--CONTINUED	
STYRENE TYPE PLASTICS MATERIALS--Continued	
α-Methyl styrene polymers-----	AMO.
*Styrene-acrylonitrile copolymer resins (SAN)-----	BFG, DOW, MCB, MON, RCI, SM.
POLYSTYRENE:	
*Expandable polystyrene beads-----	ATR, BAS, CSD, HST, TXS, VIT.
*Rubber modified polystyrene-----	API, CSD, DOW, DPI, HST, MON, PLR, SM.
*Straight polystyrene-----	AEP, AMO, API, ATR, CSD, DA, DOW, DPI, GAF, GOC, HGC, HST, KTP, MMM, MON, PLR, SM, TXS.
*STYRENE LATEXES:	
*Styrene-butadiene latexes-----	DOW, GNT, GRD, GYR, PLR, PYI, UOC.
*Styrene latexes, all other-----	ADC, BFG, GNT, GRD, MCC, MON, PVI, UCC, UOC.
*OTHER STYRENE COPOLYMERS:	
*Methyl methacrylate-butadiene-styrene (MBS) resins----	CYR, MRT, RH.
Styrene-allyl alcohol copolymer resins-----	HPC.
Styrene-divinylbenzene copolymer resins-----	RH.
Styrene-maleic anhydride copolymer resins-----	ATR, MON, PPG.
Styrene-methyl methacrylate copolymer resins-----	FLH, MCC, RCD.
Styrene copolymers, all other-----	ARZ, DOW, DSO, DUP, ENP, GYR, IOC, JNS, MON, PLC, PPG, RCD, X.
*Styrene type plastics materials, all other-----	JNS.
*VINYL RESINS:	
*Polyvinyl acetate resins-----	AIP, AZS, BOR, DAN, DSO, FJI, FLH, FLN, GLC, GRD, JOB, JSC, KMP, MNP, MON, NSC, PYI, RCI, SCM, SCO, SNW, UCC, UOC, X, X.
*Polyvinyl alcohol resins-----	AIP, AZS, DUP, MON.
Polyvinyl butyral resins-----	DUP, MON, UCC.
Polyvinyl formal resin-----	EW, GRG, MON.
*Vinyl acetate-acrylate copolymers-----	ACO, AZS, DA, DSO, FLH, FLN, HJR, MCC, NCJ, NTC, OBC, PYI, SCM, SNW, SPC, UCC, UOC.
*POLYVINYL CHLORIDE AND COPOLYMER RESINS:	
Polyvinyl chloride copolymer resins, all other-----	BFG, CNI, HKP, HN.
Polyvinyl chloride homopolymer resins-----	AIP, BFG, BOR, CNT, FOR, GGC, HKP, HN, KYS, MIL, PNT, SHT, UCC, VST.
Vinyl chloride-acetate copolymer resins-----	MCC.
POLYVINYLIDINE CHLORIDE RESINS:	
*Latex type polyvinylidene chloride resins-----	BFG, DOW, GRD, UOC.
Solid type polyvinylidene chloride resins-----	DOW.
*Vinyl resins, all other-----	DUP, NTC, RH, UCC.
*Thermoplastic resins, all other-----	DUP, LIL, MCC, MON, OBC, SW, UOC.

# VIII -- PLASTICS AND RESIN MATERIALS

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TABLE 3.--PLASTICS AND RESIN MATERIALS: DIRECTORY OF MANUFACTURERS, 1985

## ALPHABETICAL DIRECTORY BY CODE

(Names of manufacturers that reported production and/or sales of plastics and resin materials to the U.S. International Trade Commission for 1985 are listed below in the order of their identification codes as used in table 2)

CODE :	NAME OF COMPANY	CODE :	NAME OF COMPANY
ABS :	Abex Corp., Friction Products Div.- U.S.	CSD :	Fina Oil & Chemical Co., Cosden Chemical Div.
ACR :	CPC International, Inc., Acme Resin Corp.	GTP :	Continental Polymers, Inc.
ACO :	Adco Chemical Co.	CTR :	Custom Resins Div. of Bemis Co., Inc.
ACY :	American Cyanamid Co.	CYR :	CYRO Industries
ADC :	Anderson Development Co.	CXI :	Chemical Exchange Industries, Inc.
AEP :	A & E Plastics Corp.		
ACS :	Allied Corp., Chemicals Sector	DA :	Diamond Shamrock Corp., Chemicals Div.
AGI :	EMS-American Grilon, Inc.	DAN :	Dan River, Inc., Chemical Products Div.
AIP :	Air Products & Chemicals, Inc.	DCC :	Dow Corning Corp.
AHO :	Amoco Corp.	DGO :	Day-Glo Color Corp.
APH :	Alpha Corporation of Tennessee	DNS :	Dennis Chemical Co.
API :	Asoma Polymers, Inc.	DOW :	Dow Chemical Co.
APX :	Apex Chemical Co., Inc.	DPI :	Dart Polymers, Inc. Sub of Dart Container Corp.
ARK :	Armstrong World Industries, Inc.		
ARO :	Arnco	DRB :	The Derby Co., Inc.
ARZ :	Arizona Chemical Co.	DRG :	Dock Resins Corp.
ASH :	Ashland Oil, Inc.	DRR :	Delta Resins & Refractories
ATR :	Atlantic Richfield Co., Arco Chemical Co.	DSO :	DeSoto, Inc.
AUX :	Auralux Corp.	DUP :	E. I. duPont de Nemours & Co., Inc.
AZS :	AZS Corp., AZS Chemical Corp.		
		ECC :	Eastern Color & Chemical Co.
BAL :	Sherwin-Williams Co., Consumers Div.	EEP :	Eaton Corp., Industrial Polymer Product Div.
BAS :	BASF Corp.	EFH :	E. F. Houghton & Co.
BCH :	Belding Chemical Industries	EK :	Eastman Kodak Co.:
BEN :	Bennett's Paint Corp.	EKT :	Tennessee Eastman Co. Div.
BFG :	B. F. Goodrich Co.,:	EKK :	Texas Eastman Co. Div.
	Ameripol SBR Div.	ELP :	El Paso Products Co.
	B. F. Goodrich Chemical Group	EMR :	Emery Chemicals Div. of National Distillers & Chemical Corp.
BLC :	Ranbar Technology, Inc. Ball Chemical Co.		
		ENJ :	Exxon Chemical Americas
BMC :	Brin-Mont Chemicals, Inc.	ENP :	Insilco Corp., Enterprise Companies Div.
BME :	Allied Bendix Corp., Friction Materials Div.	EPI :	Eagle Pitcher Industries, Ohio Rubber Co. Div.
BOR :	Borden, Inc., Borden Chemical Div.		
BPT :	Permethane Inc.	EW :	Westinghouse Electric Corp., Insulating Materials Div.
BRU :	H. A. Bruder & Sons, Inc.		
BSC :	Cascade Resins, Inc.		
BTL :	BTL OF Illinois, Inc.	FJI :	Foy-Johnston, Inc.
		FLH :	H. B. Fuller Co.
CAS :	Caschem, Inc.	FLN :	Franklin International
CBD :	Chembond Corp.	FMO :	Ford Motor Co., Paint Plant
CCC :	C.N.C. Chemical Corp.	FMC :	FMC Corp.
CCS :	Colorado Chemical Specialties, Inc.	FOG :	Handschy Industries, Inc., Farac Varnishes & Chemicals
CET :	Combustion Engineering, Inc., C-E Cast Products		
		FOR :	Formosa Plastics Corp. - U.S.A.
CEL :	Celanese Corp.:	FRE :	Freeman Chemical Corp.
	Celanese Specialties	FRP :	FRP Co.
	Celanese Specialties Resins		
CFX :	Chemfax, Inc.	GAF :	GAF Corp., Chemical Group
CGL :	Cargill, Inc.	GAI :	Glasurit America, Inc.
CGY :	Ciba-Geigy Corp.	GE :	General Electric Co.:
CHG :	Carpenter Chemical Co.	GEI :	Insulating Materials
CHP :	C. H. Patrick & Co., Inc.	GCC :	Georgia-Gulf Corp.,:
CJO :	C. J. Osborn Chemicals, Inc.		PVC Compound Div.
CLK :	Clark Oil & Refining Corp.		Plaquemine Div.
CLU :	CL Industries, Inc.	GLC :	General Latex & Chemical Corp.
CMP :	Commercial Products Co., Inc.	GNT :	Diversitech General (Gencorp Co.)
CNI :	Conap, Inc.	GOC :	Chevron Chemical Corp.
CNT :	Certainteed Corp.	GP :	Georgia-Pacific Corp.:
COO :	Terrell Corp.		Resins Operations
CPV :	Cook Paint & Varnish Co.	GRD :	W. R. Grace & Co., Polymers & Chemical Div.
CRS :	Colorado Resins, Inc.	GRG :	P. D. George Co.

TABLE 3.--PLASTICS AND RESIN MATERIALS: DIRECTORY OF MANUFACTURERS, 1985--Continued

CODE	NAME OF COMPANY	CODE	NAME OF COMPANY
GRV	Guardsman Chemicals, Inc.	NSC	National Starch & Chemical Corp.
GYR	Goodyear Tire & Rubber Co.	NTC	National Casein Co.
HAN	Hanna Chemical Coatings Corp.	NTL	NL Industries, Inc., NL Chemicals Div
HER	Heresite-Saekaphen, Inc.	NVM	Nevamar Corp.
HGC	Goodson Chemical Corp.	NWP	Norchem, Inc.
HIM	Himont U.S.A., Inc.	OBC	O'Brien Corp.
HJR	Occidental Chemical Corp.:	OCF	Owens-Corning Fiberglas Corp.
HKD	Hugh J.--Resins Co., Inc.	OMC	Olin Corp.
HKP	Durez Div.	PAC	Pacific Anchor Chemical Corp.
HN	PVC Div.	PAI	Polymer Applications, Inc.
HPC	Tenneco Polymer, Inc.	PAS	Pennwalt Corp.
HST	Hercules, Inc.	PDI	Phelps Dodge Industries, Inc., Phelps Dodge
	American Hoechst Corp.:		Magnet Wire Co. Div.
	Hoechst Fiber Industries Div.	PEL	Pelron Corp.
	Petrochemicals/Plastics Group	PER	Perry & Derrick Co., Inc.
HVG	Ametek, Inc., Haveg Div.	PKI	Perkins Industries, Inc.
HXL	Hexcel Corp., Hexcel Chemical Products	PKL	Plaskolite, Inc.
HYA	Dexter Corp., Hysol Aerospace & Industrial	PLC	Phillips Petroleum Co.
	Products Div., Dexter Specialty Chemicals	PLN	Disogrin Industries Corp.
	Group	PLR	Polysar, Inc.:
HYC	Dexter Corp., Hysol Electronic Chemicals		Latex Div.
	Div., Dexter Specialty Chemicals Group		Plastic Div.
ICF	BASF Corp., Inmont Div.	PLS	Plastics Engineering Co.
ICI	ICI Americas, Inc. & Chemicals Div.	PMC	Plastics Manufacturing Co.
INL	Van Leer Containers, Inc.	PMT	Pantasote, Inc., Film/Compound
INP	Synair Corp.	PPG	PPG Industries, Inc.
IOC	Sybron Chemicals, Inc.	PPL	Pioneer Plastics Div. of LOF Plastics, Inc.
IOV	Iovite, Inc.	PRC	Products Research & Chemical Corp.
IPC	Interplastic Corp.	PRT	Pratt & Lambert, Inc., Paint Div.
IRI	Ironsides Co.	PSG	PMC Specialities Group Inc.
JNS	S. G. Johnson & Son, Inc.	PSL	Plaslok Corp.
JOB	Jones-Blair Co.	PST	Perstorp Compounds, Inc.
JSC	Sybron Chemicals, Inc.	PTC	Polycast Technology Corp.
KMC	Komac Paint, Inc.	PVI	Polyvinyl Chemical Industries
KMP	Kelly-Moore Paint Co., Inc.	PYI	Polymer Industries
KPT	Koppers Co., Inc.	PYZ	Polyrez Co., Inc.
KTP	Kent Polymers, Inc.	QCP	Quaker Chemical Corp.
KYS	Keysor Corp.	QUN	K. J. Quinn & Co., Inc.
LC	Lord Corp., Chemical Products Group	RAB	Raymark Corp.
LIC	Lilly Industrial Coatings, Inc.	RAS	Raffi and Swanson, Inc.
LII	Lawter International, Inc.	RBI	Reeves Brothers, Inc.
MCA	Masonite Corp., Alpine Resin Div.	RCD	Richardson Polymer Corp.
MGB	Borg-Warner Corp., Borg Warner Chemicals	RCI	Reichhold Chemicals, Inc.
MCC	McCloskey Corp.,:	REL	Reliance Universal, Inc., Louisville Resins
	McCloskey Varnish Co.:		Operations
	McCloskey Varnish Co. of California	RH	Rohm & Haas Co.
	McCloskey Varnish Co. of Oregon	RSN	Rilsan Corp.
MID	Dexter Corp., Midland Div.	RTC	Riegel Textile Corp., Riechem Div.
MIL	Milliken & Co., Milliken Chemical Co.	RUO	Ruco Polymer Corp.
MMM	Minnesota Mining & Manufacturing Co.	S	Sandoz, Inc., Colors & Chemicals Div.
MNP	McWhorter, Inc.	SAC	Southeastern Adhesives Co.
MOB	Mobay Chemical Corp., Pittsburgh Div.	SAR	Leksi, Inc.
MON	Monsanto Co.	SBG	Samuel Bingham Co.
MRT	Morton-Thiokol, Inc., Morton	SCM	SCM Corp., Coatings & Resins Div.
	Chemical Co. Div.	SCN	Schenectady Chemicals, Inc.
NCI	Union Camp Corp., Chemical Products Div.	SCO	Scholler, Inc.
NCJ	National Casein of New Jersey	SCP	Henkel Corp.
NCP	Niles Chemical Paint Co. and Kordell	SDH	Sterling Drug, Inc., Hilton Davis Chemical Co.
	Industries Div.		Div.
NEV	Neville Chemical Co.	SHC	Shell Oil Co., Shell Chemical Co. Div.
		SHT	Shintech, Inc.
		SHX	Sherex Chemical Co., Inc.

CODE

SIG

SIF

SKP

SLG

SLT

SM

SMO

SNW

SOR

SPC

SPD

SPL

SVV

STG

SV

SYL

SYT

TWA

Note

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VIII -- PLASTICS AND RESIN MATERIALS

TABLE 3.--PLASTICS AND RESIN MATERIALS: DIRECTORY OF MANUFACTURERS, 1985--CONTINUED

CODE :	NAME OF COMPANY	CODE :	NAME OF COMPANY
SIC :	Standard Oil Co., Silmar Div., Engineered Material Co.	TXS :	Textstyrene Plastics, Inc.
SIF :	Standard Oil Co., Filon Div., Engineered Material Co.	UCC :	Union Carbide Corp.
SKP :	Shakespeare Co., Monofilament Div.	UNO :	United-Erie, Inc.
SLC :	Soluol Chem Co., Inc.	UOC :	Union Oil Co. of California
SLT :	Soltex Polymer Corp.	UPJ :	Upjohn Co. Polymer Chemical Div.
SH :	Mobil Oil Corp.:	USI :	National Distillers & Chemical Corp.:
	Mobil Chemical Co.:		U.S. Industrial Chemicals Co.:
	Chemical	USH :	Emhart Corp., Bostik U.S. Div.
	Petrochemicals Div.	USR :	Uniroyal, Inc., Uniroyal Chemical Div.
	Products Div.	USS :	U.S. Steel Corp., USS Chemicals Div.
SWO :	Smooth-On, Inc.	VAL :	United Merchants & Manufacturers, Inc., Valchem Div.
SNW :	Sun Chemical Corp., Chemicals Div.	VIT :	Vititek Corp.
SOR :	MW Manufacturers, Inc., Southern Resin Div.	VPC :	Mobay Chemical Corp., Dye & Pigment Div.
SPC :	Insilco Corp., Sinclair Paint Co. Div.	VST :	Vista Polymers, Inc.
SPD :	General Electric Co., Silicone Products Dept.	VSV :	Valentine Sugars, Inc., Valite Div.
SPL :	Spaulding Fibre Co., Inc., Industrial Plastics Div.	WCA :	West Coast Adhesives Co.
SRY :	Synray Corp.	WLN :	Wilmington Chemical Corp.
STC :	American Hoechst Corp., Sou-Tex Works	WM :	Inolox Chemical Co.
SW :	Sherwin-Williams Co., Chemical Div.	WPG :	West Point-Pepperell, Inc., Griffitex Chemical Co. Sub.
SYL :	Sylvachem Corp.	WRD :	Weyerhaeuser Co.
SYT :	Synthron, Inc.	WTC :	Witco Chemical Corp.
TNA :	Ethyl Corp.		

Note.--Complete names, telephone numbers, and addresses of the above reporting companies are listed in table 1 of the appendix.



# SYNTHETIC ORGANIC CHEMICALS, 1985

## SECTION IX -- RUBBER PROCESSING CHEMICALS

### STATISTICAL HIGHLIGHTS

Cynthia Trainor

202-523-1255

Rubber-processing chemicals are organic compounds that are added to natural and synthetic rubber to give them qualities necessary for their conversion into finished rubber goods. In this report, statistics are given for cyclic and acyclic compounds by use—such as accelerators, antioxidants, and vulcanizing agents. Data on production and sales of rubber-processing chemicals in 1985 are given in table 1.<sup>1</sup> Data on production of rubber-processing chemicals during 1981-85 is given in figure 1.

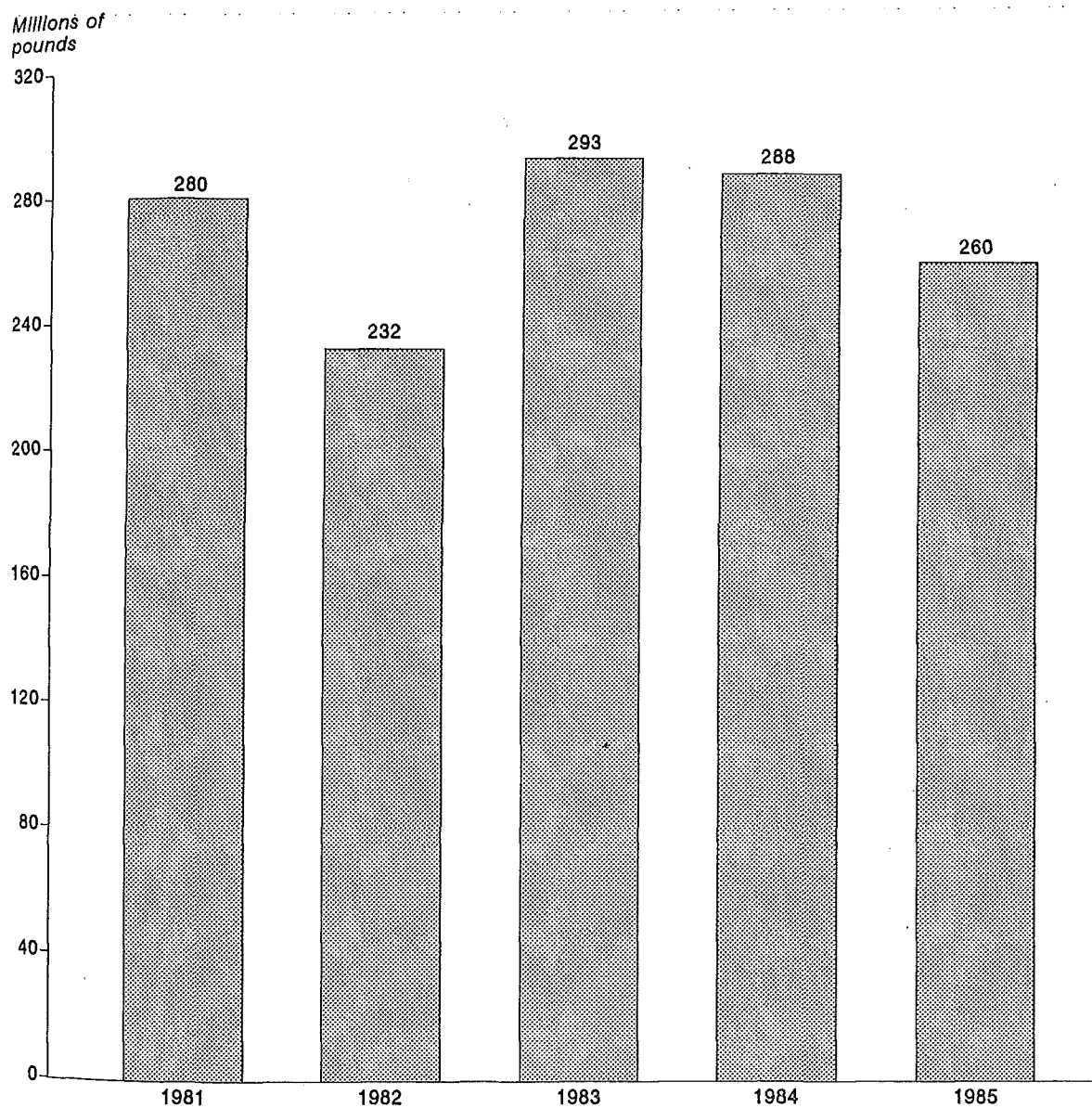
Production of rubber-processing chemicals as a group in 1985 amounted to 260 million pounds, or 10 percent less than the 288 million pounds produced in 1984. Sales of rubber-processing chemicals in 1985 amounted to 174 million pounds, valued at \$281 million, compared with 176 million pounds, valued at \$287 million, in 1984.

The production of cyclic rubber-processing chemicals in 1985 amounted to 237 million pounds, or 9 percent less than the 260 million pounds produced in 1984. Sales of cyclic rubber-processing chemicals in 1985 totaled 155 million pounds, valued at \$258 million, compared with 154 million pounds, valued at \$261 million, in 1984. Of the total production of cyclic rubber-processing chemicals in 1985, antioxidants, antiozonants, and stabilizers accounted for 67 percent, and accelerators, activators, and vulcanizing agents for 29 percent. Production of antioxidants, antiozonants, and stabilizers, which amounted to 160 million pounds in 1985, included 100 million pounds of amino compounds and 59 million pounds of phenolic and phosphite compounds. Sales of amino antioxidants, antiozonants, and stabilizers in 1985 amounted to 71 million pounds, valued at \$108 million; sales of phenolic and phosphite antioxidants, antiozonants, and stabilizers were 34 million pounds, valued at \$59 million.

Production of acyclic rubber-processing chemicals in 1985 amounted to 23 million pounds, or 18 percent less than the 28 million pounds produced in 1984. Sales in 1985 totaled 20 million pounds, valued at \$22 million, compared with 22 million pounds, valued at \$26 million, in 1984. Dithiocarbamic acid derivatives accounted for 30 percent of the production of acyclic rubber-processing chemicals in 1985.

<sup>1</sup> See table 2, which lists these products and identifies the manufacturers by codes. These codes are given in table 3.

Figure 1.—Rubber-processing chemicals.



Source: U.S. International Trade Commission, *Synthetic Organic Chemicals: United States Production and Sales*.

## IX -- RUBBER PROCESSING CHEMICALS

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TABLE 1.--RUBBER PROCESSING CHEMICALS: U.S. PRODUCTION AND SALES, 1985

[Listed below are all rubber-processing chemicals for which any reported data on production or sales may be published. (Leaders (...)) are used where the reported data are accepted in confidence and may not be published or where no data were reported.) Table 2 lists all rubber-processing chemicals for which data on production and/or sales were reported and identifies the manufacturers of each]

RUBBER-PROCESSING CHEMICALS	PRODUCTION	SALES		
		QUANTITY	VALUE	UNIT VALUE <sup>1</sup>
	1,000 pounds	1,000 pounds	1,000 dollars	Per pound
Grand Total-----	260,164	174,273	280,680	\$1.61
CYCLIC				
Total-----	237,224	154,709	258,438	1.67
Accelerators, activators, and vulcanizing agents				
total-----	69,151	41,441	68,027	1.64
Thiazole derivatives, total-----	63,918	36,156	52,012	1.44
2,2'-Dithiobis[benzothiazole]-----	7,219	6,285	7,545	1.20
All other thiazole derivatives-----	56,699	29,871	44,467	1.49
All other accelerators, activators, and vulcanizing agents <sup>2</sup> 3-----	5,233	5,285	16,015	3.03
Antioxidants, antiozonants, and stabilizers, total-----	159,528	105,181	167,080	1.59
Amino compounds, total-----	100,211	70,704	107,872	1.53
1,2-Dihydro-2,2,4-trimethylquinoline-----	...	12,085	13,046	1.08
Substituted p-phenylenediamines-----	64,619	43,556	69,930	1.61
All other amino compounds <sup>4</sup> -----	35,592	15,063	24,896	1.65
Phenolic and phosphite compounds, total <sup>5</sup> -----	59,317	34,477	59,208	1.72
Phosphites-----	45,264	24,171	29,210	1.21
Polyphenolics, total-----	6,059	6,267	21,889	3.49
Bisphenol, hindered-----	1,305	...	...	...
All other polyphenolics-----	4,754	...	...	...
All other phenolic and phosphite compounds, total-----	7,994	4,039	8,109	2.01
Phenol, styrenated mixtures-----	622	584	629	1.08
All other phenolic and phosphite compounds-----	7,372	3,455	7,480	2.16
All other cyclic rubber-processing chemicals <sup>6</sup> -----	8,545	8,087	23,331	2.89
ACYCLIC				
Total-----	22,940	19,564	22,242	1.14
Accelerators, activators, and vulcanizing agents,				
total-----	6,873	5,446	12,050	2.21
Dithiocarbamic acid derivatives <sup>3</sup> -----	4,474	3,482	8,292	2.38
All other accelerators, activators, and agents <sup>7</sup> -----	2,399	1,964	3,758	1.92
All other acyclic rubber-processing chemicals <sup>8</sup> -----	16,067	14,118	10,192	.72

<sup>1</sup>Calculated from unrounded figures.

<sup>2</sup>Includes aldehyde-amine reaction products, guanidines, dithiocarbamates, and other accelerators, activators, and vulcanizing agents.

<sup>3</sup>Data on dithiocarbamates included in this table are for materials used chiefly in the processing of natural and synthetic rubber. Data on dithiocarbamates, which are used chiefly as fungicides, are included in the section on "Pesticides and Related Products."

<sup>4</sup>Includes aldehyde- and acetone-amine reaction products.

<sup>5</sup>Also includes other antioxidants, antiozonants, and stabilizers.

<sup>6</sup>Includes blowing agents, peptizers, and other cyclic rubber-processing chemicals.

<sup>7</sup>Includes thiurams, xanthates, sulfides, and other accelerators, activators, and vulcanizing agents.

<sup>8</sup>Includes blowing agents, polymerization regulators, shortstops, and other acyclic rubber processing chemicals.

TABLE 2.--RUBBER-PROCESSING CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED,  
IDENTIFIED BY MANUFACTURER, 1985

[CHEMICALS FOR WHICH SEPARATE STATISTICS ARE GIVEN IN TABLE 1 ARE MARKED BELOW WITH AN ASTERISK (\*);  
CHEMICALS NOT SO MARKED DO NOT APPEAR IN TABLE 1 BECAUSE THE REPORTED DATA ARE ACCEPTED IN CONFIDENCE AND  
MAY NOT BE PUBLISHED. MANUFACTURERS' IDENTIFICATION CODES SHOWN BELOW ARE TAKEN FROM TABLE 3. AN "X"  
SIGNIFIES THAT THE MANUFACTURER DID NOT CONSENT TO HIS IDENTIFICATION WITH THE DESIGNATED PRODUCT]

RUBBER-PROCESSING CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
CYCLIC	
*ACCELERATORS, ACTIVATORS, AND VULCANIZING AGENTS:	
ALDEHYDE-AMINE REACTION PRODUCTS:	
Heptaldehyde-aniline condensate-----	USR.
Tetrahydro-3,5-dimethyl-4H-1,3,5-oxadiazine-4-thione--	RBC.
Triethyltrimethylenetriamine-----	USR.
Aldehyde-amine reaction products, cyclic, other-----	DUP.
DITHIOCARBAMIC ACID DERIVATIVES:	
Dibenzylidithiocarbamic acid, sodium salt-----	USR.
Dibenzylidithiocarbamic acid, zinc salt-----	USR.
GUANIDINES:	
Dicatechol borate, di-o-tolylguanidine salt <sup>*</sup> -----	DUP.
*THIAZOLE DERIVATIVES:	
1,3-Bis(2-benzothiazolylmercaptomethyl) urea-----	RBC.
N-tert-Butyl-2-benzothiazolesulfenamide-----	BFG, MON, USR.
N-Cyclohexyl-2-benzothiazolesulfenamide-----	MON, USR.
2,5-Dimercapto-1,3,4-thiadiazole-----	VNC.
*2,2'-Dithiobisbenzothiazole-----	BFG, GYR, MON, USR.
2-Mercaptobenzothiazole-----	GYR, MON, USR.
2-Mercaptobenzothiazole, copper salt-----	ACY.
2-Mercaptobenzothiazole derivative-----	VNC.
2-Mercaptobenzothiazole, zinc chloride-----	GYR.
2-Mercaptobenzothiazole, zinc salt-----	GYR, USR, VNC.
N-Oxydiethylene-2-benzothiazolesulfenamide-----	BFG, USR.
N-Oxydiethylenethiocarbamyl-N'-oxydiethylene- sulfenamide-----	BFG.
Thiazole derivatives, cyclic, other-----	X.
*ALL OTHER CYCLIC ACCELERATORS, ACTIVATORS, AND VULCANIZING AGENTS:	
Bis(morpholinothiocarbamoyl) disulfide-----	ACY.
Dibenzylamine-----	USR.
1,3-Dihydro-4(or 5)-methyl-2H-benzimidazole-2-thione--	VNC.
Dimethylammonium hydrogen isophthalate-----	VNC.
Di-N,N'-pentamethylenethiuram tetrasulfide-----	DUP, VNC.
4,4'-Dithiodimorpholine-----	MON.

TABLE 2.--RUBBER-PROCESSING CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED,  
IDENTIFIED BY MANUFACTURER, 1985--CONTINUED

RUBBER-PROCESSING CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
CYCLIC--CONTINUED	
*ACCELERATORS, ACTIVATORS, AND VULCANIZING AGENTS-- CONTINUED	
*ALL OTHER CYCLIC ACCELERATORS, ACTIVATORS, AND VULCANIZING AGENTS--CONTINUED	
2-Mercaptotoluimidazole, zinc salt-----	VNC.
m-Phenylenebismaleimide-----	DUP.
Tetramethylthiuram tetrasulfide-----	GYR.
Accelerators, activators, and vulcanizing agents, cyclic, other-----	DUP, USR.
*ANTIOXIDANTS, ANTIOZONANTS, AND STABILIZERS:	
*AMINO ANTIOXIDANTS, ANTIOZONANTS, AND STABILIZERS:	
ALDEHYDE- AND ACETONE-AMINE REACTION PRODUCTS:	
Butyraldehyde-aniline condensate-----	DUP.
Diphenylamine-acetone aldehyde-----	USR.
Diphenylamine-acetone condensate-----	BFG, USR.
*SUBSTITUTED P-PHENYLENEDIAMINES:	
Alkylaryl-p-phenylenediamines-----	MON.
N,N'-Bis(1,4-dimethylpentyl)-p-phenylenediamine-----	MON, UPM.
N,N'-Bis(1-ethyl-3-methylpentyl)-p- phenylenediamine-----	UPM.
N,N'-Bis(1-methylheptyl)-p-phenylenediamine-----	UPM.
N-Cyclohexyl-N'-phenyl-p-phenylenediamine-----	USR.
Diarylenediamines, mixed-----	GYR.
N-(1,3-Dimethylbutyl)-N'-phenyl-p-phenylenediamine-----	UPM, USR.
N,N'-Di-2-naphthyl-p-phenylenediamine-----	BFG.
N,N'-Diphenyl-p-phenylenediamine-----	BFG.
N-Isopropyl-N'-phenyl-p-phenylenediamine-----	USR.
N-(1-Methylheptyl)-N'-phenyl-p-phenylenediamine-----	UPM.
N-(1-Methylpentyl)-N'-phenyl-p-phenylenediamine-----	USR.
p-Phenylenediamines, substituted, other-----	KFI.
*OTHER AMINES:	
p-Anilinophenol-----	BFG.
1,2-Dihydro-6-ethoxy-2,2,4-Trimethylquinoline (Ethoxyquin)-----	MON.
*1,2-Dihydro-2,2,4-trimethylquinoline-----	BFG, MON, USR.
Diphenylamine-styrenated-----	GYR.
Nonyldiphenylamine mixture (Mono-, di-, and tri)-----	USR.
Octyldiphenylamine-----	BFG, USR.
Octyldiphenylamine, alkylated-----	BFG.
p-(p-Toluenesulfonamido)diphenylamine-----	USR.

TABLE 2.--RUBBER-PROCESSING CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED,  
IDENTIFIED BY MANUFACTURER, 1985--CONTINUED

RUBBER-PROCESSING CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
CYCLIC--CONTINUED	
*ANTIOXIDANTS, ANTIOZONANTS, AND STABILIZERS--CONTINUED	
*PHENOLIC AND PHOSPHITE ANTIOXIDANTS AND STABILIZERS:	
*PHOSPHITES:	
Alkylaryl phosphites mixed-----	FER, MCB.
Nonylphenyl phosphites, mixed-----	MCB, OMC, USR.
Polymeric phosphites-----	MCB, OMC.
Polyphenolic phosphites, polyalkylated-----	BFG, MCB.
Triaryl phosphites-----	MCB.
*POLYPHENOLICS (INCLUDING BISPHENOLS):	
*Bisphenol, hindered-----	DUP, GYR, USR.
4,4'-Butylidenebis(6-tert-butyl-m-cresol)-----	MON.
2,5-Di-sec-butyldecylhydroquinone-----	USR.
2,5-Di-(1,1-dimethylpropyl)hydroquinone-----	MON.
2,2'-Methylenebis(6-tert-butyl-p-cresol)-----	ACY, FER.
2,2'-Methylenebis(6-tert-butyl-4-ethylphenol)-----	ACY.
1,1,3-Tri(2-methyl-4-hydroxy-5-tert-butylphenyl) butane-----	ICI.
ALL OTHER PHENOLIC ANTIOXIDANTS AND STABILIZERS:	
Phenol, alkylated-----	BFG, GYR, NEV, RCI.
Phenol, hindered-----	FER, OMC, USR.
*Phenol, styrenated, mixtures-----	GYR, NEV, USR.
N-Stearoyl-p-aminophenol-----	HXL.
BLOWING AGENTS:	
Dinitrosopentamethylenetetramine-----	OMC.
p,p'-Oxybis(benzenesulfonylhydrazide)-----	OMC, USR.
5-Phenyltetrazole-----	OMC.
p-Toluenesulfonylhydrazide-----	USR.
p-Toluenesulfonylsemicarbazide-----	USR.
PEPTIZERS:	
2',2'''-Dithiobis(benzanilide)-----	ACY.
ALL OTHER CYCLIC RUBBER-PROCESSING CHEMICALS:	
p-tert-Amylphenol sulfide (Tackifier)-----	PAS.
4-Chloro-2,6-bis(2,4-dihydroxybenzyl)phenol-----	ICI.
N-(Cyclohexylthio)phthalimide-----	MON.
Diphenyl-4,4'-diphenylmethylenedicarbamate-----	USR.
Rubber-processing chemicals, cyclic, all other-----	ACY, FER.

TABLE 2.--RUBBER-PROCESSING CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED,  
IDENTIFIED BY MANUFACTURER, 1985--CONTINUED

RUBBER-PROCESSING CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC	
*ACCELERATORS, ACTIVATORS, AND VULCANIZING AGENTS:	
*DITHIOCARBAMIC ACID DERIVATIVES:	
Dialkyldithiocarbamic acid derivative-----	VNC.
Dibutyldithiocarbamic acid, nickel salt-----	DUP, USR, VNC.
Dibutyldithiocarbamic acid, sodium salt-----	DUP, USR, VNC.
Dibutyldithiocarbamic acid, zinc salt-----	VNC.
Diethyldithiocarbamic acid, cadmium salt and bis(diethylthiocarbamoyl)disulfide, mixture-----	VNC.
Diethyldithiocarbamic acid, selenium salt-----	VNC.
Diethyldithiocarbamic acid, sodium salt-----	VNC.
Diethyldithiocarbamic acid, tellurium salt-----	VNC.
Diethyldithiocarbamic acid, zinc salt-----	GYR, VNC.
Dimethyldithiocarbamic acid, bismuth salt-----	VNC.
Dimethyldithiocarbamic acid, copper salt-----	VNC.
Dimethyldithiocarbamic acid, lead salt-----	VNC.
Dimethyldithiocarbamic acid, selenium salt-----	VNC.
Dimethyldithiocarbamic acid, sodium salt and sodium polysulfide-----	BFG.
Dimethyldithiocarbamic acid, zinc salt-----	GYR, VNC.
Dithiocarbamic acid derivatives, acyclic, other-----	DUP, X.
THIURAMS:	
Bis(dibutylthiocarbamoyl) disulfide-----	VNC.
Bis(diethylthiocarbamoyl) disulfide-----	GYR.
Bis(dimethylthiocarbamoyl) disulfide-----	GYR, VNC.
Bis(dimethylthiocarbamoyl) sulfide-----	GYR.
N,N'-Dioctadecyl-N,N'-diisopropyl thiuram disulfide-----	USR.
XANTHATES AND SULFIDES:	
Di-n-butylxantho disulfide-----	USR.
Zinc isopropyl xanthate-----	VNC.
*ALL OTHER ACYCLIC ACCELERATORS, ACTIVATORS, AND VULCANIZING AGENTS:	
p-Aminocyclohexylmethane carbonate-----	DUP.
n-Butyraldehyde-butylamine condensate-----	DUP.
BLOWING AGENTS:	
1,2-Hydrazinedicarboxylic acid, bis(1-methylethyl) ester-----	USR.

TABLE 2.--RUBBER-PROCESSING CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED,  
IDENTIFIED BY MANUFACTURER, 1985--CONTINUED

RUBBER-PROCESSING CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
POLYMERIZATION REGULATORS:	
n-Decyl mercaptan-----	PLC.
n-Dodecyl mercaptans-----	PAS, PLC.
tert-Hexadecyl mercaptan-----	PLC.
n-Hexyl mercaptan-----	PLC.
tert-Nonyl mercaptan-----	PAS, PLC.
n-Octyl mercaptan-----	PLC.
Tetradecyl mercaptan-----	PLC.
Polymerization regulators, acyclic, other-----	PLC.
SHORTSTOPS:	
Dimethyldithiocarbamic acid, potassium salt-----	USR.
Dimethyldithiocarbamic acid, sodium salt-----	ALC, BFG, USR, VCC, VNC.
*ALL OTHER ACYCLIC RUBBER-PROCESSING CHEMICALS:	
Waxes and paraffinic products-----	DUP, RCI.
Zinc laurate (Activator, physical property improver, and processing auxiliary)-----	USR.

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TABLE 3.--RUBBER-PROCESSING CHEMICALS: DIRECTORY OF MANUFACTURERS, 1985

## ALPHABETICAL DIRECTORY BY CODE

[Names of manufacturers that reported production and/or sales of rubber-processing chemicals to the U.S. International Trade Commission for 1985 are listed below in the order of their identification codes as used in table 2]

CODE :	NAME OF COMPANY	CODE :	NAME OF COMPANY
ACY	American Cyanamid Co.	MON	Monsanto Co.
ALC	Alco Chemical Corp.	NEV	Neville Chemical Co.
BFG	B. F. Goodrich Co., B. F. Goodrich Chemical Group	OMC	Olin Corp.
DUP	E. I. duPont de Nemours & Co., Inc.	PAS	Pennwalt Corp.
FER	Ferro Corp., Ferro Chemical Div.	PLC	Phillips Petroleum Co.
GYR	Goodyear Tire & Rubber Co.	RBC	Fike Chemicals, Inc.
HEX	Hexcel Corp., Hexcel Chemical Products	RCI	Reichhold Chemicals, Inc.
ICI	ICI Americas, Inc., Chemicals Div.	UOP	UOP, Inc., UOP Process Div.
KPI	Kenrich Petrochemicals, Inc.	USR	Uniroyal, Inc., Uniroyal Chemical Div.
MCB	Borg-Warner Corp., Borg Warner Chemicals	VGC	Vinings Chemical Co.
		VNC	Vanderbilt Chemical Corp.

Note.--Complete names, telephone numbers, and addresses of the above reporting companies are listed in table 1 of the appendix.

SYNTHETIC ORGANIC CHEMICALS, 1985  
SECTION X -- ELASTOMERS

## STATISTICAL HIGHLIGHTS

Edward J. Taylor

202-523-3709

Elastomers (synthetic rubber) are high polymeric materials with properties similar to those of natural rubber. The term "elastomers" as used in this report means substances, whether in bale, crumb, powder, latex, or other crude form, which can be vulcanized or similarly processed into a material that can be stretched to at least twice their original length; and, after having been so stretched and the stress removed, will return with force to approximately their original length. U.S. production and sales of elastomers in 1985 are shown in table 1.<sup>1</sup>

Total U.S. production<sup>2</sup> of synthetic rubber in 1985 amounted to 3,828 million pounds, a decrease of 16.9 percent from that produced in 1984. The production of synthetic rubber declined irregularly from 4,849 million pounds in 1981 to 3,828 million pounds in 1985, or by 21.1 percent. (see figure 1.) Total sales of elastomers in 1985 amounted 2,228 million pounds, a decrease of 17.1 percent from that sold in 1984.

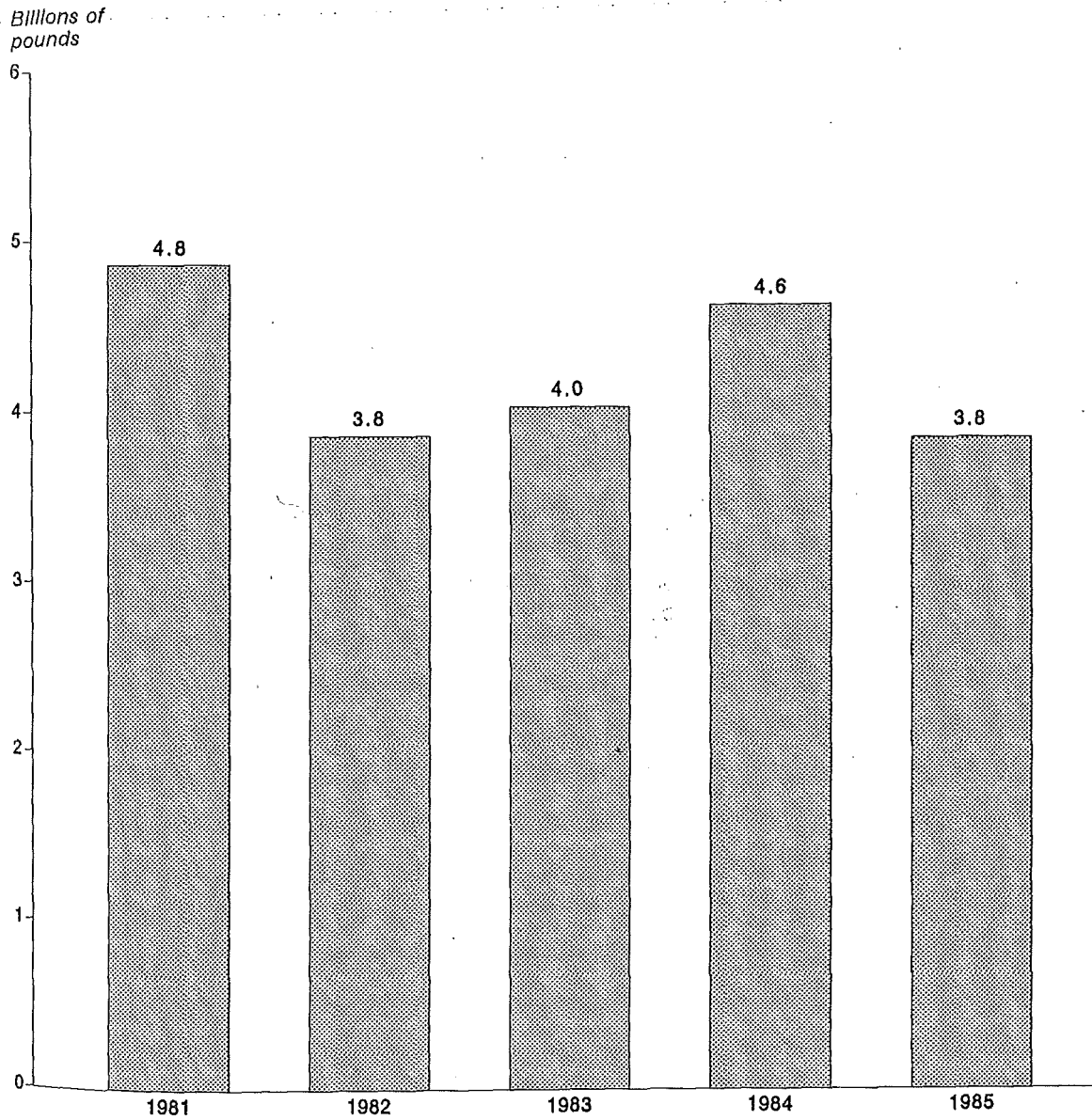
Styrene-butadiene rubber (SBR-type rubber) in 1985 continued to be the elastomer produced in the greatest quantity as it has been for more than a quarter of a century. U.S. production of SBR-type rubber, including 11 million pounds of its vinylpyridine sub-type, amounted to 1,440 million pounds in 1985. Solution polymerized butadiene rubber, a stereo type elastomer, was produced domestically in 1985 in the next largest amount—600 million pounds. Other principal types of synthetic elastomers for which U.S. production data are reported separately are ethylene-propylene rubber, production of which was 440 million pounds in 1985; and butadiene-acrylonitrile (NBR-type) rubber, production of which was 118 million pounds.

Sales of SBR-type rubber by U.S. producers in 1985 amounted to 651 million pounds. Sales of solution polymerized butadiene rubber amounted to 268 million pounds, and those of ethylene-propylene rubber to 311 million pounds. Sales of NBR-type rubber in 1985 amounted to 104 million pounds.

<sup>1</sup> See also table 2 which lists these products and indicates the manufacturers of each by code. The codes are identified by company name in table 3.

<sup>2</sup> Urethane type elastomers are now included in the section "Plastics and Resin Materials."

Figure 1.—Elastomers (synthetic rubber).



Source: U.S. International Trade Commission, *Synthetic Organic Chemicals: United States Production and Sales*.

TABLE 1.--ELASTOMERS (SYNTHETIC RUBBER):<sup>1</sup> U.S. PRODUCTION AND SALES, 1985

[Listed below are elastomers (synthetic rubber) for which reported data on production or sales may be published. (Leaders (...)) are used where the reported data are accepted in confidence and may not be published or where no data were reported.) Table 2 lists all elastomers for which data on production and/or sales were reported and identifies the manufacturers of each]

ELASTOMERS	PRODUCTION <sup>2</sup>	SALES		
		QUANTITY <sup>2</sup>	VALUE	UNIT VALUE <sup>3</sup>
	<u>1,000</u>	<u>1,000</u>	<u>1,000</u>	<u>Per</u>
	<u>pounds</u>	<u>pounds</u>	<u>dollars</u>	<u>pound</u>
Grand total-----	3,827,941	2,227,856	2,054,060	\$0.92
Butadiene-acrylonitrile type (NBR-type)-----	117,987	104,456	94,489	.90
Ethylene-propylene type (EP-type)-----	439,887	310,832	236,420	.76
Polyacrylate (ACM) ester type-----	6,202	3,870	8,506	2.20
Polybutadiene (solution polymerized) type (BR-type)---	600,071	268,380	149,465	.56
Styrene-butadiene type (SBR-type)-----	1,428,086	651,012	248,537	.38
Styrene-butadiene-vinylpyridine type-----	10,904	...	...	...
All other elastomers <sup>5</sup> -----	1,224,804	889,306	1,316,643	1.48

<sup>1</sup>The term "elastomers" is defined as substances in bale, crumb, powder, latex, and other crude forms which can be vulcanized or similarly processed into materials that can be stretched at 68° F. to at least twice their original length and, after having been stretched and the stress removed, will return with force to approximately their original length.

<sup>2</sup>Includes oil content of oil-extended elastomers.

<sup>3</sup>Calculated from unrounded figures.

<sup>4</sup>Virtually all production of SBR elastomer is the dry type of product.

<sup>5</sup>Includes acrylic ester, butyl, chlorinated natural rubber, epichlorohydrin, fluoroelastomers, polybutadiene type (emulsion), polychloroprene (neoprene) type, polyisobutylene type, polyisoprenes (including cyclorubber), polysulfide, silicone type, styrene-butadiene-vinylpyridine type (sales only), and miscellaneous elastomers.

TABLE 2.—ELASTOMERS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED,  
IDENTIFIED BY MANUFACTURER, 1985

[CHEMICALS FOR WHICH SEPARATE STATISTICS ARE GIVEN IN TABLE 1 ARE MARKED BELOW WITH AN ASTERISK (\*);  
CHEMICALS NOT SO MARKED DO NOT APPEAR IN TABLE 1 BECAUSE THE REPORTED DATA ARE ACCEPTED IN CONFIDENCE AND  
MAY NOT BE PUBLISHED. MANUFACTURERS' IDENTIFICATION CODES SHOWN BELOW ARE TAKEN FROM TABLE 3]

ELASTOMERS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
CYCLIC ELASTOMERS	
CYCLIC ELASTOMERS:	
Cyclized polyisoprene (Cyclorubber)-----	WAY.
Epichlorohydrin elastomers (CO, ECO) type-----	DUP.
*STYRENE-BUTADIENE (S OR SBR) TYPE:	
Styrene-butadiene, dry type-----	BFG, CPY, FRS, GRD, GYR, PLR, SPO.
Styrene-butadiene, latex type-----	BFG, GNT, MMM.
*Styrene-butadiene-vinylpyridine-----	BFG, FRS, GYR.
Styrene-butadiene type elastomers, other-----	FRS, LC.
CYCLIC ELASTOMERS, ALL OTHER:	
Cyclic elastomers, all other-----	HPC, SHC.
ACYCLIC ELASTOMERS:	
*Butadiene-acrylonitrile (NBR) type-----	BFG, CPY, GYR, MMM, USR.
Butyl(isobutylene-isoprene) type-----	ADC, ENJ.
*Ethylene-propylene (EP) type-----	ADC, CPY, DUP, ENJ, USR.
Fluorelastomers (CFM, FKM, FFKM) type-----	DUP, MMM.
*POLYACRYLATE ESTER TYPE:	
Polyacrylic (ACM) ester type elastomers-----	ACY, BFG.
Polyalkalene oxide-----	PRC.
Polybutadiene acrylic acid acrylonitrile terpolymer (PBAN)-----	ASY.
POLYBUTADIENE (BR) TYPE:	
Polybutadiene, emulsion-polymerized-----	GYR.
*Polybutadiene, solution-polymerized-----	ASY, FRS, PLC.
Polychloroprene (Neoprene) (CR) type-----	DKA, DUP, GRY, LC.
Polyisobutylene, type elastomers-----	ENJ.
Polyisoprene (IR) type-----	GYR, LC.
Polysulfide (T) type elastomers-----	MRT.
Silicone (Q) type elastomers-----	DCC, KF, LC, SPD, SWS.
ACYCLIC ELASTOMERS, ALL OTHER:	
Acyclic elastomers, all other-----	DUP, HPC.

TABLE 3.--ELASTOMERS (SYNTHETIC RUBBER): DIRECTORY OF MANUFACTURERS, 1985

## ALPHABETICAL DIRECTORY BY CODE

Names of manufacturers that reported production and/or sales of elastomers to the U.S. International Trade Commission for 1985 are listed below in the order of their identification codes as used in table 2]

CODE	NAME OF COMPANY	CODE	NAME OF COMPANY
ACY	American Cyanamid Co.	KF	Dynamit Nobel of America, Dynamit Nobel
ADC	Anderson Development Co.		Chemical Div.
ASY	American Synthetic Rubber Corp.	LC	Lord Corp., Chemical Products Group
BFG	B. F. Goodrich Co., B. F. Goodrich Chemical Group	MMM	Minnesota Mining and Manufacturing Co.
CPY	Copolymer Rubber & Chemical Corp.	MRT	Morton-Thiokol, Inc., Morton Chemical Co. Div.
DCC	Dow Corning Corp.	PLC	Phillips Petroleum Co.
DCA	Denka Chemical Corp.	PLR	Polysar, Inc., Latex Div.
EUP	E. I. duPont de Nemours & Co., Inc.	PRC	Products Research & Chemical Corp.
EFJ	Exxon Chemical Americas	SHC	Shell Oil Co., Shell Chemical Co. Div.
FES	Firestone Tire & Rubber Co., Firestone Synthetic Rubber & Latex Co. Div.	SPD	General Electric Co., Silicone Products Dept.
GTY	Diversitech General (Gencorp Co.)	SPO	Synpol, Inc.
GRD	W. R. Grace & Co., Polymers & Chemical Div.	SWS	Stauffer Chemical Co., Stauffer-Wacker Silicones Div.
GTR	Goodyear Tire & Rubber Co.	USR	Uniroyal, Inc., Chemical Group
HFC	Hercules, Inc.	WAY	Philip A. Hunt Chemical Corp., Organic Chemical Div.

Note.--Complete names, telephone numbers, and addresses of the above reporting companies are listed in table 1 of the appendix.

# SYNTHETIC ORGANIC CHEMICALS, 1985

## SECTION XI -- PLASTICIZERS

### STATISTICAL HIGHLIGHTS

Jesse Lawrence Johnson

202-523-0127

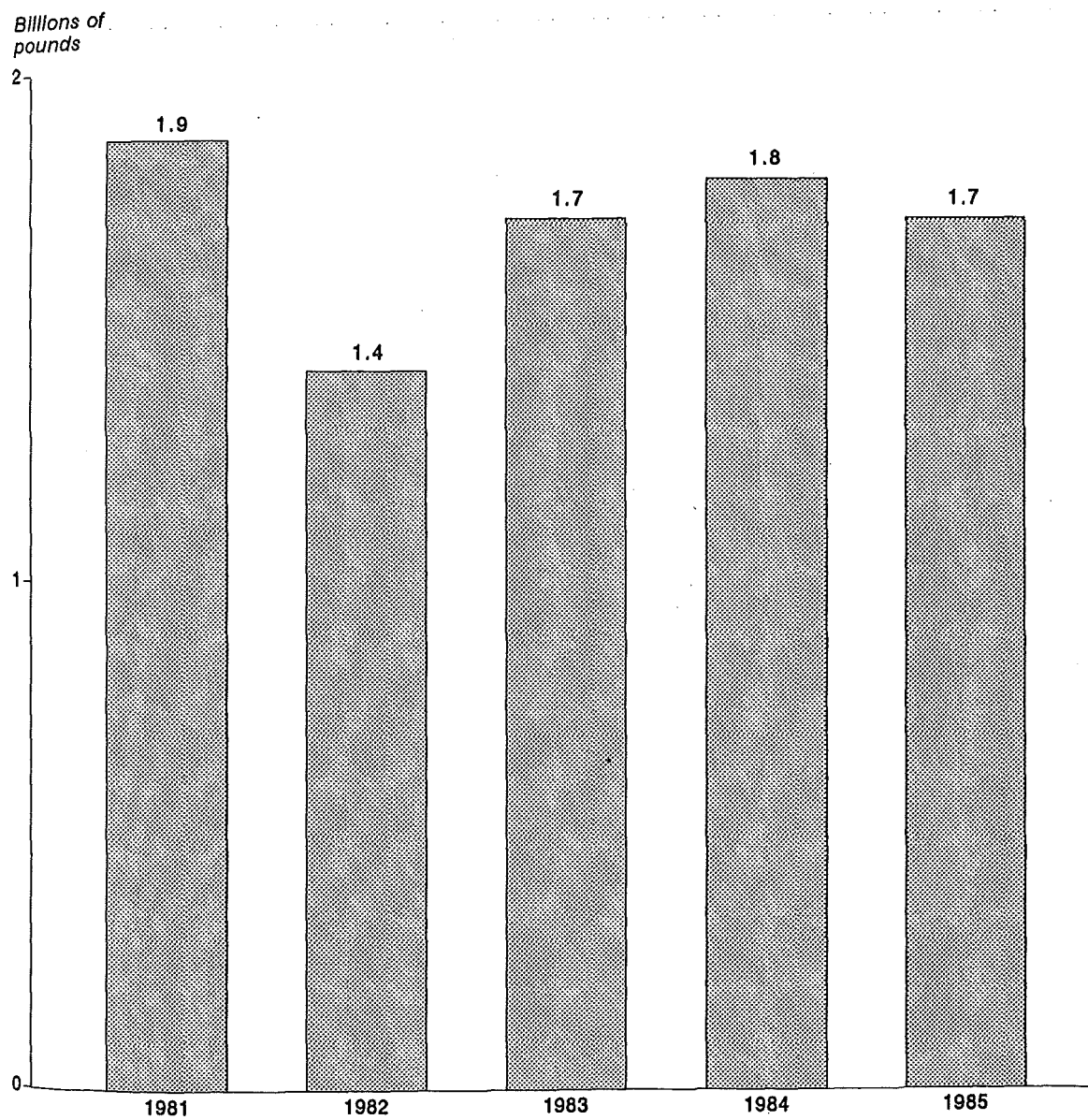
Plasticizers are organic chemicals that are added to synthetic plastics and resin materials to (1) improve workability during fabrication, (2) extend or modify the natural properties of these materials, or (3) develop new improved properties not present in the original material. Table 1 presents statistics on U.S. production and sales of plasticizers in as great a detail as is possible without revealing the operations of individual producers.

U.S. production of plasticizers totaled 1,710 million pounds in 1985, a decrease of 4.3 percent from the 1,788 million pounds reported for 1984. The trend of production of these products is shown in the graph in figure 1. Sales of plasticizers totaled 1,470 million pounds, valued at \$741 million, in 1985, compared with 1,685 million pounds, valued at \$849 million, in 1984.

Production of cyclic plasticizers in 1985, which consisted chiefly of the esters of phthalic anhydride, phosphoric acid, and trimellitic acid, amounted to 1,286 million pounds, a decrease of 3.9 percent from the 1,338 million pounds reported for 1984. Sales of cyclic plasticizers in 1985 totaled 1,118 million pounds, valued at \$499 million, compared with 1,307 million pounds, valued at \$578 million, in 1984. The most important cyclic plasticizers were the dioctyl phthalates, with production of 275 million pounds in 1985.

Production of acyclic plasticizers in 1985 totaled 424 million pounds, a decrease of 5.6 percent from the 449 million pounds reported for 1984. Sales of acyclic plasticizers totaled 351 million pounds, valued at \$243 million, in 1985, compared with 378 million pounds, valued at \$271 million, in 1984. Epoxidized soya oils were the most important acyclic plasticizers in 1985 with production of 96 million pounds.

Figure 1.—Plasticizers.



Source: U.S. International Trade Commission, *Synthetic Organic Chemicals: United States Production and Sales*.



XI -- PLASTICIZERS

TABLE 1.--PLASTICIZERS:<sup>1</sup> U.S. PRODUCTION AND SALES, 1985

[Listed below are plasticizers for which any reported data on production or sales may be published. (Leaders (...) are used where the reported data are accepted in confidence and may not be published or where no data were reported.) Table 2 lists all plasticizer chemicals for which data on production and/or sales were reported and identifies the manufacturers of each]

PLASTICIZERS	PRODUCTION	SALES		
		QUANTITY	VALUE	UNIT VALUE <sup>2</sup>
		<u>1,000</u> <u>pounds</u>	<u>1,000</u> <u>dollars</u>	<u>Per</u> <u>pound</u>
Grand total-----	1,709,859	1,469,748	741,347	\$0.50
Benzenoid <sup>3</sup> -----	1,447,293	1,233,402	585,898	.48
Nonbenzenoid-----	262,566	236,346	155,449	.66
CYCLIC				
Total-----	1,285,753	1,118,334	498,761	.45
Phosphoric acid esters <sup>4</sup> -----	50,526	...	...	...
Phthalic anhydride esters, total-----	1,135,963	970,346	384,443	.40
Dibutyl phthalates (including diisobutyl phthalates)-----	21,732	19,435	8,442	.43
Diethyl phthalate-----	17,151	14,311	18,887	1.32
Diisodecyl phthalate-----	146,269	133,384	45,490	.34
Dimethyl phthalate-----	7,650	7,997	4,060	.51
Dioctyl phthalates-----	275,392	288,313	87,724	.30
Di-tridecyl phthalate-----	21,790	21,228	11,662	.55
All other phthalic anhydride esters-----	645,979	485,678	208,178	.43
Trimellitic acid esters-----	48,545	53,211	37,399	.70
All other cyclic plasticizers <sup>5</sup> -----	50,719	94,777	76,919	.81
ACYCLIC				
Total-----	424,106	351,414	242,586	.69
Adipic acid esters, total-----	125,186	86,736	57,243	.66
Di(2-ethylhexyl) adipate-----	36,991	34,335	17,479	.51
Diisobutyl adipate-----	212	...	...	...
Diisodecyl adipate-----	1,400	1,000	739	.74
Diisooctyl adipate-----	1,496	1,445	824	.57
Ditridecyl adipate-----	8,952	9,290	8,028	.86
m-Octyl m-decyl adipate-----	5,331	4,169	2,813	.67
All other adipic acid esters-----	70,804	36,497	27,360	.75
Complex linear polyesters and polymeric plasticizers-----	49,527	26,306	25,423	.97
Epoxidized esters, total-----	112,479	112,434	65,321	.58
Epoxidized soya oils-----	95,617	96,282	53,308	.55
All other epoxidized esters-----	16,862	16,152	12,013	.74
Oleic acid esters, total-----	11,511	11,223	7,600	.68
Butyl oleate-----	1,676	1,581	1,028	.65
All other oleic acid esters-----	9,835	9,642	6,572	.68
Palmitic acid esters-----	3,405	3,369	2,769	.82
Phosphoric acid esters-----	17,855	14,262	14,825	1.04
Di(2-ethylhexyl) sebacate-----	3,613	3,477	5,468	1.57

See footnotes at end of table.

## SYNTHETIC ORGANIC CHEMICALS, 1985

TABLE 1.--PLASTICIZERS: U.S. PRODUCTION AND SALES, 1985--CONTINUED

PLASTICIZERS	PRODUCTION	SALES		
		QUANTITY	VALUE	UNIT VALUE <sup>1</sup>
	<u>1,000</u> <u>pounds</u>	<u>1,000</u> <u>pounds</u>	<u>1,000</u> <u>dollars</u>	<u>Per</u> <u>pound</u>
ACYCLIC--Continued				
Stearic acid esters, total-----	9,907	13,265	9,254	\$1.70
n-Butyl stearate-----	7,683	11,186	7,044	0.6
All other stearic acid esters-----	2,224	2,079	2,210	1.05
All other acyclic plasticizers <sup>6</sup> -----	90,623	80,342	54,683	0.6

<sup>1</sup>Includes data for compounds used principally (but not exclusively) as primary plasticizers. Does not include clearly defined extenders or secondary plasticizers.

<sup>2</sup>Calculated from unrounded figures.

<sup>3</sup>Includes benzenoid products as defined in part 1, schedule 4, of the Tariff Schedules of the United States Annotated.

<sup>4</sup>Includes data for cresyl diphenyl phosphate, dibutyl phenyl phosphate, diphenyl octyl phosphate, tricresyl phosphate, triphenyl phosphate, and other cyclic phosphoric acid esters.

<sup>5</sup>Includes data for glycol dibenzoates, toluenesulfonamides, tetrahydrofurfuryl oleate, and other cyclic plasticizers.

<sup>6</sup>Includes data for azelaic acid esters, citric and acetylcitric acid esters, myristic acid esters, pelargonic acid esters, ricinoleic and acetylricinoleic acid esters, glyceryl and glycol esters, and other acyclic plasticizers.

TABLE 2.--PLASTICIZERS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED,  
IDENTIFIED BY MANUFACTURER, 1985

[CHEMICALS FOR WHICH SEPARATE STATISTICS ARE GIVEN IN TABLE 1 ARE MARKED BELOW WITH AN ASTERISK (\*);  
CHEMICALS NOT SO MARKED DO NOT APPEAR IN TABLE 1 BECAUSE THE REPORTED DATA ARE ACCEPTED IN CONFIDENCE AND  
MAY NOT BE PUBLISHED. MANUFACTURERS' IDENTIFICATION CODES SHOWN BELOW ARE TAKEN FROM TABLE 3. AN "X"  
SIGNIFIES THAT THE MANUFACTURER DID NOT CONSENT TO HIS IDENTIFICATION WITH THE DESIGNATED PRODUCT]

PLASTICIZERS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
CYCLIC	
N-n-Butyl benzenesulfonamide-----	TNA.
Coumarone-indene plasticizers-----	NEV.
Diethylene glycol dibenzoate-----	KLM, VEL.
Dipropanediol dibenzoate (Dipropylene glycol dibenzoate)---	KLM, VEL.
N-Ethyl-p-toluenesulfonamide-----	MON, NES.
*PHOSPHORIC ACID ESTERS:	
Diphenyl octyl phosphate-----	MON.
Isodecyl diphenyl phosphate-----	SFS.
Tricresyl phosphate-----	FMC, SFS.
Triphenyl phosphate-----	EK, MON, SFS.
Phosphoric acid esters, all other-----	FMC, MON, SFS, SM.
*PHTHALIC ANHYDRIDE ESTERS:	
Bis(2-ethylhexyl)terephthlate-----	EKT.
Butyl benzyl phthalate-----	MON.
Butyl 2-ethylhexyl phthalate-----	DBC.
Butyl octyl phthalates-----	RCI, USS.
Di(2-butoxyethyl) phthalate-----	HAL.
*Dibutyl phthalate (Including diisobutyl phthalate)-----	DBC, EKT, HCC, NOD, RCI, USS, WTH.
Dicyclohexyl phthalate-----	X.
Diethylene glycol phthalate-----	CMB.
Diethyl isophthalate-----	X.
*Diethyl phthalate-----	DBC, EKT, KF, MON, MRF.
Di-(n-heptyl-n-nonyl) undecyl phthalate-----	ENJ.
*Diisodecyl phthalate-----	DBC, ENJ, HCC, NOD, RCI, TEK, USS.
Diisohexyl phthalate-----	ENJ.
Diisononyl phthalate-----	DBC, ENJ, NOD, TEK, USS.
Di(2-methoxyethyl) phthalate-----	EKT.
Dimethyl isophthalate-----	X.
*Dimethyl phthalate-----	EKT, KF, WTC, X.
Dinonyl phthalate-----	ENJ.
Dinonyl undecyl phthalate-----	NOB.
*Ditridecyl phthalate-----	ENJ, HCC, NOD, SM, TEK, USS.
Diundecyl phthalate-----	MON.
Hexyl n-decyl phthalate-----	VST.

TABLE 2.--PLASTICIZERS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED,  
IDENTIFIED BY MANUFACTURER, 1985--CONTINUED

PLASTICIZERS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
<b>CYCLIC--CONTINUED</b>	
*PHTHALIC ANHYDRIDE ESTERS--CONTINUED:	
n-Octyl n-decyl phthalate	RCI, USS.
Phthalic acid, diallyl ester	TNA.
*DIOCTYL PHTHALATES:	
Di(2-ethylhexyl) phthalate	DBC, EKT, ENJ, HCC, MRF, NOD, RCI, TEK, USS, VST.
Diisooctyl phthalate	ENJ, NOD, RCI, TEK.
Di-n-octyl phthalate	EK.
Diocetyl phthalates, all other	DBC, WTH.
GLYCOL PHTHALATE ESTERS:	
Butyl phthalyl butyl glycolate	X.
*Phthalic anhydride esters, all other	DBC, HCC, MON, NOD, TEK.
Polyethylene glycol dibenzoate	VEL.
Tetrahydrofurfuryl oleate	EMR.
Toluenesulfonamide o-, p-mixtures	MON.
*TRIMELLITIC ACID ESTERS:	
Tri(2-ethylhexyl) trimellitate	DBC, HCC, TEK.
Triisodecyl trimellitate	ENJ, HCC, NOD.
Triisononyl trimellitate	TEK, USS.
Triisooctyl trimellitate	ENJ, NOD, RCI, TEK.
Trimethyl trimellitate	FER.
Tri-n-octyl n-decyl trimellitate	RCI, TEK.
Triocetyl trimellitate	EKT, RCI, USS.
Trimellitic acid esters, all other	HCC, TEK, USS, X, X.
*Cyclic plasticizers, all other	DBC, NEV, NOD, SBC, X.
<b>ACYCLIC</b>	
*ADIPIC ACID ESTERS:	
Butylene glycol adipate	HAL.
Di(2-(2-butoxyethoxy)ethyl) adipate	HAL, MON, RCI.
Dibutoxyethyl adipate	HAL.
*Di(2-ethylhexyl) adipate	DBC, EKT, ENJ, HAL, HCC, MRF, NOD, RCI, TEK, USS, WTH.
Di-n-hexyl adipate	EKT, MON.
*Diisobutyl adipate	EKT, HAL, HCC.
*Diisodecyl adipate	EMR, HAL, HCC, MRF, NOD, RCI, SM.
Diisononyl adipate	ENJ, TEK, USS.
*Diisooctyl adipate	ENJ, HCC, RCI, TEK.
Diisopropyl adipate	VMD, WTH.

TABLE 2.--PLASTICIZERS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED,  
IDENTIFIED BY MANUFACTURER, 1985--CONTINUED

PLASTICIZERS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
*ADIPIC ACID ESTERS--CONTINUED:	
Dimethyl adipate-----	MRF, X.
Di-n-octyl adipate-----	WTH.
Di-n-propyl adipate-----	HCC.
*Ditridecyl adipate-----	EMR, HCC, NOD, SM, WM.
Ethylene glycol adipate-----	HAL.
n-Hexyl n-decyl adipate-----	EMR.
Neopentyl glycol adipate-----	HAL.
*n-Octyl n-decyl adipate-----	HCC, MON, RCI, TEK, USS.
Propylene glycol adipate-----	HAL.
*Adipic acid esters, all others-----	DBC, EKT, HAL, HCC, WTC.
AZELAIC ACID ESTERS:	
Bis(hydroxypropyl) azelate-----	EMR.
Di(2-ethylhexyl) azelate-----	EKT, EMR, HAL, RCI.
Diiso-octyl azelate-----	EMR.
CITRIC AND ACETYLCITRIC ACID ESTERS:	
Tributyl acetylcitrate-----	X.
Tributyl citrate-----	X.
Triethyl acetylcitrate-----	X.
Triethyl citrate-----	X.
Citric and acetylcitric acid esters, all other-----	X.
*COMPLEX LINEAR POLYESTERS AND POLYMERIC PLASTICIZERS:	
Adipic acid type complex linear polyesters and polymeric plasticizers-----	HAL, MRF, SHK, TEK, WTC, WTH.
Complex linear polyesters and polymeric plasticizers, all other-----	EKX, EMR, RCI, SFS, SM, VND, WM, WTC.
Poly(2,2,4-trimethyl-1,3-pentanediol) maleate-----	EKT.
*EPOXIDIZED ESTERS:	
*Epoxidized linseed oils-----	FER, VIK, WTC.
Epoxidized pentaerythritol tetraphthalate-----	UCC.
*Epoxidized soya oils-----	FER, FMC, TEK, UCC, VIK, WTC.
2-Ethylhexyl epoxytallates-----	UCC.
Octyl epoxytallates-----	WTC.
*Epoxidized esters, all other-----	VIK.
Glyceryl tripropionate-----	EKT.
GLUTARIC ACID ESTERS:	
Neopentyl glycol glutarate-----	HAL.
Propylene glycol glutarate-----	HAL.
Glutaric acid esters, all other-----	HAL.

TABLE 2.--PLASTICIZERS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED,  
IDENTIFIED BY MANUFACTURER, 1985--CONTINUED

PLASTICIZERS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
MYRISTIC ACID ESTERS:	
Isopropyl myristate	WM, WTH.
Myristyl ethoxy myristate	SCP.
OCTANOIC ACID ESTERS:	
Palmityl octanoate	SBC.
Octanoic acid esters, all other	HAL.
*OLEIC ACID ESTERS:	
2-Butoxyethyl oleate	HAL.
*Butyl oleate	CHL, EMR, HAL, WTC, WTH.
Decyl oleate	SBC, SCP, VND.
2-Ethylhexyl oleate	HAL.
Glyceryl trioleate (Triolein)	EMR, WTC.
Isooctyl oleate	HAL.
Methyl oleate	DA, EMR, TCH, WTC.
Neopentyl glycol dioleate	HCC.
Oleyl oleate	SBC.
PROPYL OLEATES:	
n-Propyl oleate	EMR.
Trimethylolpropane trioleate	HCC.
Oleic acid esters, all other	DA, EMR, HAL.
*PALMITIC ACID ESTERS:	
n-Butyl palmitate	EKT.
2-Ethylhexyl palmitate	VND, WTH.
Isopropyl palmitate	WM, WTH.
2-Methoxyethyl palmitate	EKT.
PELARGONIC ACID ESTERS:	
Glycol pelargonate	EMR, TCH.
Isodecyl pelargonate	EMR.
*PHOSPHORIC ACID ESTERS:	
Tri(2-butoxyethyl) phosphate	FMC, MON, SFS.
Tri(2-chloroethyl) phosphate	SFS.
Tri(2-chloropropyl) phosphate	FER, SFS.
Triethyl phosphate	EKT.
Trioctyl phosphate	SFS.
Phosphoric acid esters, all other	SFS.
RICINOLEIC AND ACETYLRICINOLEIC ACID ESTERS:	
n-Butyl acetylricinoleate	CAS.
Butyl ricinoleate	CAS.
Ethyl glycol monoricinoleate	CAS.

TABLE 2.--PLASTICIZERS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED,  
IDENTIFIED BY MANUFACTURER, 1985--CONTINUED

PLASTICIZERS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
RICINOLEIC AND ACETYLRICINOLEIC ACID ESTERS--CONTINUED	
Glyceryl monoricinoleate-----	CAS.
Glyceryl tri(acetylricinoleate)-----	CAS.
Methyl acetylricinoleate-----	CAS.
Methyl ricinoleate-----	CAS, DA.
Propylene glycol monoricinoleate-----	CAS.
SEBACIC ACID ESTERS:	
Dibutoxyethyl sebacate-----	HAL.
Dibutyl sebacate-----	EKT, X.
*Di(2-ethylhexyl) sebacate-----	HAL, HCC, X.
Diisopropyl sebacate-----	SBC, X.
Dimethyl sebacate-----	X.
Propylene glycol sebacate-----	HAL.
*STEARIC ACID ESTERS:	
*n-Butyl stearate-----	CHL, EMR, TCH, WM, WTC, WTH.
Diethylene glycol succinate-----	CMB.
2-Ethylhexyl stearate-----	STC, TCH.
Hexadecyl stearate-----	STC.
Isobutyl stearate-----	DA, TCH, WTH.
Isodecyl stearate-----	WM.
Methyl pentachlorostearate-----	VDM.
Myristyl stearate-----	VND.
2-Octyldecyl-12-stearoyl stearate-----	VND.
Tridecyl stearate-----	HCC.
*Stearic acid esters, all other-----	SBC, SCP, WTC.
Sucrose acetate isobutyrate-----	EKT.
Tetraethylene glycol di(2-ethylhexanoate)-----	HAL, UCC, WM.
Triethylene glycol di(caprylate-caprate)-----	HAL.
Triethylene glycol di(2-ethylbutyrate)-----	HAL, UCC.
Triethylene glycol di(2-ethylhexanoate)-----	EKT.
2,2,4-Trimethyl-1,3-pentanediol diisobutyrate-----	EKX.
*Acyclic plasticizers, all other-----	ARZ, EMR, HCC, HPC, TCH.

XI -- PLASTICIZERS

TABLE 3.--PLASTICIZERS: DIRECTORY OF MANUFACTURERS, 1985

ALPHABETICAL DIRECTORY BY CODE

[Names of manufacturers that reported production and/or sales of plasticizers to the U.S. International Trade Commission for 1985 are listed below in the order of their identification codes as used in table 2]

CODE :	NAME OF COMPANY	CODE :	NAME OF COMPANY
ARZ :	Arizona Chemical Co.	NES :	Ruetgers-Nease Chemical Co.
CAS :	Caschem, Inc.	NEV :	Neville Chemical Co.
CHL :	Chemol Co.	NOD :	Nuodex, Inc.
CHB :	Cambridge Industries Co.	RCI :	Reichhold Chemicals, Inc.
DA :	Diamond Shamrock Corp., Chemicals Div.	SBC :	Scher Chemicals, Inc.
DBC :	Badische Corp.	SCP :	Henkel Corp.
DIX :	Dixie Chemical Co., Inc.	SFS :	Stauffer Chemical Co., Specialty and Intermediates Div.
EK :	Eastman Kodak Co.;	SHX :	Sherex Chemical Co., Inc.
EKT :	Tennessee Eastman Co. Div.	SM :	Mobil Oil Corp., Mobil Chemical Co., Chemical Products Div.
EKX :	Texas Eastman Co. Div.	STC :	American Hoechst Corp., Sou-Tex Works
EHR :	Emery Chemicals Div. of National Distillers & Chemical Corp.	TCH :	Emery Industries, Inc., Tylon Div.
ENJ :	Exxon Chemical Americas	TEK :	Teknor Apex Co.
FER :	Ferro Corp.;	TNA :	Ethyl Corp.
	Ferro Chemical Div.	UCC :	Union Carbide Corp.
	Grant Chemical Div.	USS :	U.S. Steel Corp., USS Chemicals Div.
FHG :	FMC Corp.	VDM :	Van De Mark Chemical Co., Inc.
HAL :	C. P. Hall Co.	VEL :	Vesicol Chemical Corp.
HCC :	Hatco Chemical Corp.	VIK :	Viking Chemical Co.
HPC :	Hercules, Inc.	VND :	Van Dyk Div. of Mallinckrodt, Inc.
KF :	Dynamit Nobel of America, Dynamit Nobel Chemical Div.	VST :	Vista Polymers, Inc.
KLM :	Kalama Chemical, Inc.	WM :	Inolex Chemical Co.
MON :	Monsanto Co.	WTC :	Witco Chemical Corp.
MRF :	Morflex Chemical Co., Inc.	WTH :	Union Camp Corp.

Note.--Complete names, telephone numbers, and addresses of the above reporting companies are listed in table 1 of the appendix.



SYNTHETIC ORGANIC CHEMICALS, 1985  
SECTION XII -- SURFACE-ACTIVE AGENTS

## STATISTICAL HIGHLIGHTS

Eric Land

202-523-0491

The surface-active agents included in this report are organic chemicals that reduce the surface tension of water or other solvents and are used chiefly as detergents, dispersing agents, emulsifiers, foaming agents, or wetting agents in either aqueous or nonaqueous systems. Waxes and products used chiefly as plasticizers are excluded. Surface-active agents are produced from natural fats and oils, from silvichemicals such as lignin, rosin, and tall oil, and from chemical intermediates derived from coal tar and petroleum. A major part of the output of the bulk chemicals shown in this report is consumed in the form of packaged soaps and detergents for household and industrial use. The remainder is used in the processing of textiles and leather, in ore flotation and oil-drilling operations, and in the manufacture of agricultural sprays, cosmetics, elastomers, foods, lubricants, paint, pharmaceuticals, and many other products.

The statistics for production and sales of surface-active agents are grouped by ionic class and by chemical class and subclass. All quantities are reported in terms of 100-percent organic surface-active ingredients and thus exclude all inorganic salts, water, and other diluents. Sales statistics reflect sales of bulk surface-active agents only; sales of formulated products are excluded. Data for "all other" in each of the categories, which was published in previous editions, can be derived by subtracting from the totals of each category the sum of the enumerated items within that category. Data for the production of surface-active agents during 1981-85 are shown in figure 1.

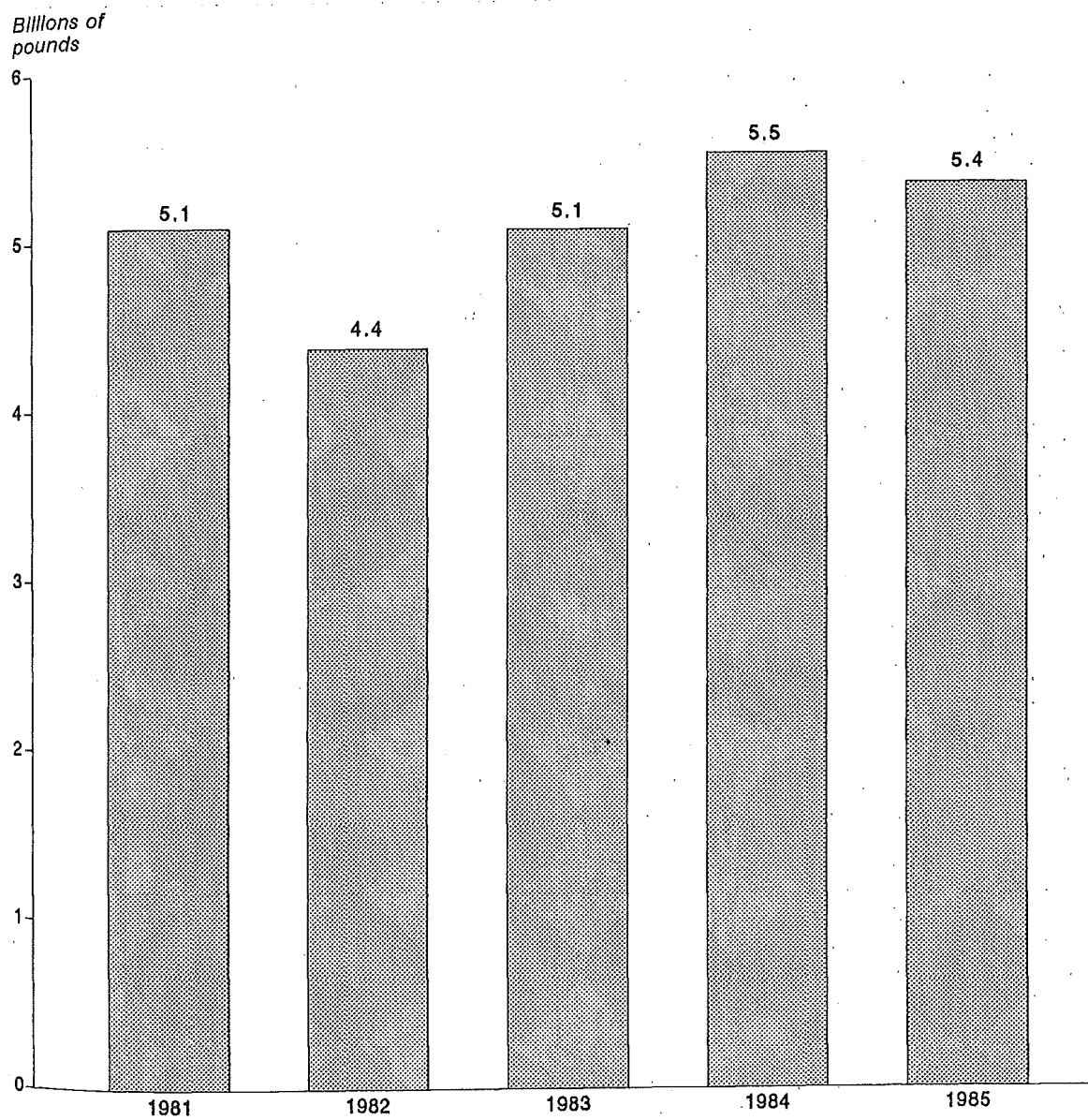
Total U.S. production of surface-active agents in 1985 amounted to 5,363 million pounds, or 2.8 percent less than the 5,519 million pounds reported for 1984. Sales of bulk surface-active agents in 1985 amounted to 3,328 million pounds, valued at \$1,574 million, compared with sales in 1984 of 3,443 million pounds, valued at \$1,874 million. In terms of quantity, sales in 1985 were 3.3 percent less than in 1984.

Production of anionic surface-active agents in 1985 amounted to 3,355 million pounds, or 62.6 percent of the total surfactant output reported for 1985. Sales of anionics in 1985 amounted to 1,684 million pounds, valued at \$538 million.

Production of cationic surface-active agents in 1985 amounted to 418 million pounds, 8.3 percent less than the 456 million pounds reported in 1984. Production of nonionic surface-active agents amounted to 1,564 million pounds in 1985, 1.4 percent more than the 1,543 million pounds reported in 1984. Sales of cationic surface-active agents in 1985 decreased by 3.2 percent in terms of quantity, and by 14.3 percent in terms of value when compared with sales as reported in 1984. Sales of nonionics in 1985 decreased by 2.0 percent in terms of quantity, and by 25.6 percent in terms of value when compared with sales as reported in 1984.

The difference between production and sales reflects inventory changes and captive consumption of surface-active agents by synthetic rubber producers, and by manufacturers of cosmetics, packaged detergents, bar soaps, and other formulated consumer products. In some instances the difference may also reflect quantities of surface-active agents used as chemical intermediates, e.g., nonionic alcohol and alkylphenol ethoxylates which may be converted to anionic surface-active agents by phosphorylation or sulfation.

Figure 1.—Surface-active agents.



Source: U.S. International Trade Commission, *Synthetic Organic Chemicals: United States Production and Sales*.

XII -- SURFACE-ACTIVE AGENTS

TABLE 1.--SURFACE-ACTIVE AGENTS: U.S. PRODUCTION AND SALES, 1985

(Listed below are the surface-active agents for which reported data on production or sales may be published. (Leaders (...)) are used where the reported data are accepted in confidence and may not be published or where no data were reported.) Table 2 lists all surface-active agents for which data on production and/or sales were reported and identifies the manufacturers of each]

SURFACE-ACTIVE AGENTS	SALES <sup>2</sup>			
	PRODUCTION <sup>1</sup>	QUANTITY <sup>1</sup>	VALUE	UNIT VALUE <sup>3</sup>
	1,000 pounds	1,000 pounds	1,000 dollars	Per pound
Grand total-----	5,363,183	3,327,828	1,574,310	\$0.47
<b>AMPHOTERIC</b>				
Total-----	25,369	22,026	24,973	1.13
(Carboxymethyl)[3-(coconut oil amido)propyl] dimethylammonium hydroxide, inner salt-----	970	935	1,591	1.70
N-Dodecyl-3-iminodipropionic acid, disodium salt-----	254	254	377	1.48
(Mixed alkyl) sulfobetaine-----	1,099	...	...	...
<b>ANIONIC</b>				
Total-----	3,355,178	1,683,542	537,646	.32
Carboxylic acids (and salts thereof), total-----	831,989	157,871	71,970	.46
Amine salts of fatty, rosin, and tall oil acids-----	2,625	1,292	1,603	1.24
Coconut oil acids, potassium salt-----	...	329	193	.59
Coconut oil acids, sodium salt-----	104,125	3,236	1,307	.54
Oleic acid, sodium salt-----	417	133	175	1.32
Palm oil acids, sodium salt-----	222	56	28	.50
Stearic acid, potassium salt-----	682	490	462	.94
Tallow acids, sodium salt-----	324,940	21,540	5,950	.28
Phosphoric and polyphosphoric acid esters (and salts thereof), total-----	43,642	33,618	33,138	.99
Alcohols and phenols, alkoxylated and phosphated, total-----	30,441	27,534	24,296	.88
Decyl alcohol, ethoxylated and phosphated-----	1,459	1,317	945	.72
Dinonylphenol, ethoxylated and phosphated-----	843	797	762	.96
Mixed linear alcohols, ethoxylated and phos- phated-----	5,695	5,106	5,082	1.00
Nonylphenol, ethoxylated and phosphated-----	12,478	11,531	6,988	.61
Phenol, ethoxylated and phosphated-----	2,963	2,863	3,181	1.11
Tridecyl alcohol, ethoxylated and phosphated-----	760	...	...	...
All other phosphoric and polyphosphoric acid esters: (and salts thereof), total-----	13,201	6,084	8,842	1.45
Decyl and octyl phosphate-----	756	721	425	.59
2-Ethylhexyl phosphate, sodium salt-----	300	248	335	1.35
Mixed alkyl phosphate-----	2,697	1,055	1,670	1.58
Sulfonic acids (and salts thereof), total-----	1,769,507	1,276,125	284,340	.22
Alkylbenzenesulfonates, total-----	568,642	187,798	97,427	.52
Dodecylbenzenesulfonic acid-----	234,372	122,819	56,534	.46
Dodecylbenzenesulfonic acid, calcium salt-----	7,062	3,793	3,865	1.02
Dodecylbenzenesulfonic acid, isopropylamine salt-----	5,067	4,158	3,347	.80
Dodecylbenzenesulfonic acid, sodium salt-----	168,941	47,927	26,105	.54
Dodecylbenzenesulfonic acid, triethanolamine salt-----	7,188	6,874	3,998	.58
Tridecylbenzenesulfonic acid, sodium salt-----	118,987	...	...	...

See footnotes at end of table.

TABLE 1.--SURFACE-ACTIVE AGENTS: U.S. PRODUCTION AND SALES, 1985--CONTINUED

SURFACE-ACTIVE AGENTS	PRODUCTION <sup>1</sup>		SALES <sup>2</sup>		UNIT VALUE <sup>3</sup> Per pound
	1,000 pounds	1,000 pounds	1,000 dollars	VALUE	
ANIONIC--Continued					
Sulfonic acids (and salts thereof)--continued					
Benzene-, cumene-, toluene-, and xylenesulfonates,					
total-----	105,833	91,137	24,217		\$0.27
Cumenesulfonic acid, sodium salt-----	8,007	7,922	3,095		.29
Xylenesulfonic acid, sodium salt-----	68,732	60,209	13,795		.21
Ligninsulfonates and naphthalenesulfonates, total--	979,824	924,765	92,768		.10
Diisopropylnaphthalenesulfonic acid, sodium salt--	1,648	1,280	2,697		2.11
Ligninsulfonic acid, ammonium salt-----	6,307	6,334	496		.08
Ligninsulfonic acid, calcium salt-----	560,077	520,637	23,749		.05
Ligninsulfonic acid, chromium salt-----	54,908	53,748	8,416		.16
Ligninsulfonic acid, sodium salt-----	289,389	278,051	22,606		.08
Mixed alkane sulfonic acid, sodium salt-----	9,089	7,672	5,944		.77
Sulfosuccinamic acid derivatives-----	2,167	1,839	2,148		1.11
Taurine derivatives-----	1,690	1,702	3,131		1.84
Sulfonic acids having ester or ether linkages,					
total-----	76,599	35,416	44,318		1.25
Sulfosuccinic acid esters, total-----	21,172	19,652	22,554		1.15
Sulfosuccinic acid, bis(2-ethylhexyl)ester,					
sodium salt-----	14,565	14,013	16,560		1.18
Sulfosuccinic acid, ditridecyl ester,					
sodium salt-----	193	158	212		1.11
All other sulfonic acids (and salts thereof)-----	25,663	25,616	14,387		.58
Sulfuric acid esters (and salts thereof), total-----	668,704	199,195	139,574		.19
Acids, amides, and esters, sulfated-----	9,926	6,488	3,530		.51
Alcohols, sulfated, total-----	275,925	90,289	66,634		.71
Dodecyl sulfate, sodium salt-----	1,725	1,517	1,312		.85
Dodecyl sulfate, ammonium salt-----	28,052	19,597	10,281		.51
Dodecyl sulfate, diethanolamine salt-----	1,486	1,584	1,158		.78
Dodecyl sulfate, magnesium salt-----	273	221	245		1.11
Dodecyl sulfate, sodium salt-----	42,926	40,826	26,987		.66
Dodecyl sulfate, triethanolamine salt-----	13,167	10,562	7,694		.71
2-Ethylhexyl sulfate sodium salt-----	1,412	1,331	4,212		3.17
Mixed linear alcohols, sulfated, ammonium salt--	48,556	3,778	3,566		.91
Mixed linear alcohols, sulfated, triethanolamine					
salt-----	20,119	4,623	3,996		.85
Octyl sulfate, sodium salt-----	209	213	314		1.41
Ethers, sulfated, total-----	357,558	78,207	52,770		.87
Alkylphenols, ethoxylated and sulfated-----	7,012	7,207	7,343		1.01
Dodecyl alcohol, ethoxylated and sulfated,					
ammonium salt-----	1,926	1,645	1,168		.71
Dodecyl alcohol, ethoxylated and sulfated,					
sodium salt-----	11,201	10,351	9,764		.91
Mixed linear alcohols, ethoxylated and sulfated					
ammonium salt-----	...	29,893	18,013		.81
Mixed linear alcohols, ethoxylated and sulfated,					
sodium salt-----	180,907	28,526	15,693		.55
Natural fats and oils, sulfated, total-----	25,295	24,211	16,641		.81
Castor oil, sulfated, sodium salt-----	3,176	2,874	2,106		.77
Coconut oil sulfated, sodium salt-----	33	...	...		.01
Mixed fish oils, sulfated, sodium salt-----	2,232	2,355	865		.49
Neatsfoot oil, sulfated, sodium salt-----	811	...	...		.41
Tall oil, sulfated, sodium salt-----	948	798	327		.46
Tallow sulfated, sodium salt-----	750	613	247		.41
All other anionic surface-active agents-----	41,336	16,733	8,624		.81

See footnotes at end of table.

TABLE 1.--SURFACE-ACTIVE AGENTS: U.S. PRODUCTION AND SALES, 1985--CONTINUED

SURFACE-ACTIVE AGENTS	PRODUCTION <sup>1</sup>		SALES <sup>2</sup>	
	QUANTITY <sup>1</sup>	VALUE	QUANTITY <sup>1</sup>	UNIT VALUE <sup>3</sup>
	1,000 pounds	1,000 dollars	1,000 pounds	Per pound
<b>CATIONIC</b>				
Total-----	418,466	311,759	298,840	\$ .96
Amine oxides and oxygen-containing amines (except those having amide linkages), total-----	90,310	41,596	34,671	.83
Acyclic, total-----	82,766	35,253	28,142	.80
(Coconut oil alkyl)amine, ethoxylated-----	2,379	3,507	3,016	.86
(Mixed alkyl)amine, ethoxylated-----	686	...	...	...
(9-Octadecenyl)amine, ethoxylated-----	1,001	...	...	...
(Tallow alkyl)amine, ethoxylated-----	6,548	6,310	3,576	.57
N-(Tallow alkyl)trimethylenediamine, ethoxylated-----	...	1,924	1,530	.79
Cyclic (including imidazoline and oxazoline derivatives), total-----	7,544	6,343	6,529	1.03
1-(2-Hydroxyethyl)-2-nor(tall oil alkyl)-2-imidazoline-----	594	377	1,255	3.33
Amines and amine oxides having amide linkages, total-----	29,112	14,037	13,962	.99
3-Lauramido-N,N-dimethylpropyl amine oxide-----	300	325	628	1.93
Stearic acid-diethylenetriamine condensate-----	670	556	858	1.54
Stearic acid-ethylenediamine condensate, mono-ethoxylated-----	169	163	134	.82
Tall oil acids polyalkylenepolyamine condensate-----	10,446	...	...	...
Amines, not containing oxygen (and salts thereof), total-----	108,383	75,587	68,250	.90
Amine salts-----	585	...	...	...
Diamines and polyamines-----	25,480	19,895	17,030	.86
Imidazoline derivatives-----	9,198	9,475	7,749	.82
N-(9-Octadecenyl)trimethylenediamine-----	973	...	...	...
N-(Tallow alkyl)dipropylenetriamine-----	548	191	169	.88
N-(Tallow alkyl)trimethylenediamine-----	7,414	3,903	3,185	.82
Monoamines, total-----	82,318	54,129	49,492	.91
(Coconut oil alkyl)amine-----	...	1,477	1,799	1.22
N,N-Dimethyloctadecylamine-----	1,337	323	510	1.58
(Hydrogenated tallow alkyl)amine-----	5,419	4,367	3,689	.84
9-Octadecenylamine-----	8,519	6,017	4,676	.78
Octadecylamine-----	2,007	1,475	1,555	1.05
(Soybean oil alkyl)amine-----	2,623	899	665	.74
(Tallow alkyl)amine-----	7,633	8,383	5,867	.70
Quaternary ammonium salts, containing oxygen-----	41,079	31,966	29,148	.91
Quaternary ammonium salts, not containing oxygen-----	...	...	...	...
Total-----	146,620	145,688	127,926	.88
Acyclic, total-----	116,452	119,570	105,614	.88
Bis(coconut oil alkyl)dimethylammonium chloride-----	...	1,584	2,402	1.52
Bis(hydrogenated tallow alkyl)dimethylammonium chloride-----	65,232	64,399	51,682	.80
N,N,N',N'-Pentamethyl-N-(tallow alkyl)trimethylene-bis(ammonium chloride)-----	...	1,071	898	.84
Trimethyl(tallow)ammonium chloride-----	718	1,205	1,218	1.01

Footnotes at end of table.

TABLE 1.--SURFACE-ACTIVE AGENTS: U.S. PRODUCTION AND SALES, 1985--CONTINUED

SURFACE-ACTIVE AGENTS	PRODUCTION <sup>1</sup>	SALES <sup>2</sup>		UNIT VALUE <sup>3</sup>
		QUANTITY <sup>1</sup>	VALUE	
	1,000 pounds	1,000 pounds	1,000 dollars	Per pound
<b>CATIONIC--Continued</b>				
Quaternary ammonium salts, not containing oxygen-- Continued				
Benzenoid, total <sup>4</sup> -----	30,168	26,118	23,312	89.3
Benzyl(coconut oil alkyl)dimethylammonium chloride-----	2,665	...	...	
Benzyl(dimethyl(mixed alkyl)ammonium chloride)-----	12,418	11,137	7,520	61
1-Benzylpyridinium chloride-----	139	139	157	1.1
Benzyltrimethylammonium chloride-----	3,913	3,445	2,611	66
All other cationic surface-active agents-----	2,955	2,885	24,883	8.6
<b>NONIONIC</b>				
Total-----	1,564,163	1,310,501	712,851	54
Carboxylic acid amides, total-----	52,931	48,257	40,243	77
Diethanolamine condensates (amine/acid ratio=2/1), total-----	16,664	13,834	10,256	74
Coconut oil acids-----	7,767	6,346	5,121	65
Coconut oil and tallow acids-----	3,206	3,061	1,576	48
Lauric and myristic acids-----	787	237	255	32
Oleic acid-----	742	505	372	49
Stearic acid-----	88	...	...	
Tall oil acids-----	1,880	1,660	1,197	64
Diethanolamine condensates (other amine/acid ratios), total-----	26,838	24,171	20,382	78
Coconut oil acids (amine/acid ratio=1/1)-----	19,051	17,449	14,154	74
Lauric acid (amine/acid ratio=1/1)-----	3,592	2,806	2,915	104
Lauric and myristic acids (amine/acid ratio=1/1)-----	1,633	1,586	1,514	92
Linoleic acid (amine/acid ratio=1/1)-----	493	512	460	93
Oleic acid (amine/acid ratio=1/1)-----	136	83	57	41
Soybean oil acids (amine/acid ratio=1/1)-----	1,027	987	604	59
Stearic acid (amine/acid ratio=1/1)-----	118	87	63	53
Other carboxylic acid amides, total-----	16,428	10,252	9,605	58
Coconut oil acid-ethanolamine condensate (amine/ acid ratio=1/1)-----	4,466	1,963	1,822	41
Carboxylic acid esters, total-----	259,137	206,463	170,960	66
Anhydrosorbitol esters, total-----	33,686	31,535	22,761	71
Anhydrosorbitol monolaurate-----	4,883	4,844	3,570	73
Anhydrosorbitol mono-oleate-----	6,765	4,993	4,003	59
Anhydrosorbitol monostearate-----	17,763	17,605	11,872	67
Anhydrosorbitol trioleate-----	2,250	1,999	1,473	66
Diethylene glycol esters, total-----	17,367	1,447	1,075	74
Diethylene glycol monolaurate-----	423	432	281	66
Diethylene glycol monostearate-----	71	81	82	115
Ethoxylated sorbitol and anhydrosorbitol esters, total-----	30,841	28,424	22,342	72
Ethoxylated anhydrosorbitol monolaurate-----	5,573	5,304	4,537	81
Ethoxylated anhydrosorbitol mono-oleate-----	7,636	7,149	4,845	67
Ethoxylated anhydrosorbitol monostearate-----	11,087	9,859	7,430	67
Ethoxylated anhydrosorbitol triester of tall oil acids-----	532	528	325	61
Ethoxylated anhydrosorbitol trioleate-----	2,094	2,035	1,724	82
Ethoxylated anhydrosorbitol tristearate-----	921	807	668	72

See footnotes at end of table.

XII -- SURFACE-ACTIVE AGENTS

TABLE 1.--SURFACE-ACTIVE AGENTS: U.S. PRODUCTION AND SALES, 1985--CONTINUED

SURFACE-ACTIVE AGENTS	SALES <sup>2</sup>			
	PRODUCTION <sup>1</sup>	QUANTITY <sup>1</sup>	VALUE	UNIT VALUE <sup>3</sup>
	1,000 pounds	1,000 pounds	1,000 dollars	Per pound
NONIONIC--Continued				
Carboxylic acid esters--Continued				
Ethylene glycol monostearate-----	2,715	2,641	2,102	.80
Glycerol esters, total-----	60,700	53,366	46,874	.88
Complex glycerol esters-----	11,339	8,207	10,817	1.32
Glycerol esters of chemically defined acids, total-----	18,004	14,772	12,352	.84
Glycerol mono-oleate-----	6,123	4,347	3,803	.87
Glycerol monoricinoleate-----	55	52	77	1.46
Glycerol monostearate-----	11,149	10,090	8,987	.80
Glycerol esters of mixed acids-----	31,357	30,387	23,705	.78
Natural fats and oils, ethoxylated, total-----	32,995	24,090	21,457	.89
Castor oil, ethoxylated-----	13,756	9,859	7,167	.73
Hydrogenated castor oil, ethoxylated-----	5,064	3,639	4,295	1.18
Lanolin, ethoxylated-----	1,894	1,366	1,202	.88
Polyethylene glycol esters, total-----	46,570	38,827	29,231	.75
Polyethylene glycol diester of tall oil acids-----	3,825	1,449	817	.56
Polyethylene glycol dilaurate-----	857	901	924	1.03
Polyethylene glycol dioleate-----	2,916	661	537	.81
Polyethylene glycol monoester of tall oil acids-----	664	503	419	.83
Polyethylene glycol monolaurate-----	5,019	4,436	3,403	.77
Polyethylene glycol mono-oleate-----	3,563	2,458	2,059	.84
Polyethylene glycol monopelargonate-----	1,431	...	...	...
Polyethylene glycol monostearate-----	5,934	5,124	4,296	.84
Polyethylene glycol sesquiester of tall oil acid-----	2,054	1,764	1,190	.67
Polyglycerol esters, total-----	1,555	1,488	2,076	1.40
Polyglycerol mono-oleate-----	640	640	791	1.24
1,2-Propanediol monostearate-----	1,665	1,328	1,907	1.44
Ethers, total-----	1,215,350	1,044,620	484,219	.46
Benzenoid ethers, total <sup>4</sup> -----	432,013	379,536	178,788	.47
Dinonylphenol, ethoxylated-----	4,173	3,343	2,763	.83
Dodecylphenol, ethoxylated-----	15,548	13,954	7,440	.53
Nonylphenol, ethoxylated-----	323,314	297,738	113,983	.38
Nonylphenol, ethoxylated and propoxylated-----	825	...	...	...
Phenol, ethoxylated-----	1,853	770	642	.83
Nonbenzenoid ethers, total-----	703,976	605,177	260,440	.43
Chemically-defined linear alcohols, ethoxylated, total-----	28,045	24,022	24,439	1.02
Decyl alcohol, ethoxylated-----	6,913	4,953	2,534	.51
Dodecyl alcohol, ethoxylated-----	3,221	2,757	2,285	.83
9-Octadecenyl alcohol, ethoxylated-----	1,213	680	730	1.07
Octadecyl alcohol, ethoxylated-----	1,471	...	...	...
Oleyl alcohol, ethoxylated-----	2,365	2,357	2,750	1.17
Mixed linear alcohols, alkoxyated, total-----	675,931	581,155	236,001	.41
Mixed linear alcohols, ethoxylated-----	607,747	516,148	204,392	.40
Mixed linear alcohols, ethoxylated and propoxylated-----	25,220	28,708	18,700	.65

See footnotes at end of table.

## SYNTHETIC ORGANIC CHEMICALS, 1985

TABLE 1.--SURFACE-ACTIVE AGENTS: U.S. PRODUCTION AND SALES, 1985--CONTINUED

SURFACE-ACTIVE AGENTS	PRODUCTION <sup>1</sup>	SALES <sup>2</sup>		
		QUANTITY <sup>1</sup>	VALUE	UNIT VALUE <sup>3</sup>
	1,000 pounds	1,000 pounds	1,000 dollars	Per pound
NONIONIC--Continued				
Ethers--Continued				
Other ethers and thioethers, total-----	79,282	59,772	44,991	75.3
Mixed alcohols, ethoxylated-----	6,460	...	...	...
Poly(mixed ethylene, propylene) glycol-----	12,979	...	...	...
Tridecyl alcohol, ethoxylated-----	13,481	8,699	4,887	56
All other nonionic surface-active agents-----	36,745	11,161	17,429	156

<sup>1</sup>All quantities are given in terms of 100 percent organic surface-active ingredient.

<sup>2</sup>Sales include products sold as bulk surface-active agents only.

<sup>3</sup>Calculated from unrounded figures.

<sup>4</sup>The term "benzenoid" used in this report, describes any surface-active agent, except lignin derivatives, whose molecular structure includes 1 or more 6-membered carbocyclic or heterocyclic rings with conjugated double bonds (e.g., the benzene ring or the pyridine ring).

NOTE: Data for "all other" categories, which were published in previous editions of this report, can be derived by subtracting from the totals of each category the sum of the enumerated items within that category.



TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1985

[CHEMICALS FOR WHICH SEPARATE STATISTICS ARE GIVEN IN TABLE 1 ARE MARKED BELOW WITH AN ASTERISK (\*); CHEMICALS NOT SO MARKED DO NOT APPEAR IN TABLE 1 BECAUSE THE REPORTED DATA ARE ACCEPTED IN CONFIDENCE AND MAY NOT BE PUBLISHED. MANUFACTURERS' IDENTIFICATION CODES SHOWN BELOW ARE TAKEN FROM TABLE 3. AN "X" SIGNIFIES THAT THE MANUFACTURER DID NOT CONSENT TO HIS IDENTIFICATION WITH THE DESIGNATED PRODUCT]

SURFACE-ACTIVE AGENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
<b>AMPHOTERIC</b>	
1,1-Bis(carboxymethyl)-2-undecyl-2-imidazolinium chloride, disodium salt-----	BRD.
1,1-Bis(carboxymethyl)-2-undecyl-2-imidazolinium hydroxide, disodium salt-----	X.
Bis(2-hydroxyethyl)tallowammonium ethanoate-----	MIR.
3-[Caprylamidoethylene-(2-hydroxyethyl)amino-propionic acid]-----	MIR.
Caprylamphopropionate-----	MOA.
1-Carboxyethyl-1-(2-ethoxycarboxyethyl)-2-cocoimidazolinium, disodium salt-----	SBC.
1-Carboxyethyl-1-(2-hydroxyethyl)-2-heptyl-2-imidazolinium hydroxide, sodium derivative, sodium salt-----	MIR.
1-Carboxyethyl-1-(2-hydroxyethyl)-2-nonyl-2-imiazolinium hydroxide, sodium derivative, sodium salt-----	MIR.
(1-Carboxyheptadecyl)trimethylammonium hydroxide, inner salt-----	DUP.
(Carboxymethyl-3-cocoamidopropyl)dimethylammonium chloride, sodium salt-----	ENJ.
*(Carboxymethyl)[3-(coconut oil amido)propyl]dimethylammonium hydroxide, inner salt-----	CYL, JOR, MIR, ONX, SCP, SHX.
1-Carboxymethyl-2-heptadecyl-1-(2-hydroxyethyl)-2-imidazolinium hydroxide, sodium derivative, sodium salt-----	BRD, MIR.
1-Carboxymethyl-1-(2-hydroxyethyl)-2-heptyl-2-imidazolinium hydroxide, sodium derivative, sodium salt-----	MIR.
1-Carboxymethyl-1-(2-hydroxyethyl)-2-nonyl-2-imidazolinium hydroxide, sodium derivative, sodium salt-----	BRD, MIR.
1-Carboxymethyl-1-(2-hydroxyethyl)-2-undecyl-2-imidazolinium hydroxide, sodium derivative, sodium salt-----	MIR.
1-Carboxymethyl-1-(2-hydroxyethyl)-2-undecyl-2-imidazoliniumhydroxide, sodium derivative, sodium salt--	MIR.

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1985--CONTINUED

SURFACE-ACTIVE AGENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
AMPHOTERIC--CONTINUED	
(Carboxymethyl)-3-(laurylamidopropyldimethyl ammonium hydroxide, inner salt)	JOR, MIR.
Cocoamidoamphoglycinate	MOA
Cocoamidopropyl betaine	CRD, MOA.
3-[3-(Cocoamidopropyl)dimethylammonio]-2-hydroxypropane sulfonate	MIR.
(3-Cocoamidopropyl)(2-hydroxy-3-sulfopropyl)dimethyl, hydroxide, inner salt	SBC.
(3-Cocoamidopropyl)-(2-hydroxy-3-sulfopropyl)-dimethyl ammonium hydroxide, inner salt	SHX.
3-Cocoamidopropyl-2-hydroxy-3-sulfopropyldimethyl ammonium hydroxide, inner salt	SCP.
Cocoamphocarboxyglycinate	MOA.
Cocoamphocarboxypropionate	MOA.
Cocoamphopropionate	MOA.
N-(Coconut oil alkyl)- $\beta$ -alanine, partial sodium salt	SCP.
N-(Coconut oil alkyl)- $\beta$ -alanine, sodium salt	DUP, WM.
3-(Coconut oil alkyl)amidoethylene-(2-hydroxyethyl)-aminopropionic acid	MIR.
N-(Coconut oil alkyl)aminobutyric acid	ARC.
N,N-Di(hydroxyethyl)-n-carboxymethyl tallow ammonium quat, inner salt	SHX.
Di-(hydrogenated tallow)methylammonium tallowate	SHX.
Dimethyloleylammonium ethanoate	MIR.
N-Dodecyl-3-iminodipropionic acid	MOA.
*N-Dodecyl-3-iminodipropionic acid, disodium salt	AAC, MIR, MOA, SCP.
N-Dodecyl-3-iminodipropionic acid, monosodium salt	MIR.
N-Dodecyl-3-iminopropionic acid, monosodium salt	SCP.
Heptadecylmethylbenzimidazoline sulfonic acid, sodium salt	BRD
1-(2-Hydroxyethyl)-2-heptyl-3-carboxyethylimidazoline, sodium salt	SCP.
1-Hydroxyethyl-1-(2-hydroxy-3-sodium sulfonatopropyl)-2-capryl-2-imidazolinium hydroxide	MIR.
1-Hydroxyethyl-1-(2-hydroxy-3-sodium sulfonatopropyl)-2-nor-coconut oil fatty acids-2-imidazolinium hydroxide	MIR.
1-Hydroxyethyl-1-(2-hydroxy-3-sodium sulfonatopropyl)-2-oleyl-2-imidazolinium hydroxide	MIR.

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1985--CONTINUED

SURFACE-ACTIVE AGENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
AMPHOTERIC--CONTINUED	
1-(2-Hydroxyethyl)-1-(sodium carboxymethylene-oxyethylene)-2-nor-coconut oil fatty acids-2-imidazolinium hydroxide	MIR.
Isodecyloxypropyliminopropionic acid, monosodium salt	ENJ.
Isostearic amphopropionate	MOA.
Laurylamidopropyl betaine	MOA.
Laurylamphoglycinate	MOA.
*(Mixed alkyl)sulfobetaine	BRD, JOR, MOA, X.
Oleic acid-ethylenediamine condensate, propoxylated and sulfated, sodium salt	MOA.
Oleyl betaine	SCP.
1-(Sodium carboxyethylene)-1-(sodium carboxymethylene-oxyethylene)-2-nor-(tall oil fatty acids)-2-imidazolinium hydroxide	MIR.
1-(Sodium carboxymethyl)-1-(sodium carboxymethylene-oxyethylene)-2-nor-(coconut oil fatty acids)-2-imidazolinium lauryl sulfate	MIR.
N-(Tallow alkyl)-3-iminodipropionic acid, disodium salt	MIR, MOA, SCP.
Tridecyloxypropyl(ethyleneoxy)propionic acid, potassium salt	MRV.
Amphoteric surface-active agents, all other	DUP, S, WTC, X.
ANIONIC	
CARBOXYLIC ACIDS (AND SALTS THEREOF):	
AMINE SALTS OF FATTY, ROSIN, AND TALL OIL ACIDS:	
Coconut oil acids, diethanolamine salt	SHX.
Coconut oil acids, ethanolamine salt	SBP.
Coconut oil acids, triethanolamine salt	DA.
Isostearic acid, triethanolamine salt	PCI.
Octanoic acid, triethanolamine salt	X.
Oleic acid, diethylamine salt	WTC.
Oleic acid, morpholine salt	X.
Oleic acid, triethanolamine salt	CPC, X.
3-Propanoic acid, coco-amino, sodium salt	PCI.
Rosin acids, triethanolamine salt	CPC.
Stearic acid, N,N,N',N'-tetrakis(2-hydroxyethyl)-ethylenediamine salt	ICI.
Stearic acid, triethanolamine salt	AAC, CPC, GLY, PCI, X.

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED  
OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1985--CONTINUED

SURFACE-ACTIVE AGENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
<b>ANIONIC--CONTINUED</b>	
CARBOXYLIC ACIDS (AND SALTS THEREOF)--CONTINUED	
AMINE SALTS OF FATTY, ROSIN, AND TALL OIL	
ACIDS--CONTINUED	
Tall oil acids, diethanolamine salt (Condensate)-----	SHX.
Tallow acids, ethanolamine salt-----	SEP.
Tallow acids, triethanolamine salt-----	SBP.
Amine salts of fatty, rosin, and tall oil acids, all other-----	S, WM.
CARBOXYLIC ACIDS HAVING AMIDE, ESTER, OR ETHER	
LINKAGES:	
5(or 6)-Carboxy-4-hexyl-2-cyclohexene-1-octanoic acid, reaction products with castor oil-----	X.
N-(Coconut oil acyl)sarcosine-----	HMP.
N-(Coconut oil acyl)sarcosine, sodium salt-----	HMP.
Dodecyloxypoly(ethyleneoxy)acetic acid, sodium salt-----	MIR.
N-Lauroyliminodiacetic acid-----	HMP.
N-Lauroylsarcosine-----	HMP.
N-Lauroylsarcosine, ammonium salt-----	HMP.
N-Lauroylsarcosine, sodium salt-----	HMP.
Mixed(secondary linear alcohol)polyethylene propionic acid, sodium salt-----	CHP.
N-Oleoylsarcosine, sodium salt-----	GAF.
N-Oleoylsarcosine-----	HMP.
Poly(oxy-1,2-ethanediyl)- $\alpha$ -carboxy methyl, omega- (tri-decyloxy), potassium salt-----	PCI.
Tridecyloxypoly(ethyleneoxy)acetic acid, sodium salt-----	HMP.
Carboxylic acids with amide, ester or ether linkage, other-----	DA, WTC.
POTASSIUM AND SODIUM SALTS OF FATTY, ROSIN, AND	
TALL OIL ACIDS:	
Animal grease, sodium salt-----	NMC.
5(or 6)carboxy-4-hexyl-2-cyclohexene-1-octanoic acid, potassium/sodium salts-----	X.
Castor oil acids, sodium salt-----	DEX, HEW.
Citric acid, sodium salts (50%) in sodium phosphates (20%)-----	STC.
*Coconut oil acids, potassium salt-----	AGP, CON, ESS, HEW, HIP, HNT, LAS, LUR, NMC, PG, PNX, SOP.
*Coconut oil acids, sodium salt-----	BSW, CON, CP, HEW, LAS, LEV, NMC, NPR, PG, SOP, X.
Corn oil acids, potassium salt-----	HNT, NMC.

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1985--CONTINUED

SURFACE-ACTIVE AGENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ANIONIC--CONTINUED	
CARBOXYLIC ACIDS (AND SALTS THEREOF)--CONTINUED	
POTASSIUM AND SODIUM SALTS OF FATTY, ROSIN, AND	
TALL OIL ACIDS--CONTINUED	
2-Ethylhexanoic acid, potassium salt-----	UPF.
Gluconic acid, potassium and sodium salts with 20 percent mix of sodium bisulfite-formaldehyde----	STC.
Heptanoic acid, potassium salt-----	X.
Hexyl(Isonanoyl anide)carboxylic acid, mono-and triethanolamine salts-----	STC.
Hexyl(isonanoyl anide)carboxylic acid, triethanol- di-and triethanolamine salts-----	STC.
Isonanoic acid, sodium salt-----	STC.
Isostearic acid, isoproxy titanium salt-----	KPI.
Mixed vegetable fatty acids, potassium salt-----	GRL, QCP.
Mixed vegetable fatty acids, sodium salt-----	NMC, QCP.
Mixed vegetable fatty acids, triethanolamine salt-----	EFH.
Naphthenic acid, potassium salt-----	WBG.
Oleic acid, ammonium salt-----	CCC.
Oleic acid, epoxidized, ammonium salt-----	SCP.
Oleic acid, potassium salt-----	BSW, DA, HAL, HNT, PG, WBG, X.
*Oleic acid, sodium salt-----	BSW, DA, USR, WBG, WTC.
Olive oil acids, sodium salt-----	HNT.
Palm kernel oil acids, potassium salt-----	PG.
Palm kernel oil acids, sodium salt-----	NMC, PG.
*Palm oil acids, sodium salt-----	BSW, HEW, LAS.
Rosin acids, potassium salt-----	ARZ, X.
Rosin acids, sodium salt-----	SLM(E), X.
Soybean oil acids, potassium salt-----	DA, PNK.
Stearic acid, ammonium salt-----	BSW.
*Stearic acid, potassium salt-----	BSW, CCC, CON, DA, HEW, WTC.
Stearic acid, sodium salt-----	CON, DA, NOC, SYP, WTC.
Tall oil acids-----	WVA.
Tall oil acids, potassium salt-----	CCC, CON, DA, DAN, ESS, HIP, HNT, PNK, SOP.
Tall oil acids, sodium salt-----	CON, GDC, NMC, WVA, X.
Tallow acids, potassium salt-----	AGP, LAS, PG, PNK.
*Tallow acids, sodium salt-----	BSW, CON, CP, DA, HEW, LAS, LEV, NMC, NPR, PG, PNK, X.
Potassium and sodium salts of fatty, rosin, and tall oil acids, all other-----	DA, USR.

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1985--CONTINUED

SURFACE-ACTIVE AGENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ANIONIC--CONTINUED	
PHOSPHORIC AND POLYPHOSPHORIC ACID ESTERS (AND SALTS THEREOF):	
ALCOHOLS AND PHENOLS, ALKOXYLATED AND PHOSPHATED:	
Amyl alcohol, ethoxylated and phosphated-----	GAF.
Butyl alcohol, ethoxylated and phosphated-----	GAF.
*Decyl alcohol, ethoxylated and phosphated-----	GAF, MCB, MCP, RPC, STC, TCH.
Decyl alcohol, potassium salt-----	RPC.
*Dinonylphenol, ethoxylated and phosphated-----	CPC, GAF, WTC.
Dodecyl alcohol, ethoxylated and phosphated-----	GAF.
Dodecylphenol, ethoxylated and phosphated-----	DEX, GAF.
2-Ethylhexanol and ethoxylated nonylphenol, polyphosphated-----	CCC.
2-Ethylhexanol and ethoxylated nonylphenol, polyphosphated, sodium salt-----	CCC.
2-Ethylhexanol, ethoxylated and phosphated-----	DA, SOS, STC.
2-Ethylhexanol, ethoxylated and phosphated, potassium salt-----	CHP.
2-Ethylhexanol, phosphated-----	MCB.
2-Ethylhexanol, phosphated, potassium salt-----	MCB.
Hexyl alcohol, ethoxylated and phosphated-----	GAF.
Hexyl alcohol, phosphated, potassium salt, solubilized-----	MCB.
Mixed linear alcohols, alkoxyalted and phosphated, potassium salt-----	PCI.
*Mixed linear alcohols, ethoxylated and phosphated-----	CHP, CPC, CRT, CYL, DA, ENJ, FER, GAF, HIP, HRT, JOR, MCB, MOA, MRV, RPC, SCP, TCH, WTC, X, X.
Mixed linear alcohols, ethoxylated and phosphated, sodium salt-----	CHP.
Mixed tridecyl alcohol and 2-ethylhexanol, phosphated, potassium salt-----	CHP.
*Nonylphenol, ethoxylated and phosphated-----	CRT, CTL, CYL, DA, DEX, ESS, FTX, GAF, GDC, HRT, JOR, LVR, MCB, MCP, MOA, MZC, OMC, RPC, SCP, SOP, STC, TCC, WVA(E), WTC, X.
Nonylphenol, ethoxylated and phosphated, barium salt-----	WTC.
9-Octadecenyl alcohol, ethoxylated and phosphated-----	GAF, GLY, STC.
9-Octadecyl alcohol, ethoxylated and phosphated-----	GAF.
Octylphenol, ethoxylated and phosphated-----	RH, RPC, WTC.
Octylphenol, ethoxylated and phosphated, magnesium salt-----	ONX.

TABLE 2.—SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1985—CONTINUED

SURFACE-ACTIVE AGENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ANIONIC—CONTINUED	
PHOSPHORIC AND POLYPHOSPHORIC ACID ESTERS (AND SALTS THEREOF)—CONTINUED	
ALCOHOLS AND PHENOLS, ALKOXYLATED AND PHOSPHATED—CONTINUED:	
Nonylphenol, ethoxylated and phosphonated	OMC.
*Phenol, ethoxylated and phosphated	GAF, JOR, MCB, MCP, MIL, MOA, MZC, RH, TCH, WTC.
Polyhydric alcohol, ethoxylated and phosphated	DEX, GAF.
Tridecyl alcohol, ethoxylated and phosphated, polyalkylene polyamine salt	X.
*Tridecyl alcohol, ethoxylated and phosphated	DAN, DEX, GAF, HIP, MIL, OMC, X.
Tridecyl alcohol, ethoxylated and phosphated, potassium salt	DEX.
Alcohols and phenols, alkoxyated and phosphated or polyphosphated, all other	GAF, WTC.
ALCOHOLS, PHOSPHATED OR POLYPHOSPHATED:	
Butyl methyl pyrophosphate isopropoxy titanium salt octyl phosphite adduct	KPI.
Butyl phosphate, potassium salt	DUP.
*Decyl and octyl phosphate	DA, MZC, STC.
2-Ethylhexyl phosphate	CHP, MCP, OMC.
2-Ethylhexyl phosphate, potassium salt	PCI.
*2-Ethylhexyl phosphate, sodium salt	CHP, DAN, WTC.
2-Ethylhexyl polyphosphate	SFS.
2-Ethylhexyl polyphosphate, sodium salt	DEX, SFS.
Hexyl phosphate	ICI, STC.
Hexyl phosphate, potassium salt	ICI.
Hexyl polyphosphate, potassium salt	SCP.
Methylbutyl phosphate ethylenedioxytitanium salt/N,N-dimethylaminoethylmethacrylate salt	KPI.
Mixed alkyl phosphate, sodium salt	X.
*Mixed alkyl phosphate	DUP, SFS, STC, WTC, X.
Mixed alkyl phosphate, alkylamine salt	X.
Mixed alkyl phosphate, diethanolamine salt	DUP, SCP.
Mixed alkyl phosphate, potassium salt	STC, X.
Mixed alkyl phosphate, triethanolamine salt	X.
Octyl phosphate	SCP, WTC.
Octyl phosphate, alkylamine salt	X.
Octyl phosphate, isopropoxy titanium salt	KPI.
Octyl phosphate neopalkoxy titanium salt	KPI.
Octyl phosphate, potassium salt	DEX.
Octyl polyphosphate	DEX.
Octyl pyrophosphate, ethylenedioxy titanium salt	KPI.

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1985--CONTINUED

SURFACE-ACTIVE AGENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ANIONIC--CONTINUED	
PHOSPHORIC AND POLYPHOSPHORIC ACID ESTERS (AND SALTS THEREOF)--CONTINUED	
ALCOHOLS, PHOSPHATED OR POLYPHOSPHATED--CONTINUED	
Octyl pyrophosphate, ethylenedioxy titanium salt/dimethylaminomethacrylate salt-----	KPI.
Octyl pyrophosphate, isoproxy titanium salt-----	KPI.
Octyl pyrophosphate neoalkoxy titanium salt-----	KPI.
Octyl pyrophosphate, oxoethylenedioxy titanium salt---	KPI.
Tridecyl phosphate-----	STC.
Phosphated and polyphosphated alcohols, all other----	DA, HRT, KPI, WTC.
OTHER PHOSPHORIC AND POLYPHOSPHORIC ACID ESTERS:	
Blend of fatty and phosphate esters-----	MIL.
Ethanolamine, N,N-dimethylene phosphonic acid-----	OMC.
Glycerol, ethoxylated and phosphated-----	X.
Glycerol monoester of mixed fatty acids, phosphated---	WTC.
Polyoxyalkylate(fatty alcohol), phosphate ester-----	BAS.
Stearyl amine polyphosphoric acid, ethoxylated-----	GDC.
Phosphoric and polyphosphoric acid esters, all other--	BAS, MOA, SFS, X, X.
SULFONIC ACIDS (AND SALTS THEREOF):	
ALKYLBENZENESULFONATES:	
DODECYLBENZENESULFONATES:	
*Dodecylbenzenesulfonic acid-----	CTL, EMK, JLP, LEV, MON, PIL, PLX, STP(E), TCI, TEN, VST, WTC, WVA(E), X.
Dodecylbenzenesulfonic acid, (mixed alkyl)amine salt-----	ECC, HIP, X.
*Dodecylbenzenesulfonic acid, ammonium salt-----	CCC, X.
*Dodecylbenzenesulfonic acid, calcium salt-----	ICI, RH, STC, STP, TMH, WTC, X.
Dodecylbenzenesulfonic acid, ethoxylated, oleyl amine salt-----	STC.
Dodecylbenzenesulfonic acid, diethanolamine salt----	VPC, WTC.
Dodecylbenzenesulfonic acid, isopropanolamine salt--	PIL.
*Dodecylbenzenesulfonic acid, isopropylamine salt----	CTL, ICI, STP, WTC.
Dodecylbenzenesulfonic acid, isoproxy titanium salt-----	KPI.
Dodecylbenzenesulfonic acid, monoethanolamine salt--	FTX, PCI, RCI.
Dodecylbenzenesulfonic acid, potassium salt-----	GDC, PCI.
*Dodecylbenzenesulfonic acid, sodium salt-----	AAC, BLA, CP, GPC, CRT, CTL, DUP, ECC, JLP, LEV, MMC, PCI, PG, PIL, PLX, PNK, RPC, SOP, STP(E), TEN, VST, WTC, WVA(E).
*Dodecylbenzenesulfonic acid, triethanolamine salt---	AAC, BRD, CCC, CPC, CTL, ESS, FTX, PIL, STP, WTC.
Dodecylbenzene sulfonates, all other-----	HK, MRV.



TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1985--CONTINUED

SURFACE-ACTIVE AGENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ANIONIC--CONTINUED	
SULFONIC ACIDS (AND SALTS THEREOF)--CONTINUED	
ALKYLBENZENESULFONATES--CONTINUED	
Benzenesulfonic acid, mixed linear (C <sub>9</sub> -14)	LEV.
Didodecylbenzenesulfonic acid	WTC.
Tridecylbenzenesulfonic acid	PLX.
*Tridecylbenzenesulfonic acid, sodium salt	BLA, CMT, CP, LAS, NPR, PG, STP.
Alkybenzenesulfonates, all other	WTC.
BENZENE-, CUMENE-, TOLUENE-, AND XYLENESULFONATES:	
Benzenesulfonic acid, 3,3'-(1-methylethylidene)-bis(6-hydroxydisodium salt), polymer with formaldehyde and 4,4'-sulfonylbis(phenol)	DA.
Cumenesulfonic acid, ammonium salt	NES.
*Cumenesulfonic acid, sodium salt	DA, NES, STP, WTC.
Toluenesulfonic acid, potassium salt	NES.
Toluenesulfonic acid, sodium salt	NES, PG, VST.
Xylenesulfonic acid, ammonium salt	NES, STP, WTC.
Xylenesulfonic acid, potassium salt	NES.
*Xylenesulfonic acid, sodium salt	ICI, NES, PIL, SDC, STP, WTC.
LIGNINSULFONATES:	
Ligninsulfonic acid, aluminum salt	DA.
*Ligninsulfonic acid, ammonium salt	MAR, PSP, RAY, SPA.
*Ligninsulfonic acid, calcium salt	FPC, LKY, MAR, PSP.
*Ligninsulfonic acid, chromium salt	MAR, PSP, RAY.
Ligninsulfonic acid, iron salt	MAR, PSP.
Ligninsulfonic acid, magnesium salt	MAR.
Ligninsulfonic acid, mixed chromium and iron salts	PSP.
Ligninsulfonic acid, potassium salt	PSP.
Ligninsulfonic acid, propoxylated, sodium salt	STP.
*Ligninsulfonic acid, sodium salt	MAR, PSP, RAY, WVA.
Ligninsulfonic acid, zinc salt	ENJ, MAR, PSP.
NAPHTHALENESULFONATES:	
Butylnaphthalenesulfonic acid, sodium salt	DA, ECC, UDI.
Butyl-o-phenylphenol sulfonic acid, sodium salt	RRC.
Di(C <sub>5</sub> -C <sub>6</sub> alkyl)naphthalenesulfonic acid	X.
Dibutylnaphthalenesulfonic acid	UDI.
*Diisopropylnaphthalenesulfonic acid, sodium salt	DA, DUP, UDI.
Isopropylnaphthalenesulfonic acid	UDI.
Methylnaphthalenesulfonic acid, sodium salt	CPC, DA, UDI.
Methylnonylnaphthalenesulfonic acid, sodium salt	UDI.
Naphthalenesulfonic acid, ammonium salt	DA.
4,4'-Sulfonyldiphenolnaphthalenesulfonic acid	PCI.
Naphthalenesulfonates, all other	HAL, ICI, UDI.

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1985--CONTINUED

SURFACE-ACTIVE AGENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ANIONIC--CONTINUED	
SULFONIC ACIDS (AND SALTS THEREOF)--CONTINUED	
SULFONIC ACIDS HAVING AMIDE LINKAGES:	
SULFOSUCCINAMIC ACID DERIVATIVES:	
N-(Coconut oil alkyl)sulfosuccinamic acid, disodium salt-----	SCP.
N-(1,2-Dicarboxyethyl)-N-octadecylsulfosuccinamic acid, tetrasodium salt-----	ACY, MOA.
Lauric alkanolamidesulfosuccinate, sodium salt-----	TCH.
N-Octadecylsulfosuccinamic acid, disodium salt-----	ACY, WTC.
Oleamidossulfosuccinamic acid, disodium salt-----	SBC.
N-(Oleoyloxyisopropyl)sulfosuccinamic acid-----	WTC.
TAURINE DERIVATIVES:	
N-(Coconut oil acyl)-N-methyltaurine, sodium salt-----	GAF.
N-Methyl-N-oleoyltaurine, sodium salt-----	CPC, GAF, STC.
N-Methyl-N-palmitoyltaurine, sodium salt-----	GAF.
N-Methyl-N-(tall oil acyl)taurine, sodium salt-----	CCC, GAF, WVA.
Sulfonic acids having amide linkages, all other-----	STC.
SULFONIC ACIDS HAVING ESTER OR ETHER LINKAGES:	
SULFOSUCCINIC ACID ESTERS:	
Sulfosuccinic acid, bis(diisobutyl)ester, amidodisodium salt-----	MOA.
Sulfosuccinic acid, bis(2,6-dimethyl-4-heptyl)-ester, sodium salt-----	MOA, NSC.
*Sulfosuccinic acid, bis(2-ethylhexyl)ester, sodium salt-----	ACC, ACY, CCC, CHP, CRT, ECC, EMK, ENJ, FTX, HDG, MCP, MOA, RH, RPC, SCO, STC, WTC.
Sulfosuccinic acid, dihexyl ester, sodium salt-----	ACY, MOA.
Sulfosuccinic acid, diisodecyl ester, sodium salt-----	ACY.
Sulfosuccinic acid, diisooctyl ester, sodium salt-----	DA, SOS.
Sulfosuccinic acid, dioctyl ester, sodium salt-----	MOA.
Sulfosuccinic acid, dipentyl ester, sodium salt-----	ACY, DA.
*Sulfosuccinic acid, ditridecyl ester, sodium salt-----	ACY, DA, MOA.
Sulfosuccinic acid, (coconut oil alkyl)-iminoisopropanol half-ester, sodium salt-----	MOA.
Sulfosuccinic acid, mixed linear alcohols, ethoxylate ester, sodium salt-----	AAC.
Sulfosuccinic acid, monolauramido ester, disodium salt-----	MOA.
Sulfosuccinic acid, monolauryl(polyethoxy)ester, disodium salt-----	TCH.

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1985--CONTINUED

SURFACE-ACTIVE AGENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ANIONIC--CONTINUED	
SULFONIC ACIDS (AND SALTS THEREOF)--CONTINUED	
SULFONIC ACIDS HAVING ESTER OR ETHER LINKAGES--	
CONTINUED	
SULFOSUCCINIC ACID ESTERS--CONTINUED	
Sulfosuccinic acid, mono-oleamidopolyethyleneglycol ester, disodium salt-----	SCP.
Sulfosuccinic acid esters, all other-----	MTR, WTC.
ALL OTHER SULFONIC ACIDS HAVING ESTER OR ETHER LINKAGES:	
Coconut oil acids, 2-sulfoethyl ester, sodium salt--	DA, FTX, GAF, JOR, LEV.
Dipolyetherdisulfonic acid, diethanolamine salt-----	VPC.
Dodecyldiphenyloxidedisulfonic acid-----	X.
Dodecyldiphenyloxidedisulfonic acid, disodium salt--	CTL, DOW, X.
Dodecyl sulfoacetate-----	DA.
Dodecyl sulfoacetate, sodium salt-----	STP.
Glycerol monostearate sulfoacetate, sodium salt-----	WTC.
Iso-octylphenol, ethoxylated and sulfonated, sodium salt-----	GAF, RH.
n-Octylphenol, ethoxylated and sulfonated, sodium salt-----	AAC, CRT, PG.
Sulfonic acids with ester linkages, all other-----	WTC.
Sulfonic acids with ether linkages, all other-----	DA, WTC.
OTHER SULFONIC ACIDS:	
Allyl sulfonate, sodium salt-----	ARD.
Diphenylsulfone sulfonic acid, potassium salt-----	UPF.
(Mixed alkane)sulfonic acid, sodium salt-----	AAC, AZS, CCL, DUP, ONX, WTC, WVA(E), X, X.
Oleyloxyethylidiamide oxypropanol sulfonic acid-----	S.
Petroleum sulfonic acid, water soluble (Acid layer), sodium salt-----	PIL, WTC.
Tall oil, sulfonated, potassium salt-----	X.
Sulfonic acids, all other-----	CLU, HAL, SLM, STP, WTC.
SULFURIC ACID ESTERS (AND SALTS THEREOF):	
ACIDS, AMIDES, AND ESTERS, SULFATED:	
CARBOXYLIC ACID ESTERS (EXCEPT NATURAL FATS AND OILS), SULFATED:	
ESTERS OF SULFATED OLEIC ACID:	
Butyl oleate, sulfated, sodium salt-----	HIP, ICI, MCP, MRV, NSC.
Butyl and propyl oleate, sulfated, sodium salt-----	CRT, LUR.
Isopropyl oleate, sulfated, sodium salt-----	DEX.
Methyl oleate, sulfated, sodium salt-----	DA, ICI.
Oleic acid, sulfated-----	ACT.

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1985--CONTINUED

SURFACE-ACTIVE AGENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ANIONIC--CONTINUED	
SULFURIC ACID ESTERS (AND SALTS THEREOF)--CONTINUED	
ACIDS, AMIDES, AND ESTERS, SULFATED--CONTINUED	
CARBOXYLIC ACID ESTERS (EXCEPT NATURAL FATS AND OILS), SULFATED--CONTINUED	
ESTERS OF SULFATED OLEIC ACID--CONTINUED	
Oleic acid, sulfated, disodium salt-----	MCP, TEN.
Oleic acid, sulfated, sodium salt-----	ACY.
Propyl oleate, sulfated, sodium salt-----	CHP, MRV.
Esters of sulfated oleic acid, all other-----	DA.
OTHER CARBOXYLIC ACID ESTERS:	
Coconut oil acids-ethanolamine salt, sulfated, potassium salt-----	EMK.
Glycerol monoester of coconut oil acids, sulfated, sodium salt-----	CP.
Mixed alkyl phenol sulfate, ethoxylated, triethanolamine salt-----	MIL.
9-Octadecenyl acetate, sulfated, sodium salt-----	DUP.
Tall oil acids, sulfated, sodium salt-----	ICI.
ALCOHOLS, SULFATED:	
DODECYLSULFATE SALTS:	
*Dodecyl sulfate, ammonium salt-----	AAC, BRD, CTL, CYL, JRG, LEV, ONX, STP(E), TCH, TNI, WTC, WVA(E).
*Dodecyl sulfate, diethanolamine salt-----	BRD, DUP, JRG, ONX, STP, TCH, WTC.
Dodecyl sulfate, N,N-diethylcyclohexylamine salt-----	DUP.
Dodecyl sulfate, isopropanolamine salt-----	BRD, JRG.
*Dodecyl sulfate, magnesium salt-----	AAC, BRD, CYL, ONX, WTC.
Dodecyl sulfate, potassium salt-----	PG.
*Dodecyl sulfate, sodium salt-----	AAC, BRD, DUP, ONX, STP, TCH, WTC, WVA(E).
*Dodecyl sulfate, triethanolamine salt-----	AAC, BRD, CYL, ONX, SHX, STP(E), TCH, TNI, WTC, WVA(E).
*Decyl sulfate, sodium salt-----	AAC, SCP, WTC.
3,9-Diethyl-6-tridecyl sulfate, sodium salt-----	NCC.
*2-Ethylhexyl sulfate, sodium salt-----	AAC, BRD, NCC, PCI, SCP, SOS, TCH, WTC.
7-Ethyl-2-methyl-4-undecyl sulfate, sodium salt-----	NCC.
Hexadecyl sulfate, sodium salt-----	CTL.
Hexyl sulfate, potassium salt-----	DEX.
Lauryl sulfate, sodium salt-----	MOA.
Linear alcohols, sulfated, all other-----	DA, WTC.
*Mixed linear alcohols, sulfated, ammonium salt-----	CP, NTL, PG, S, SCP, WTC, X.
Mixed linear alcohols, sulfated, diethanolamine salt-----	SCP.

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1985--CONTINUED

SURFACE-ACTIVE AGENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ANIONIC--CONTINUED	
SULFURIC ACID ESTERS (AND SALTS THEREOF)--CONTINUED	
ALCOHOLS, SULFATED--CONTINUED	
Mixed linear alcohols, sulfated, sodium salt-----	DA, DUP, ONX, PG, SCP, SEA, WTC.
*Mixed linear alcohols, sulfated, triethanolamine salt-----	AAC, CTL, ONX, PG, SCP, WTC.
*Octyl sulfate, sodium salt-----	AAC, APX, DUP.
Oleyl sulfate, sodium salt-----	DUP.
Polyglycidol sulfate-----	GAF.
Tridecyl sulfate, sodium salt-----	AAC.
ETHERS, SULFATED:	
ALKYLPHENOLS, ETHOXYLATED AND SULFATED:	
(Mixed alkyl)phenol, ethoxylated and sulfated, sodium salt-----	PRL.
1-Naphthol, ethoxylated and sulfated, free acid-----	TCH.
Nonylphenol, ethoxylated and phosphated, partial sodium salt-----	GAF.
Nonylphenol, ethoxylated and sulfated, ammonium salt-----	GAF, RPC, STP.
Nonylphenol, ethoxylated and sulfated, sodium salt-----	GAF, WTC.
Octylphenoxypolyethoxyethyl sulfate-----	RH.
Sulfated cyclic ethers, all other-----	STP(E), WVA(E).
Decyl alcohol, propoxylated and sulfated, sodium salt-----	APX.
*Dodecyl alcohol, ethoxylated and sulfated, ammonium salt-----	AAC, MOA, STP(E), WTC.
*Dodecyl alcohol, ethoxylated and sulfated, sodium salt-----	AAC, CTL, CYL, ONX, SCP, STP(E), TCH, WTC.
Dodecyl and tetradecyl alcohols, ethoxylated and sulfated, ammonium salt-----	X.
Dodecyl and tetradecyl alcohols, ethoxylated and sulfated, potassium salt-----	APX.
Isobutanol, ethoxylated and sulfated, ammonium salt-----	X.
Mixed linear alcohol, ethoxylated and sulfated, mixed sodium and cocoamphocarboxyglycinate salts-----	AAC.
*Mixed linear alcohols, ethoxylated and sulfated, ammonium salt-----	BRD, ONX, PG, SCP, SHC, STP(E), VST, WTC, X, X.
Mixed linear alcohols, ethoxylated and sulfated, diethanolamine salt-----	SCP.
Mixed linear alcohols, ethoxylated and sulfated, potassium salt-----	SVC.
*Mixed linear alcohols, ethoxylated and sulfated, sodium salt-----	AAC, BRD, DUP, GAF, ONX, PG, PIL, SCP, SHC, SHX, STP, TCH, TCI, VST, WTC, WVA.

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED  
OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1985--CONTINUED

SURFACE-ACTIVE AGENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ANIONIC--CONTINUED	
SULFURIC ACID ESTERS (AND SALTS THEREOF)--CONTINUED	
ETHERS, SULFATED--CONTINUED	
Tridecyl alcohol, ethoxylated and sulfated, ammonium salt	ARC.
Tridecyl alcohol, ethoxylated and sulfated, sodium salt	AAC.
NATURAL FATS AND OILS, SULFATED:	
*Castor oil, sulfated, sodium salt	ACT, ACY, APX, ARL, CRT, DA, DEX, HIP, ICI, LUR, MRV, SCP, SLM, WHW.
*Coconut oil, sulfated, sodium salt	ACY, CIN, MRD.
Cod oil, sulfated, sodium salt	SEA, WHW.
Grease, other than wool, sulfated, sodium salt	WHW.
Herring oil, sulfated	SLM.
Herring oil, sulfated, sodium salt	SEA, SLM.
Lard, sulfated, sodium salt	CRT, MRD, WHW.
Mixed fish oils, sulfated, ammonium salt	CIN.
*Mixed fish oils, sulfated, sodium salt	CIN, MRD, SLM, WHW.
Mixed vegetable oils, sulfated, sodium salt	CIN, CPC.
Mustard seed oil, sulfated, sodium salt	DA.
*Neatsfoot oil, sulfated, sodium salt	CIN, SEA, SLM.
Peanut oil, sulfated, sodium salt	ACY.
Pecan oil, sulfated, sodium salt	CRT.
Pine oil, sulfated	SCM.
Ricebean oil, sulfated, sodium salt	DA.
Soybean oil, sulfated, sodium salt	ACT, WHW.
Tall Oil, sulfated, ammonia salt	CIN.
*Tall oil, sulfated, sodium salt	ACT, APX, CIN, SOS, WHW WVA.
*Tallow, sulfated, sodium salt	ACY, CCC, ECC, LUR, MRD, NSC, SLM, SOS, WHW.
Natural fats and oils, sulfated, all other	DA.
All other sulfuric acid esters	BFP, DA, SLM.
OTHER ANIONIC SURFACE-ACTIVE AGENTS:	
Alkylalcohol ethoxylated and carbonated, sodium salt	S.
Blend of hydrocarbons and esters	MIL.
Ethoxylated acetic acid, sodium salt	S.
Half-phthalic acid ester of tallow alkanolamide/ monoglyceride	EFH.
Isobutyl phthalate	SHX.
Lignin, sodium salt	WVA.
Maleated esterified tall oil	ENP.

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1985--CONTINUED

SURFACE-ACTIVE AGENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ANIONIC--CONTINUED	
OTHER ANIONIC SURFACE-ACTIVE AGENTS--CONTINUED	
Maleated linseed oil-----	ENP.
Mixed linear alcohols, ethoxylated and carbonated, sodium salt-----	S.
Tridecyl alcohol, ethoxylated and carbonated, sodium sodium salt-----	S.
Anionic surface-active agents, all other-----	DAN, DUP, MIR, SLM.
CATIONIC	
AMINE OXIDES AND OXYGEN-CONTAINING AMINES (EXCEPT THOSE HAVING AMIDE LINKAGES):	
ACYCLIC:	
3-(C <sub>12-15</sub> alkyloxy)-1-propanamine-----	ENJ.
3-(C <sub>12-18</sub> alkyloxy)-1-propanamine-----	ENJ.
N-(C <sub>12-18</sub> alkyl)oxypropyl trimethylene diamine-----	ENJ.
Bis-Hydroxyethyl-cocoamine oxide, phosphated potassium salt-----	JOR.
N,N-Bis(2-Hydroxyethyl)-(coconut oil alkyl)amine oxide-----	ARC.
Bis-(2-Hydroxyethyl)isodecyloxypropylamine oxide-----	ENJ.
N,N-Bis(2-Hydroxyethyl)octadecylamine-----	ARC, SHX.
N,N-Bis(2-Hydroxyethyl)(tallow alkyl)amine-----	ARC, MZC, SHX.
N,N-Bis(2-Hydroxyethyl)(tallow alkyl)amine acetate-----	MZC.
Cocoamidopropyl dimethyl amine-----	SOS.
*(Coconut oil alkyl)amine, ethoxylated-----	ARC, ENJ, MZC, SHX, SVC, TCH, X.
Cocoylamidopropyldimethylamine oxide-----	SCP.
Diethylenetriamine, ethoxylated and propoxylated-----	X.
Diethylenetriamine, propoxylated-----	X.
N,N-Dimethyl(coconut oil alkyl)amine oxide-----	ARC.
N,N-Dimethyldodecylamine oxide-----	BRD, JOR, PG, SHX, X.
N,N-Dimethylhexadecylamine oxide-----	ARC, BRD, ONX.
N,N-Dimethyl(mixed alkyl)amine oxide-----	PG, S.
N,N-Dimethyl oleyl amine oxide-----	SCP.
Di(pyrrolidonylethyl)imine-----	PCI.
Ethoxylated and quaternized hydrogenated tallow alkyl amine-----	SVC.
Ethylenediamine, alkoxyated-----	X.
Hexyloxypropyl amine-----	DUP, ENJ.
(Hydrogenated tallow alkyl)amine, ethoxylated-----	ENJ, SHX.
N-(2-Hydroxyethyl)-N,N',N'-tris(2-hydroxypropyl)- ethylenediamine-----	ONX, WTC, X.

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1985--CONTINUED

SURFACE-ACTIVE AGENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
CATIONIC--CONTINUED	
AMINE OXIDES AND OXYGEN-CONTAINING AMINES (EXCEPT THOSE HAVING AMIDE LINKAGES)--CONTINUED	
ACYCLIC--CONTINUED	
Isodecyloxypropylamine-----	ENJ.
Isodecyloxypropylamine, ethoxylated-----	ENJ.
3-(3-Isodecyloxy)propylaminopropyl amine-----	SHX.
N-Isodecyloxypropyl trimethylene diamine-----	ENJ.
Isopropoxy-tris(2-Ethylenediamino)ethyl titanate-----	KPI.
Isotridecyloxypropylamine-----	ENJ.
N-Isotridecyloxypropyl trimethylene diamine-----	ENJ.
3-(Mixed alkoxy)propylamine, ethoxylated oxides-----	SHX.
3-(3-Mixed alkoxy)propylaminopropyl amine-----	SHX.
*(Mixed alkyl)amine, ethoxylated-----	ICI, RH, SHX, SVC.
(Mixed alkyl)oxypropylamine-----	AZS.
Mixed tert-alkyl primary amines, ethoxylated-----	X.
*(9-Octadecenyl)amine, ethoxylated-----	ARC, GAF, STC, TCH, X.
Octadecylamine, ethoxylated-----	ARC, TCH.
3-Octyloxy and 3-decyloxy-propylamine-----	ARC.
Oleylamine, ethoxylated-----	MCB.
Polyalkylene polyamine, ethoxylated-----	X.
Polyether amine, ethoxylated-----	RH.
1-Propanamine, alkoxyated-----	SHX.
1,3-Propanediamine, alkoxyated-----	SHX.
(Soybean oil alkyl)amine, ethoxylated-----	ARC, BAS, ENJ, MCB, SHX, SVC, TCH.
*(Tallow alkyl)amine, ethoxylated-----	ARC, DA, DUP, ENJ, GAF, MCB, S, SHX, STP, TCH, WVA(E), X.
(Tallow alkyl)amine, propoxylated-----	ARC.
*N-(Tallow alkyl)trimethylenediamine, ethoxylated-----	ARC, BAS, ENJ.
N-(Tallow alkyl)trimethylenediamine, propoxylated-----	ARC.
Tallow ethyl alkylamine, ethoxylated, sulfate-----	RPC.
N,N,N',N'-Tetrakis(2-hydroxyethyl)ethylenediamine-----	MZC.
N,N,N',N'-Tetrakis(2-hydroxypropyl)-ethylenediamine, propoxylated and ethoxylated-----	BAS, MZC.
3-(3-Tridecyloxy)propylaminopropyl amine-----	SHX.
Triethanolamine, ethoxylated-----	MIL, RSA, TCH.
Triethanolamine salicylate-----	EFH.
Amine oxides and oxygen-containing amines (except those with amide linkages), acyclic, all other-----	BAS, DA, SDH, X.



TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1985--CONTINUED

SURFACE-ACTIVE AGENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
CATIONIC--CONTINUED	
AMINE OXIDES AND OXYGEN-CONTAINING AMINES (EXCEPT THOSE HAVING AMIDE LINKAGES)--CONTINUED	
CYCLIC:	
Aniline, ethoxylated-----	MIL.
2-Butenedioic acid-( $\alpha$ )diamine - 1-(2-aminoethyl)- 2-(tall oil alkyl)-2-imidazoline condensate-----	X.
2,5-Dimethoxyaniline, ethoxylated-----	MIL.
2-Heptadecyl-1,4-hydroxymethyl-4-ethyl-2-oxazoline-----	BRD.
N-Hexadecylmorpholine-----	BRD.
N-(2-Hydroxyethyl)-1,2-diphenylethylenediamine-----	MIR.
1-(2-Hydroxyethyl)-2-nonyl-2-imidazoline-----	BRD, MIR, MOA, MZC, SCP, SHX.
1-(2-Hydroxyethyl)-2-nor(coconut oil alkyl)-2- imidazoline-----	MOA, TCH.
1-(2-Hydroxyethyl)-2-nor(soya oil alkyl)-2- imidazoline-----	MIR.
*1-(2-Hydroxyethyl)-2-nor(tall oil alkyl)-2- imidazoline-----	BRD, HDG, MIR, MOA, WTC, X.
1-(2-Hydroxyethyl)-2-(tall oil alkyl)imidazoline, fatty acid salt-----	X.
Lignin amine-----	WVA.
1-(2-Naphthenic acid amidoethyl)-2-naphthenyl-2- imidazoline-----	ARC.
Rosin amine, ethoxylated-----	HPC, WTC, X.
m-Toluidine, ethoxylated-----	MIL.
Amine oxides and oxygen-containing amines (Except those having amine linkages), cyclic, all other-----	DA, TCH, WTC.
AMINES AND AMINE OXIDES HAVING AMIDE LINKAGES:	
CARBOXYLIC ACID - DIAMINE AND POLYAMINE CONDENSATES:	
Acetic acid, amides with polyalkylene polyamines, salt-----	X.
Caprylic acid tetraethylene-pentamine condensate-----	ICI.
Carboxylic acid-diamine and polyamine condensates, all other-----	DA, MOA, WTC.
Coconut acids, dimethylpropylamine condensate, carboxylated-----	AAC.
Coconut oil acids-N,N-dimethyltrimethylenediamine condensate-----	FTX, SCP.
Mixed fatty acids-polyalkylenepolyamine condensate-----	TCH.
Naphthenic acids-polyalkylene polyamine condensate-----	X.
Naphthenic acids-tall oil fatty acids-polyalkylene polyamine condensate-----	X.

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED  
OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1985--CONTINUED

SURFACE-ACTIVE AGENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
CATIONIC--CONTINUED	
AMINES AND AMINE OXIDES HAVING AMIDE LINKAGES--CONTINUED	
CARBOXYLIC ACID - DIAMINE AND POLYAMINE CONDENSATES--	
CONTINUED	
2-Nor tall oil alkyl-1-tall oil amidoethyl imidazoline-----	SHX.
Oleic acid-diethylenetriamine condensate-----	DA, ICI.
Oleic acid-N,N-dimethyltrimethylenediamine condensate-----	CCW.
Pelargonic acid-tetraethylenepentamine condensate-----	ICI, STC.
Stearic acid-diethylenetriamine condensate-----	CRT, DA, JOR, S, SNW.
Stearic acid-diethylenetriamine condensate, ethyl sulfate-----	GDC.
Stearic acid-ethylenediamine condensate-----	CLD, SOS.
Stearic acid-ethylenediamine condensate, monoethoxylated ethyl sulfate-----	GDC.
Stearic acid mixed amine condensate-----	STC.
Stearic acid-tetraethylenepentamine condensate-----	OMX.
Stearic acid-tetraethylenepentamine condensate, acetate salts-----	X.
Tall oil acids/aminoethylpiperazine condensate-----	ENJ.
Tall oil acids-diethylenetriamine condensate-----	SCP, WVA.
Tall oil acids-N,N-dimethylpropylenediamine condensate-----	FER.
Tall oil acids/ethylene/amine distillation residue, condensate-----	ENJ.
Tall oil acids-mixed polyamine condensate-----	WVA.
*Tall oil acids-polyalkylenepolyamine condensate-----	QCP, WVA, X.
Tall oil acids-polyalkylenepolyamine condensate, salts, with dodecylbenzene sulfonic acid and/or tall oil fatty acids-----	X.
CARBOXYLIC ACID - DIAMINE AND POLYAMINE CONDENSATES, ALKOXYLATED:	
Mixed fatty acids-diethylene triamine diethyl- sulfate condensate-----	JOR.
*Stearic acid-ethylenediamine condensate, monoethoxylated-----	DEX, ICI, SLC.
Carboxylic acid-diamine and polyamine condensates, alkoxylated, all other-----	SHX, STP, WVA(E).

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1985--CONTINUED

SURFACE-ACTIVE AGENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
CATIONIC--CONTINUED	
AMINES AND AMINE OXIDES HAVING AMIDE LINKAGES--CONTINUED	
OTHER AMINES AND AMINE OXIDES HAVING AMIDE LINKAGES:	
Cocoamidopropyl dimethyl amine oxide-----	ONX, SBC.
N,N'-(Di-tall oil acid)amidoethylamine-----	X.
3-Lauramido-N,N-dimethylpropylamine oxide-----	JOR, ONX, SNW.
Stearamidoethyldiethylamine-----	S.
Stearamidoethylethanolamine acetate-----	S.
Stearic acid, diethanolamine condensate, methyl sulfate-----	DUP.
Stearic acid-imino-bis(propyl amine) condensate-----	JOR.
AMINES, NOT CONTAINING OXYGEN (AND SALTS THEREOF):	
AMINE SALTS:	
N,N-Dimethyl-N-alkylamine phosphate-----	X.
(Hydrogenated tallow alkyl)amine acetate-----	ARC, WTC.
(Mixed alkyl)amine phosphate-----	X.
Octadecylamine acetate-----	ARC, STC.
(Tallow alkyl)amine acetate-----	ARC, X.
N-(Tallow alkyl)trimethylenediamine acetate-----	ARC.
N-(Tallow alkyl)trimethylenediamine oleate-----	ARC, JTO.
Amine salts (not containing oxygen), all other-----	DA.
DIAMINES AND POLYAMINES:	
IMIDAZOLINE DERIVATIVES:	
1-(2-Aminoethyl)-2-nor(tall oil alkyl)-2-imidazoline-----	WTC.
2-Heptadecyl-2-imidazoline-----	GGY, SCO.
Stearamidoethyl-2-heptadecyl imidazoline-----	ICI.
N-(Coconut oil alkyl)trimethylenediamine-----	ARC, JTO, SHX.
N-(Dimeracidalkyl)trimethylenediamine-----	ENO.
Dimethylaminopropylamine-----	AZS.
N-(Docosyl and eicosyl)tarimethylenediamine-----	ENO.
N-(Ethylheptyl)trimethylenediamine-----	ARC.
N-(Mixed alkyl)polyethylenepolyamine-----	CCW, WTC.
*N-(9-Octadecenyl)trimethylenediamine-----	ARC, JTO, SHX.
Polyalicyclene polyamines and salts and quats-----	X.
2-Propyl-3-tallow-1,3-tetrahydropyrimidine-----	ARC.
N-(Soybean oil alkyl)trimethylenediamine-----	ENO.
3-(Tall oil amino)propyl amine-----	SHX.
*N-(Tallow alkyl)dipropylentriamine-----	ARC, ENJ, JTO, SHX.
*N-(Tallow alkyl)trimethylenediamine-----	ARC, ENJ, ENO, JTO.
N-(Tallow alkyl)-N,N',N'-trimethyl-1,3-propane diamine-----	ARC.
3-Tetradecylaminopropyl amine-----	SHX.
Diamines and polyamines, all other-----	SHX, X.

TABLE 2.—SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED  
OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1985—CONTINUED

SURFACE-ACTIVE AGENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
CATIONIC—CONTINUED	
AMINES, NOT CONTAINING OXYGEN (AND SALTS THEREOF)—	
CONTINUED	
PRIMARY MONOAMINES:	
Alkyldimethylamine oxide-----	STC.
Arachidylbehenylalkyl amine-----	ENO.
*(Coconut oil alkyl)amine-----	ARC, JTO, MCB, SHX.
Dimeracidalkyl amine-----	ENO.
Dodecylamine-----	ARC, SHX.
(Erucyl alkyl)amine-----	ENO.
Hexadecylamine-----	ARC, ENO.
*(Hydrogenated tallow alkyl)amine-----	ARC, ENO, JTO, SHX.
(Mixed alkyl)amine-----	SHX.
*9-Octadecenylamine-----	ARC, ENO, JTO, SHX.
*Octadecylamine-----	ARC, ENO, SHX.
*(Soybean oil alkyl)amine-----	ARC, ENO, JTO.
(Tall oil alkyl)amine-----	ARC.
*(Tallow alkyl)amine-----	ARC, ENJ, ENO, JTO, SHX.
SECONDARY AND TERTIARY MONOAMINES:	
Bis(coconut oil alkyl)amine-----	ARC.
Bis(hydrogenated tallow alkyl)amine-----	ARC, SHX.
Bis(tallow alkyl)amine-----	ARC.
N,N-Dimethyl(coconut oil alkyl)amine-----	AAC, ARC.
N,N-Dimethyldodecylamine-----	ARC, ONX, TNA.
N,N-Dimethylhexadecylamine-----	ARC, ONX.
N,N-Dimethyl(hydrogenated tallow alkyl)amine-----	ARC.
N,N-Dimethyl(mixed alkyl)amine-----	BRD, ONX.
N,N-Dimethyl-9-octadecenylamine-----	ARC.
*N,N-Dimethyloctadecylamine-----	ARC, ENO, ONX, SHX.
N,N-Dimethyl(soybean oil alkyl)amine-----	ARC, ENO,
N,N-Dimethyl(tall oil alkyl)amine-----	ARC.
N,N-Dimethyl(tallow alkyl)amine-----	ENO.
N,N-Dimethyltetradecylamine-----	ARC, BRD.
N-Methylbis(coconut oil alkyl)amine-----	ARC, SHX.
N-Methylbis(hydrogenated tallow alkyl)amine-----	ARC, ENO, SHX.
N-Methylbis(octyl-decyl)amine-----	ONX.
Methyl didecylamine-----	ONX, TNA.
N-Methyldioctadecylamine-----	ARC.
(Mixed C <sub>8</sub> -C <sub>10</sub> )tertiary amine-----	AZS.
Tri(hydrogenated tallow) amine-----	SHX.
Triisodecylamine-----	SCP.
Trilaurylamine-----	SCP.
Tri(mixed alkyl)amine-----	SHX, TNA.
Trioctylamine-----	BRD, SCP, SHX.
Secondary and tertiary monoamines, all other-----	ARC, SHX.

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1985--CONTINUED

SURFACE-ACTIVE AGENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
CATIONIC--CONTINUED	
OXYGEN-CONTAINING QUATERNARY AMMONIUM SALTS:	
(2-Aminoethyl)ethyl(hydrogenated tallow alkyl)(2-hydroxyethyl)ammonium ethyl sulfate-----	LUR.
Benzene-methan ammonium-N-(3-aminopropyl)-N,N-dimethyl-N-cocoacyl derivatives-chlorides-----	X.
Benzene-methan ammonium-N,N-dimethyl-N-tetradecyl-chloride-----	X.
Benzyl(coconut oil alkyl)bis(2-hydroxyethyl)-ammonium chloride-----	X.
1-Benzyl-1-(2-hydroxyethyl)-2-nor(tall oil alkyl)-2-imidazoline-----	X, X.
Benzyl(polyoxyethylene-cocoamine)ammonium chloride with benzyl (polyoxyethylene, tallow amine) ammonium chloride-----	S.
Benzyl(polyoxyethylene, octadecylamine) ammonium chloride with benzyl(polyoxyethylene, tallow amine) ammonium chloride-----	S.
Benzyl(rosin amine)ammonium chloride, ethoxylated-----	X.
Benzyl(tallow alkyl)bis(2-hydroxyethyl)ammonium chloride-----	DUP.
Bis(N-Amidopropyl, N,N-dimethyl, N-benzylammonium chloride)-----	SBC
Bis(N-Amidopropyl)-N,N-dimethyl-N-ethylammonium ethyl sulfate, dimer acid-----	SBC.
Bis(N,N'-ethyl(stearic/arachidic/behenic)amide)-cyanoethyl ethylammonium ethosulfate-----	PCI.
Bis(2-Hydroxyethyl, ethoxylated)methyl(9-octadecenyl)-ammonium chloride-----	ARC.
Bis(2-Hydroxyethyl, ethoxylated)-methyl octadecylammonium chloride-----	ARC.
Bis-2-Hydroxyethyl-hydrogenated tallo-ethyl sulfate-----	ICI.
Bis(2-Hydroxyethyl)methyl(tallow alkyl)ammonium chloride-----	ARC, MZC.
Bis-2-Hydroxyethyl-octyl-methyl-p-toluene sulfonate-----	HXL.
Bis(2-Hydroxypropyl)methyl(tallow alkyl)-methosulfate-----	ARC.
1,3-Bis(Stearyl dimethylammonium chloride)-2-propanol-----	JOR.
(Coconut oil alkyl)bis(2-hydroxyethyl, ethoxylated)-methylammonium chloride-----	ARC, ENJ, GAF, SHX.
Coconut oil fatty acid polyoxyethylene-----	S.
Dimethyldodecylethylammonium ether sulfate-----	PCI.

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1985--CONTINUED

SURFACE-ACTIVE AGENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
CATIONIC--CONTINUED	
OXYGEN-CONTAINING QUATERNARY AMMONIUM SALTS--CONTINUED	
Ethanaminium, 2-hydroxy-N,N-bis(2-hydroxyethyl)-N-methyl-, salt with silicic acid-----	TCH.
Ethoxylated(hydrogenated tallow amine), methyl ammonium chloride-----	ENJ.
Ethoxylated, quaternized (C <sub>12-18</sub> alkyl) oxypropyl trimethylene diamine-----	ENJ, MCB.
Ethoxylated, quaternized reaction product of formaldehyde and tallow diamine-----	ENJ.
Ethoxylated tallow amine, potassium propionate derivative-----	SVC.
N-Ethyl-N,N-bis(polyoxyethylene)tallow ammonium ethyl sulfate-----	SHX.
1-Ethyl-2-(8-heptadecenyl)-1-(2-hydroxyethyl)-2-imidazolium ethyl sulfate-----	ICI, SHX.
N-Ethyl-N-hexadecylmorpholinium ethyl sulfate-----	BRD, ICI.
1-Ethyl-2-isoheptadecyl-1-(2-hydroxyethyl)-2-imidazolium ethyl sulfate-----	SBC.
Ethyl(polyoxyethylene, cocoamine)ethylsulfate-----	S.
N-Ethyl-N-(soybean oil alkyl)morpholinium ethyl sulfate-----	ICI.
α-Glyconamidopropyl dimethyl-2-hydroxyethyl ammonium ammonium chloride-----	VND.
(2-Hydroxyethyl)dimethyl(3-stearamidopropyl)-ammonium dihydrogen phosphate-----	ACY.
(2-Hydroxyethyl)dimethyl(3-stearamidopropyl)-ammonium nitrate-----	ACY.
Hydroxyethyl-2-undecyl-2,3-imidazoline-----	MOA.
Hydroxypropylammonium acetate-----	X.
N-2-Hydroxypropyl-N-methyl-N,N-bis(tallow amido ethyl)-ammonium ethyl sulfate-----	SHX.
(3-Lauramidopropyl)trimethylammonium methyl sulfate-----	ACY.
2-(2-Lauroloxyethyl)carbamoyl-1-methylpyridinium chloride-----	WTC.
Methyl, bis-(2-hydroxyethyl)hydrogenated tallow alkylammonium chloride-----	ENJ.
Methyl, bis-(2-hydroxyethyl)isodecyloxypropyl-ammonium chloride-----	ENJ.
Methyl, bis-(2-hydroxyethyl)isotridecyloxypropyl-ammonium chloride-----	ENJ.
Methyl, bis-(2-hydroxyethyl)-(soyaalkyl) ammonium chloride-----	ENJ.
Methyl dioleyl ethoxy ammonium methyl sulfate-----	SHX.

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1985--CONTINUED

SURFACE-ACTIVE AGENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
CATIONIC--CONTINUED	
OXYGEN-CONTAINING QUATERNARY AMMONIUM SALTS--CONTINUED	
1-Methyl-2-(8-heptadecenyl)-1-(9-octadecenyl)amido ethyl	SHX.
1-Methyl-2-nor-tallow-1-2-tallow amidoethyl-imidazolinium methyl sulfate	SHX.
N-Methyl-N-polyoxyethylene-N,N-bis(hydrogenated tallow amidoethyl)ammonium	SHX.
N-Methyl-N-polyoxyethylene-N,N-bis(tallow amidoethyl)	SHX.
1-Methyl-2-(2-stearoyloxyethyl)carbamoylpyridinium chloride	BRD, WTC.
Methyltallowdiethylenetriamine condensate, polyethoxylated, methyl sulfate	SVC.
Methyltallowdiethylenetriamine condensate, polypropoxylated, methyl sulfate	SVC.
Mixed (coco and soya fatty acids), reaction products with chloromethane and diethylenetriamine, ethoxylated, quaternized	ENJ.
Mixed fatty acid amide with diethylene triamine/ethyl sulfate	EFH.
Oxygen-containing quaternary ammonium salts (Except those having amide linkages), all other	DA, MOA, SHX, VND, X, X.
N,N,N',N',N'-Penta-(2-hydroxyethyl)-N-(tallow alkyl)-1,3-diaminopropane diacilate	ARC.
Polyethyleneimine methyl ammonium sulfate	STC.
1-Propanaminium, N-ethyl-N,N-dimethyl-3-(1-oxooctadecyl)amino-, ethyl sulfate	SBC.
Soya fatty acids, reaction products with chloromethane and diethylenetriamine, ethoxylated, quaternized	ENJ.
Soya fatty acids, reaction products with chloromethane and diethylenetriamine, propoxylated, quaternized	ENJ.
Stearylamidopropyltrimethylmyristyl acetate ammonium chloride	VND.
Stearyldimethylammoniummethosulfate quaternary	SVC.
Stearyldimethylethylammonium ethyl sulfate	JOR.
Tallow amine, ethoxylated, quaternary ammonium salt	DUP, VND.
Tetra-butylammonium hydrogen sulfate	HXL.
Trimethyl-p-methylbenzylammonium chloride	PCI.
Tris(2-hydroxyethyl)-(tallow alkyl)ammonium diacilate	ARC.
Oxygen containing quaternary ammonium salts, all other	MOA, X.

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED  
OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1985--CONTINUED

SURFACE-ACTIVE AGENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
CATIONIC--CONTINUED	
QUATERNARY AMMONIUM SALTS, NOT CONTAINING OXYGEN:	
ACYCLIC:	
*Bis(coconut oil alkyl)dimethylammonium chloride-----	ARC, ENJ, JTO, ONX, SHX, SVC, WTC.
Bis(coconut oil alkyl)dimethylammonium nitrate-----	ARC.
*Bis(hydrogenated tallow alkyl)dimethylammonium chloride-----	ARC, ENO, ONX, SHX, SVC.
Bis(hydrogenated tallow alkyl)- dimethylammonium methyl sulfate-----	ARC, ONX, SHX.
Bis(tallow alkyl)dimethyl ammonium chloride-----	SHX.
Cocodimethylethylammonium ethyl sulfate-----	SHX.
N-(Coconut oil alkyl)aminobutyric acid, sodium salt-----	ARC, BRD, JTO, ONX, SHX.
Didecyldimethylammonium chloride-----	HNT, ONX.
Dimethyldi(C <sub>12-18</sub> )ammonium chloride (mixed straight and branched chains)-----	SHX.
Dimethyldioctadecylammonium choride-----	ARC, SHX.
Dimethyldioctadecylammonium methyl sulfate-----	ARC, SHX.
N,N-Dioctyl-N,N-dimethylammonium chloride-----	BRD, HNT.
Di-tallow-amidoammonium sulfate-----	CRD.
Dodecyltrimethylammonium chloride-----	ARC, SHX.
Ethyl dimethyl(mixed alkyl)ammonium ethyl sulfate-----	DEX, JOR.
Ethylhexadecyldimethylammonium bromide-----	HXL.
Hexadecyltrimethylammonium chloride-----	ARC, BRD, SHX.
(Hydrogenated tallow alkyl)trimethylammonium chloride-----	ARC, SHX.
Methyl-1-tallowamidoethyl-2-tallowimidazolium-methyl sulfate-----	CRD.
Methyl tri(C <sub>9-11</sub> )ammonium chloride-----	SHX.
Methyltrioctylammonium chloride-----	BRD, SCP.
(Mixed alkyl)ammonium chloride-----	MIL.
Mixed linear alkyl dimethylammonium methyl sulfate-----	STC.
(Mixed linear alkyl)trimethylammonium bromide-----	DUP.
Mixture of N-octyl, N-decyl, N,N-dimethyl ammonium chloride and benzyl, dimethyl, (mixed alkyl)ammonium chloride-----	BRD.
Octyl-decyl-dimethyl ammonium chloride-----	HNT.
N-Octyl, N-decyl, N,N-dimethyl ammonium chloride-----	BRD, HNT.
*N,N',N',N'-Pentamethyl-N-(tallow alkyl)- trimethylene-bis(ammonium chloride)-----	ARC, JTO, SHX.
(Stearic acid)-ethylenediamine methylammonium sulfate-----	STC.



TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1985--CONTINUED

SURFACE-ACTIVE AGENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
CATIONIC--CONTINUED	
QUATERNARY AMMONIUM SALTS, NOT CONTAINING OXYGEN--	
CONTINUED:	
ACYCLIC--CONTINUED	
Tetrabutylammonium bromide-----	EK, HXL, RSA.
1-Tetradecanaminium,N,N,N-trimethyl-chloride-----	SHX.
Tetraethanolammonium hydroxide-----	RSA.
Tetraethylammonium bromide-----	EK, RSA.
Tetraethylammonium chloride-----	EK.
Tetraheptylammonium bromide-----	EK.
Tetra methylammonium bromide-----	RSA.
Tetramethylammonium chloride-----	RSA.
Tetramethylammonium hydroxide-----	RSA.
Tetrapropylammonium hydroxide-----	RSA.
Tributylmethylammonium chloride-----	TMA.
Trihydrogenated tallow ammonium chloride-----	ENO.
Trimethyldodecylammonium chloride-----	ONX.
Trimethyl(soybean oil alkyl)ammonium chloride-----	ARC, JTO, SHX.
*Trimethyl(tallow alkyl)ammonium chloride-----	ARC, ENO, JTO, SHX.
Trimethyltetradecylammonium bromide-----	HXL.
Quaternary ammonium salts, not containing oxygen, acyclic, all other-----	DA, MOA, WTC, X.
BENZENOID:	
Benzyl(alkylpyridinium)chloride-----	X.
*Benzyl(coconut oil alkyl)dimethylammonium chloride-----	ENO, GDC, HRT, ONX, SHX, TCC, WTC.
Benzyl-di(hydrogenated tallow alkyl)- methylammonium chloride-----	ARC.
*Benzyl dimethyl(mixed alkyl)ammonium chloride-----	AAC, BRD, CRD, FTX, HNT, JOR, ONX, PCI, SCP, SHX, X.
Benzyl dimethyloctadecylammonium chloride-----	ONX, SHX, TNI.
Benzyl dimethyl oleyl ammonium chloride-----	JOR.
Benzyl dimethyl(tallow alkyl)ammonium chloride-----	ENO, HLI, SHW, WTC.
Benzyl dimethyl tetradecylammonium chloride-----	BRD, HXL.
Benzyl dodecyl dimethylammonium chloride-----	HXL, ONX.
Benzyl hexadecyl dimethylammonium chloride-----	BKM, ONX.
Benzyl(hydrogenated tallow alkyl)dimethylammonium chloride-----	ARC, ENO, SHX.
Benzyl-methyl-bis(hydrogenated tallow)ammonium chloride-----	ENO.
Benzylpicolinium chloride-----	S.
*1-Benzylpyridinium chloride-----	BRD, GDC, PCI.
Benzyltriethylammonium chloride-----	RSA.

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1984--CONTINUED

SURFACE-ACTIVE AGENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
CATIONIC--CONTINUED	
QUATERNARY AMMONIUM SALTS, NOT CONTAINING OXYGEN	
CONTINUED	
BENZENOID--CONTINUED	
*Benzyltrimethylammonium chloride-----	CRT, HIP, PCI, RSA, SHX, TCC.
2,4-Dichlorobenzyl dimethyl(mixed alkyl)ammonium chloride-----	X.
(3,4-Dichlorobenzyl)dodecyldimethylammonium chloride-----	ONX.
1-Dodecylpyridinium chloride-----	CCL, DAN.
(Ethylbenzyl)dimethyl(mixed alkyl)ammonium chloride-----	HNT, ONX.
(Mixed alkyl)dibenzyltrimethyl-1,3-propane * diammonium chloride-----	GDC.
$\alpha$ -Naphthyl-dodecyl-dimethylammonium chloride-----	ONX.
1-Phenethyl-2-picolinium bromide-----	HXL.
Phenethyl pyridinium bromide-----	HXL.
Quaternary ammonium salts not containing oxygen, benzenoid, all other-----	ICI, X, X.
Cationic surface-active agents, all other-----	DUP, MIR, MOA, RPC, SCP, WTC.
NONIONIC	
CARBOXYLIC ACID AMIDES:	
DIETHANOLAMINE CONDENSATES (AMINE/ACID RATIO = 2/1):	
Capric acid (Ratio = 2/1)-----	SCP, TCH.
Castor oil acids (Ratio = 2/1)-----	CAS, CLI, NSC.
*Coconut oil acids (Ratio = 2/1)-----	ARD, CCL, CLI, CON, CTL, CYL, DA, ECC, EFH, FTX, GDC, HNT, HRT, HTN, JOR, LUR, MCP, MOA, MRV, MZC, ONX, PNK, RPC, SBC, SCP, SHX, SOP, STP, TCH, VAL, WTC.
*Coconut oil and tallow acids (Ratio = 2/1)-----	BRD, CRT, CTL, ESS, JOR, MOA, SBC, UNN, WTC.
Lard oil acids-----	FER.
Lard oil and tall oil acids-----	FER.
Lauric acid (Ratio = 2/1)-----	CRD, MOA, MZC, WTC.
*Lauric and myristic acids (Ratio = 2/1)-----	CRD, HRT, MOA, PG, SBC, STP.
Linoleic acid (Ratio = 2/1)-----	MOA.
Mixed carboxylic acids-----	SOS.
*Oleic acid (Ratio = 2/1)-----	CLI, EFH, EMR, MZC, STP.
Palmitic and stearic acids (Ratio = 2/1)-----	RPC.
Pelargonic acid (Ratio = 2/1)-----	TCH.
Soybean oil acids (Ratio=2/1)-----	MZC.

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1985--CONTINUED

SURFACE-ACTIVE AGENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
NONIONIC--CONTINUED	
CARBOXYLIC ACID AMINES--CONTINUED	
DIETHANOLAMINE CONDENSATES (AMINE/ACID RATIO = 2/1)--	
CONTINUED	
*Stearic acid (Ratio = 1/1)-----	CLI, EFH, VAL, WVA.
*Tall oil acids (Ratio = 1/1)-----	ECC, MOA, MZC, PNK, SBC, STC, WTC, WVA.
*Tallow acids (Ratio = 1/1)-----	CLI, ICI, MOA.
Diethanolamine condensates (amine/acid Ratio= 2/1),	
all other-----	WTC.
DIETHANOLAMINE CONDENSATES (OTHER AMINE/ACID RATIOS):	
Capric acid (Ratio = 1/1)-----	MOA.
*Coconut oil acids (Ratio = 1/1)-----	AAC, ARD, BRD, CLI, CTL, DA, EMK, FTX, HNT, HRT,
	HTN, JOR, JRG, MOA, MZC, ONX, PEL, PIL, S, SBC,
	SCP, SHX, STP, TCC, WTC, X.
*Lauric acid (Ratio = 1/1)-----	CLI, CYL, MOA, ONX, SBC, TCH, TNI.
*Lauric and myristic acid (Ratio = 1/1)-----	BRD, CLI, CYL, HTN, MOA, SBC, WTC.
*Linoleic acid (Ratio = 1/1)-----	CLI, JOR, MOA, SBC, VND.
Mixed carboxylic acids (Ratio = 1/1)-----	SOS.
Myristic acid (Ratio = 1/1)-----	MOA.
*Oleic acid (Ratio = 1/1)-----	DA, SBC, TMH, WTC.
Palmitic and stearic acids (Ratio = 1/1)-----	BRD.
*Soybean oil acids (Ratio = 1/1)-----	MOA, MZC, SBC.
*Stearic acid (Ratio = 1/1)-----	CHP, ECC, ENJ, HIP, MRV.
Tall oil acids (Ratio = 1/1)-----	CHP, WTC.
Tallow acids (Ratio = 1/1)-----	BRD, MOA, VPC.
ALL OTHER CARBOXYLIC ACID AMIDES:	
Castor oil acids-polyalkylene polyamine maleic	
anhydride condensate-----	X.
Cocoaminoamide-----	DA.
Coconut oil acids-----	STP.
*Coconut oil acids (Ratio = 1/1)-----	JOR, MOA, PG, SCP, SOS, VND, WTC.
Coconut oil acids (Ratio = 2/1)-----	MOA, STP, WTC.
Coconut oil acids-----	DA, MOA.
Coconut oil acids-dimethylaminopropylamine	
condensate (Ratio = 1/1)-----	JRG.
Coconut oil acids-ethanolamine condensate,	
ethoxylated-----	BRD, STP.
Fatty acid alkenolamide-----	MCB.
Hydrogenated (tallow acids) aminoethylethanolamine	
condensate (Ratio=1/2)-----	DAN.
Hydrogenated tallow acids, (Ratio = 2/1)-----	ARC.
Hydrogenated tallow acids, aminoethylethanolamide,	
acetate salt-----	PCI.

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1985--CONTINUED

SURFACE-ACTIVE AGENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
NONIONIC--CONTINUED	
CARBOXYLIC ACID AMIDES--CONTINUED:	
ALL OTHER CARBOXYLIC ACID AMIDES--CONTINUED:	
Hydrogenated tallow glycerides diethylenetriamine condensate	HRT.
Isonanoic acid mono and triethanolamine salt	STC.
Isopropanolamine condensates, all other	WTC.
Isostearic acid, aminoethylethanolamide, acetate salt	PCI.
Lauric acid	CLI, HTN, MOA.
Lauric acid - ethanolamine condensate, ethoxylated	MZC.
Lauric and myristic acids	DA.
Lauric and myristic acids (Ratio = 1/1)	MOA.
Myristic acid	CRN.
Oleic acid (Ratio = 1/1)	SBC.
Oleic acid (Ratio = 1/2)	EFH.
Oleic acid aminoethylethanolamine-condensate (Ratio = 1/1) ethyl sulfate	RPC.
Oleic acid-ethanolamine condensate, ethoxylated	ONX, SHX.
Stearic acid (Ratio = 1/1)	MOA, VND, WTC.
Stearic acid (Ratio = 1/2)	WTC.
Stearic acid (Ratio = 2/1)	CLI, ECC.
Stearic acid aminoethanolamine (Ratio = 1.0/1.65)	CHP.
Stearic acid-aminoethyl ethanolamine (Ratio = 1.75/1.0)	SBC.
Stearic acid-N-aminoethyl ethanolamine condensate	MRV.
Stearic acid diethanolamine (Ratio = 1.0/11.6)	CHP.
Stearic acid-ethylenediamine condensate (Ratio = 1/2)	TCH, WTC.
Tall oil acids-ethylenediamine condensate (Ratio = 1/2)	SCP.
Tall oil fatty acid, diethylene triamine condensate (amine/acid ratio=1/2)	STC.
Tall oil fatty acids (Ratio = 1/2)	EFH.
Tall oil fatty acids (Ratio = 2.7/1)	EFH.
Tall oil fatty acids-triethanolamine condensate	X.
Tallow alkyl amide, ethoxylated	MCB.
Alkanolamine condensates, all other	CPC, DA, TCH, VND, WTC.
Carboxylic acid - alkanolamine condensates, all other	DA, ROB, WTC.
Carboxylic acid-diamine and polyamine condensate, all other	ONX.
Carboxylic acid amides, all other	BKM, WTC, X.
Diethanolamine condensate, all other	DA.
Ethanolamine condensates, all other	WTC.
Ethanolamine condensates, (Ratio = 1/1), all other	VND.

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED  
OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1985--CONTINUED

SURFACE-ACTIVE AGENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
NONIONIC--CONTINUED	
CARBOXYLIC ACID ESTERS:	
ANHYDROSORBITOL ESTERS:	
Anhydrosorbitol dioleate-----	ICI.
Anhydrosorbitol monoester of tall oil acids-----	HDG, MZC.
*Anhydrosorbitol monolaurate-----	BRD, GLY, ICI, MZC, TCH.
*Anhydrosorbitol mono-oleate-----	BRD, GLY, HDG, ICI, MZC, SVC, TCH.
Anhydrosorbitol monopalmitate-----	ICI, TCH.
*Anhydrosorbitol monostearate-----	BRD, GLY, HDG, ICI, MZC, TCH.
Anhydrosorbitol sesquioleate-----	GLY, TCH.
Anhydrosorbitol sesquistearate-----	TCH.
*Anhydrosorbitol trioleate-----	BRD, HDG, ICI, MZC, TCH.
Anhydrosorbitol tristearate-----	GLY.
Anhydrosorbitol esters, all other-----	BAS.
DIETHYLENE GLYCOL ESTERS:	
Diethylene glycol distearate-----	GLY, WTC.
Diethylene glycol monoester of tall oil acids-----	BKM.
*Diethylene glycol monolaurate-----	ECC, GLY, HDG, MZC.
*Diethylene glycol monostearate-----	CLI, ECC, HDG, STP, VND.
Diethylene glycol sesquiester of tall oil acids-----	ECC.
Diethylene glycol sesquilaurate-----	GLY.
Diethylene glycol sesquistearate-----	WTC.
Diethylene glycol terephthalate-----	UPF.
Diethylene glycol esters, all other-----	DA.
ETHOXYLATED ANHYDROSORBITOL ESTERS:	
*Ethoxylated anhydrosorbitol monolaurate-----	BRD, ICI, MZC, TCH.
*Ethoxylated anhydrosorbitol mono-oleate-----	BRD, GLY, HDG, ICI, MZC, SVC, TCH.
Ethoxylated anhydrosorbitol monopalmitate-----	HDG, ICI.
*Ethoxylated anhydrosorbitol monostearate-----	GLY, HDG, ICI, MZC, SVC, TCH.
Ethoxylated anhydrosorbitol monotallate-----	TCH.
*Ethoxylated anhydrosorbitol triester of tall oil acids-----	GLY, ICI, STP(E), WVA(E).
*Ethoxylated anhydrosorbitol trioleate-----	BRD, GLY, HDG, ICI, MZC, TCH.
*Ethoxylated anhydrosorbitol tristearate-----	GLY, HDG, ICI, MZC.
ETHOXYLATED SORBITOL ESTERS:	
Ethoxylated sorbitol beeswax ester-----	ICI.
Ethoxylated sorbitol hexaester of tall oil acids-----	TCH.
Ethoxylated sorbitol hexaoleate-----	GLY, ICI, MZC, TCH.
Ethoxylated sorbitol lanolin ester-----	ICI.
Ethoxylated sorbitol mono-oleate-----	ICI.
Ethoxylated sorbitol oleate, acetylated-----	ICI.
Ethoxylated sorbitol pentalaurate-----	MZC.

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1985--CONTINUED

SURFACE-ACTIVE AGENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
NONIONIC--CONTINUED	
CARBOXYLIC ACID ESTERS--CONTINUED:	
ETHOXYLATED SORBITOL ESTERS--CONTINUED	
Ethoxylated sorbitol tetraester of lauric and oleic acids-----	ICI.
Ethoxylated sorbitol tetraester of tall oil acids-----	WTC.
Ethoxylated sorbitol tetraoleate-----	ICI.
Ethoxylated sorbitol tetrastearate-----	ICI.
Ethoxylated sorbitol trioleate-----	BAS.
Ethoxylated sorbitol esters, all other-----	X.
ETHYLENE GLYCOL ESTERS:	
Ethylene glycol distearate-----	ICI, MZC, STP, WM, WTC.
Ethylene glycol mono-oleate-----	EFH, EMR, TCH.
*Ethylene glycol monostearate-----	BRD, CLI, CYL, GLY, HDG, MZC, STP, TCH, VND, WM, WTC.
Ethylene glycol esters, all other-----	WTC.
GLYCEROL ESTERS:	
COMPLEX GLYCEROL ESTERS:	
Glycerol diacetyltartrate monostearate-----	EKT.
Glycerol ester ethoxylates-----	GLY.
Glycerol mono- and diesters of mixed fatty acids-----	ICI.
Glycerol monoester of hydrogenated tallow fatty acid-----	PCI.
Glycerol monoester of mixed fatty acids, acetylated-----	EKT.
Glycerol monoester of mixed fatty acids, succinylated-----	EKT.
Glycerol mono-oleate, acetylated-----	WTC.
Glycerol mono-oleate, ethoxylated-----	SCP.
GLYCEROL ESTERS OF CHEMICALLY DEFINED ACIDS:	
Glycerol dilaurate-----	VND.
Glycerol dimerate-----	PCI.
Glycerol dioleate-----	GLY, STP.
Glycerol monocaprylate-----	STP.
Glycerol monolaurate-----	GLY.
*Glycerol mono-oleate-----	EFH, EMR, GLY, HAL, HDG, MZC, STP, SVC, TCH, WTC.
*Glycerol monoricinoleate-----	CAS, GLY, HDG, MZC.
*Glycerol monostearate-----	CCC, CHL, CLD, CPC, CRT, CYL, EMR, GLY, HAL, HDG, HRT, LUR, MCB, MZC, SNW, SOS, STP, TCH, VND, WM, WTC, X.
Glycerol trioleate-----	SVC.
Glycerol esters of chemically defined acids, all other-----	DA.

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1985--CONTINUED

SURFACE-ACTIVE AGENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
NONIONIC--CONTINUED	
CARBOXYLIC ACID ESTERS--CONTINUED:	
GLYCEROL ESTERS--CONTINUED:	
GLYCEROL ESTERS OF MIXED ACIDS:	
Glycerol mixed ester of soybean oil-trimethylolpropane-----	ENP.
Glycerol mono-, di-, and triesters of hydrogenated tallow acids-----	WPG.
Glycerol monoester of C <sub>8</sub> -C <sub>10</sub> acids-----	SVC.
Glycerol monoester of coconut oil acids-----	GLY.
Glycerol monoester of cottonseed oil acids-----	EKT.
Glycerol monoester of hydrogenated cottonseed oil acids-----	EKT, WM.
Glycerol monoester of hydrogenated lard acids-----	EKT.
Glycerol monoester of hydrogenated soybean oil acids-----	BFP, EKT, WTC.
Glycerol monoester of lard acids-----	EKT.
Glycerol monoester of mixed fatty acids-----	PCI, SVC.
Glycerol monoester of palm oil acids-----	EKT.
Glycerol monoester of safflower oil acids-----	EKT.
Glycerol monoester of tall oil acids-----	EFH, FER.
Glycerol monoester of tallow acids-----	EKT.
Glycerol sesquiester of hydrogenated tallow acids-----	WTC.
Glycerol sesquiester of tall oil acids-----	SLM.
Glycerol triester of mixed fatty acids-----	SVC.
Glycerol trilaurate-----	SVC.
Glycerol esters of mixed acids, all other-----	BFP, DA.
NATURAL FATS AND OILS, ETHOXYLATED:	
*Castor oil, ethoxylated-----	BAS, CAS, DA, GAF, GLY, HTN, ICI, MCB, MIL, S, STC, STP(E), SVC, TCH, TMH, WVA(E), X.
Coconut oil, ethoxylated-----	STC.
*Hydrogenated castor oil, ethoxylated-----	CAS, DA, ICI, MCB, MIL, S, STC, TCH.
*Lanolin, ethoxylated-----	CRD, CRN, STC, TCH.
Oleic acid, ethoxylated-----	MIL.
Soybean oil, ethoxylated-----	DA.
Stearic acid, ethoxylated-----	GAF.
Tall oil acids, ethoxylated and propoxylated-----	X.
Tall oil, refined, ethoxylated-----	TCH, X.
Tallow fatty acids, ethoxylated-----	MCB.
POLYETHYLENE GLYCOL ESTERS:	
POLYETHYLENE GLYCOL ESTERS OF CHEMICALLY-DEFINED ACIDS:	
*Polyethylene glycol dilaurate-----	EFH, GLY, HAL, HDG, MZC, STP, TCH, WM.

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1985--CONTINUED

SURFACE-ACTIVE AGENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
NONIONIC--CONTINUED	
CARBOXYLIC ACID ESTERS--CONTINUED:	
POLYETHYLENE GLYCOL ESTERS--CONTINUED:	
POLYETHYLENE GLYCOL ESTERS OF CHEMICALLY-DEFINED	
ACIDS--CONTINUED:	
*Polyethylene glycol dioleate-----	CLD, DA, EFH, GLY, HAL, MIL, SOS, STP, TCH.
Polyethylene glycol distearate-----	CHP, GLY, MZC, SBC, STP, TCH.
*Polyethylene glycol hydroxyacetate-----	CCA.
Polyethylene glycol monocaprylate-----	ECC, GLY.
*Polyethylene glycol monolaurate-----	BAS, CCA, CGY, ECC, EFH, GLY, HAL, ICI, MZC, STP, TCH, WM.
*Polyethylene glycol mono-oleate-----	ARC, BAS, CCA, CLD, CRT, DA, ECC, EFH, GAF, GDC, GLY, HAL, HDG, MRT, MRV, MZC, ONX, SHX, STP, SVC, TCH, WTC.
Polyethylene glycol mono-oleate, ethoxylated-----	ICI.
Polyethylene glycol monopalmitate-----	GLY, ICI.
Polyethylene glycol monopelargonate-----	SOS, STC, TCH.
Polyethylene glycol monoricinoleate-----	ECC, S.
*Polyethylene glycol monostearate-----	BAS, CCC, CPC, CRT, DA, DEX, EFH, GAF, GDC, GLY, HDG, HRT, ICI, MCP, MZC, SLC, SOS, STP, TCH, VMD.
Polyethylene glycol sesquioleate-----	SOS, TCH, WTC.
Polyethylene glycol terephthalate-----	PCI.
Polyethylene glycol esters of chemically-defined	
acids, all other-----	BAS, RPC, WTC.
POLYETHYLENE GLYCOL ESTERS OF MIXED ACIDS:	
Polyethylene glycol diester of coconut oil and	
oleic acids-----	EFH.
Polyethylene glycol diester of mixed linear acid/	
oleic acid-----	PCI.
*Polyethylene glycol diester of tall oil acids-----	BRD, CCC, EFH, MZC, STP(E), WVA(E), X.
Polyethylene glycol ester of mixed fatty acids-----	SHX, SOS.
Polyethylene glycol monoester of coconut oil acids--	ICI.
*Polyethylene glycol monoester of tall oil acids-----	ARC, BKM, CCC, EFH, FER, MZC.
Polyethylene glycol (mixed ester) of tall oil acids:	DA.
Polyethylene glycol sesquiester of castor oil acids--	DA.
Polyethylene glycol sesquiester of coconut oil acids:	DA, LUR, MRT.
*Polyethylene glycol sesquiester of tall oil acids---	ICI, SLM, STP(E), WTC, WVA(E).
Polyethylene glycol sesquiester of tallow acids-----	RPC, SHX, TCH.
Polyethylene glycol esters of mixed acids, all other:	WTC, STP(E), WVA(E).
POLYGLYCEROL ESTERS:	
Mixed oleic, lauric, stearic, and palmitic	
hexaglycerol esters-----	SVC.



TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1985--CONTINUED

SURFACE-ACTIVE AGENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
NONIONIC--CONTINUED	
CARBOXYLIC ACID ESTERS--CONTINUED:	
POLYGLYCEROL ESTERS--CONTINUED:	
Polyglycerol decaoleate-----	TCH.
Polyglycerol decaoleate-----	GLY.
Polyglycerol distearate-----	GLY, MZC.
*Polyglycerol mono-oleate-----	HDG, MZC, WTC.
Polyglycerol monostearate-----	GLY, HDG.
Polyglycerol esters, all other-----	WTC.
PROPANEDIOL ESTERS:	
1,2-Propanediol monolaurate-----	SBC.
1,2-Propanediol mono-oleate-----	EFH, HAL.
*1,2-Propanediol monostearate-----	EKT, GLY, HAL, MZC, SBC, TCH, WM, WTC.
Propanediol esters, all other-----	DA.
OTHER CARBOXYLIC ACID ESTERS:	
Caprylic amphopropionate-----	MOA.
Di-isobutylene maleate-----	RH.
Ethoxylated 1,3-butylene glycol stearate-----	STC
Ethoxylated castor oil, ditridecylmaleate-----	UPF.
Ethoxylated glycerol mono- and diesters of hydrogenated tallow acids-----	SVC.
Ethoxylated glycerol and propylene glycol esters of coco fatty acids-----	SVC.
Ethoxylated 1,2-propanediol monostearate-----	ICI.
Ethoxylated and propoxylated glycerol mono- and diesters of tallow acids-----	SVC.
Lauric acid ester of glycerol and ethoxylated nonylphenol-----	TCC.
Linoleic acid dimers, alkoxyated-----	X.
Maleic anhydride, polypropylene glycol copolymer-----	PCI.
Methylglucoside dioleate-----	CRN.
Methylglucoside laurate-----	HDG.
Methylglucoside sesquistearate-----	CRN.
Mixed alkyl stearate-----	SOS.
Mixed di- and triethylene glycol monoester of tall oil acids-----	MCB, WVA.
Nonylphenol ethoxylate, oleate-----	EFH.
Pentaerythritol stearate-----	SCP.
Pentaerythritol, tall oil acid ester, alkoxyated-----	X.
Polycarboxylic acid, alkylate-----	X.
Polycarboxylic acid, alkylphenoxyalkoxyate-----	X.
Polypropylene glycol dioleate-----	CLD.

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1985--CONTINUED

SURFACE-ACTIVE AGENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
NONIONIC--CONTINUED	
CARBOXYLIC ACID ESTERS--CONTINUED:	
OTHER CARBOXYLIC ACID ESTERS--CONTINUED:	
Propylene glycol esters of hydrogenated palm oil-----	PG, VND.
Propylene glycol esters of hydrogenated soybean oil----	PG.
Tridecyl stearate-----	GLY.
Trimethylol propane trioleate-----	EFH.
Carboxylic acid esters, all other-----	CHP, CRN, DA, EMR, ROB, SYL, X.
ETHERS:	
BENZENOID ETHERS:	
Alkylphenol-formaldehyde condensates, alkoxyated,	:
all other-----	WTC, X.
t-Amylphenol, ethoxylated-----	X.
*Dinonylphenol, ethoxylated-----	BAS, CPC, DA, GAF, HTN, MCB, MZC, RH, S, TCH.
*Dodecylphenol, ethoxylated-----	DA, GAF, MCB, MON, SOC, TCH, TMH.
Epichlorohydrin bisphenol A, ethoxylated-----	X.
Furfuryl alcohol, ethoxylated-----	SVC.
Iso-octylphenol, ethoxylated-----	AAC, BAS, GAF, MCB, MZC, RH, TMH.
(Mixed alkyl)phenol, alkoxyated-----	X.
(Mixed alkyl)phenol epichlorohydrin-formaldehyde,	:
alkoxyated-----	X.
(Mixed alkyl)phenol, ethoxylated-----	BAS, MIL, NTL.
(Mixed alkyl)phenol, ethoxylated, butyl ether-----	RH.
(Mixed alkyl)phenol-formaldehyde, alkoxyated-----	MCB, STC, WTC, X.
(Mixed alkyl)phenol-formaldehyde, methoxyated-----	STC.
Mixed phenylstyrene, phenol, ethoxylated-----	STC.
Naphthalene sulfonic acid, polymer with formaldehyde-	:
sodium salt-----	PCI.
β-Naphthol, ethoxylated-----	X.
*Nonylphenol, ethoxylated-----	AAC, ARC, BAS, CPC, DA, GAF, HDG, HTN, ICI, MCB,
	MIL, MON, MZC, OMC, RH, S, STC, STP(E), TCH,
	TMH, TX, UCC, WTC, WVA(E), X, X, X.
*Nonylphenol, ethoxylated and propoxyated-----	GAF, RH, TMH, X.
Nonylphenol, ethoxylated with mixed fatty acids-----	SOS.
Nonylphenol-formaldehyde, alkoxyated-----	WTC, X.
Nonylphenol oleate, ethoxylated-----	SOS.
n-Octylphenol, ethoxylated-----	AAC, DA, TCH.
Octylphenol, ethoxylated and benzylated-----	GAF.
tert-Octylphenol-formaldehyde, ethoxylated-----	SDW.
*Phenol, ethoxylated-----	DA, GAF, ICI, MCB, MIL.

TABLE 2.—SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1985—CONTINUED

SURFACE-ACTIVE AGENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
NONIONIC—CONTINUED	
ETHERS—CONTINUED:	
BENZENOID ETHERS—CONTINUED:	
Poly(oxy-1,2 ethanediyl), $\alpha$ (phenylmethyl)-omega-	
hydrocy, ethoxylated nonyl phenol alkyl ethers-----	PCI.
Soya sterols, ethoxylated-----	SCP.
Benzenoid ethers all other-----	BAS, RH, SVC.
NONBENZENOID ETHERS:	
CHEMICALLY-DEFINED LINEAR ALCOHOLS, ALKOXYLATED:	
Butanol, ethoxylated-----	DA, GAF, MCB, X.
2-Butanol, ethoxylated and propoxylated-----	SVC, X.
*Decyl alcohol, ethoxylated-----	AAC, BAS, CPC, GAF, ICI, MCB, S, STC, TCH.
Decyl alcohol, ethoxylated and propoxylated-----	DA.
Decyloxypoly(ethyleneoxy)ethyl chloride-----	GAF.
*Dodecyl alcohol, ethoxylated-----	AAC, HDG, ICI, MIL, WTC, X.
Glycerol, ethoxylated-----	SVC.
Hexadecyl alcohol, ethoxylated-----	ICI, MZC, TCH.
N-Hexyl alcohol, ethoxylated-----	GAF.
Isoamyl alcohol, ethoxylated-----	GAF.
Isostearyl alcohol, ethoxylated-----	SHX.
Lauryl alcohol, ethoxylated-----	GAF.
Methyl alcohol, alkoxyated-----	X.
*9-Octadecenyl alcohol, ethoxylated-----	AAC, DA, GAF, ICI.
*Octadecyl alcohol, ethoxylated-----	CRN, DA, GAF, ICI, STC.
*Oleyl alcohol, ethoxylated-----	CPC, CRD, GLY, HTN, MZC, S, SHX, STC.
Stearyl alcohol, propoxylated and ethoxylated-----	TCH.
Trimethol propane alkoxyate-----	BAS.
Chemically defined linear alcohols, alkoxyated,	
all other-----	BAS, WTC.
Coconut oil alcohol, ethoxylated-----	GAF, GLY, MZC, STC, TX.
Decyl and octyl alcohols, ethoxylated-----	GAF, TX.
Developmental alcohol, ethoxylated-----	SHC.
Lanolin alcohol, propoxylated-----	CRN.
Mixed linear alcohols, alkoxyated-----	X.
*Mixed linear alcohols, ethoxylated-----	AAC, BAS, DA, DUP, GAF, ICI, MCB, MIL,
	RH, S, SHC, SHX, STC, STP, TCH, TMH,
	TNA TX, UCC, VST, WTC, X.
Mixed linear alcohols, ethoxylated, benzyl ether-----	X.
*Mixed linear alcohols, ethoxylated and	
propoxylated-----	BAS, DA, DUP, GAF, MCB, MIL, OMC, S, STP,
	SVC, TCH, UCC, WTC, X.
Mixed linear alkylpoly(ethyleneoxy)ethyl chloride-----	GAF.
Tallow alcohol, ethoxylated-----	AAC, MZC, SHX, STC, TX.
Wool wax alcohols, ethoxylated-----	CRD.
Nonbenzenoid ethers all other-----	CRN, DA, RH, VAL, WTC, X.

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1985--CONTINUED

SURFACE-ACTIVE AGENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
NONIONIC--CONTINUED	
ETHERS--CONTINUED:	
OTHER ETHERS AND THIOETHERS:	
Bis(alkyl-aryl)alcohols, ethoxylated-----	DA.
Bis-cumylphenyl-oxoethylene titanate-----	KPI.
Butanediol, ethoxylated-----	GAF.
Butyl carbitol, ethoxylated and propoxylated-----	STP, WVA(E).
1,3-Butylene glycol, ethoxylated-----	STC.
Butynediol, ethoxylated-----	GAF.
tert-Dodecyl mercaptan, ethoxylated-----	AAC, GAF, MET.
Glycerin, alkoxyated maleate-----	X.
Glycerine, ethoxylated-----	AAC, X.
Isodecyl alcohol, ethoxylated and propoxylated-----	MCB.
Lignin, ethoxylated-----	WVA.
*Mixed alcohols, ethoxylated-----	CRN, MCB, MIL, RH, TCH, X.
Polyethylene glycol, propoxylated-----	MIL.
*Poly(mixed ethylene, propylene)glycol-----	S, UCC, X, X.
Polypropylene glycol, ethoxylated-----	BAS, DA, MCB, MZC, WTC, X.
3-Propanonitrate methylphenyl ether-----	PCI.
Rosin alcohol, ethoxylated-----	MZC.
2,4,7,9-Tetramethyl-5-decyne-4,7-diol, ethoxylated-----	DA, TCH.
Thiodiglycol, ethoxylated-----	MCB.
*Tridecyl alcohol, ethoxylated-----	AAC, CPC, DA, DUP, GAF, HTN, ICI, MCB, MIL, MZC, OMC, S, STC, TCH, WTC, X.
Tridecyl alcohol, propoxylated and ethoxylated-----	DA, MCB, TX.
Trimethylnonyl alcohol, ethoxylated-----	TCH, UCC.
Trimethylolpropane, alkoxyated-----	BAS, DA, MCB.
Ethers and thioethers, all other-----	AAC, RH, WTC, X.
OTHER NONIONIC SURFACE-ACTIVE AGENTS:	
Formaldehyde, dicyandiamide, ethylene sulfate polymers-----	PCI.
(Mixed alkyl)phenol alkylenediaminealkanolamine formaldehyde-----	X.
Mixed fatty acid-ethoxylated nonyl phenol ester-----	RPC.
Naphthalene sulfonic acid polymer with formaldehyde and 4,4 dihydroxy diphenyl phenol, ammonium salt-----	PCI.
Octyl phosphate, ethoxylated-----	DUP.
Tetra-(2,2-diallyloxymethylene)-i-butoxy titanium bis-(ditridecyl) phosphite-----	KPI.
Tetra-isopropoxy titanium (bis-dioctyl) phosphite-----	KPI.
Tetra-octyloxy titanium (bistridecyl) phosphite-----	KPI.
Tri(castor oil alkyl)phosphate-----	GLY.
Nonionic surface-active agents, all other-----	CRN, DUP, MIL, PG, X, X.

## SYNTHETIC ORGANIC CHEMICALS, 1985

TABLE 3.--SURFACE-ACTIVE AGENTS: DIRECTORY OF MANUFACTURERS, 1985

## ALPHABETICAL DIRECTORY BY CODE

[Names of manufacturers that reported production and/or sales of surface-active agents to the U.S. International Trade Commission for 1985 are listed below in the order of their identification codes as used in table 2]

CODE	NAME OF COMPANY	CODE	NAME OF COMPANY
AAC	Alcolac, Inc.	HDG	Hodag Chemical Corp.
ACT	Southland Corp., Chemical Div.	HIP	High Point Chemical Corp.
AGY	American Cyanamid Co.	HK	Occidental Chemical Corp., Industrial & Speciality Chemicals Div.
AGP	Dial, Corp.	HLI	Onyx Chemical Co.
APX	Apex Chemical Co., Inc.	HMP	W. R. Grace & Co., Hampshire Chemicals Div.
ARC	Akzo Chemie America, Armat Chemicals	HNT	Huntington Laboratories, Inc.
ARD	Ardmore Chemical Co. Inc.	HPC	Hercules, Inc.
ARL	Arol Chemical Products Co.	HRT	Hart Products Corp.
ARZ	Arizona Chemical Co.	HST	American Hoechst Corp., Sou-Tex Works
AZS	AZS Corp., AZS Chemical Corp.	HTN	Heterene Chemical Co.
BAS	BASF Corp.	HXL	Hexcel Corp., Hexcel Chemical Products
BFP	Breddo Food Products Corp.	ICI	ICI Americas, Inc., Chemicals Div.
BKM	Buckman Laboratories, Inc.	JLP	J. L. Prescott Co.
BLA	Astor Products, Inc., Blue Arrow Div.	JOR	Jordan Chemical Co.
BRD	Lonza, Inc.	JRG	Andrew Jergens Co.
BSW	Original Bradford Soap Works, Inc.	JTO	Jetco Chemicals, Inc.
CAS	Caschem, Inc.	KPI	Kenrich Petrochemicals, Inc.
CCA	Interstab Chemicals, Inc.	LAS	Los Angeles Soap Co.
CCC	C.N.C. Chemical Corp.	LEV	Lever Brothers Co.
CCL	Catawba-Charlab, Inc.	LKY	Lake States Div. of Rhineland Paper Co.
CCW	Morton-Thiokol, Inc., Carstab Div.	LUR	Laurel Products Corp.
CGY	Giba-Geigy Corp.	MAR	Reed Lignin, Inc.
CHL	Chemol, Inc.	MCB	Borg-Warner Corp., Borg Warner Chemicals
CHP	C. H. Patrick & Co., Inc.	MCP	Moretex Chemical Products, Inc.
CIN	Stockhausen, Inc.	MIL	Milliken & Co., Milliken Chemical Div.
CLD	Colloids, Inc.	MIR	Miranol Chemical Co., Inc.
CLI	Clintwood Chemical Co.	MOA	Mona Industries, Inc.
CLU	CL Industries, Inc.	MON	Monsanto Co.
CMT	Chemithon Corp.	MRD	Marden-Wild Corp.
CON	Concord Chemicals Co., Inc.	MRT	Morton-Thiokol, Inc., Morton Chemical Co. Div
CP	Colgate-Palmolive Co.	MRV	Marlowe-Van Loan Corp.
GPC	Grant Industries, Inc.	MZC	Mazer Chemicals, Inc.
CRD	Croda, Inc.	NCC	Niacet Corp.
CRN	GPC International, Inc., Amerchol Corp.	NES	Ruetgers-Nease Chemical Co.
CRT	Chemos Corp.	NMC	National Milling & Chemical Co.
CTL	Continental Chemical Co.	NOC	Norac Co., Inc., Mathe Div.
CYL	Cyclo Chemical Corp.	NPR	Safeway Stores, Inc.
DA	Diamond Shamrock Corp., Chemicals Co.	NSC	National Starch & Chemical Corp.
DAN	Dan River, Inc., Chemical Products Div.	NTL	NL Industries, Inc.
DEX	Dexter Chemical Corp.	OMC	Olin Corp.
DOW	Dow Chemical Corp.	ONX	Onyx Chemical Co.
DUP	E. I. duPont de Nemours & Co., Inc.	PCI	Piedmont Chemical Industries, Inc.
ECC	Eastern Color & Chemical Co.	PEL	Pelron Corp.
EFH	E. F. Houghton & Co.	PG	Procter & Gamble Co., Procter & Gamble Mfg. Co.
EK	Eastman Kodak Co.:	PIL	Pilot Chemical Co.
EKT	Tennessee Eastman Co. Div.	PLX	Desoto, Inc.
EMK	Emkay Chemical Co.	PNX	Murphy-Phoenix Co.
EMR	Emery Chemicals Div. of National Distillers & Chemical Corp.	PSP	Georgia-Pacific Corp., Bellingham Div.
ENJ	Exxon Chemical Americas	QCP	Quaker Chemical Corp.
ENO	Enenco, Inc.	RAY	ITT Rayonier, Inc.
ENP	Insilco Corp. Enterprise Companies Div.	RBC	Fike Chemical Co.
ESS	Essential Chemicals Corp.	RH	Rohm & Haas Co.
FER	Ferro Corp., Keil Chemical Div.	ROB	Robeco Chemicals, Inc.
FPC	Flambeau Paper Corp.	RPC	Millmaster Onyx Group. Lyndall Chemical Co. Div.
FTX	Finetex, Inc.	RSA	R.S.A. Corp.
GAF	GAF Corp., Chemical Group		
GDC	Gresto, Inc.		
GLY	Glyco, Inc.		
GRL	Vestal Laboratories, Inc.		
HAL	G. P. Hall Co.		
HEW	Hewitt Soap Co., Inc.		

CODE

S

SBC

SBP

SCM

SCO

SCP

SDC

SDH

SDW

SEA

SFS

SHC

SHK

SLC

SLM

SNW

SOC

SOP

SOS

SPA

SBC

SIP

SVC

SYL

SYP

Note

On ap

TABLE 3.--SURFACE-ACTIVE AGENTS: DIRECTORY OF MANUFACTURERS, 1985--CONTINUED

CODE	NAME OF COMPANY	CODE	NAME OF COMPANY
S	Sandoz, Inc., Colors & Chemicals Div.	TCC	Sybron Chemicals, Inc.
SBC	Scher Chemicals, Inc.	TCH	Emery Industries, Inc., Trylon Div.
SBP	SBS Products Inc.	TCI	Dow Chemical Co., Textize Div.
SCM	SCM Corp., Organic Chemicals Div.	TEN	Tennessee Chemical Co.
SCD	Scholler, Inc.	TMH	Thompson Hayward Chemical Co.
SCP	Henkel Corp.	TNA	Ethyl Corp.
SDC	Sandoz Chemicals Corp.	TNI	Gillette Co., Chemical Div.
SDH	Sterling Drug, Inc.:	TX	Texaco, Inc., Texaco Chemical Co.
	Hilton Davis Chemical Co.		
SDW	Sterling Organics Div.	UCC	Union Carbide Corp.
SEA	Seaboard Chemicals, Inc.	UDI	Petrochemicals/Desoto, Inc.
SFS	Stauffer Chemical Co., Specialty & Intermediates Div.	UNN	United Chemical Corp. of Norwood
		UPF	Jim Walter Resources, Inc., CIC Div.
SHC	Shell Oil Co., Shell Chemical Co. Div.	USR	Uniroyal, Inc., Uniroyal Chemical Div.
SHX	Sherex Chemical Co., Inc.		
SLC	Soluol Chemical Co., Inc.	VAL	United Merchants & Manufacturers, Inc., Valchem Div.
SLM	Salem Oil & Grease Co.		
SNW	Sun Chemical Corp., Chemicals Div.	VND	Van Dyk, Div. of Mallinckrodt, Inc.
SDG	Chevron Corp., Chevron Chemical Co.	VPC	Mobay Chemical Corp., Dye & Pigment Div.
SOP	Southern Chemical Products Co.	VST	Vista Polymers, Inc.
SOS	SSC Industries, Inc.		
SPA	Scott Paper Co.	WBG	White & Bagley Co.
STC	American Hoechst Corp., Sou-Tex Works	WHW	Whittemore-Wright Co., Inc.
STP	Stapan Chemical Co.	WM	Inolex Chemicals Co.
SVC	Capital City Products Co., Armstrong Chemical Plant	WPG	West Point-Pepperell, Inc., Griffitex Chemical Co. Sub.
SYL	Sylvachem Corp.	WTC	Witco Chemical Corp.
SYP	Plastic Specialties & Technology, Inc., Synthetic Product Co. Div.	WVA	Westvaco Corp.

Note.--Complete names, telephone numbers, and addresses of the above reporting companies are listed in table 1 of the appendix.

# SYNTHETIC ORGANIC CHEMICALS, 1985

## SECTION XIII -- PESTICIDES AND RELATED PRODUCTS

### STATISTICAL HIGHLIGHTS

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202-523-0490

Pesticides and related products include fungicides, herbicides, insecticides, rodenticides, and related products such as plant growth regulators, seed disinfectants, soil conditioners, soil fumigants, and synergists. The data are given in terms of 100 percent active materials; they exclude such materials as diluents, emulsifiers, and wetting agents.

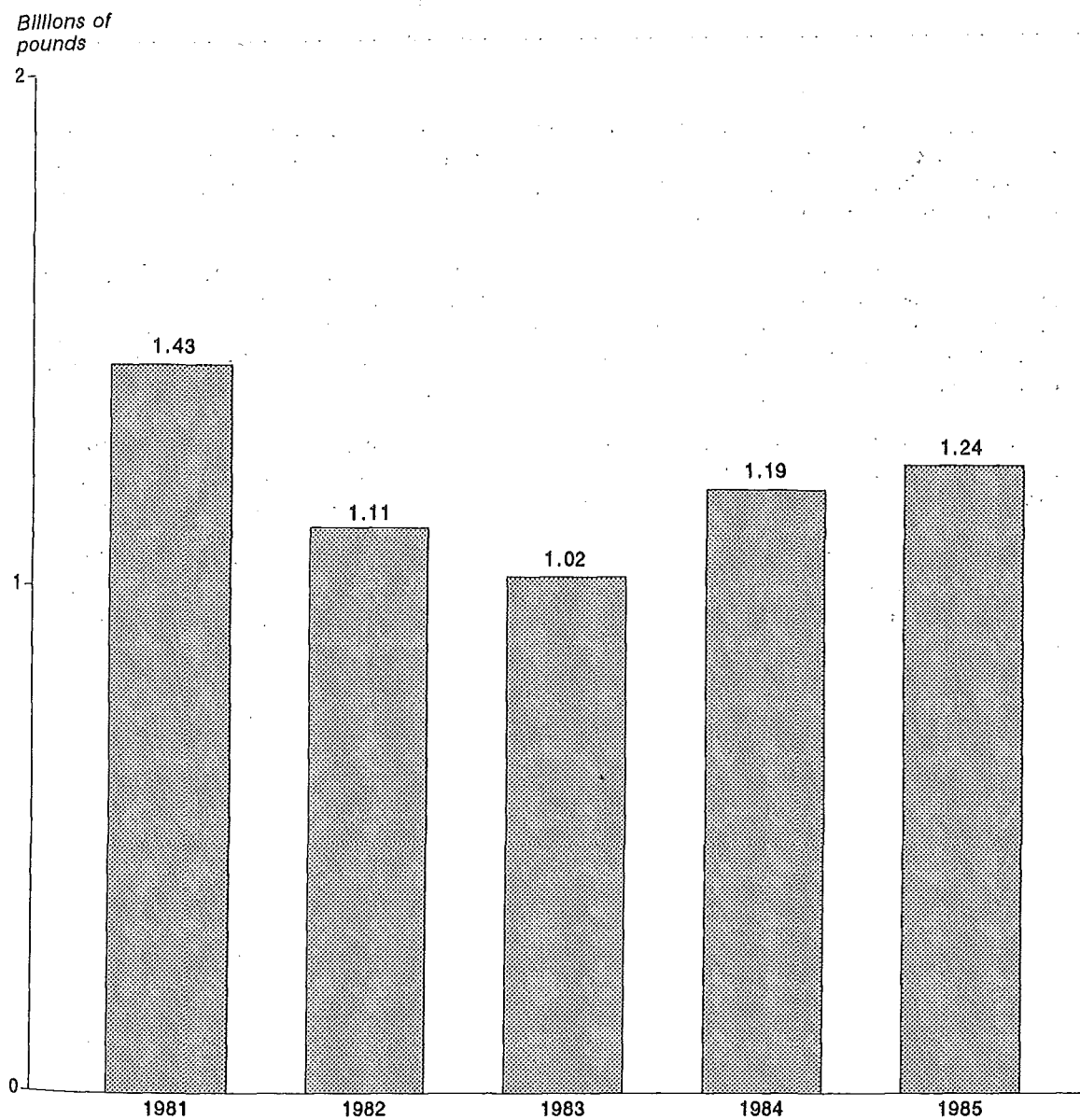
U.S. production of pesticides and related products in 1985 amounted to 1,235 million pounds—3.9 percent greater than the 1,189 million pounds reported for 1984 (table 1).<sup>1</sup> Sales in 1985 were 1,022 million pounds, a decline of 7.8 percent, as compared with 1,108 million pounds reported in 1984; the value of sales was \$4,437 million in 1985, compared with \$4,730 million in 1984—a decline of 6.2 percent. Data for production of pesticides and related products during 1981–85 are shown in figure 1.

The output of cyclic pesticides and related products amounted to 876 million pounds in 1985—4.0 percent greater than the 843 million pounds produced in 1984. Sales in 1985 were 713 million pounds, valued at \$3,266 million, compared with 809 million pounds, valued at \$3,557 million, in 1984.

Production of acyclic pesticides and related products in 1985 amounted to 359 million pounds, compared with 347 million pounds reported for 1984. Sales in 1985 were 309 million pounds, compared with 299 million pounds reported for 1984; the value of sales were \$1,171 million in 1985, compared with \$1,174 million in 1984.

<sup>1</sup> See also table 2, which list these products and identifies the manufacturers by codes. These codes are given in table 4.

Figure 1.—Pesticides and related products.



Source: U.S. International Trade Commission, *Synthetic Organic Chemicals: United States Production and Sales*.



TABLE 1.--PESTICIDES AND RELATED PRODUCTS: U.S. PRODUCTION AND SALES, 1985

[Listed below are all pesticides and related products for which any reported data on production or sales may be published. (Leaders (...)) are used where the reported data are accepted in confidence and may not be published or where no data were reported). Table 2 lists all pesticides and related products for which data on production and/or sales were reported and identifies the manufacturers of each]

PESTICIDES AND RELATED PRODUCTS	PRODUCTION	SALES		
		QUANTITY	VALUE	UNIT VALUE <sup>1</sup>
		<u>1,000</u> <u>pounds</u>	<u>1,000</u> <u>pounds</u>	<u>1,000</u> <u>dollars</u>
Grand total-----	1,234,914	1,021,715	4,436,835	\$4.34
CYCLIC				
Total-----	876,212	712,722	3,266,051	4.58
Fungicides, total-----	96,282	74,500	220,228	2.96
Naphthenic acid, copper salt-----	3,516	2,122	2,071	.98
All other cyclic fungicides <sup>2</sup> -----	92,766	72,378	218,157	3.01
Herbicides and plant growth regulators, total-----	631,224	519,886	2,288,826	4.40
3',4'-Dichloropropionanilide (Propanil)-----	12,993	...	...	...
All other cyclic herbicides <sup>3</sup> -----	618,231	519,886	2,288,826	4.40
Insecticides and rodenticides, total-----	148,706	118,336	756,997	6.40
Cypermethrin-----	3,291	2,249	62,395	27.74
Organophosphorus insecticides <sup>4</sup> -----	74,960	52,012	258,265	4.97
All other cyclic insecticides and rodenticides <sup>5</sup> -----	70,455	64,075	436,337	6.81
ACYCLIC				
Total-----	358,702	308,993	1,170,784	3.79
Fungicides <sup>6</sup> -----	12,756	19,602	42,267	2.16
Herbicides and plant growth regulators <sup>7</sup> -----	124,620	115,691	594,733	5.14
Insecticides, rodenticides, soil conditioners, and fumigants, total-----	221,326	173,700	533,784	3.07
Organophosphorus insecticides <sup>8</sup> -----	82,525	51,763	245,552	4.74
Trichloronitromethane (chloropicrin)-----	10,885	6,388	6,274	.98
All other acyclic insecticides, rodenticides, soil conditioners, and fumigants <sup>9</sup> -----	127,916	115,549	281,958	2.44

<sup>1</sup>Calculated from unrounded figures.

<sup>2</sup>Includes benomyl, captafol, captan, chlorothalonil, DMTT, folpet, PCP, PMA, and others.

<sup>3</sup>Includes alachlor, atrazine, benefin, bensulide, 2,4-D and other 2,4-D esters and salts, dicamba, dinitrophenol compounds, diuron, DNBP, isopropyl phenylcarbamates (IPC and CIPC), maleic hydrazide, molinate, NPA, picloram, triazines, trifluralin, uracils, plant growth regulators, and others.

<sup>4</sup>Includes diazinon, methyl parathion, and other phosphorothioates and phosphorodithioates.

<sup>5</sup>Includes carbaryl, chlorinated insecticides (chlordan, heptachlor, and others), insect attractants, DEET and other insect repellents, small amounts of rodenticides, and others.

<sup>6</sup>Includes dithiocarbamates.

<sup>7</sup>Includes butylate, dalapon, EPTC, methanearsonic acid salts, thiocarbamates, and organophosphorus herbicides, and others.

<sup>8</sup>Includes acephate, disulfoton, ethion, malathion, phorate, and other organophosphorus insecticides.

<sup>9</sup>Includes aldicarb, methomyl, methyl bromide, soil conditioners and fumigants, small quantities of rodenticides, and others.

Note.--Does not include data for the insect fumigant, p-dichlorobenzene, nor the fungicide, o-phenylphenol. These data are included in the section on "Cyclic Intermediates." It also does not include data for the fungicides, dimethyldithiocarbamic acid, sodium salt and dimethyldithiocarbamic acid, zinc salt (i.e., ziram). These data are included in the section on "Rubber-Processing Chemicals." The data for ethylene dibromide, a fumigant, are included in the "Miscellaneous End-Use Chemicals and Chemical Products" section.

TABLE 2.--PESTICIDES AND RELATED PRODUCTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED,  
IDENTIFIED BY MANUFACTURER, 1985

[CHEMICALS FOR WHICH SEPARATE STATISTICS ARE GIVEN IN TABLE 1 ARE MARKED BELOW WITH AN ASTERISK (\*);  
CHEMICALS NOT SO MARKED DO NOT APPEAR IN TABLE 1 BECAUSE THE REPORTED DATA ARE ACCEPTED IN CONFIDENCE AND  
MAY NOT BE PUBLISHED. MANUFACTURERS' IDENTIFICATION CODES SHOWN BELOW ARE TAKEN FROM TABLE 3. AN "X"  
SIGNIFIES THAT THE MANUFACTURER DID NOT CONSENT TO HIS IDENTIFICATION WITH THE DESIGNATED PRODUCT]

PESTICIDES AND RELATED PRODUCTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
CYCLIC	
*FUNGICIDES:	
2-Bromo-4'-hydroxyacetophenone-----	BKM.
1-(4-Chlorophenoxy)-3,3-dimethyl-1-(1,2,4-triazol-1-yl)-butan-2-one-----	CHG.
α-(2-Chlorophenyl)-α-(4-chlorophenyl)-5-pyrimidinemethanol-----	LIL.
α-(2-Chlorophenyl)-α-(4-fluorophenyl)-5-pyrimidinemethanol-----	LIL.
2,4-Dichloro-6-(o-chloroanilino)-s-triazine-----*	CHG.
1,4-Dichloro-2,5-dimethoxybenzene (Chloroneb)-----	CHF.
Di[phenylmercuric]docecenyl succinate-----	TRO.
Hexahydro-1,3,5-triethyl-s-triazine-----	VNC.
Hexahydro-1,3,5-tri(2-hydroxyethyl)-s-triazine-----	X.
2-Mercaptobenzothiazole, sodium salt-----	NOD.
Mercaptobenzothiazole, zinc salt-----	VNC.
Mercury fungicides, cyclic, all other-----	NOD.
Methyl-1-(butylcarbamoyl)-2-benzimidazolecarbamate (Benomyl)-----	DUP, USR.
2,2'-Methylenebis(4-chlorophenol) (dichlorophene)-----	GIV.
3-(2-Methylpiperidino)propyl-3,4-dichlorobenzoate (Piperalin)-----	LIL.
5-Methyl-1,2,4-triazolo[3,4-b]benzothiazole (Tricyclazole)-----	LIL.
*Naphthenic acid, copper salt-----	CCA, MCI, NOD, TRO.
2-n-Octyl-4-isothiazolin-3-one-----	FER, RH.
Pentachlorophenol (PCP)-----	RCI.
Pentachlorophenol, sodium salt-----	FRO.
Phenylmercuric acetate (PMA)-----	COS.
Phenylmercuric ammonium acetate-----	COS, TRO.
Phenylmercuric oleate-----	COS, TRO.
8-Quinolinol, copper salt-----	NOD, SOL.
8-Quinolinol, magnesium salt-----	FMT.
8-Quinolinol, sulfate salt-----	SOL.
cis-N-[(1,1,2,2-Tetrachloroethyl)thio]-1-cyclohexene-1,2-dicarboximide (Captafol)-----	SOC.
2,4,5,6-Tetrachloroisophthalonitrile-----	SDS.

TABLE 2.--PESTICIDES AND RELATED PRODUCTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED,  
IDENTIFIED BY MANUFACTURER, 1985--CONTINUED

PESTICIDES AND RELATED PRODUCTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
CYCLIC--CONTINUED	
*FUNGICIDES--CONTINUED:	
Tetrahydro-3,5-dimethyl-2H-1,3,5-thiadiazine-2-thione (DMTT)-----	MRK, USR, VCC.
2-(Thiocyanomethylthio)benzothiazole-----	BKM.
N-[(Trichloromethylthio)-4-cyclohexene-1, 2-dicarboximide (Captan)-----	SFA, SFC, VNC.
N-(Trichloromethylthio)phthalimide (Folpet)-----	SFA.
1,3,5-Tri(2-isopropanol)-s-triazine-----	EFH.
Cyclic fungicides, all other-----	NOD.
*HERBICIDES AND PLANT GROWTH REGULATORS:	
3-Amino-2,5-dichlorobenzoic acid, ammonium salt (2,5-Dichloro-3-aminobenzoic acid, ammonium salt)-----	GAF, UCC.
4-Amino-6-(1,1-dimethylethyl)-3-(methylthio)-1,2,4- triazin-5-(4H)-one-----	CHG, DUP.
4-Amino-3,5,6-trichloropicolinic acid (Picloram)-----	DOW.
4,6-Bis(isopropylamino)-2-methoxy-s-triazine (Prometon)-:	CGY.
2,4-Bis(isopropylamino)-6-(methylthio)-s-triazine (Prometryn)-----	CGY.
5-Bromo-3-sec-butyl-6-methyluracil (Bromacil)-----	DUP.
2-(tert-Butylamino)-4-ethylamino-6-(methylthio)-s- triazine-----	CGY.
3-tert-Butyl-5-chloro-6-methyluracil-----	DUP.
N-Butyl-N-ethyl- $\alpha,\alpha,\alpha$ -trifluoro-2,6-dinitro-p- toluidine (Benefin)-----	LIL.
Butyl 2-[4-[[5-(trifluoromethyl)-2-pyridinyl]oxy]- phenoxy]propanoate-----	X.
N-(Chloroacetyl)-N-(2,6-diethylphenyl)glycine, ethyl ethyl ester-----	FSN.
2-Chloro-4,6-bis(ethylamino)-s-triazine (Simazine)-----	CGY.
2-Chloro-4,6-bis(isopropylamino)-s-triazine (Propazine)-----	CGY.
2-Chloro-2',6'-diethyl-N-(n-butoxymethyl)acetanilide (Butachlor)-----	MON.
2-Chloro-2',6'-diethyl-N-(methoxymethyl)acetanilide (Alachlor)-----	MON.
2-Chloro-N-ethoxymethyl-N-(2-ethyl-6-methylphenyl)- acetamide (Accto chlor)-----	MON.
2-Chloro-1-(3-ethoxy-4-nitrophenoxy)-4- (trifluoromethyl)benzene (Oxyfluorfen)-----	RH.
2-Chloro-4-(ethylamino)-6-(isopropylamino)-s- triazine (Atrazine)-----	CGY, SHC.

TABLE 2.--PESTICIDES AND RELATED PRODUCTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED,  
IDENTIFIED BY MANUFACTURER, 1985--CONTINUED

PESTICIDES AND RELATED PRODUCTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
CYCLIC--CONTINUED	
*HERBICIDES AND PLANT GROWTH REGULATORS--CONTINUED:	
2-[4-Chloro-6-(ethylamino)-2-triazin-2-ylamino]-2-methylpropionitrile (Cyanazine)	SHC.
N-(2-Chloroethyl)- $\alpha,\alpha,\alpha$ -trifluoro-2,6-dinitro-N-propyl-p-toluidine (Fluchloralin)	SOL.
2-Chloro-N-isopropylacetanilide (Propachlor)	MON.
2-Chloro-N-[(4-methoxy-6-methyl-1,3,5-triazin-2-yl)-aminocarbonyl]benzenesulfonamide	DUP.
2-(4-Chloro-2-methylphenoxy)propionic acid, dimethylamine salt	RIV.
3-Cyclohexyl-6-(dimethylamino)-1-methyl-1,3,5-triazine-2,4-(1H,3H)-dione	DUP.
3,5-Dibromo-4-hydroxybenzoxynitrile (Bromoxynil)	RDA.
3,6-Dichloro-2-anisic acid (Dicamba)	VEL.
2,6-Dichlorobenzonitrile	USR.
2-(2,4-Dichlorophenoxy)propionic acid, isooctyl ester	RIV.
3-(3,4-Dichlorophenyl)-1,1-dimethylurea (Diuron)	DUP.
3-(3,4-Dichlorophenyl)-1-methoxy-1-methylurea (Linuron)	DUP.
*3',4'-Dichloropropionanilide (Propanil)	CYT, RH, VTC.
S-(0,0-Diisopropyl phosphorodithioate) ester of N-( $\alpha$ -mercaptoethyl)benzenesulfonamide (Bensulide)	SFA.
1,1'-Dimethyl-4,4'-bipyridinium dichloride	X.
N,N-Dimethyl-2,2-diphenylacetamide (Diphenamid)	CWN.
N-(1,1-Dimethyl-2-propynyl)-3,5-dichlorobenzamide (Pronamide)	RH.
Dimethyl-2,3,5,6-tetrachloroterephthalate (DCPA)	SDS.
N-[5-1,1-Dimethyl-1,3,4-thiadiazol-2-yl]-N,N-dimethylurea (Tebuthiuron)	LIL.
1,1-Dimethyl-3-( $\alpha,\alpha,\alpha$ -trifluoro-m-tolyl)urea (Fluometuron)	FRI.
Dinitrobutylphenol (DNBP)	CED, USR.
Dinitrobutylphenol, ammonium salt	CED.
Dinitrobutylphenol, triethanolamine salt	CED.
2,6-Dinitro-N,N-dipropyl cumidine	LIL.
3,5-Dinitro-N <sub>4</sub> ,N <sub>4</sub> -dipropylsulfanilamide	X.
2-(Ethylamino)-4-(isopropylamino)-6-(methylthio)-s-triazine (Ametryne)	CGY.
5-Ethyl cyclohexylethylthiocarbamate	SFA.
S-Ethyl-hexahydro-1H-azepine-1-carbothioate (Molinate)	SFA.

TABLE 2.--PESTICIDES AND RELATED PRODUCTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED,  
IDENTIFIED BY MANUFACTURER, 1985--CONTINUED

PESTICIDES AND RELATED PRODUCTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
CYCLIC--CONTINUED	
*HERBICIDES AND PLANT GROWTH REGULATORS--CONTINUED:	
N-[3-(1-Ethyl-1-methylpropyl)-5-isoxazolyl]-2,6-dimethoxybenzamide (Flexidor)	LIL.
N-(1-Ethylpropyl)-3,4-dimethyl-2,6-dinitrobenzenamine	ACY.
2-(Ethylthio)-4,6-bis(isopropylamino)-s-triazine	CGY.
3-(Hexahydro-4,7-methanoindan-5-yl)-1,1-dimethylurea (Norea)	AMV.
3-Isopropyl-1H-2,1,3-benzothiadiazin-4(3H)-one 2,2-dioxide	BAS.
Isopropyl N-(3-chlorophenyl)carbamate (CIPC)	PPG, RBC.
Isopropyl N-phenylcarbamate (IPC)	PPG, RBC.
2-(2-Methyl-4-chlorophenoxy)propionic acid, diethanolamine salt	RIV.
2-(2-Methyl-4-chlorophenoxy)propionic acid, iso-octyl ester	RIV.
1-(2-Methylcyclohexyl)-3-phenylurea (Siduron)	ADC, DUP.
Methyl 5-(2',4'-dichlorophenoxy)-2-nitrobenzoate	RDA.
Methyl 2-[[[(4,6-dimethyl-2-pyrimidinyl)amino]carbonyl]amino]sulfonyl]benzoate	DUP.
1-Methyl-3-phenyl-5-[3-(trifluoromethyl)phenyl]4(1H)-pyridone (Fluridone)	LIL.
N-1-Naphthylphthalamic acid (NPA)	DRX, USR.
7-Oxabicyclo-[2.2.1]-heptane-2,3-dicarboxylic acid, disodium salt (Endothall)	PAS.
PHENOXYACETIC ACID DERIVATIVES:	
4-Chloro-2-methylphenoxyacetic acid, iso-octyl ester	RIV.
2,4-DICHLOROPHENOXYACETIC ACID, ESTERS AND SALTS:	
2,4-Dichlorophenoxyacetic acid (2,4-D)	DOW, UCC, VTC.
2,4-Dichlorophenoxyacetic acid, butoxyethanol ester	DOW.
2,4-Dichlorophenoxyacetic acid, sec-butyl ester	DOW.
2,4-Dichlorophenoxyacetic acid, dimethylamine salt	DOW, PBI, RIV.
2,4-Dichlorophenoxyacetic acid, ethanolamine and isopropanolamine salts	DOW.
2,4-Dichlorophenoxyacetic acid, iso-octyl ester	DOW, RIV.
2,4-Dichlorophenoxyacetic acid, isopropyl ester	AMV.
2,4-Dichlorophenoxyacetic acid, esters and salts, all other	UCC, VEL.
PLANT GROWTH REGULATORS:	
N-[(Acetylamino)methyl]-2-chloro-N-(2,6-diethylphenyl)acetamide	MON.
2-Chloro-N-(2,6-dinitro-4-(trifluoromethyl)phenyl)-N-ethyl-6-fluorobenzenemethanamine	CGY.

TABLE 2.--PESTICIDES AND RELATED PRODUCTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1985--CONTINUED

PESTICIDES AND RELATED PRODUCTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
CYCLIC--CONTINUED	
*HERBICIDES AND PLANT GROWTH REGULATORS--CONTINUED:	
PLANT GROWTH REGULATORS--CONTINUED:	
8-(4-Chlorophenyl)methyl- $\alpha$ -(1,1-dimethylethyl)-1,2,4-triazole-1-ethanol	X.
2-Chloro-6-(trichloromethyl)pyridine	DOW.
$\alpha$ -Cyclopropyl- $\alpha$ -(p-methoxyphenyl)-5-pyrimidine methanol (Ancymidol)	LIL.
1,2-Dihydro-3,6-pyridazinedione (Maleic hydrazide) (MH)	DRX, USR.
1,1-Dimethylpiperidinium chloride	BAS.
N-[2,4-dimethyl-5-[[trifluoromethyl]sulfonyl]aminophenyl]acetamide, diethanolamine salt	MMM.
Gibberellic acid	ABB.
3-Indolebutyric acid	MRK.
1-Naphthaleneacetic acid (NAA)	GNW.
1-Naphthaleneacetic acid, sodium salt	GNW.
Sodium 5-2-chloro-4-(trifluoromethyl)phenoxy-2-nitrobenzoate	RH.
3,5,6-Trichloro-2-pyridinyloxyacetic acid	DOW.
$\alpha,\alpha,\alpha$ -Trifluoro-2,6-dinitro-N-ethyl-N-(2-methyl-2-propenyl)-p-toluidine (Ethylfluralin)	LIL.
$\alpha,\alpha,\alpha$ -Trifluoro-2,6-dinitro-N,N-dipropyl-p-toluidine (Trifluralin)	LIL.
Cyclic herbicides, all other	HEX, SFS.
INSECT ATTRACTANTS AND REPELLENTS:	
tert-Butyl 4(or 5)-chloro-2-methylcyclohexane-carboxylate (Trimedlure)	OSX.
N,N-Diethyltoluamide (DEET)	MRF, TNA, VGC.
Insect attractants, all other	X.
INSECTICIDES:	
Bacillus thuringiensis	ABB, CLP, ZOC.
(5-Benzyl-3-furyl)methyl-2,2-dimethyl-3-(2-methylpropenyl)cyclopropane carboxylate (Resmethrin)	PEN.
2,3,4,5-Butenylentetrahydrofurfural	PLC.
2-(p-tert-Butylphenoxy)cyclohexyl-2-propynyl sulfite	ACY, USR.
2-(2-Chlorophenyl)methyl-4,4-dimethyl-3-isoxazolidinone	NES.
Cyano(4-fluoro-3-phenoxyphenyl)methyl-3-(2,2-dichloroethenyl)-2,2-dimethylcyclopropanecarboxylate	NES.
Cyano-3-phenoxybenzyl-cis, trans-3-(2,2-dichlorovinyl)-2,2-dimethylcyclopropane carboxylate	X.
*Cypermethrin	FMN, NES, SHC, VTC.

TABLE 2.--PESTICIDES AND RELATED PRODUCTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED,  
IDENTIFIED BY MANUFACTURER, 1985--CONTINUED

PESTICIDES AND RELATED PRODUCTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
CYCLIC--CONTINUED	
INSECTICIDES--CONTINUED	
2,3-Dihydro-2,2-dimethyl-7-benzofuranyl[(dibutylamino)-thio]methylcarbamate	FMN.
2,3-Dihydro-2,2-dimethyl-7-benzofuranyl methylcarbamate	FMN.
2,2-Dimethyl-1,3-benzodioxol-4-yl N-methylcarbamate	FSN.
Di-n-propylisocinchomerate	MGK.
Distinnaxane, hexakis(2-methyl-2-phenylpropyl)	SHC.
Isopropyl-11-methoxy-3,7,11-trimethyldodeca-2,4-dienoate	X.
Methyl 3-(2,2-dichloroethenyl)-2,2-dimethyl-3-cyano-3-phenoxyphenylcyclopropanecarboxylate	FMN.
1-Naphthyl-N-methylcarbamate (Carbaryl)	UCC.
3-(Phenoxyphenyl)methyl-cis, trans-3-(2,2-dichloroethenyl)-2,2-dimethyl cyclopropane-cyclopropanecarboxylate	FMN, VTC, X.
Tetrahydro-5,5-dimethyl-2(1H)-pyrimidinone[3-[4-(trifluoromethyl)phenyl]-1-[2-[4-(trifluoromethyl)phenyl]ethenyl]-2-propenylidene]hydrozone	ACY.
Tricyclohexyltin hydroxide	DOW, X, X.
2,3,5-Trimethylphenol	X.
CHLORINATED INSECTICIDES:	
2-Chloro-N-[[4-(trifluoromethoxy)phenyl]amino]carbonyl]benzamide	CHG.
Ethyl 4,4'-dichlorobenzilate (Chlorobenzilate)	CGY.
Heptachloro-tetrahydro-endo-methanoindene (Heptachlor)	VEL.
Hexachloroepoxyoctahydro-endo, endo-dimethanonaphthalene (Endrin)	VEL.
Octachlorohexahydro-4,7-methanoindene (Chlordan)	VEL.
Toxaphene (Chlorinated camphene)	FSN.
1,1,1-Trichloro-2,2-bis(p-methoxyphenyl)ethane (Methoxychlor)	CHF.
*ORGANOPHOSPHORUS INSECTICIDES:	
S-[[p-Chlorophenyl]thio]methyl] 0,0-diethyl phosphorodithioate (Carbophenothion)	SFA.
O-(2,4-Dichlorophenyl) O-ethyl S-propyl phosphorodithioate	CHG.
O,O-Diethyl O-(2-diethylamino-6-methyl-4-pyrimidinyl) phosphorothioate	X.
O,O-Diethyl O-(2-isopropyl-4-methyl-6-pyrimidinyl) phosphorothioate (Diazinon)	CGY, VEL.

TABLE 2.--PESTICIDES AND RELATED PRODUCTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED,  
IDENTIFIED BY MANUFACTURER, 1985--CONTINUED

PESTICIDES AND RELATED PRODUCTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
CYCLIC--CONTINUED	
INSECTICIDES--CONTINUED	
*ORGANOPHOSPHORUS INSECTICIDES--CONTINUED	
0,0-Diethyl 0-[4-(methylsulfinyl)phenyl]- phosphorothioate	CHG.
0,0-Diethyl 0-(p-nitrophenyl)phosphorothioate (Parathion)	MON.
0,0-Diethyl 0-3,5,6-trichloro-2-pyridyl- phosphorothioate	DOW.
0,0-Dimethyl 0-[4-(methylthio)-m-tolyl]- phosphorothioate (Fenthion)	CHG.
0,0-Dimethyl 0-(p-nitrophenyl)phosphorothioate (Methyl parathion)	MON.
0,0-Dimethyl S-[(4-oxo-1,2,3-benzotriazin-3(3H)- yl)methyl]phosphorodithioate (Azinphos-methyl)	CHG.
2,3-p-Dioxanedithiol S,S-bis-(0,0-diethyl- phosphorodithioate (Dioxathion)	FSN.
0-Ethyl 0-[4-(methylthio)phenyl] S-propyl- phosphorodithioate	CHG.
0-Ethyl 0-(p-nitrophenyl)phenylphosphonothioate (EPN)	DUP, SFS.
0-Ethyl-S-phenylethylphosphonodithioate	SFA.
N-(Mercaptomethyl)phthalimide S-(0,0-dimethyl- phosphorodithioate)	SFA, X.
Organophosphorus insecticides, cyclic, all other	SFS, SHC.
Cyclic insecticides, all other	FMN.
RODENTICIDES:	
3-( $\alpha$ -Acetylbenzyl)-4-hydroxycoumarin (Warfarin)	MOT.
3-[3-(4'-Bromo[1,1'-biphenyl]-4-yl)-1,2,3,4-tetra- hydro-1-naphthalenyl]-4-hydroxy-2H-1- benzopyran-2-one	LIL, X.
2-Diphenylacetyl-1,3-indandione and sodium salt	MOT, RBC.
2-Isovaleryl-1,3-indandione	MOT.
2-Pivaloyl-1,3-indandione (Pindone)	MOT.
CYCLIC PESTICIDES, ALL OTHER:	
Benzyl-2-chloro-4-(trifluoromethyl)-5-thiazole- carboxylate	MON.
$\alpha$ -[2-(2-n-Butoxyethoxy)ethoxy]-4,5-methylene- dioxo-2-propyltoluene. (Piperonyl butoxide)	ALP, TMA.
N-(2-Ethylhexyl)bicyclo(2.2.1)-5-heptene-2,3- dicarboximide	MGK.
1-Methyl-3,5,7-triaza-1-azonia tricyclodecane chloride	BKM.



TABLE 2.--PESTICIDES AND RELATED PRODUCTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED,  
IDENTIFIED BY MANUFACTURER, 1985--CONTINUED

PESTICIDES AND RELATED PRODUCTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
*FUNGICIDES:	
Bis-1,4-bromoacetoxy-2-butene-----	VIN.
Bis(tributyltin) oxide-----	X.
Chloromethoxypropylmercuric acetate-----	TRO.
1,2-Dibromo-2,4-dicyanobutane-----	MRK.
Disodium cyanodithioimidocarbonate-----	BKM.
n-Dodecylguanidine acetate (Dodine)-----	ACY.
Dodecylguanidine hydrochloride-----	MRK.
Methylenebis(thiocyanate)-----	MRK, VIN.
Poly[oxyethylene(dimethylimino)ethylene- (dimethylimino)ethylene dichloride]-----	BKM.
Poly(N,N,N',N'-tetramethylethylenediamine) with (chloromethyl)oxirane-----	BKM.
Tributyltin chloride-----	X.
DITHIOCARBAMIC ACID FUNGICIDES:	
Dimethyldithiocarbamic acid, potassium salt-----	ALC, BKM.
Ethylene bis(dithiocarbamic acid), disodium salt (Nabam)-----	ALC, VCC.
Ethylene bis(dithiocarbamic acid), manganese salt (Maneb)-----	RH.
Ethylene bis(dithiocarbamic acid), manganese salt with zinc ions-----	RH.
Hydroxymethyl(methyl)dithiocarbamic acid, potassium salt-----	BKM.
N-Methyldithiocarbamic acid, potassium salt-----	BKM.
Dithiocarbamic acid fungicides, acyclic, all other-----	VCC.
Acyclic fungicides, all other-----	VCC.
*HERBICIDES AND PLANT GROWTH REGULATORS:	
N,N-Bis(phosphonomethyl)glycine-----	MON.
2-Chloro-N,N-diallylacetamide (CDAA)-----	MON.
S-(2,3-Dichloroallyl) diisopropylthiocarbamate (Diallate)-----	MON.
2,2-Dichloropropionic acid, sodium salt (Dalapon)-----	DOW.
N-5-(1,1-Dimethylethyl)-1,3,4-thiadiazol-2-yl-N, N'-dimethylurea (Tebuthiuron)-----	MRT.
S-Ethyl diisobutylthiocarbamate (Butylate)-----	PPG, SFA.
S-Ethyl dipropylthiocarbamate (EPTC)-----	PPG, SFA.
Ethyl xanthogen disulfide-----	RBC.
Methanearsonic acid, disodium salt (DSMA)-----	VIN.
Methanearsonic acid, monosodium salt (MSMA)-----	SDS.
Methylthiosulfonic acid, S-(2-hydroxypropyl) ester-----	BKM.

TABLE 2.--PESTICIDES AND RELATED PRODUCTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED,  
IDENTIFIED BY MANUFACTURER, 1985--CONTINUED

PESTICIDES AND RELATED PRODUCTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
*HERBICIDES AND PLANT GROWTH REGULATORS--CONTINUED:	
N-(Phosphonomethyl)glycine, isopropylamine salt-----	MON.
S-Propyl butylethylthiocarbamate (Pebulate)-----	SFA.
S-Propyl dipropylthiocarbamate (Vernolate)-----	SFA.
Thiocyanic acid, methylene ester-----	BKM.
S,S,S-Tributyl phosphorotrithioate-----	CHG.
Tributyl phosphorotrithioate (Merphos)-----	RDA.
S-(1,2,3-Trichloroallyl)diisopropylthiocarbamate (Triallate)-----	MON.
PLANT GROWTH REGULATORS:	
2-(Chloroethyl)phosphonic acid-----	UCC.
N-(Phosphonomethyl)glycine, sodium sesqui salt-----	MON.
Plant growth regulators, acyclic, all other-----	USR.
Acyclic herbicides, all other-----	DUP, SHC.
INSECTICIDES:	
Ethyl 3,7,11-trimethyldodeca-2,4-dienoate-----	DOW, X.
Isopropyl-11-methoxy-3,7,11-trimethyldodeca-2,4- dienoate-----	X.
Methyl N',N'-dimethyl-N-(methylcarbamoyl)oxy-1- thiooxamidate-----	DUP.
S-Methyl-N-(methylcarbamoyl)oxythioacetimidate (Methomyl)-----	DUP, SHC.
2-Methyl-2-(methylthio)propionaldehyde O- (methylcarbamoyl)oxime (Aldicarb)-----	UCC.
*ORGANOPHOSPHORUS INSECTICIDES:	
S-1,2-Bis(ethoxycarbonyl)ethyl O,O-dimethyl phosphorodithioate (Malathion)-----	ACY.
2-Carbomethoxy-1-propen-2-yl dimethyl phosphate-----	AMV, SHC.
1,2-Dibromo-2,2-dichloroethyl dimethyl phosphate (Naled)-----	AMV, SHC.
O,O-Diethyl S-[2-(ethylthio)ethyl]phosphorodithioate (Disulfoton)-----	CHG.
O,O-Diethyl O-[2-(ethylthio)ethyl]phosphorothioate (Demeton O)-----	CHG.
O,O-Diethyl S-[(ethylthio)methyl]phosphorodithioate (Phorate)-----	ACY.
3-(Dimethoxyphosphinyloxy)-N,N-dimethyl-cis-crotonamide-	SHC.
O,S-Dimethylacetylphosphoramidothioate (Acephate)-----	SOC.
O,O-Dimethyl-O-2,2-dichlorovinyl phosphate (DDVP)-----	AMV, SHC.
S-[[1,1-Dimethylethyl]thio]methyl] O,O-diethyl- phosphorodithioate (Turfufos)-----	ACY.

TABLE 2.--PESTICIDES AND RELATED PRODUCTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED,  
IDENTIFIED BY MANUFACTURER, 1985--CONTINUED

PESTICIDES AND RELATED PRODUCTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
*ORGANOPHOSPHORUS INSECTICIDES--CONTINUED:	
Dimethyl phosphate of 3-hydroxy-N-methyl-cis-crotonamide-----	SHC.
O,S-Dimethyl phosphoramidothioate-----	CHG.
O,O,O',O'-Tetraethyl S,S'-methylenebisphosphorodithioate (Ethion)-----	FMN.
RODENTICIDES:	
2-Hydroxyethyl n-octyl sulfide-----	PLC.
Sodium fluoroacetate-----	RBC, TUL.
Rodenticides, acyclic, all other-----	RBC.
SOIL CONDITIONERS:	
Polyacrylonitrile, hydrolyzed, sodium salt-----	ACY.
SOIL FUMIGANTS:	
1,3-Dichloropropene-----	DOW.
O-Ethyl S,S-dipropyl phosphorodithioate-----	RDA.
Methyl bromide (Bromomethane)-----	GTL.
N-Methyldithiocarbamic acid, sodium salt (Metham)-----	BKM, SFA.
Methyl isothiocyanate and 1,3-dichloropropene-----	MRT.
*Trichloronitromethane (Chloropicrin)-----	LCP, NLO, TMA.
ACYCLIC PESTICIDES, ALL OTHER:	
3-Alkoxy-2-hydroxypropyl trimethyl ammonium chloride----	X.
Bromoacetic acid-----	VIN.
N-Cocoalkyl-1,3-propylenediamine acetate-----	X.
N-Cocoalkyl trimethylenediamine adipate-----	X.
2-[(Hydroxymethyl)amino]-2-methylpropanol-----	TRO.
2-[(Hydroxymethyl)]ethanol-----	TRO.
3-Iodo-2-propynyl butylcarbamate-----	TRO.
Pesticides and related products, acyclic, all other-----	SFS, USR, X.

TABLE 3.--PESTICIDES AND RELATED PRODUCTS: DIRECTORY OF MANUFACTURERS, 1985

## ALPHABETICAL DIRECTORY BY CODE

(Names of manufacturers that reported production and/or sales of pesticides and related products to the U.S. International Trade Commission for 1985 are listed below in the order of their identification codes as used in table 2)

CODE :	NAME OF COMPANY	CODE :	NAME OF COMPANY
ABB :	Abbott Laboratories	MON :	Monsanto Co.
ACY :	American Cyanamid Co.	MOT :	Motomco, Ltd.
ADC :	Anderson Development Co.	MRF :	Morflex Corp.
ALC :	Alco Chemical Corp.	MRK :	Merck & Co., Inc.
ALP :	Alpha Laboratories, Inc.	MRT :	Morton-Thiokol, Inc., Morton Chemical Co. Div.
ANV :	Amvac Chemical Corp.		
		NES :	Ruetgers-Nease Chemical Co.
BAS :	BASF Wyandotte Corp.	NLO :	Niklor Chemical Co., Inc.
BKM :	Buckman Laboratories, Inc.	NOD :	Nuodex, Inc.
CCA :	Interstab Chemicals, Inc.	PAS :	Pennwalt Corp.
CED :	Cedar Chemical Co.	PBI :	PBI-Gordon Corp.
CGY :	Ciba-Geigy Corp., Agricultural Div.	PEN :	CPC International, Inc., Penick Div.
CHF :	Kincaid Enterprises, Inc.	PLC :	Phillips Petroleum Co.
CHG :	Mobay Chemical Corp., Agricultural Chemicals Div.	PPG :	PPG Industries, Inc.
CLP :	Cell Products, Inc.		
COS :	Cosan Chemical Corp.	RBC :	Fike Chemicals, Inc.
CAN :	Upjohn Co., Fine Chemicals	RCI :	Reichhold Chemicals, Inc.
CIT :	Cumberland International Corp.	RDA :	Rhone-Poulenc, Inc.
		RH :	Rohm & Haas Co.
		RIV :	Riverdale Chemical Co.
DOW :	Dow Chemical Co.		
DRX :	Drexel Chemical Co.	SDS :	S.D.S. Biotech Corp.
DUP :	E. I. duPont de Nemours & Co., Inc.		Stauffer Chemical Co.:
		SFA :	Agricultural Products Div.
EPH :	E. F. Houghton & Co.	SFC :	Calhio Chemicals, Inc.
		SFS :	Specialty & Intermediates Div.
FER :	Ferro Corp., Ferro Chemical Div.	SHC :	Shell Oil Co., Shell Chemical Co. Div.
FMN :	FMC Corp., Agricultural Chemical Group	SOC :	Chevron Corp., Chevron Chemical Co.
FMT :	Fairmount Chemical Co., Inc.	SOL :	Southland Corp., Fine Chemicals Div.
FRI :	Farmland Industries, Inc.		
PRO :	Vulcan Materials Co., Chemicals Div.	TNA :	Ethyl Corp.
FSN :	Nor-Am Chemical Co.	TRO :	Troy Chemical Corp.
		TUL :	Tull Chemical Co., Inc.
GAF :	GAF Corp., Chemical Group	UCC :	Union Carbide Corp.
GIV :	Givaudan Corp.	USR :	Uniroyal, Inc., Uniroyal Chemical Group
GNW :	Greenwood Chemical Co.		
GTL :	Great Lakes Chemical Corp.	VCC :	Vinings Chemical Co.
		VEL :	Velsicol Chemical Corp.
HEX :	Hexagon Laboratories, Inc.	VGC :	Virginia Chemicals, Inc.
LCP :	LCP Chemicals-Maine	VIN :	Vineland Chemical Co., Inc.
LIL :	Eli Lilly & Co.	VNC :	Vanderbilt Chemical Corp.
		VTC :	Vertac Chemical Corp.
MCI :	Mooney Chemical, Inc.		
MKG :	McLaughlin Gormley King Co.	ZOC :	Zoecon Corp.
MNH :	Minnesota Mining & Manufacturing Co.		

Note.-- Complete names, telephone numbers, and addresses of the above reporting companies are listed in table 1 of the appendix.

SYNTHETIC ORGANIC CHEMICALS, 1985  
SECTION XIV -- MISCELLANEOUS END-USE CHEMICALS  
AND CHEMICAL PRODUCTS

STATISTICAL HIGHLIGHTS

David G. Michels

202-523-0293

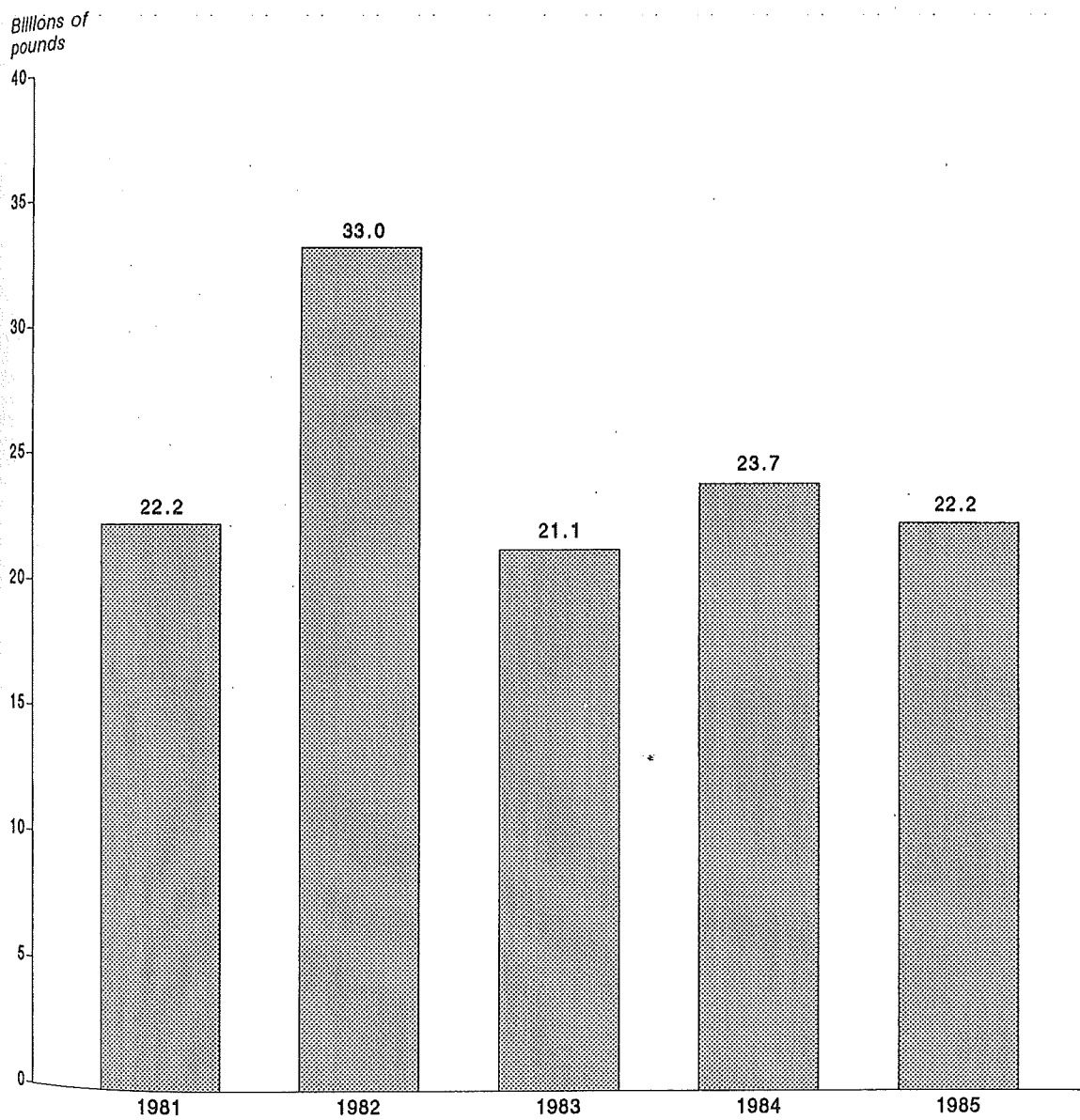
This section incorporates those end-use groups which are not readily classifiable within the prior sections of this report. Both cyclic and acyclic chemicals fall within this section. With the exception of enzymes and fuel additives, both production and sales of all other end-use groups contained within this section have increased for the first time since 1981.

In 1985, the production of miscellaneous end-use chemicals exceeded 22,214 million pounds, a decrease of 6 percent from the more than 23,731 million pounds of production reported for 1984. Except for a sharp rise in 1982, production of these chemicals has remained nearly level throughout the period 1981-85 (figure 1). Sales in 1985 totaled 16,217 million pounds, valued at \$6,178 million. The sales quantity increased 9 percent from that of 1984 with the value of sales increasing by 61 percent. Polymers for fibers and urea collectively accounted for 79 percent of the 1985 production of these miscellaneous end-use chemicals. Urea accounted for 56 percent of the 1985 sales quantity of these chemicals.

In 1985, the production of lubricating oil and grease additives totaled 1,418 million pounds, an increase of 31 percent, compared with 1984. Total sales quantity for 1985 was 998 million pounds, 18.2 percent less than the 1984 sales quantity of 1,226 million pounds, while the value of sales decreased by 20 percent to \$710 million.

Production of fuel additives for 1985 totaled 2,226 million pounds, an increase of 16 percent from the previous year. Total sales quantity for 1985 was 1,817 million pounds, up 48 percent from the 1984 sales quantity of 1,222 million pounds, with the sales value increasing 13 percent to \$569 million.

Figure 1.—Miscellaneous end-use chemicals and chemical products.



Source: U.S. International Trade Commission, *Synthetic Organic Chemicals: United States Production and Sales*.

TABLE 1.--MISCELLANEOUS END-USE CHEMICALS AND CHEMICAL PRODUCTS: U.S. PRODUCTION AND SALES, 1985

[Listed below are all miscellaneous end-use chemicals and chemical products for which any reported data on production or sales may be published. (Leaders (...)) are used where the reported data are accepted in confidence any may not be published or where no data were reported.) Table 2 lists all miscellaneous end-use chemicals and chemical products for which data on production and/or sales were reported and identifies the manufacturers of each]

MISCELLANEOUS END-USE CHEMICALS AND CHEMICAL PRODUCTS	SALES			
	PRODUCTION	QUANTITY	VALUE	UNIT VALUE <sup>1</sup>
	1,000 pounds	1,000 pounds	1,000 dollars	Per pound
Grand total-----	22,214,251	16,217,149	6,177,680	\$0.38
Amino acids and their salts-----	124,609	122,323	133,913	1.09
Chelating agents, nitrilociids and salts, total-----	360,284	239,665	108,649	.45
(Ethylenedinitrilo)tetraacetic acid (EDTA)-----	9,889	9,145	8,500	.93
(Ethylenedinitrilo)tetraacetic acid, disodium copper salt, dihydrate-----	370	490	368	.75
(Ethylenedinitrilo)tetraacetic acid, disodium zinc salt, dihydrate-----	4,869	4,811	2,914	.61
(Ethylenedinitrilo)tetraacetic acid, disodium salt-----	1,867	1,674	2,519	1.51
(Ethylenedinitrilo)tetraacetic acid, tetrasodium salt-----	150,110	73,300	25,323	.35
(N-Hydroxyethylethylenedinitrilo)triacetic acid, trisodium salt-----	...	10,093	3,690	.37
Nitrilo-tris-methylene triphosphonic acid-----	4,141	...	...	...
All other-----	189,038	140,152	65,335	.47
Chemical indicators-----	17	11	909	85.99
Chemical reagents and fine chemicals-----	215	197	29,645	150.27
Enzymes, total-----	( <sup>2</sup> )	( <sup>2</sup> )	82,624	( <sup>2</sup> )
Bacterial amylase-----	( <sup>2</sup> )	( <sup>2</sup> )	17,781	( <sup>2</sup> )
Glucoamylase-----	( <sup>2</sup> )	( <sup>2</sup> )	20,786	( <sup>2</sup> )
Pectinase-----	( <sup>2</sup> )	( <sup>2</sup> )	3,044	( <sup>2</sup> )
Proteases, total-----	( <sup>2</sup> )	( <sup>2</sup> )	28,632	( <sup>2</sup> )
Rennin-----	( <sup>2</sup> )	( <sup>2</sup> )	17,449	( <sup>2</sup> )
All other proteases-----	( <sup>2</sup> )	( <sup>2</sup> )	11,183	( <sup>2</sup> )
All other enzymes-----	( <sup>2</sup> )	( <sup>2</sup> )	12,381	( <sup>2</sup> )
Flotation reagents-----	24,866	27,465	12,606	.46
Fuel additives, total <sup>3</sup> -----	2,225,585	1,817,177	568,962	.31
Gasoline additives, total-----	2,127,563	1,779,459	536,375	.25
Methyl-t-butyl ether <sup>4</sup> -----	1,891,147	1,550,560	243,746	.16
Tetra(methyl-ethyl) lead, (TEL-TML, reacted)-----	27,054	21,430	35,956	1.68
All other gasoline additives-----	209,362	207,469	256,673	1.24
Fuel additives, all other-----	98,022	37,718	32,587	.86
Lubricating oil and grease additives, total-----	1,418,333	998,241	709,603	.71
Oil soluble petroleum sulfonates:				
Oil soluble petroleum sulfonate, barium salt-----	2,282	2,275	2,382	1.05
Oil soluble petroleum sulfonate, calcium salt-----	298,350	276,406	159,379	.58
Oil soluble petroleum sulfonate, sodium salt-----	83,268	43,152	23,273	.54
All other lubricating oil and grease additives-----	1,034,433	676,408	524,569	.78
Paint driers, naphthenic acid salts, total <sup>5 6</sup> -----	10,311	8,665	13,810	1.59
Calcium naphthenate-----	483	470	476	1.01
Cobalt naphthenate-----	3,620	3,078	8,910	2.89
Iron naphthenate-----	33	...	...	...
Manganese naphthenate-----	610	538	484	.90
Paint driers, naphthenic acid salts, all other-----	5,565	4,579	3,940	.86

See footnotes at end of table.

## SYNTHETIC ORGANIC CHEMICALS, 1985

TABLE 1.--MISCELLANEOUS END-USE CHEMICALS AND CHEMICAL PRODUCTS: U.S. PRODUCTION AND SALES, 1985--CONTINUED

MISCELLANEOUS END-USE CHEMICALS AND CHEMICAL PRODUCTS	PRODUCTION	SALES		
		QUANTITY	VALUE	UNIT
		1,000 pounds	1,000 dollars	Per pound
Photographic chemicals, total-----	...	5,125	22,857	4.46
p-Diethylaminobenzendiazonium chloride-----	89	92	458	4.97
All other photographic chemicals-----	...	5,033	22,399	4.45
Polymers for fibers, total-----	6,361,789	...	...	...
Nylon 6 and 6/6 <sup>4</sup> -----	1,825,708	...	...	...
Polyacrylonitrile and acrylonitrile copolymers <sup>4</sup> -----	738,221	...	...	...
Polyethylene terephthalate <sup>4</sup> -----	2,547,392	...	...	...
All other polymers for fibers-----	1,250,468	...	...	...
Polymers, water soluble, total-----	402,464	323,672	652,064	2.01
Acrylamide polymers and co-polymers-----	110,507	72,525	75,916	1.69
Cellulose esters and ether-----	164,736	155,374	454,996	2.76
Polyacrylic acid salts, total-----	60,313	45,268	35,427	1.11
Ammonium polyacrylate-----	2,924	...	...	...
Polyacrylate methacrylate copolymer-----	11,654	...	...	...
Sodium Ammonium polyacrylate and copolymers-----	17,320	12,944	10,702	1.11
Sodium polyacrylate-----	2,274	467	1,908	4.39
All other polyacrylic acid salts-----	26,141	31,857	22,817	1.11
All other water soluble polymers-----	66,908	50,505	85,725	1.11
Tanning materials, synthetic-----	23,535	24,408	15,549	1.11
Textile chemicals, other than surface-active agents, total-----	41,086	39,651	19,745	1.11
Dimethylolhydroxyethylene urea-----	20,523	18,948	7,479	1.11
Urea polymers with formaldehyde and methanol-----	499	492	310	1.11
All other tetxile chemicals, other than surface- active agents-----	20,064	20,211	11,956	1.11
Urea in compounds or mixtures, total-----	11,136,899	9,099,807	664,199	1.11
In feed compounds-----	255,644	218,522	17,483	1.11
In liquid fertilizer-----	2,822,693	2,157,692	192,291	1.11
In solid fertilizer-----	7,389,948	6,227,109	418,861	1.11
Urea in compounds or mixtures, all other-----	668,614	496,484	35,564	1.11
All other miscellaneous end-use chemicals and chem- ical products <sup>7</sup> -----	84,169	3,510,742	3,142,545	1.11

<sup>1</sup>Calculated from unrounded figures.

<sup>2</sup>Not available.

<sup>3</sup>Statistics exclude production and sales of tricresyl phosphate. Statistics on tricresyl phosphate are given with the section on "Plasticizers."

<sup>4</sup>The difference between the production reported here and that shown on the Preliminary Report on U.S. Production of Selected of Selected Organic Chemicas (including Synthetic Plastics and Resins Materials, 1985) results from a combination of incorrect reporting by some companies, and end-of-year inventory adjustment, rounding.

<sup>5</sup>Quantities are given on the basis of solid naphthenate.

<sup>6</sup>Statistics exclude production and sales of copper naphthenate. Statistics for copper naphthenate are given in the section on "Pesticides and Related Products."

<sup>7</sup>Includes all other items listed in table 2 which are not individually publishable as groups.



TABLE 2.--MISCELLANEOUS END-USE CHEMICALS AND CHEMICAL PRODUCTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1985

[CHEMICALS FOR WHICH SEPARATE STATISTICS ARE GIVEN IN TABLE 1 ARE MARKED BELOW WITH AN ASTERISK (\*); CHEMICALS NOT SO MARKED DO NOT APPEAR IN TABLE 1 BECAUSE THE REPORTED DATA ARE ACCEPTED IN CONFIDENCE AND MAY NOT BE PUBLISHED. MANUFACTURERS' IDENTIFICATION CODES SHOWN BELOW ARE TAKEN FROM TABLE 3. AN "X" SIGNIFIES THAT THE MANUFACTURER DID NOT CONSENT TO HIS IDENTIFICATION WITH THE DESIGNATED PRODUCT]

MISCELLANEOUS END-USE CHEMICALS AND CHEMICAL PRODUCTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
*AMINO ACIDS AND THEIR SALTS:	
Aspartic acid-----	ESX, PFZ.
N,N-Bis(2,2-acetamido)glycine-----	RBC.
N,N-Dimethylglycine-----	MCK.
N,N-Dimethylglycine hydrochloride-----	MCK.
Glutamic acid hydrochloride-----	LEM.
Glycine (Aminoacetic acid), non-medical-----	CHT, HMP.
METHIONINE AND ITS SALTS:	
Methionine (animal feed grade)-----	DGC.
Methionine, hydroxy analogue, calcium salt-----	MON.
Phenyl alanine-----	CLP.
Potassium glutamate-----	LEM.
Protein hydrolysates-----	BRS.
Sarcosine-----	HMP.
Amino acids and salts, acyclic, all other-----	IMC, RSA, WAY.
Amino acids and salts, cyclic, all other-----	AJT, HCC.
BIOLOGICAL STAINS:	
Biological stains-----	ALD, EK, MMC.
*CHELATING AGENTS, NITRILACIDS AND SALTS:	
N-alkylamine bismethylenephosphonic acid-----	DUP.
N-alkylaminobismethylene phosphonic acid salts-----	WAY, X.
Aminotrimethyl phosphonic acid-----	SCP.
(Diethylenetrinitrilo)pentaaacetic acid-----	CGY, HMP.
(Diethylenetrinitrilo)pentaaacetic acid, monosodium hydrogen ferric salt-----	CGY.
(Diethylenetrinitrilo)pentaaacetic acid, pentasodium salt-----	CGY, HMP.
(Diethylenetrinitrilo)pentaaacetic acid, sodium salt-----	DOW, WAY.
N,N-Dihydroxyethylglycine, sodium salt-----	HMP.
(Ethylene-bis-nitrilo)dimethylene phosphonic acid, potassium salt-----	WAY.
*(Ethylenedinitrilo)tetraacetic acid (Ethylenediaminetetraacetic acid) (EDTA)-----	CGY, DOW, HMP.
(Ethylenedinitrilo)tetraacetic acid, calcium disodium salt-----	CGY, DAN, DOW.
(Ethylenedinitrilo)tetraacetic acid, diammonium salt-----	CGY, DOW.
*(Ethylenedinitrilo)tetraacetic acid, disodium copper salt, dihydrate-----	CGY, DOW, HMP.

TABLE 2.--MISCELLANEOUS END-USE CHEMICALS AND CHEMICAL PRODUCTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1985--CONTINUED

MISCELLANEOUS END-USE CHEMICALS AND CHEMICAL PRODUCTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
*CHELATING AGENTS, NITRILACIDS AND SALTS--CONTINUED	
*(Ethylenedinitrilo)tetraacetic acid, disodium salt	CGY, DOW, HMP.
*(Ethylenedinitrilo)tetraacetic acid, disodium zinc salt, dihydrate	CGY, DOW, HMP.
(Ethylenedinitrilo)tetraacetic acid, monosodium iron salt	CGY, HMP.
(Ethylenedinitrilo)tetraacetic acid, tetraammonium salt	CGY, DOW.
(Ethylenedinitrilo)tetraacetic acid, tetrapotassium salt	CGY, HMP.
*(Ethylenedinitrilo)tetraacetic acid, tetrasodium salt	CGY, DOW, HMP.
*(Ethylenedinitrilo)tetraacetic acid, trisodium salt	CGY, TX.
Glucoheptonic acid, $\beta$ -isomer, sodium salt	BLZ.
Glucoheptonic acid, sodium salt	BLZ, PFN.
Hexamethylenediaminetetra(methylenephosphonic acid), potassium salt	WAY.
Hydroxyethane-1-diphosphonic acid	HMP, MYO.
(N-Hydroxyethylethylenedinitrilo)triacetic acid, iron salt	CGY, DOW, HMP.
(N-Hydroxyethylethylenedinitrilo)triacetic acid, magnesium salt	TX.
*(N-Hydroxyethylethylenedinitrilo)triacetic acid, trisodium salt	CGY, DAN, DOW, HMP.
Hydroxyethylidene diphosphonic acid, potassium salt	X.
Hydroxyethylidene diphosphonic acid, sodium salt	WAY, X.
Nitrilotriacetic acid	HMP.
Nitrilotriacetic acid, trisodium salt	HMP, MON.
*Nitrilo-tris-methylene triphosphonic acid	BKM, MYO, WAY, X.
Nitrilo-tris-methylene triphosphonic acid, potassium salt	X.
Nitrilo-tris-methylene triphosphonic acid, sodium salt	MYO, WAY, X, X.
2-Phosphonobutane-1,2,4-tricarboxylic acid, sodium salt	X.
Polyamine polymethane phosphonic acid	SCP, X, X.
Polyamine polymethane phosphonic acid, magnesium salt	RPC.
Chelating agents, nitriloacids and salts, all other	BKM, CGY, HMP, X.
*CHEMICAL INDICATORS:	
*Chemical indicators	ALD, EK, GFS, MMC.
*CHEMICAL REAGENTS AND FINE CHEMICALS:	
*Chemical reagents and fine chemicals	ALD, COC, CO, EK, ESA, GFS, HMY, PAM, PFN, PIC, PLB, RSA, UPJ, X.

TABLE 2.--MISCELLANEOUS END-USE CHEMICALS AND CHEMICAL PRODUCTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1985--CONTINUED

MISCELLANEOUS END-USE CHEMICALS AND CHEMICAL PRODUCTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
*ENZYMES:	
HYDROLYTIC ENZYMES:	
AMYLASES:	
*Bacterial amylase-----	GBF, GNR, MLS, NBI, PMP.
*Glucoamylase-----	GBF, MLS, NBI.
*Maltase-----	PFZ, TX.
Amylases, all other-----	GBF, TX.
*PROTEASES:	
Papain-----	GBF, PFZ.
Pepsin-----	CHH, SPR.
Protease (bacterial)-----	MLS, PMP.
*Rennin-----	CHH, MLS, PFZ.
*Proteases, all other-----	GBF, GNR, PIC, SPR.
OTHER HYDROLYTIC ENZYMES:	
Cholesterol esterase-----	BCK.
Glucose isomerase-----	MLS.
Hydrolytic enzyme mixtures-----	JFR.
Lipase-----	GBF, GNR.
*Pectinase-----	GBF, GNR, MLS.
Other hydrolytic enzymes-----	GNR, MLS, PMP, X.
NON-HYDROLYTIC ENZYMES:	
Cholesterol oxidase-----	BCK.
Glucose oxidase-----	BCK, MLS.
Glucose-6-phosphate dehydrogenase-----	BCK.
Glycerol kinase-----	BCK.
Uricase-----	BCK.
*FLOTATION REAGENTS:	
PHOSPHORODITHIOATES, USED AS FLOTATION REAGENTS:	
Dicresylphosphorodithioic acid-----	ACY.
Dicresylphosphorodithioic acid, ammonium salt-----	ACY.
PHOSPHORODITHIOATES, USED AS FLOTATION REAGENTS--CONTINUED	
Dicresylphosphorodithioic acid, sodium salt-----	KCV.
Phosphorodithioates used as flotation reagents, all other-----	ELC.
Rosin amines-----	HPC.
Thiocarbanilide (Diphenylthiourea)-----	ACY, RBC.
XANTHATES AND SULFIDES, USED AS FLOTATION REAGENTS:	
Sodium n-butylxanthate-----	USR.
Sodium sec-butylxanthate-----	ESX.
Xanthates and sulfides-----	PLC.
Floation reagents, all other-----	DOW, PLC, RBC, SHX.

TABLE 2.--MISCELLANEOUS END-USE CHEMICALS AND CHEMICAL PRODUCTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1985--CONTINUED

MISCELLANEOUS END-USE CHEMICALS AND CHEMICAL PRODUCTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
*FUEL ADDITIVES:	
DIESEL FUEL ADDITIVES:	
Diesel fuel additives, acyclic, all other-----	TNA.
Hexyl nitrate-----	DUP, TNA.
Diesel fuel additives, cyclic, all other-----	TNA.
FUEL OIL ADDITIVES:	
Adipic acid-diethylenetriamine-epichlorohydrin polymer-----	X.
N-sec-Butyl-N-phenylphenylenediamine-----	UPM.
N,N-Dimethyl-1,3-propanediamine polymer with epichlorohydrin, sulfate-----	X.
N,N'-Disalicylidene-1,2-propanediamine-----	DUP, FER, SM.
Ethoxylated hydantoin glycol dicococate-----	GLY.
Formaldehyde polymer with ethylenediamine and nonyl phenol derivatives-----	X.
Imidazoline from tall oil fatty acids and diethylenetriamine-----	X.
4,4'-Methylenebis(2,6-di-tert-butylphenol)-----	GTL, TNA.
Methylene-bis(dimethyl)hydantoin and derivatives-----	GLY.
Mixed aryl diimides-----	SM.
Phenyl acid phosphate-----	HDG.
Poly(dimethylimino(2-hydroxytrimethylene)chloride)-----	X.
Polyethylenepolyamine polymer with 1,4-dihydroxy-2- butyne-----	X.
Rust preventing additives-----	ALK.
Sulfurized fatty acid amides, esters, or ester-amides--	CXI.
Tetrahydropyrimidine from tall oil fatty acids and propylenediamine-----	X.
Fuel oil additives, acyclic, all other-----	CXI, DUP, SM.
Fuel oil additives, cyclic, all other-----	DUP, PAH.
*GASOLINE ADDITIVES:	
N,N'-Di-sec-butyl-p-phenylenediamine-----	UPM.
N,N'-Diisopropyl-p-phenylenediamine-----	DUP.
Ethylene dibromide-----	GTL, TNA.
*Methyl-t-butyl ether-----	ATR, ENJ, TPC, TUS.
Methylcyclopentadienylmanganese tricarbonyl-----	TNA.
Tetraethyl lead-----	DUP, TNA, X.
*Tetra(methyl-ethyl)lead, (Tel-tml,reacted)-----	DUP, TNA, X.
Tetramethyl lead-----	DUP, TNA, X.
Gasoline additives, acyclic all other-----	SOC.
*LUBRICATING OIL AND GREASE ADDITIVES:	
Butadiene styrene copolymer-----	TNA.

TABLE 2.--MISCELLANEOUS END-USE CHEMICALS AND CHEMICAL PRODUCTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1985--CONTINUED

MISCELLANEOUS END-USE CHEMICALS AND CHEMICAL PRODUCTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
*LUBRICATING OIL AND GREASE ADDITIVES--CONTINUED	
CHLOROSULFURIZED AND SULFURIZED COMPOUNDS:	
Chlorosulfurized lard oil	CCW, WBG.
Chlorosulfurized sperm oil	ELC.
Hydrocarbon carboxylic acid derivatives	X, X.
Hydrocarbon phosphorous acid, barium salt	X.
Hydrocarbon phosphoryl derivatives	X.
Methylene-bridged polyalkyl phenols	TNA, TX.
Sulfurized lard oil	CCW, FER, WBG.
Sulfurized sperm oil substitutes	CCW, ELC.
OIL-SOLUBLE PETROLEUM SULFONATES:	
Oil-soluble petroleum sulfonate, ammonium salt	NTL.
*Oil-soluble petroleum sulfonate, barium salt	PAR, TNA, WTC, X.
*Oil-soluble petroleum sulfonate, calcium salt	PAR, SOC, TNA, TX, WTC, X.
Oil-soluble petroleum sulfonate, magnesium salt	WTC, X.
*Oil-soluble petroleum sulfonate, sodium salt	MOR, PAR, SHC, WTC, X.
Oil-soluble petroleum sulfonate, all other	DUP, MON, SHC, SOC, WTC.
Oxidized hydrocarbon mixture	ALX.
PHENOL SALTS:	
Alkyl phenols	X.
Dodecylphenol, ethylenediamine, formaldehyde polymer, calcium salt	SOC, TX.
Nonylphenol, barium salt	CCA, FER, WTC.
Phenol, magnesium salt	WTC.
PHOSPHORODITHIOATES (DITHIOPHOSPHATES):	
Bis(1,3-Dimethylbutyl)phosphorodithioate oleyl amine salt	ELC.
Di-2-ethylhexylphosphorodithioic acid	ELC.
Di-N-propylphosphorodithioic acid	ELC.
Zinc dialkyldithiophosphate	ELC, SOC, TNA.
Zinc dialkylphenol dithiophosphate	SOC.
Zinc dibutyl phosphorodithioate	ELC.
Zinc diisodecyl phosphorodithioate	ELC.
Zinc hydrocarbon dithiophosphate	X.
Phosphorodithioates used as lubricating oil and grease additives, all other	TX, X.
SUCCINIMIDES:	
Alkenyl succinimide	SOC, TNA, VTC.
Dodecenyl-oleyl succinimide	SM.
Dodecenyl-acetic succinimide	SM.
All other specify	TNA.

TABLE 2.--MISCELLANEOUS END-USE CHEMICALS AND CHEMICAL PRODUCTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1985--CONTINUED

MISCELLANEOUS END-USE CHEMICALS AND CHEMICAL PRODUCTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
*LUBRICATING OIL AND GREASE ADDITIVES--CONTINUED	
SULFUR COMPOUNDS:	
Aliphatic hydrocarbon sulfides-----	ELC, FER, SOC, TNA, X.
Chlorosulfurized cresylic acids-----	CCW.
Diisobutylene polysulfide-----	TNA, TX.
Di-tertiary nonylpolysulfide-----	PAS.
Triisobutylene polysulfide-----	TX.
Sulfur compounds, all other-----	WTC, X.
ALL OTHER LUBRICATING OIL AND GREASE ADDITIVES:	
Alkene thiophosphonate-----	TX.
Alkyl succinic anhydride-----	SM.
Alkyl terephthalamate-----	SOC.
Bornyl phenylamine-----	SOC.
Di-2-ethylhexylphosphorodithioic acid-----	ELC.
Diisopropyl hydrogen phosphite-----	SM.
Dimer acid esters and polyesters-----	EMR.
Dodecyl succinic acid, benzotriazole salt-----	SM.
Dodecylphenyl- $\alpha$ -naphthylamine-----	SM.
Dodecylphenyl- $\alpha$ -naphthylamine, dioctyl diphenylamine : co-polymer-----	SM.
Fatty acid polyamine condensate-----	SOC.
Lubricating oil and grease additives, acyclic, all : other-----	CRT, CXI, DUP, MON, SM, TNA, VTC, X.
Mixed polyesters-----	HCC.
Pentaerythritol esters-----	HCC.
1,3,4-Thiadiazole, 2,5-bis(dialkyldithio) derivatives-----	ELC.
Lubricating oil and grease additives, cyclic, all : other-----	CGY, DUP SM, TNA, UPM, X.
*PAINT DRIERS, NAPHTHENIC ACID SALTS:	
Cadmium naphthenate-----	CCA.
*Calcium naphthenate-----	CCA, MCI, NOD, TRO.
Chromium naphthenate-----	MCI.
*Cobalt naphthenate-----	CCA, MCI, NOD, SHP, TRO.
Copper naphthenate-----	NOD.
*Iron naphthenate-----	CCA, MCI, NOD.
Lead naphthenate-----	CCA, MCI, NOD, SHP, TRO.
Lithium naphthenate-----	CCA.
*Manganese naphthenate-----	CCA, MCI, NOD, SHP, SM.
Naphthenate driers, mixed salts-----	MCI.
Rare earths naphthenate-----	CCA, NOD.
Strontium naphthenate-----	CCA.
Zinc naphthenate-----	CCA, MCI, NOD, SHP, TRO.
Paint dryers, naphthenic acid salts, all other-----	SHP.

TABLE 2.--MISCELLANEOUS END-USE CHEMICALS AND CHEMICAL PRODUCTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1985--CONTINUED

MISCELLANEOUS END-USE CHEMICALS AND CHEMICAL PRODUCTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
*PHOTOGRAPHIC CHEMICALS:	
2-Amino-5-mercapto-1,3,4-thiadiazole	FMT.
5-Aminotetrazole	FMT.
Aryl alkyl polyether alcohol	DIK.
5-Chlorobenzotriazole	FMT.
3-Chloro-4-diethylaminobenzenediazonium chloride (p-Diazo-2-chloro-N,N-diethylaniline zinc chloride)	ESA.
Chlorohydroquinone	ESA.
4-Diazo-2,5-diethoxymorpholinobenzene	ALL, ESA.
2,5-Diethoxy-4-morpholinobenzenediazonium chloride	ALL, ESA.
2,5-Diethoxy-4-morpholinobenzenediazonium sulfate	ALL.
*p-Diethylaminobenzenediazonium chloride (p-Diazo-N,N-diethylaniline zinc chloride)	ALL, ESA, FMT.
N,N-Diethyltoluene-2,5-diamine, monohydrochloride	X.
p-Dimethylaminobenzenediazonium chloride (p-Diazo-N,N-dimethylaniline zinc chloride)	ALL, ESA.
p-Diphenylaminediazonium sulfate	FMT.
p-(N-Ethylbenzimidobenzenediazonium chloride (p-Diazo-N-benzyl-N-ethylaniline)-zinc chloride)	ESA.
p-[Ethyl(2-hydroxyethyl)amino]benzenediazonium chloride (p-Diazo-N-ethyl-N-hydroxyethylaniline zinc chloride)	ESA.
(N-Ethyl-N-(2-hydroxyethyl)-3-methyldehydrogen sulfate)p-phenylenediamine	X.
N-Ethyl-N-hydroxyethyl-p-phenylenediamine sulfate	WAY.
N-Ethyl-N-(β-methane sulfonamidoethyl)toluene-2,5-diaminesulfate	X.
Hydroquinone (Hydroquinol)	EKT.
p-[(2-Hydroxyethyl)methylamino]benzenediazonium chloride (p-Diazo-N-hydroxyethyl-N-methylaniline)-zinc chloride	ESA.
4-Hydroxymethyl-4-methyl-1-phenyl-3-pyrazolidone	X.
2-Hydroxynaphthoic ethylamide	FMT.
4-Methoxy-1-naphthol	X.
p-Methylaminophenol sulfate (Metol)	EK.
2-Methylbenzoxazole	FMT.
5-Methyl-1,7-dihydroxy-1,3,4-triazaindolizine	FMT.
4,4-Methylidene-bis-1(p-sulfophenyl)3-methylpyrazolone	FMT.
4-((3-Methyl-5-oxo-1-(4-sulfophenyl)-2-pyrazolin-4-ylidene)methylene)-3-methyl-1-(4-sulfophenyl)-2-pyrazolin-5-one	DUP.
2-Methylthiazoline	FMT.

TABLE 2.--MISCELLANEOUS END-USE CHEMICALS AND CHEMICAL PRODUCTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1985--CONTINUED

MISCELLANEOUS END-USE CHEMICALS AND CHEMICAL PRODUCTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
*PHOTOGRAPHIC CHEMICALS--CONTINUED	
p-Morpholinyl-2,5-dibutoxybenzene diazonium chloride	ALL
6-Nitrobenzimidazole	FMT.
5-Nitrobenzimidazole nitrate	EK.
1-Phenyl-3-pyrazolidone	CWN, EK.
Poly(vinyl-0-sulfobenzal)	DUP.
4-N-(1-Pyrrolidyl)-m-toluenediazonium chloride	ALL, ESA.
Photographic chemicals, all other	EK, ESA, FMT, X.
*POLYMERS FOR FIBERS:	
Cellulose acetate	CEL, EKT, MIL.
Cerex/nylon polymer	MON.
Copolyurethane urea	DUP.
Linear saturated polyester	EKT.
*NYLON 6 AND 6/6:	
Nylon 6 (Polymer for filber, only)	ACS.
Nylon 6/6	DUP, MON.
*Polyacrylonitrile and acrylonitrile copolymers	ACY, DUP, MON, SFS.
*Polyethylene terephthalate	CEL, DUP, EKT, FRF, GYR.
Poly-m-phenylene isophthalamide	DUP.
Poly-p-phenylene terephthalamide	DUP.
Polymers for fibers, all other	HST.
*POLYMERS, WATER SOLUBLE:	
ACRYLAMIDE POLYMERS AND CO-POLYMERS:	
Acrylamide-2-acrylamido-2-methylpropanesulfonic acid, sodium salt polymer	DOW, MRK, X.
Acrylamide-acrylic acid copolymer	CHP.
Acrylamide-acrylic acid copolymer, sodium salt	BKM, SNW.
Acrylamide N-dimethylaminomethylacrylamide copolymer	EKM.
Adipic acid-crosslinked polycrylamide	S.
Polyacrylamide	ACY, ENJ, SNW, X.
Polyacrylamide dimethylammonium ethyl methacrylate	SNW.
Polyacrylamide copolymers, all other	X.
*CELLULOSE ESTERS AND ETHERS:	
Cationic cellulosic ether	UCC.
Hydroxyethylcellulose	DOW, UCC, X.
Methylcellulose	DOW.
Sodium carboxymethylcellulose (100%)	CBC, LCS, MAK, X.
Cellulose ethers and esters, all other	S, SYT, X.
Dimethylamine epichlorohydrin ethylenediamine copolymer	CPS, X.
Dimethyl diallyl ammonium chloride polymers	SHX, X.
Ethyl acrylate methacrylic acid copolymer	ALC.
Hydroxypropyl guar gum	RPC.



TABLE 2.--MISCELLANEOUS END-USE CHEMICALS AND CHEMICAL PRODUCTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1985--CONTINUED

MISCELLANEOUS END-USE CHEMICALS AND CHEMICAL PRODUCTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
*CELLULOSE ESTERS AND ETHERS--CONTINUED	:
*POLYACRYLIC ACID SALTS:	:
*Ammonium polyacrylate-----	ENJ, RH, X, X, X.
*Polyacrylate methacrylate copolymers-----	BFG, CRN, RH, X, X.
*Sodium ammonium polyacrylate and copolymers-----	DA, X, X.
*Sodium polyacrylate-----	BKM, CIN, ENJ, SYT, X, X.
Polyacrylic acid salts, all other-----	ACY, X, X.
Polyacrylonitrile, hydrolyzed-----	DIK, RH.
Polyacrylonitrile, starch hydrolyzed polymer-----	GPC.
Polyamines-----	ENJ, X.
Polydextrose-----	PFZ.
Poly(diallyldimethylammonium) chloride-----	CPS, MRK, X.
Polyethylene glycol, mono(nonylphenol) sulfate, ammonium salt-----	BAK.
Polymaleic anhydride-----	X.
Polymethacrylic acid, sodium salt-----	ALC, CPS.
Poly(1,1'-(methylimino)bis(3-chloro-2-propanol)- tetramethylethylenediamine)-----	BKM.
Sodium carboxymethyl amylose-----	CCL.
Vinyl acetate maleic copolymer, sodium salt-----	X.
1-Vinyl-2-pyrrolidinone, polymers-----	CCL, DAN, GAF, UCC, X.
Kanthan gum-----	PFZ.
Polymers, water soluble, all other-----	RH, RPC, S, STC, SYT, X, X, X, X, X.
POLYALPHAOLEFINS:	:
Poly- $\alpha$ -olefins-----	SM, TNA.
Poly- $\alpha$ -olefins, sulfurized-----	SM.
RARE SUGARS:	:
1-Arabinose-----	PFN.
D-Galactose-----	PFN.
D-Maltose-----	PFN.
SILICONE GREASES:	:
Silicone greases-----	DCC, SPD, SWS.
*TANNING MATERIALS, SYNTHETIC:	:
Cresol-phenol-formaldehyde condensate and salt-----	DA.
2-Naphthalenesulfonic acid, formaldehyde condensate and salt-----	GRD, RH.
1-Phenol-2-sulfonic acid, formaldehyde condensate (Phenol-formaldehyde, sulfonated)-----	RH.
Polyoxyalkylated cyclic amines-----	MIL.
*TEXTILE CHEMICALS, OTHER THAN SURFACE-ACTIVE AGENTS:	:
4,4'-bis(2-Benzoxazolyl)stilbene-----	EKT.
N,N-bis-(2-Hydroxyethyl)octadecanamide-----	CCC.
N,N-Dibenzylhydroxylamine-----	CCC.

TABLE 2.--MISCELLANEOUS END-USE CHEMICALS AND CHEMICAL PRODUCTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1985--CONTINUED

MISCELLANEOUS END-USE CHEMICALS AND CHEMICAL PRODUCTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
*TEXTILE CHEMICALS, OTHER THAN SURFACE-ACTIVE AGENTS--	:
CONTINUED	:
Dicyanodiamide formaldehyde ammonium chloride polymer---	: CCC, DAN.
Diethylenetriamine, triethylphosphate, urea polymer,	:
stearate-----	: CCC.
*Dimethyloldihydroxyethylene urea-----	: ACY, CCC, CHP, DAN, RPC, SYT.
Formaldehyde polymer with carbamate esters-----	: SYT.
Hydrogenated tallow fatty acid aminoethylethanolamine	:
condensation products-----	: CCC.
Melamine formaldehyde methanol polymer-----	: ACY, CCC.
Melamine formaldehyde triethanolamine mixed fatty	:
alcohols polymer-----	: RPC.
Melamine stearyl alcohol polymer-----	: SYT.
Product from the reaction of stearyl nitrile,	:
candellilla wax, paraformaldehyde, phosphorous	:
trichloride, and picoline-----	: CCC.
Propoxylated starches-----	: SYT.
Urea, 2-(2-aminoethyl)aminoethanol polymer, stearate---	: CCC.
*Urea polymers with formaldehyde and methanol-----	: ACY, CCC, CRT, SYT.
Urea, polymer with tetrakis(hydroxymethyl)phosphonium	:
sulfate-----	: CHP.
Textile chemicals, other than surface active agents,	:
all other-----	: ACR, CCC, CRT, DAN, ENJ, RPC, SYT, X.
UREA, BY END-USE MARKETS:	:
Urea, primary solution (Report on 100% urea-content	:
basis)-----	: APD, ARM, BNP, BOR, CAC, CFI, CHN, CNC,
	: FRI, GCC, HKY, MSC, OMC, PLC, SMP, SOC,
	: SOH, TER, TRI, TVA, UOC, WLC, WYC, X.
*UREA IN COMPOUNDS OR MIXTURES (100% BASIS):	:
*Urea in feed compounds (100% Basis)-----	: APD, BNP, CAC, SOH, TER, TRI, WYC.
*Urea in liquid fertilizer (100% Basis)-----	: ARM, BNP, CFA, CFI, CHN, CNC, FRI,
	: HKY, MSC, PLC, SMP, SOC, SOH, TER, TRI,
	: TVA, WYC, X.
Urea in plastics (100% Basis)-----	: BOR, OMC, SOH, TRI.
*Urea in solid fertilizer (100% Basis)-----	: APD, CAC, CFI, CNC, FRI, GCC, OMC, SOH,
	: TER, TRI, TVA, UOC, WLC, WYC, X.

## SYNTHETIC ORGANIC CHEMICALS, 1985

TABLE 3.--MISCELLANEOUS END-USE CHEMICALS AND CHEMICAL PRODUCTS: DIRECTORY OF MANUFACTURERS, 1985

## ALPHABETICAL DIRECTORY BY CODE

[Names of manufacturers that reported production and/or sales of miscellaneous end-use chemicals to the U.S. International Trade Commission for 1985 are listed below in the order of their identification codes as used in table 2]

CODE :	NAME OF COMPANY	CODE :	NAME OF COMPANY
ACR :	CPC International, Inc., Acme Resin Corp.	FER :	Ferro Corp.:
ACS :	Allied Corp., Chemicals Sector		Ferro Chemical Div.
ACY :	American Cyanamid Co.		Keil Chemical Div.
AJI :	Ajinomoto USA, Inc.	FMT :	Fairmount Chemical Co., Inc.
ALC :	Alco Chemical Corp.	FRF :	Firestone Tire & Rubber Co., Firestone
ALD :	Aldrich Chemical Co., Inc.		Fibers & Textiles Co.
ALL :	Alliance Chemical, Inc.	FRI :	Farmland Industries, Inc.
ALX :	Alox Corp.		
APD :	Atlas Powder Co. Sub. of Tyler Corp.	GAF :	GAF Corp., Chemical Group
ARM :	U.S. Steel Corp., USS Agri-Chemicals Div.	GBF :	Gist-Brocades U.S.A Inc.
ATR :	Atlantic Richfield Co., Arco Chemical Co.	GCC :	W. R. Grace & Co., Agricultural Chemicals Group
		GFS :	G. Frederick Smith Chemical Co.
BCK :	Beckman Instruments, Inc.	GLY :	Glyco, Inc.
BFG :	B. F. Goodrich Co., B. F. Goodrich Chemical	GNR :	Genencor, Inc.
	Group	GPC :	Grain Processing Corp.
BKM :	Buckman Laboratories, Inc.	GRD :	W. R. Grace & Co., Polymers & Chemical Div.
BLZ :	Belzak Corp.	GTL :	Great Lakes Chemical Corp.
BOR :	Borden, Inc., Borden Chemical Div.	GYR :	Goodyear Tire & Rubber Co.
BNP :	Bison Nitrogen Products Co.		
BRS :	Bristol-Myers Co.	HCC :	Hatco Chemical Corp.
		HGD :	Hodag Chemical Corp.
CAC :	Cominco American, Inc.	HKY :	Hawkeye Chemical Co.
CBC :	Carbose Corp.	HMP :	W. R. Grace & Co., Hampshire Chemical Div.
CCA :	Interstab Chemicals, Inc.	HMY :	Humphrey Chemical Co.
CCC :	C.N.C. Chemical Corp.	HPC :	Hercules, Inc.
CCL :	Catawba-Charlab, Inc.	HST :	American Hoechst Corp., Hoechst Fiber
CCW :	Morton-Thiokol, Inc., Carstab Div.		Industries Div.
CEL :	Celanese Corp., Celanese Fibers		
	Operations	IMC :	International Minerals & Chemicals Corp.,
CFI :	CF Industries, Inc.		Industrial Chemicals Div.
GGY :	Giba-Geigy Corp.		
CHH :	CHR. Hansen's Laboratory, Inc.	JFR :	George A. Jeffreys & Co., Inc.
CHN :	N-REN Corp., Cherokee Nitrogen Div.		
CHP :	C. H. Patrick & Co., Inc.	KCU :	Kennecott Minerals Co., Utah Copper Div.
CHT :	Chattem, Inc.		
CIN :	Stockhausen, Inc.	LGS :	Louisiana Chemical Specialties, Inc.
CLP :	Cell Products, Inc.	LEM :	Napp Chemicals, Inc.
CNC :	Columbia Nitrogen Corp.		
CO :	Conoco Specialty Products, Inc.	MAK :	MAK Chemical Corp.
COC :	Columbia Organic Chemicals Co., Inc.	MCI :	Mooney Chemicals, Inc.
CPS :	CPS Chemical Co., Inc.	MCK :	MacKenzie Chemical Works, Inc.
CRN :	CPC International, Inc., Amerchol Corp.	MIL :	Milliken & Co., Milliken Chemical Co.
CRT :	Chemos Corp.	MLS :	Miles Laboratories, Inc., Biotechnology Group
CWN :	Upjohn Co., Fine Chemicals	MMC :	EM Industries, Inc., EM Science Div.
CXI :	Chemical Exchange Industries, Inc.		
		MON :	Monsanto Co.
DAN :	Dan River, Inc., Chemical Products Div.	MOR :	Pennzoil Co., Pennzoil Moro Co.
DCC :	Dow Corning Corp.	MRK :	Merck & Co., Inc.
DGC :	Degussa Corp.	MSG :	Mississippi Chemical Corp.
DIX :	Dixie Chemical Co., Inc.	MYO :	Mayo Chemical Co.
DOW :	Dow Chemical Co.		
DUP :	E. I. duPont de Nemours & Co., Inc.	NBI :	Novo Biochemical Industries, Inc.
		NOD :	Nuodex, Inc.
EK :	Eastman Kodak Co.:	NTL :	NL Industries, Inc.
EKT :	Tennessee Eastman Co. Div.		
ELC :	Elco Corp. Sub. of Detrex Chemical	OMC :	Olin Corp.
	Industries, Inc.	PAH :	Parish Chemical Co.
EMR :	Emery Chemicals Div. of National Distillers &	PAR :	Pennzoil Co., Penreco Div.
	Chemical Corp.	PAS :	Pennwalt Corp.
ENJ :	Exxon Chemical Americas	PFN :	Pfanstiehl Laboratories, Inc.
ESA :	East Shore Chemical Co.	PFZ :	Pfizer, Inc.
ESX :	Essex Chemical Corp., Essex Industrial	PIC :	Pierce Chemical Co.
	Chemicals, Inc.		

TABLE 3--MISCELLANEOUS END-USE CHEMICALS AND CHEMICAL PRODUCTS: DIRECTORY OF MANUFACTURERS, 1985--CONTINUED

CODE	NAME OF COMPANY	CODE	NAME OF COMPANY
PLB	Pharmacia P-L Biochemicals, Inc.	STC	American Hoechst Corp., Sou-Tex Works
PLC	Phillips Petroleum Co.	SWS	Stauffer Chemical Co., Stauffer-Wacker
PMP	PMP Fermentation Products, Inc.		Silicone Div.
PTT	Petro-Tex Chemical Corp.	SYT	Synthron, Inc.
QCP	Quaker Chemical Corp.	TER	Terra International, Inc.
RBC	Fike Chemicals, Inc.	TER	Terra Nitrogen, Inc.
RH	Rohm & Haas Co.	TNA	Ethyl Corp.
RPC	Millmaster Onyx Group, Inc., Lyndall Chemical Co. Div.	TPC	Texas Petrochemical Corp.
RSA	R.S.A. Corp.	TRI	Triad Chemical
S	Sandoz, Inc., Colors & Chemicals Div.	TRO	Troy Chemical Corp.
SCP	Henkel Corp.	TUS	Texaco Butadiene Co.
SFS	Stauffer Chemical Co., Specialty & Intermediates Div.	TVA	Tennessee Valley Authority
SHC	Shell Oil Co., Shell Chemical Co. Div.	TX	Texaco, Inc., Texaco Chemical Co.
SHP	Shepherd Chemical Co.	UCC	Union Carbide Corp.
SHX	Sherex Chemical Co., Inc.	UMP	UOP, Inc., UOP Process Div.
SN	Mobil Oil Corp., Mobil Chemical Co., Chemical Products Div.	UOC	Union Oil Co. of California
SHP	J. R. Simplot Co.	UPJ	Upjohn Co.
SHW	Sun Chemical Corp., Chemical Div.	USR	Uniroyal, Inc., Uniroyal Chemical Div.
SOC	Chevron Corp., Chevron Chemical Co.	WAY	Philip A. Hunt Chemical Corp., Organic Chemical Div.
SOH	Standard Oil Chemical Co.	WBG	White & Bagley Co.
SPD	General Electric Co., Silicone Products Dept.	WLC	Agrico Chemical Co.
SPR	Scientific Protein Laboratories	WTC	Witco Chemical Corp.
		WYC	Wycon Chemical Co.

Note.--Complete names, telephone numbers, and addresses of the above reporting companies are listed in table 1 of the appendix.

SYNTHETIC ORGANIC CHEMICALS, 1985  
SECTION XV -- MISCELLANEOUS CYCLIC AND ACYCLIC CHEMICALS

## STATISTICAL HIGHLIGHTS

Aimison Jonnard and David G. Michels

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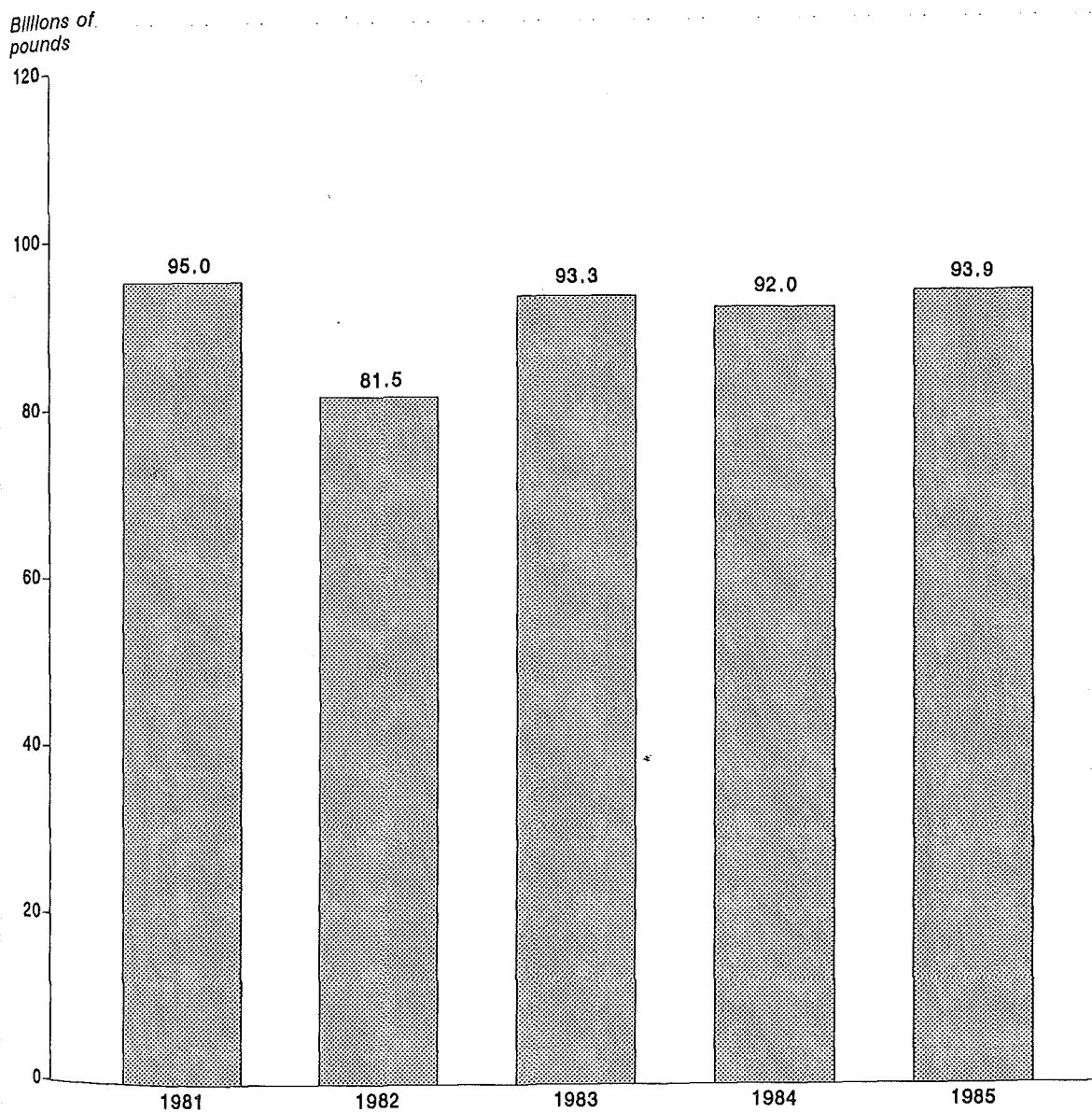
The term "miscellaneous chemicals" as it is used here comprises those synthetic organic products that are not included in the use groups covered by sections I-XIV of this report. They include products that are employed in a great variety of uses. The number of chemicals used extensively for only one purpose is not large. Among the products covered in this section are those used for refrigerants, aerosols, solvents, and a wide range of chemical intermediates.

U.S. production of miscellaneous cyclic and acyclic chemicals in 1985 amounted to 93.9 billion pounds, an increase of 2.0 percent compared with production in 1984. Production of miscellaneous cyclic chemicals comprised only 2.9 percent of this section's total production.

Figure 1 shows the trend of production of miscellaneous chemicals during 1981-85, and shows there has been a considerable increase since the low point in 1982. However, the 1985 production of 93.9 billion pounds was slightly less than the 95.0 billion pounds produced in 1981, and was considerably smaller than the all-time peak of 98.8 billion pounds produced in 1979. Because most of the production of miscellaneous chemicals is used internally by their producers to make more advanced intermediates and other chemical products, their sales are much smaller than their production. In 1985, sales of miscellaneous chemicals were 36.4 billion pounds, valued at \$11.2 billion, compared with 40.4 billion pounds, valued at \$12.0 billion, in 1984. This decrease in sales in 1985 was 10.0 percent in quantity and 6.5 percent in value. Oxygenated hydrocarbons accounted for 60 percent of the production of all acyclic miscellaneous chemicals. Production of oxygenated hydrocarbons, which include organic acids, alcohols (the largest group), ketones, esters, ethers, aldehydes, epoxides, and other chemicals, decreased from 59.0 billion pounds in 1984 to 54.6 billion pounds in 1985, or by 7.0 percent. With the exception of polyhydric alcohols, which benefited from a 1-billion-pound increase in production of ethylene glycol in 1985, all types of oxygenated hydrocarbons shared in the decrease. Production of methanol, a monohydric alcohol, decreased about 3 billion pounds in 1985 compared with its production in 1984.

The largest individual group of miscellaneous acyclic chemicals is the halogenated hydrocarbons. Production of halogenated hydrocarbons increased from 19.4 billion pounds in 1984 to 26.8 billion pounds in 1985, or by 38 percent. Production of chlorinated hydrocarbons, by far the largest segment of this group, increased 41.0 percent in 1985, to 25.8 billion pounds, from 18.3 billion pounds in 1984. Virtually all of the increase in production was accounted for by ethylene dichloride, up almost 5 billion pounds in 1985, and vinyl chloride monomer, up more than 3 billion pounds. Ethylene dichloride is the raw material for vinyl chloride, which in turn is the raw material for polyvinyl chloride plastics.

Figure 1.—Miscellaneous cyclic and acyclic chemicals.



Source: U.S. International Trade Commission, *Synthetic Organic Chemicals: United States Production and Sales*.

XV -- MISCELLANEOUS CYCLIC AND ACYCLIC CHEMICALS

TABLE 1.--MISCELLANEOUS CYCLIC AND ACYCLIC CHEMICALS: U.S. PRODUCTION AND SALES, 1985

Listed below are all miscellaneous cyclic and acyclic chemicals for which any reported data on production or sales may be published. (Leaders (...) are used where the reported data are accepted in confidence and may not be published or where no data were reported.) Table 2 lists all miscellaneous cyclic and acyclic chemicals for which data on production and/or sales were reported and identifies the manufacturers of each

MISCELLANEOUS CYCLIC AND ACYCLIC CHEMICALS	PRODUCTION	SALES		
		QUANTITY	VALUE	UNIT VALUE <sup>1</sup>
		1,000 pounds	1,000 dollars	Per pound
Grand total-----	93,927,389	36,431,156	11,179,826	\$0.31
CYCLIC				
Total-----	2,691,986	1,253,280	1,096,092	.87
Benzoyl peroxide-----	8,546	8,466	20,771	2.45
Butyl benzoate-----	536	484	277	.57
tert-Butyl peroxybenzoate-----	3,878	3,807	8,261	2.17
Ciprolactam <sup>2</sup> -----	1,089,497	...	...	...
Ozone hydroperoxide-----	1,132	1,219	1,863	1.53
2,6-Di-tert-butyl-p-cresol (BHT), tech. grade-----	2,515	4,484	5,118	1.14
Dodecenylsuccinic anhydride-----	5,476	4,479	3,865	.86
Hexamethylenetetramine, tech. grade-----	80,253	48,791	16,438	.34
Lactones-----	86,630	16,062	17,059	1.06
Maleic anhydride <sup>2</sup> -----	393,529	330,993	145,507	.44
Pinene and derivatives, total-----	237,091	70,955	23,476	.33
β-Pinene-----	41,523	...	...	...
Fine oil, synthetic-----	39,165	40,536	16,805	.41
All other-----	156,403	30,419	6,671	.22
1,3,5-Trichloro-5-triazine-2,4,6-(1H, 3H, 5H)trione-----	101,643	...	...	...
All other miscellaneous cyclic chemicals-----	681,260	763,540	853,457	1.11
ACYCLIC				
Total-----	91,235,403	35,177,876	10,083,734	.29
NITROGENOUS COMPOUNDS				
Total-----	7,212,270	3,069,639	1,309,614	.43
Aldehydes, total				
Acrylamide monomer-----	...	63,105	24,574	.39
N,N'-Ethylene bis (oleamide)-----	393	421	494	1.17
N,N'-Ethylenebis(stearamide)-----	...	27,574	18,458	.67
All other-----	252,353	79,193	75,350	.95
Amines, total <sup>3</sup>				
Butylamines-----	1,448,959	499,954	379,656	.76
Di-n-butylamine-----	29,079	25,329	20,716	.82
Ethylamines:-----	4,141	4,717	3,628	.77
Diethylamine-----	19,696	6,279	4,661	.74
Ethylamine, mono-----	59,303	...	...	...

See footnotes at end of table.

## SYNTHETIC ORGANIC CHEMICALS, 1985

TABLE 1.--MISCELLANEOUS CYCLIC AND ACYCLIC CHEMICALS: U.S. PRODUCTION AND SALES, 1985--CONTINUED

MISCELLANEOUS CYCLIC AND ACYCLIC CHEMICALS	PRODUCTION	SALES		
		QUANTITY	VALUE	UNIT VALUE <sup>1</sup>
		1,000 pounds	1,000 dollars	Per pound
<b>NITROGENOUS COMPOUNDS--Continued</b>				
<b>Amines<sup>2</sup>--Continued</b>				
Triethylamine-----	17,277	17,787	15,429	\$0.87
Ethylenediamine-----	63,881	47,049	36,293	.77
Isopropylamine, mono-----	54,198	51,446	23,316	.43
<b>Methylamines:</b>				
Dimethylamine-----	65,904	57,247	24,796	.43
Methylamine, mono-----	52,317	...	...	...
Trimethylamine-----	29,384	17,921	5,921	.33
All other-----	1,057,920	276,896	248,524	.90
1,3-Diethyl-2-thiourea-----	...	330	680	2.08
Dimethylaminoethyl methacrylate-----	2,796	1,394	2,470	1.77
<b>Ethanolamines, total<sup>2</sup></b>				
2,2'-Aminodiethanol (Diethanolamine)-----	537,287	505,596	124,068	.23
2-Aminoethanol (Monoethanolamine)-----	166,479	157,388	41,596	.26
2-Methylactonitrile (Acetone cyanohydrin)-----	215,342	154,297	41,464	.27
2,2',2''-Nitrilotriethanol (Triethanolamine)-----	155,466	193,911	41,008	.21
<b>Nitriles, total</b>				
Acetonitrile-----	4,103,526	1,699,999	481,706	.28
Acrylonitrile-----	22,268	...	...	...
2-Methylactonitrile (Acetone cyanohydrin)-----	2,348,871	1,370,803	420,225	.31
All other-----	1,008,424	...	...	...
2-Methylactonitrile (Acetone cyanohydrin)-----	723,963	329,196	61,481	.19
All other nitrogenous compounds-----	866,956	192,073	202,158	1.05
<b>ACIDS, ACYL HALIDES AND ANHYDRIDES</b>				
Total-----	11,162,295	2,298,521	794,435	.35
Acetic acid, synthetic, 100% <sup>2</sup> -----	2,897,465	1,027,636	141,730	.14
Acrylic acid <sup>2</sup> -----	795,015	142,677	63,506	.45
Fatty acids, hydrogenated and nonhydrogenated-----	...	122,929	39,423	.32
Fumaric acid-----	48,643	29,133	17,813	.61
Propionic acid-----	99,748	66,348	14,634	.22
All other acid, acyl halides, and anhydrides-----	7,321,424	909,798	517,329	.57
<b>SALTS OF ORGANIC ACIDS</b>				
Total-----	315,491	292,379	239,277	.82
Acetic acid salts, total-----	19,095	18,559	13,612	.74
Ammonium acetate-----	165	173	255	1.48

See footnotes at end of table.



TABLE 1.--MISCELLANEOUS CYCLIC AND ACYCLIC CHEMICALS: U.S. PRODUCTION AND SALES, 1985--CONTINUED

MISCELLANEOUS CYCLIC AND ACYCLIC CHEMICALS	PRODUCTION	SALES		
		QUANTITY	VALUE	UNIT VALUE <sup>1</sup>
	<u>1,000</u> <u>pounds</u>	<u>1,000</u> <u>pounds</u>	<u>1,000</u> <u>dollars</u>	<u>Per</u> <u>pound</u>
<b>ACYCLIC--Continued</b>				
<b>SALTS OF ORGANIC ACIDS--Continued</b>				
<b>Acetic acid salts--Continued</b>				
Potassium acetate	506	1,721	1,295	\$0.75
Sodium acetate	13,195	...	...	...
Zinc acetate	408	426	531	1.25
All other	4,821	16,239	11,531	.71
<b>2-Ethylhexanoic acid (α-Ethylcaproic acid) salts,</b>				
total	20,863	17,641	30,300	1.72
Cadmium 2-ethylhexanoate	219	...	...	...
Calcium 2-ethylhexanoate	2,146	2,146	2,234	1.04
Cobalt 2-ethylhexanoate	4,409	3,493	9,273	2.65
Lead 2-ethylhexanoate	939	962	1,064	1.11
Manganese 2-ethylhexanoate	1,085	1,086	1,033	.95
Nickel 2-ethylhexanoate	1,826	1,227	1,792	1.46
Zinc 2-ethylhexanoate	956	909	1,036	1.14
Zirconium 2-ethylhexanoate	3,529	2,833	5,164	1.82
All other	5,754	4,985	8,704	1.74
Calcium neodecanoate	90	93	120	1.30
Calcium propionate	19,438	15,700	7,176	.46
<b>Oxalic acid salts:</b>				
Ammonium oxalate	88	75	164	2.18
Potassium oxalate	60	53	127	2.40
<b>Stearic acid salts, total<sup>4</sup></b>				
Aluminum stearates	3,215	3,470	4,438	1.28
Barium stearate	876	673	689	1.02
Cadmium stearate	90	97	212	2.18
Calcium stearate	69,147	65,923	42,767	.65
Cobalt stearate	511	519	1,428	2.75
Magnesium stearate	22,629	16,079	11,519	.72
Zinc stearate	27,925	26,363	24,315	.92
All other	1,919	1,457	2,313	1.59
All other salts of organic acids	129,545	125,677	100,097	.80
<b>ALDEHYDES</b>				
Total	8,228,498	2,086,288	201,459	.10
Butyraldehyde	1,286,229	38,258	6,381	.17
Formaldehyde (37% by weight) <sup>2</sup>	5,606,140	1,742,409	108,780	.06
Propionaldehyde	219,391	8,319	1,972	.24
All other aldehydes	1,116,738	297,302	84,326	.28

See footnotes at end of table.

## SYNTHETIC ORGANIC CHEMICALS, 1985

TABLE 1.--MISCELLANEOUS CYCLIC AND ACYCLIC CHEMICALS: U.S. PRODUCTION AND SALES, 1985--CONTINUED

MISCELLANEOUS CYCLIC AND ACYCLIC CHEMICALS	PRODUCTION	SALES		
		QUANTITY	VALUE	UNIT VALUE <sup>1</sup>
	<u>1,000</u> <u>pounds</u>	<u>1,000</u> <u>pounds</u>	<u>1,000</u> <u>dollars</u>	<u>Per</u> <u>pound</u>
ACYCLIC--Continued				
KETONES				
Total-----	2,621,992	2,341,920	527,648	\$0.23
Acetone: <sup>2</sup>				
From cumene-----	1,148,980	1,051,870	184,509	.18
From isopropyl alcohol-----	638,820	482,108	82,147	.17
4-Hydroxy-4-methyl-2-pentanone (Diacetone alcohol)-----	36,925	30,637	12,468	.41
Methyl ethyl ketone (2-Butanone) <sup>2</sup> -----	537,101	559,589	140,713	.25
4-Methyl-2-pentanone (Methyl isobutyl ketone)-----	130,907	135,122	51,110	.38
All other ketones-----	129,259	82,594	56,701	.69
ALCOHOLS, MONOHYDRIC, UNSUBSTITUTED				
Total-----	11,934,525	6,690,328	1,212,347	.18
Alcohols, C <sub>11</sub> or lower, unmixed, total-----	11,044,256	6,181,900	971,212	.16
Butyl alcohols, total-----	2,843,431	...	...	...
n-Butyl alcohol (n-Propylcarbinol) <sup>2</sup> -----	716,242	459,628	100,958	.22
Isobutyl alcohol (Isopropylcarbinol) <sup>2</sup> -----	174,968	119,966	20,564	.17
All other-----	1,952,221	...	...	...
Ethyl alcohol, synthetic <sup>2 5</sup> -----	648,784	...	...	...
2-Ethyl-1-hexanol <sup>2</sup> -----	536,310	384,836	103,290	.27
Isopropyl alcohol <sup>2</sup> -----	1,234,553	852,630	203,830	.24
Methanol, synthetic <sup>2</sup> -----	5,002,918	2,656,904	192,377	.07
Propyl alcohol (Propanol)-----	145,283	84,875	27,769	.33
All other-----	632,977	1,623,061	322,424	.70
Alcohols, C <sub>12</sub> and higher, unmixed, total-----	165,411	69,911	42,329	.61
Mixtures of alcohols:				
Containing C <sub>11</sub> or lower only-----	184,726	124,454	56,295	.45
Other mixtures-----	540,132	314,063	142,511	.46
ESTERS OF MONOHYDRIC ALCOHOL				
Total-----	4,927,305	2,834,342	1,117,394	.39
Allyl methacrylate-----	668	662	1,290	1.95
Butyl acetates:				
n-Butyl acetate-----	179,140	112,601	48,479	.43
Isobutyl acetate-----	76,732	57,033	17,122	.30
Butyl acrylate-----	423,620	210,771	98,188	.47
tert-Butyl peroxy-2-ethylhexanoate-----	1,952	1,947	6,458	3.38
tert-Butyl peroxy-pivalate-----	2,402	2,522	8,576	3.40
Dibutyl maleate-----	2,904	2,826	1,554	.55
Diethyl maleate-----	4,055	3,776	2,834	.75
2-Ethoxyethyl acetate-----	103,038	101,557	43,776	.43
Ethyl acetate (100% basis) <sup>2</sup> -----	191,981	178,403	44,573	.25
Ethyl acrylate-----	303,100	209,874	84,394	.19
2-Ethyl-1-hexyl acrylate-----	79,240	58,561	32,225	.55

See footnote at end of table.

TABLE 1.--MISCELLANEOUS CYCLIC AND ACYCLIC CHEMICALS: U.S. PRODUCTION AND SALES, 1985--CONTINUED

MISCELLANEOUS CYCLIC AND ACYCLIC CHEMICALS	PRODUCTION	SALES		
		QUANTITY	VALUE	UNIT VALUE <sup>1</sup>
	1,000 pounds	1,000 pounds	1,000 dollars	Per pound
ACYCLIC--Continued				
ESTERS OF MONOHYDRIC ALCOHOLS--Continued				
Fatty acid esters, not included with plasticizers or surface-active agents, total	18,814	18,441	11,576	\$0.63
Myristyl myristate	307	282	450	1.59
Tridecyl stearate	1,893	1,835	1,495	.81
All other	16,614	16,324	9,631	.59
Methyl methacrylate <sup>2</sup>	858,147	...	...	...
Phosphorus acid esters, not elsewhere specified	102,848	89,609	101,896	1.14
Propyl acetate	60,873	55,775	24,439	.44
Vinyl acetate	2,112,433	1,309,338	278,455	.21
All other esters of monohydric alcohols	405,358	420,646	311,559	.74
POLYHYDRIC ALCOHOLS				
Total <sup>5</sup>	5,743,412	3,941,386	982,095	.25
1,4-Butanediol	353,482	86,024	59,090	.69
Ethylene glycol <sup>2</sup>	4,178,310	2,896,757	500,862	.17
Pentaerythritol <sup>2</sup>	93,726	116,551	59,072	.51
Propylene glycol <sup>2</sup>	499,529	466,913	148,352	.32
Sorbitol (70% by weight)	179,087	133,998	49,885	.37
All other polyhydric alcohols	439,278	241,143	164,834	.68
POLYHYDRIC ALCOHOL ESTERS <sup>6</sup>				
Total	210,305	210,065	126,049	.60
POLYHYDRIC ALCOHOL ETHERS				
Total	1,766,656	1,420,131	493,361	.35
2-Butoxyethanol <sup>2</sup>	276,814	267,184	79,491	.30
2-(2-Butoxyethoxy)ethanol (Diethylene glycol monobutyl ether)	69,736	64,919	24,378	.38
2-[2-(2-Butoxyethoxy)ethoxy]ethanol (Triethylene glycol monobutyl ether)	10,148	4,839	2,475	.51
Diethylene glycol	440,549	336,662	53,953	.16
Dipropylene glycol	52,877	...	...	...
2-Ethoxyethanol	123,879	60,913	21,031	.35
2-(2-Ethoxyethoxy)ethanol (Diethylene glycol monoethyl ether)	25,743	23,974	8,745	.36
2-[2-(2-Ethoxyethoxy)ethoxy]ethanol (Triethylene glycol monoethyl ether)	12,061	...	...	...
2-Methoxyethanol (Ethylene glycol monomethyl ether)	83,493	77,768	21,850	.28
2-(2-Methoxyethoxy)ethanol (Diethylene glycol monomethyl ether)	40,167	32,775	10,640	.32
2-[2-(2-Methoxyethoxy)ethoxy]ethanol (triethylene glycol monomethyl ether)	28,501	...	...	...
Polyethylene glycol	73,327	54,371	29,394	.54

See footnotes at end of table.

## SYNTHETIC ORGANIC CHEMICALS, 1985

TABLE 1.--MISCELLANEOUS CYCLIC AND ACYCLIC CHEMICALS: U.S. PRODUCTION AND SALES, 1985--CONTINUED

MISCELLANEOUS CYCLIC AND ACYCLIC CHEMICALS	PRODUCTION	SALES		
		QUANTITY	VALUE	UNIT VALUE
		1,000 pounds	1,000 dollars	Per pound
ACYCLIC--Continued				
POLYHYDRIC ALCOHOL ETHERS--Continued				
Polyglycols, ethylene glycol and glycol ether, mixed-----	5,605	...	...	...
Polypropylene glycol-----	16,065	10,440	6,493	\$0.62
Tetraethylene glycol-----	24,159	16,001	6,640	.41
Triethylene glycol-----	149,691	143,596	40,047	.28
All other polyhydric alcohol ethers-----	333,841	326,689	188,224	.58
HALOGENATED HYDROCARBONS				
Total-----	26,836,764	6,916,903	1,785,085	.26
Chlorinated hydrocarbons, total-----	25,804,474	6,121,016	1,136,214	.19
Carbon tetrachloride <sup>2</sup> -----	645,618	360,328	58,220	.06
Chlorinated paraffins (C <sub>10</sub> -C <sub>30</sub> ):				
35%-64% chlorine-----	79,904	81,962	31,104	.38
Chloroform-----	275,255	383,723	54,508	.14
Chloromethane (Methyl chloride)-----	...	174,097	36,560	.21
Dichloromethane (Methylene chloride) <sup>2</sup> -----	467,118	502,503	94,519	.19
Ethyl chloride (Chloroethane) <sup>2</sup> -----	170,503	82,606	13,287	.06
Ethylene dichloride (1,2-Dichloroethane) <sup>2</sup> -----	12,100,888	409,990	38,776	.09
Tetrachloroethylene (Perchloroethylene) <sup>2</sup> -----	677,819	437,996	81,043	.19
1,1,1-Trichloroethane (Methyl chloroform) <sup>2</sup> -----	868,776	580,088	182,689	.31
Vinyl chloride, monomer (Chloroethylene) <sup>2</sup> -----	9,462,979	2,868,762	459,810	.16
All other-----	1,055,614	238,961	85,698	.36
Fluorinated (including other fluorohalogenated) hydrocarbons, total-----	1,019,486	783,796	633,712	.80
Chlorodifluoromethane (F-22) <sup>2</sup> -----	235,350	141,255	158,033	1.12
Dichlorodifluoromethane (F-12) <sup>2</sup> -----	301,893	284,044	182,317	.64
Trichlorofluoromethane (F-11) <sup>2</sup> -----	175,781	171,168	81,104	.47
All other-----	306,462	187,329	212,258	1.13
Iodinated (not otherwise halogenated) hydrocarbons-----	64	60	553	9.22
All other halogenated hydrocarbons-----	12,740	12,031	14,606	1.22
ALL OTHER MISCELLANEOUS ACYCLIC CHEMICALS				
Total-----	9,897,607	2,874,231	1,253,878	.44
Acyclic peroxides:				
2-Butanone peroxide-----	9,751	10,240	16,026	1.56
Expoxides, ethers, and acetals, total-----	8,033,541	2,148,042	616,791	.29
Ethylene oxide <sup>2</sup> -----	5,430,359	615,170	130,971	.21
Glycidyl ethers, total-----	6,157	6,218	12,477	2.01
1-Butoxy-2,3-epoxypropane (Butyl glycidyl ether)-----	536	546	1,037	1.00
All other-----	2,597,025	1,526,654	473,343	.31

TABLE 1.--MISCELLANEOUS CYCLIC AND ACYCLIC CHEMICALS: U.S. PRODUCTION AND SALES, 1985--CONTINUED

MISCELLANEOUS CYCLIC AND ACYCLIC CHEMICALS	PRODUCTION	SALES		
		QUANTITY	VALUE	UNIT VALUE <sup>1</sup>
	1,000 pounds	1,000 pounds	1,000 dollars	Per pound
ACYCLIC--Continued				
ALL OTHER MISCELLANEOUS ACYCLIC CHEMICALS--Continued				
Phosgene (Carbonyl chloride)-----	514,095	...	...	...
Silicone fluids-----	134,116	88,769	168,715	\$1.90
All other miscellaneous acyclic chemicals-----	1,206,104	627,180	452,346	.73
MIXTURES NOT SPECIFICALLY ITEMIZED				
Total-----	378,283	201,743	41,092	.20
Glycol residues-----	13,414	9,066	1,763	.19

<sup>1</sup>Calculated from unrounded figures.

<sup>2</sup>The difference between the production reported here and that shown on the Preliminary Report on U.S. Production of Selected Organic Chemicals (including Synthetic Plastics and Resin Materials, 1985), results from a combination of incorrect reporting by some companies, end-of-year inventory adjustments, and rounding.

<sup>3</sup>Statistics exclude production and sales of fatty amines. Statistics on fatty amines. Statistics on fatty amines are included in the section "Surface-Active Agents."

<sup>4</sup>Statistics exclude production and sales of potassium and sodium stearates. Statistics on these stearates are included in the section "Surface-Active Agents."

<sup>5</sup>Statistics for production of specially denatured alcohol, 209,876,665 wine gallons, and completely denatured alcohol, 297,955,185 wine gallons, for calendar year 1985 are compiled from data supplied by the Bureau of Alcohol, Tobacco, and Firearms. Withdrawals of completely denatured alcohol for fuel use was 222,893,158 wine gallons; nearly all specially denatured alcohol is considered to be used for fuel.

<sup>6</sup>Some polyols which are used as intermediates for urethanes have been included in the section "Plastics and Resin Materials."

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1985

[CHEMICALS FOR WHICH SEPARATE STATISTICS ARE GIVEN IN TABLE 1 ARE MARKED BELOW WITH AN ASTERISK (\*); CHEMICALS NOT SO MARKED DO NOT APPEAR IN TABLE 1 BECAUSE THE REPORTED DATA ARE ACCEPTED IN CONFIDENCE AND MAY NOT BE PUBLISHED. MANUFACTURERS' IDENTIFICATION CODES SHOWN BELOW ARE TAKEN FROM TABLE 3. AN "X" SIGNIFIES THAT THE MANUFACTURER DID NOT CONSENT TO HIS IDENTIFICATION WITH THE DESIGNATED PRODUCT]

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
CYCLIC	
6-Acetoxy-2,4-dimethyl-1,3-dioxane-----	GIV, NEV.
Acetylcyclohexane sulfonyl peroxide-----	WTL.
Alkylphenol formaldehyde condensate, alkoxyated-----	X.
Alkylphenol formaldehyde copolymer-----	X.
1-(2-Aminoethyl)piperazine-----	CYL, DOW.
1-(3-Aminopropyl)morpholine-----	TX.
Amyl p-dimethylaminobenzoate-----	VND.
Amyl and dimethylaminobenzoate-----	VND.
BENZOIC ACID SALTS:	
Ammonium benzoate-----	WTK.
Cadmium benzoate-----	VNC.
Potassium benzoate-----	KLM, PFZ.
Sodium benzoate, U.S.P.-----	HCP, JRC, KLM, PFZ.
Sodium benzoate, tech.-----	PFZ.
Benzoic acid salts, all other-----	FER, WTC.
Benzenephosphinic acid-----	SFS.
1,4-Benzoquinone (p-Quinone)-----	EKT.
Benzothiazole-----	RCL, X.
Benzotriazole, substituted-----	CGY, X.
*Benzoyl peroxide-----	AZT, CAD, NOC, PLC, WTC, WTL.
Benzyl alcohol-----	KLM, SFS.
Benzyl chloroformate-----	ESX, VCM.
Benzyl cocoalkyl dimethyl ammonium chloride-----	X.
Bis(p-chlorobenzoyl)peroxide-----	CAD.
Bis(2,4-dichlorobenzoyl) peroxide-----	CAD, WTL.
Bis(α,α-dimethylbenzyl)peroxide-----	WTL.
2,2-Bis(ferrocenyl)propane-----	ARA.
Bis(hydroxymethyl)oleyl oxazoline-----	ANG.
Bis(1,1,3,3-methyl-butyl-phenyl)ether-----	HEX.
1,1-Bis(3,3,5-trimethyl)dicyclohexane-----	WTL.
Bis(triphenylsilyl)chromate-----	X.
Boron fluoride-phenol complex-----	ACS.
Bromochloro-5,5'-dimethyl hydantoin-----	GLY.
8-Bromo-8-nitrostyrene-----	GIV.
2-Butoxyethyl benzoate-----	X.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1985

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
CYCLIC--CONTINUED	
*Butyl benzoate	MRF, PCI, TCC.
4-tert-Butylcyclohexyl peroxydicarbonate	CAD.
tert-Butylhydroquinone	EKT.
Butyl and isopropyl phthalimides	RPC.
2(and 3)-tert-Butyl-4-methoxyphenol (BHA)	EKT.
*tert-Butyl peroxybenzoate	AZT, FRE, WTC, WTL.
tert-Butyl peroxy-3,5,5-trimethyl cyclohexane	CAD.
4-tert-Butylpyrocatechol	CRZ.
Camphene	SCM, X.
*Caprolactam (2-Oxohexamethyleneimine)	ACS, CNP, DBC, X.
Caprolactam magnesium bromide	X.
Cellulose acetate hexahydrophthalate	X.
Cellulose acetate phthalate	EK, UCC.
1-(3-Chloroallyl)-3,5,7-triazo-1-azoniaadamantane chloride	DOW.
p-(Chloromethyl)phenyl trimethoxysilane	SCM.
Chlorothiaxanthone	PSG.
Cresolsulfonic acid, formaldehyde condensate	STC.
*Cumene hydroperoxide	BTL, CLK, FRE, USS, WTC.
$\alpha$ -Cumyl peroxyneodecanoate	WTL.
Cyanuric acid	FMC, MON.
1,4-Cyclohexylenedimethanol	EKT.
Cyclo chloroacetate	AAC.
Cyclopropane	DOW.
Decabromodiphenyl ether (DBDP)	TNA.
Decahydronaphthalene (Decalin)	DUP.
Dehydroacetic acid or sodium salt	GAN.
1,4-Diazobicyclo(2.2.2)octane	TX, X.
Diazodinitrophenol	HPC.
2,5-Di(benzoyl peroxy)-2,5-dimethylhexane	AZT, WTL.
Di-t-butyl diperoxyphthalate	WTL.
2,5-Di-tert-butylhydroquinone	EKT.
1,3-Dichloro-5,5-dimethylhydantoin	GLY.
Dichloro-s-triazine-2,4,6(1H,3H,5H)trione (Dichloroisocyanuric acids and salts)	FMC.
4,4'-Dichloro-3-(trifluoromethyl)carbanilide	CGY.
1,1-Dicyclohexane	WTL.
Dicyclohexylammonium nitrite	SHC.
Dicyclopentadienylchromium	X.
Dicyclopentadienyliron	ARA.
N,N'-Diethyl-N,N'-diphenylurea	VDM.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE  
REPORTED, IDENTIFIED BY MANUFACTURER, 1985--CONTINUED

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
CYCLIC--CONTINUED	
Di(2-ethylhexyl)chlorendate-----	VEL.
1,5-Diethyl-2-thio-4,6-pyrimidinedione-----	TNI.
2,5-Dihydrothiophene-1,1-dioxide (Sulfolene)-----	PLC.
3,5-Dihydroxy-3,5-dimethyl-1,2-peroxycyclopentane-----	WTC, WTL.
Diiodomethyl-p-tolyl sulphone-----	ABB.
Diisopropylbenzene hydroperoxide-----	HPC.
Diketene-----	BRD, EKT.
Dimer acid esters with polyethylene glycol hydrogen phthalate and castor oil-----	X.
p-Dimethoxybenzene (Dimethyl ether of hydroquinone)-----	ASL.
N,N'-Dimethyl-N,N'-diphenylurea-----	VDM.
4,4-Dimethyl oxazolidine-----	EFH.
4,4-Dimethyl oxazoline-----	ANG.
4,4-Dinitrocarbanilide-4,6-dimethyl-2-pyrimidinol-----	MRK, NOC.
Dioxane (1,4-Diethylene oxide)-----	FER, MIL.
1,3-Dioxolane-----	FER.
Di-para-xylene-----	WCC.
Dipropylene glycol salicylate-----	SBC.
*Dodecenylsuccinic anhydride-----	BCC, DIX, HMY, MIL.
4-(Dodecyloxy)-2-hydroxybenzophenone-----	EKT.
Dodecyl pyridinium chloride-----	TLC.
6-Ethoxy-12-dihydro-2,2,4-trimethyl quinoline-----	MON.
Ethoxylated methylglucoside-----	CRN.
5-Ethyl-1-aza-3,7-dioxabicyclo[3.3.0]octane-----	ANG.
Ethyl chrysanthemate-----	SFS.
2,6-DI-TERT-BUTYL-P-CRESOL (BHT):	
2,6-Di-tert-butyl-p-cresol, (BHT), Food grade-----	KPT, USR.
*2,6-Di-tert-butyl-p-cresol, (BHT), Technical grade-----	KPT, UCC, USR.
2-Ethylhexyl benzoate-----	TCC.
2-Ethylhexyl-p-dimethylaminobenzoate-----	VND.
Ethyl hydroxymethyl oleyl oxazoline-----	ANG.
Ethylidene norbornene-----	UCC.
4-Ethylmorpholine-----	TX.
Ferrocene polymer with 2-propanone, in chlorinated wax-----	ARA.
FURAN DERIVATIVES:	
2-Furaldehyde (Furfural)-----	CYL, QKO, X.
[5-(Phenylmethyl)]-3-furfuryl alcohol-----	PEN.
Tetrahydrofurfuryl alcohol-----	QKO.
Gallic acid, tech.-----	MAL.



TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1985

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
CYCLIC--CONTINUED	
Glyceryl p-aminobenzoate	VND.
Hexabromocyclodecane	TNA.
*Hexamethylenetetramine, tech.	BOR, CYL, HMP, NOD, OMC, PLS, WCL.
Homomenthyl salicylate	WTC.
Hydrindantin	PIC.
Hydroquinone, di(β-hydroxyethyl) ether	EKT.
p-Hydroxybenzoic acid, benzyl ester	LEM.
p-Hydroxybenzoic acid, butyl ester	CWN, KLM REG.
p-Hydroxybenzoic acid, ethyl ester	KLM.
p-Hydroxybenzoic acid, methyl ester	KLM, LEM.
p-Hydroxybenzoic acid, propyl ester	KLM, LEM.
N-(Hydroxyethyl)piperazine	TCH.
Hydroxymethyl-5,5-hydantoin	GLY.
2-Hydroxy-2-methylphenyl propanone	MMC.
α-D-p-Hydroxyphenylglycine methyl ester K	BOC.
1,2,3-Indantrione monohydrate (Ninhydrin)	PIC.
*LACTONES:	
Butyrolactone	BAS, GAF.
Caprolactone	UCC.
Glucono-γ-lactone	PFZ.
Lactones, all other	PFN.
Lanolin acetate	CRN.
Lanolin acid	CRN.
Lanolin acid, isopropyl ester	CRN.
Lanolin alcohol acetate	GRN.
*Maleic anhydride	AMO, ASH, DKA, MON, USS.
p-Menthane	HPC.
8-p-Menthyl hydroperoxide	HPC.
4-Methoxyphenol	ASL, EKT.
Methylaziridine	ARS.
2,2'-Methylenebis(3,4,6-trichlorophenol) (Hexachlorophene)	VEL.
4-Methylmorpholine	TX.
1-Methyl-2-pyrrolidone, monomer	BAS, GAF.
Morpholine	AIP, TX.
Morpholine salt of p-toluene sulfonic acid	AMB.
Octabromodiphenyl oxide	TNA.
Octadecenyl succinic anhydride	MIL.
Octadecyl-3-(3,5-di-tert-butyl-4-hydroxyphenyl)- propionate	CGY, TNA.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1985

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
CYCLIC--CONTINUED	
Octenylsuccinic anhydride-----	HMY, MIL.
Oxalyl bis(benzylidene hydrazide)-----	EKT.
Pentaerythritol tribenzoate-----	VEL.
Phenethyl bromide-----	WCC.
Phenothiazine-----	WAG.
2-Phenoxyethanol (Ethylene glycol monophenyl ether)-----	TCH.
2-(2-Phenoxyethoxy)ethanol (Diethylene glycol phenyl ether)-----	EKT.
$\alpha$ -D-Phenylglycine methyl ester K-----	BOC.
Phenyl xylyl ethane-----	HCC, TCC.
Phthalic acid, lead salt, (Dibasic)-----	ALI.
Picramic acid, sodium salt-----	SDC.
*PINENE AND DERIVATIVES:	
Pinane-----	SCM.
Pinane hydroperoxide-----	SCM.
2-Pinanol (cis and trans)-----	SCM.
$\alpha$ -Pinene-----	ARZ, SCM.
* $\beta$ -Pinene-----	ARZ, HPC, NCI, SCM.
Pinene, sulfate-----	ARZ, HPC, NCI.
Pine oil, natural sulfate-----	NCI.
*Pine oil, synthetic-----	ARZ, NCI, SCM.
Polypropylene glycol glycerol triether and epichlorohydrin bisphenol epoxy resin-----	X.
Polypropylene glycol glyceryl triether (epichlorohydrin-bisphenol A) epoxy resin copolymer, ethoxylated-----	X.
Propoxylated methylglucoside-----	CRN.
Propylene glycol dibenzoate-----	VEL.
Propyl gallate-----	EKT.
2,4(1H,3H)Pyrimidinedione-----	SCM.
Resorcinol monobenzoate-----	EKT.
Rosin acid salts-----	SD.
Salicylic acid magnesium salt-----	KLM.
Sodium benzene phosphinate-----	SFS.
Stannous octyl phthalate-----	X.
Styrene oxide-----	UCC.
Succinic anhydride-----	BCC.
Sucrose benzoate-----	VEL.
Tall oil, chemically modified-----	CCC, FOC, EFH, GAF, WVA, X, X.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1985

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
CYCLIC--CONTINUED	
*TALL OIL SALTS (LINOLEIC-ROsin ACID SALTS):	
Calcium manganese tallate	MCI, SHP.
Calcium tallate	CCA, X.
Cobalt manganese tallate	MCI.
Cobalt tallate	MCI, SHP.
Lead manganese tallate	SHP.
Lead tallate	CCA, MCI.
Manganese tallate	MCI, SHP.
Zinc tallate	MCI.
Tall oil salts, all other (Linoleic-rosin acid salts)	CCA, SHP, X.
Tannic acid, N.F.	MAL.
Terpene hydrocarbons, monocyclic (Solvenol)	HPC, NCI, SCM, WTK.
Terpene polymers	ARZ.
Tetrabromobisphenol A	GTL, TNA, X.
n-Tetradecenylsuccinic anhydride	DIX.
1,2,3,4-Tetrahydronaphthalene (Tetralin)	DUP.
Tetrahydrothiophene	PAS.
Tetrahydrothiophene-1,1-dioxide (Sulfolane)	PLC.
Tetraphenyltin chloride	ALW.
Thiophene	PAS.
Triallyl cyanurate	ACY.
Tributyltin benzoate	COS.
3,4,4'-Trichlorocarbanilide	MON.
*1,3,5-Trichloro-s-triazine-2,4,6-(1H,3H,5H)trione (Trichloroisocyanuric acid)	FMC, MON, OMC, SHC.
3,3,5-Trimethylcyclohexanol (m-homenthol)	ARS.
3,5,5-Trimethyl-2-cyclohexene-1-one (Isophorone)	ENJ, UCC.
2,4,6-Trinitroresorcinol and lead derivative	REM.
s-Trioxane	ALW.
2,4,6-Triphenoxy-s-triazine	AMB.
Triphenyltin hydroxide	X.
1-Vinyl-2-pyrrolidinone--other copolymers	GAF.
1-Vinyl-2-pyrrolidinone-methylacrylic acid, dimethylamine ethyl ester, copolymer	GAF.
1-Vinyl-2-pyrrolidinone, monomer	GAF.
Cyclic chemicals, all other	AIP, ALW, CWN, DA, DOW, GAF, KF, NES, ORT, PAC, PIC, PLC, REG, REM, RH, RSA, SFS, SK, STC, TCC, TNA TX, UCC, VTC, WLN, WTK, WTC, X, X, X, X.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1985

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
CYCLIC--CONTINUED	
ACYCLIC	
*NITROGENOUS COMPOUNDS:	
Acetamidine hydrochloride-----	WTC.
Acetamidoethanol (N-Acetyl-ethanolamine)-----	GAF, SBC.
Alkyl C <sub>12</sub> C <sub>14</sub> amine hydrochloride-----	COS.
*AMIDES:	
Acetamide-----	ACS, WTK.
*Acrylamide monomer-----	ACY, CYL, X, X.
Amido amine salts as curing agents-----	CEL, PAC, X.
1,1'-Azobisformamide-----	OMC, USR.
Bis[2-(octadecylamido)ethyl]-N-(2-cyanoethyl)-N-ethyl ammonium ethyl sulfate-----	SBC.
Coconut oil amide-----	ARC, CAD, FTX.
N,N-Diethyldodecanamide-----	EK.
N,N-Dimethylacetamide-----	DUP.
N,N-Dimethylacetoacetamide-----	EKT.
Dimethylaminopropyl methacrylamide-----	TX.
Dimethyl caprylamide capramide-----	HAL.
N,N-Dimethylformamide-----	DUP, HAL.
Erucamide-----	ARC, WTC.
*N,N'-Ethylenebis-oleamide (Oleic acid-ethylenediamine condensate (Amine/acid ratio = 1/2))-----	CCW, GLY, WTC.
*N,N'-Ethylenebis(stearamide)-----	CCW, DA, GLY, WTC.
Fish oil fatty acid amide-----	WTC.
Formaldehyde adduct condensation-----	COS.
N-(Hydroxymethyl)-formamide-----	X.
Methacrylamide-----	DUP.
N-Methylacetamide-----	ARS, EKT.
Oleamide (Octadecene amide)-----	ARC, WTC.
Oleoylpalmitamide-----	HXL.
Oxamide-----	HML, TLI.
Stearamide (Octadecane amide)-----	ARC, WTC.
Stearyl erucamide-----	HXL, WTC.
Tallow amide, hydrogenated-----	ARC, CAD.
Amides, all other-----	ARS, BRD, DOW, EFH, SOL, WTC.
*AMINES:	
Allylamines-----	SHC, VGC.
Bis-hexamethylenetriamine amine-----	DUP, MON.

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MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
*NITROGENOUS COMPOUNDS--CONTINUED	
*AMINES--CONTINUED	
*BUTYLAMINES:	
n-Butylamine, mono-----	AIP, PAS.
sec-Butylamine, mono-----	PAS.
tert-Butylamine, mono-----	MON.
*Di-n-butylamine-----	AIP, PAS, VGC.
Diisobutylamine-----	AIP, VGC.
Tri-n-butylamine-----	AIP, PAS.
n-Butylethylamine-----	AIP.
Di-tert-butylethyldiamine-----	VGC.
Diethylaminoethanethiol HCl-----	EVN.
Diethylenetriamine-----	AIP, DOW, TX, UCC.
Diisopropylamine-----	AIP, PAS, UCC.
Dimethylaminopropylamine-----	AIP, TX.
Dimethylaminopropylamine, propoxylated-----	TX.
N,N-Dimethylbutylamine-----	VGC.
1,3-Dimethylbutylamine-----	PLC.
Dipropylenetriamine-----	MHI.
ETHYLAMINES:	
*Diethylamine-----	AIP, PAS, UCC.
*Ethylamine, mono-----	AIP, PAS, SHC, UCC.
*Triethylamine-----	AIP, PAS, UCC, VGC.
*Ethylenediamine-----	DOW, TX, UCC.
(2-Ethylhexyl)amine, mono-----	VGC.
N-Ethyl-2-methylallylamine-----	VGC.
1,6-Hexanediamine (Hexamethylenediamine)-----	DUP, MON.
n-Hexylamine-----	CXI, PAS.
*Isopropylamine, mono-----	AIP, UCC, VGC.
METHYLAMINES:	
*Dimethylamine-----	AIP, DUP, GAF, IMC.
*Methylamine, mono-----	AIP, DUP, GAF, IMC.
*Trimethyl amine-----	AIP, DUP, GAF, IMC.
Mixed primary t-alkylamines-----	RH.
Nitrilotriacetoneitrile-----	HMP, VGC.
tert-Octylamine-----	RH.
Pentaethylenehexamine-----	DOW, UCC.
PENTYLAMINES (AMYLAMINES):	
Dipentylamine-----	PAS, VGC.
Pentylamine, mono-----	PAS.
Tripentylamine-----	PAS.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1985

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
*NITROGENOUS COMPOUNDS--CONTINUED	
*AMINES--CONTINUED	
Poly(oxypropylene)diamine-----	TX.
PROPYLAMINES:	
Dipropylamine-----	PAS, VGC.
Propylamine, mono-----	PAS.
Tripropylamine-----	PAS.
Tetraethylenepentamine-----	DOW, UCC.
N,N,N',N'-Tetramethyl-1,3-butanediamine-----	MON.
Tetramethylethylenediamine-----	BKM.
Triethylenetetramine-----	DOW, UCC.
Amines, all other-----	BUC, CXI, EK, MON, PAC, USR, VEL, X.
2-Aminoethanol hydrochloride-----	HCP, OMC.
2-Aminoethanol (Monoethanol amine) sulfite-----	EVN, OMC.
Aminoethoxyethanol-----	TX.
2-(2-Aminoethylamino)ethanol (Aminoethylethanolamine)-----	DOW, HDG, UCC.
2-Aminoethyl mercaptoacetate (Monoethanolamine thioglycolate)-----	EVN.
2-Amino-2-ethyl-1,3-propanediol-----	ANG.
Aminoguanidine hydrochloride-----	REM.
3-Amino-3-methyl-1-butyne-----	RH.
2-Amino-2-methyl-1,3-propanediol-----	ANG.
2-Amino-2-methyl-1-propanol-----	ANG.
2-Amino-2-methyl-1-propanol hydrochloride-----	CCC.
tert-Butylaminoethanol-----	PAS.
tert-Butylaminoethyl methacrylate-----	AAC, CPS.
tert-Butyldiethanolamine-----	PAS, UCC.
1-Butyl-3-ethyl-2-thiourea-----	PAS.
Butyl isocyanate-----	UPJ.
2-Chloro-N,N-diethylethylamine hydrochloride-----	SOL.
2-Chloro-N,N-dimethylethylamine (Dimethylamino ethyl chloride) hydrochloride-----	SOL.
2-Chloro-N,N-dimethylpropylamine hydrochloride-----	SOL.
3-Chloro-N,N-dimethylpropylamine hydrochloride-----	X.
3-Chloro-2-hydroxypropyltrimethyl ammonium chloride-----	DOW.
Choline-----	HFT, RH.
N-Cocoamidopropyl-N,N-dimethyl-N-sodium acetate, ammonium salt-----	X.
1-(2-Cyanoethyl)ethyl urea-----	GAF.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1985

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
*NITROGENOUS COMPOUNDS--CONTINUED	
Di-amine derivatives of dimer acids-----	SCP.
2-Dibutylaminoethanol-----	PAS.
Dibutylaminomethanol-----	X.
1,3-Dibutyl-3-thiourea-----	RBC, VNC.
2-Diethylaminoethanol (N,N-Diethylethanolamine)-----	PAS, UCC.
2-(2-Diethylaminoethoxy)ethanol-----	PAS, UCC.
2-Diethylaminoethyl acrylate-----	AAC, X.
Diethylaminoethylacrylate, dimethyl sulfate, quaternary salt-----	CPS.
2-Diethylaminoethyl methacrylate-----	CPS, DUP.
Diethylcarbamoyl chloride-----	GAF.
Diethylhydroxylamine-----	PAS.
N,N-Diethyl-N-methyl-2(1-oxo-2-propenyloxy) ethaniminium sulfate-----	X.
*1,3-Diethyl-2-thiourea-----	PAS, RBC, VNC.
2-Diisopropylaminoethanol (N,N- Diisopropylethanolamine)-----	PAS, UCC.
Di-(methoxyethyl)hydroxylamine-----	SCP.
Dimethylamine epichlorohydrin copolymer-----	X.
Dimethylamine sulfate-----	ALW, RH.
2-Dimethylaminoethanethiol hydrochloride-----	EVN.
2-Dimethylaminoethanol (N,N-Dimethylethanolamine)-----	PAS, PEL, TX, UCC.
Dimethylaminoethyl acrylate-----	FKE.
Dimethylaminoethylacrylate, methyl chloride, quaternary salt-----	CPS, X.
Dimethylaminoethyl methacrylate-----	AAC, CPS, PAS.
Dimethylaminomethylmethacrylate, dimethyl sulfate, quaternary salt-----	AAC, CPS.
Dimethylaminoethylmethacrylate, methyl chloride, quaternary salt-----	AAC, CPS.
Dimethylaminomethanol-----	X.
2-Dimethylamino-2-methyl-1-propanol hydrochloride-----	WPG.
1-(Dimethylamino)-2-propanol-----	ANG, PAS, PEL.
1,1-Dimethylhydrazine-----	USR.
2,5-Dithiobiurea-----	FMT, GAF.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1985

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
*NITROGENOUS COMPOUNDS--CONTINUED	
*ETHANOLAMINES:	
*Diethanolamine-----	DOW, ICI, OMC, TX, UCC.
*Monoethanolamine-----	CXI, DOW, ICI, OMC, TX, UCC.
*Triethanolamine-----	DOW, ICI, OMC, TX, UCC.
2-Ethylaminoethanol (Ethylmonoethanolamine)-----	PAS.
Ethylenediamine dihydrochloride-----	RSA.
1,1-Ethylenediurea-----	EK.
5-(N-Ethyl-N-hydroxyethylamino)-2-pentanone-----	SDW.
N-Ethyl-N-hydroxyethyl-1,4-pentanediamine-----	SDW.
2-Ethyl-2-nitro-1,3-propanediol-----	ANG.
Hexamethylenediamine adipate (Nylon salt)-----	DUP, MON, X.
2-(Hydroxymethyl)-2-nitro-1,3-propanediol (Tris- (hydroxymethyl)nitromethane)-----	ANG.
Iminodiacetic acid-----	HMP.
ISOPROPYLAMINES:	
Monoisopropylamine-----	DOW.
Diisopropylamine-----	DOW, X.
Triisopropylamine-----	DOW.
2-Isopropylaminoethanol-----	PAS.
Isopropyl ethylthionocarbamate-----	ESX.
Ketimine, tetrafunctional-----	PAC.
2-Methoxyethyl carbamate-----	VAL.
3-Methoxypropylamine-----	TX.
2-Methylaminoethanol (N-Methylethanolamine)-----	PAS, UCC.
Methyl carbamate-----	NSC.
2,2'-(Methylimino)diethanol (Methyldiethanolamine)-----	DOW, PAS.
Methyl isocyanate-----	UCC.
2-Methyl-2-nitro-1,3-propanediol-----	ANG.
2-Methyl-2-nitro-1-propanol-----	ANG.
Nitrated lard oil-----	SM.
*NITRILES:	
*Acetonitrile-----	BKC, DUP, SOH, X.
*Acrylonitrile, monomer-----	ACY, DUP, MON, SOH.
Adiponitrile-----	DUP.
2,2'-Azobis[2-methylpropionitrile] (Azobisisobutyronitrile)-----	DUP.
n-Butyronitrile-----	EKK, WYT.



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MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
*NITROGENOUS COMPOUNDS--CONTINUED	
*NITRILES--CONTINUED	
Coconitrile-----	ARC.
Crotonitrile-----	RBC.
Cyanoacetic acid-----	KF.
3-Ethoxypropionitrile-----	DIX.
Ethyl cyanoacetate-----	KF.
Hexadecanenitrile-----	ARC.
Isobutyronitrile-----	EKK.
Lactonitrile-----	MON.
Lauronitrile (Dodecyl nitrile)-----	ARC.
3-Methoxypropionitrile-----	X.
Methyl cyanoacetate-----	KF.
Methylisobutyl ketone aminonitrile-----	HMP.
*2-Methylactonitrile (Acetone cyanohydrin)-----	CYR, DUP, MON, RH, SOH.
Oleonitrile (Octadecene nitrile)-----	ARC.
Pentenenitrile-----	DUP.
Propionitrile-----	MON.
Stearonitrile (Octadecane nitrile)-----	ARC.
Tallow nitrile-----	ARC.
3,3'-Thiodipropionitrile-----	EVN.
Vinylacetonitrile-----	ARC, RBC.
Nitriles, all other-----	ARC, DUP, EVN, OMC, RSA.
Nitroethane-----	ANG.
Nitromethane-----	ANG.
1-Nitropropane-----	ANG.
2-Nitropropane-----	ANG.
Octadecyl isocyanate-----	MOB.
2-Oximino-3-pentanone-----	PD.
Pentaerythritol tetranitrate-----	DUP, HPC.
Polyvinyl octadecyl carbamate-----	ESA.
n-Propylaminoethanol-----	X.
Semicarbazide hydrochloride-----	OMC.
Tetranitromethane-----	HML.
Thiosemicarbazide-----	FMT.
Trimethylamine hydrochloride-----	X.
Nitrogenous compounds, acyclic, all other-----	ADC, BUC, FKE, NES, OMC, PD, PIC, PRL, RSA, SHC, SHX, STC, TNA, UCC, WTC, X, X, X.

TABLE 2.—MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1985

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC—CONTINUED	
*ACIDS, ACID ANHYDRIDES, AND ACYL HALIDES:	
ACETIC ACID, 100%:	
Acetic acid, recovered (100%)-----	AIP, CEL, EKT, MON, RDA, SD.
*Acetic acid, synthetic (100%)-----	CEL, EKT, MON, UCC, USI.
ACETIC ANHYDRIDE, 100%:	
Acetic anhydride from acetaldehyde (100%)-----	EKT.
Acetic anhydride from acetic acid, other than recovered, by the vapor-phase process (100%)-----	CEL.
Acetic anhydride from acetic acid, recovered, by vapor-phase process-----	CEL, PFZ.
Acetyl chloride-----	WCC.
*Acrylic acid-----	CEL, DBC, RH, UCC.
Adipic acid-----	DUP, MON.
Azelaic acid-----	EMR.
2,2-bis(Hydroxy-methyl)-propionic acid-----	IMC.
Bromoacetic acid-----	WCC.
Bromobutyric acid-----	GTL.
tert-Butylperoxy maleic acid-----	WTC, WTL.
Butyric acid-----	CEL, EKT.
Butyric anhydride-----	EKT.
Butyryl chloride-----	TLC, WCC.
Chloroacetic acid, mono-----	PFZ, VTC.
Citric acid-----	MLS, PFZ.
Crotonic acid (2-Butenoic acid)-----	EKT.
Decanoyl chloride-----	WTL.
2,2-dichloroacetyl chloride-----	RDA.
Dimer acid (C-36 Aliphatic dibasic acid)-----	EMR, SYL.
Dimethylpropionic acid-----	ENJ.
Dithiodipropionic acid-----	EVN.
Dodecanedioic acid-----	DUP.
1,2-Ethanedisulfonic acid-----	SK.
2-Ethylhexanoic acid ( $\alpha$ -Ethylcaproic acid)-----	EKT, UCC.
2-Ethylhexanoyl chloride-----	PPG, WTL.
*Fatty acids, hydrogenated-----	DRL, GLY.
Fatty acids, non-hydrogenated-----	CAS, DRL, GLY, WVA.
Formic acid, 90%-----	CEL, UCC.
*Fumaric acid-----	AGC, DKA, KLM, MON, PFZ.
Gluconic acid, technical-----	PFZ, PMP.
Glutaric anhydride-----	UCC.

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MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
*ACIDS ACID ANHYDRIDES, AND HALIDES--CONTINUED	
Glycolic acid (Hydroxyacetic acid)	CEL, DUP.
Heptanoyl chloride	WCC.
n-Hexadecenylsuccinic anhydride	DIX, HMY.
n-Hexanoic acid	HMY.
1-Hydroxyethylidene-1,1-diphosphonic acid	CED.
Isethionic acid (2-Hydroxyethanesulfonic acid)	CYL, WTC.
Isoascorbic acid (Erythorbic acid)	PFZ.
Isobutyric acid	EKK.
Isobutyric anhydride	EKT, FER.
Isononanoyl chloride	STC.
Iso-octadecenoic acid	SYL.
Iso-octadecenylsuccinic anhydride	HMY.
Isopentanoic acid	UCC.
Itaconic acid (Methylenesuccinic acid)	PFZ.
Lactic acid, edible, 100%	MON.
Lauroyl chloride	WTL.
Maleic acid	PFN.
Malic acid	AGC, CYL, DKA.
Mercaptoacetic acid (Thioglycolic acid)	EVN.
3-Mercaptopropionic acid	EVN.
Mercaptosuccinic acid (Thiomalic acid)	EVN.
Methacrylic acid	DUP, RH.
Methanesulfonic acid	PAS.
Methanesulfonyl chloride	PAS.
Neodecanoic acid	ENJ.
Nonanoic acid (Pelargonic acid)	CEL, EMR.
Nonanoyl chloride	WCC.
Nonenylsuccinic anhydride	HMY.
Octanoyl chloride	WCC.
Oleic acid	DRL, GLY.
Oleoyl chloride	FTX, STC.
Oxalic acid	ACS.
Oxidized Fischer Tropsch wax	SNW.
Palmitoyl chloride	STC, X.
Peroxyacetic acid	FMB, UCC.
Pivaloyl chloride	PPG, WCC.
Polyacrylic acid	BFG, BKM, RH, SNW.
*Propionic acid	CEL, EKT, UCC.
Propionic anhydride	EKT.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE  
REPORTED, IDENTIFIED BY MANUFACTURER, 1985

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
*ACIDS, ACID ANHYRIDES, AND ACYL HALIDES--CONTINUED	
Propionyl chloride	WCC.
Sebacic acid	WTH.
Sebacoyl chloride	EK, WTL.
Sorbic acid (2,4-Hexadienoic acid)	MON.
Stearoyl chloride	DA.
Succinic acid	ACS.
Thioacetic acid	EVN.
3,3'-Thiodipropionic acid	EVN.
Thiolactic acid	EVN.
Trifluoroacetic acid	HOC.
Trifluoroacetic anhydride	HOC.
Valeric acid	UCC.
Acids, acid anhydrides, and acyl halides, all other	AAC, BKM, DRL, EK, FMC, KF.
*SALTS OF ORGANIC ACIDS:	
*ACETIC ACID SALTS:	
Aluminum acetate	NCC.
Aluminum tridecanate	KCH.
Ammonium acetate	ACS, BKC, WTK.
Barium acetate	BKC.
Calcium acetate	ACS, HFT.
Chromium acetate	SHP.
Cobalt acetate	SHP.
Cobalt manganese acetate	SHP.
Copper acetate	BKC.
Lead acetate	AIP, BKC.
Lead subacetate	BKC.
Magnesium acetate	BKC, SHP.
Manganese acetate	SHP.
Nickel acetate	BKC, SHP.
*Potassium acetate	ACS, BKC, HCP, NCC.
*Sodium acetate	ACS, ATL, BKC, EKT, HCP, NCC, X.
Sodium diacetate	HCP, NCC.
*Zinc acetate	ACS, BKC, DIX, SHP, WTK.
Zirconium acetate	CCC, TZC.
Acetic acid salts, all other	X.
Adipic acid, ammonium salt	ACS, SOL.
Allylsulfonic acid, sodium salt	IOC.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE  
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MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
*SALTS OF ORGANIC ACIDS--CONTINUED	
CITRIC ACID SALTS:	
Ammonium citrate-----	PFZ, WTK.
Calcium citrate-----	PFZ.
Diethanolamine citrate-----	X.
Potassium citrate-----	HKL, PFZ.
Sodium citrate-----	HKL, PFZ, X.
Citric acid salts, all other-----	WTK.
*2-ETHYLHEXANOIC ACID (ALPHA-ETHYLCAPROIC ACID) SALTS	
Aluminum 2-ethylhexanoate-----	NOC, WTC.
Barium 2-ethylhexanoate-----	NOD.
*Cadmium 2-ethylhexanoate-----	CCA, FER, VNC, WTC.
*Calcium 2-ethylhexanoate-----	CCA, COS, MCI, NOD, TRO.
Chromium 2-ethylhexanoate-----	MCI.
*Cobalt 2-ethylhexanoate-----	CCA, MCI, NOD, SHP, TRO, WTC.
Cobalt-potassium 2-ethylhexanoate-----	MCI.
Copper 2-ethylhexanoate-----	MCI, NOD.
Dibutyltin di-2-ethylhexanoate-----	COS.
Iron 2-ethylhexanoate-----	CCA, NOD.
*Lead 2-ethylhexanoate-----	CCA, COS, NOD, SHP, TRO, WTC.
*Manganese 2-ethylhexanoate-----	CCA, COS, MCI, NOD, SHP, TRO.
*Nickel 2-ethylhexanoate-----	CYL, MCI, NOD, SHP, WTC.
Potassium 2-ethylhexanoate-----	CCA, MCI, PEL.
Rare earths 2-ethylhexanoate-----	CCA, MCI, NOD.
Stannous 2-ethylhexanoate-----	FER, WTC.
*Zinc 2-ethylhexanoate-----	CCA, COS, FER, MCI, NOD, OMC, SHP, VNC, WTC.
*Zirconium 2-ethylhexanoate-----	CCA, COS, MCI, NOD, TRO, WTC.
2-Ethylhexanoic acid salts, all other-----	FER, LIL, NOD, SHP.
FORMIC ACID SALTS:	
Potassium formate-----	HCP.
Sodium formate, refined-----	BKC, WTK.
Sodium formate, technical-----	IMC, PST, WTK.
Formic acid salts, all other-----	RSA, WTK.
Fumaric acid, lead salt-----	ALI.
GLUCONIC ACID SALTS:	
Potassium glycolate-----	HCP, X.
Sodium gluconate-----	PFN, PFZ, X.
Glycolic acid, sodium salt-----	HCP.
2-Hydroxy-3-(2-propenyloxy)-1-propanesulfonic acid, sodium salt-----	AAC.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1985

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
*SALTS OF ORGANIC ACIDS--CONTINUED	
TERTIARY-ALPHA-ALKYLCARBOXYLIC ACID SALTS (ISOCARBOXYLIC ACID SALTS):	
Calcium t- $\alpha$ -alkylcarboxylate-----	MCI.
Cobalt t- $\alpha$ -alkylcarboxylate-----	MCI, MCK.
Copper t- $\alpha$ -alkylcarboxylate-----	MCI.
Iron t- $\alpha$ -alkylcarboxylate-----	MCI.
Lead t- $\alpha$ -alkylcarboxylate-----	MCI.
Manganese t- $\alpha$ -alkylcarboxylate-----	MCI.
Mixed t- $\alpha$ -alkylcarboxylic acid salts-----	MCI.
Zinc t- $\alpha$ -alkylcarboxylate-----	MCI.
Zirconium t- $\alpha$ -alkylcarboxylate-----	MCI.
Isononanoic acid, lead salt-----	CCA.
Isooctanoic acid, calcium salt-----	CCA.
Isethionic acid, sodium salt-----	MCB.
Isoascorbic acid, sodium salt (Sodium erythorbate)-----	PFZ.
LACTIC ACID SALTS:	
Sodium lactate (Nalac)-----	PFM.
Lactic acid salts, all other-----	PFM.
LAURIC ACID SALTS:	
Barium cadmium laurate-----	FER.
Dibutyltin dilaurate-----	FER, X.
Lauric acid salts, all other-----	WTC.
Lead salts of menhaden fish oil, C- <sub>14</sub> to C- <sub>22</sub> (lead fishate)-----	ELC, MCI.
LINOLEIC ACID SALTS:	
Calcium linoleate-----	CCA.
Cobalt linoleate-----	CYL.
Lead linoleate-----	IMC.
MALEIC ACID SALTS:	
Tribasic lead maleate-----	ALI.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1985

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
*SALTS OF ORGANIC ACIDS--CONTINUED	
MERCAPTOACETIC ACID (THIOGLYCOLIC ACID) SALTS:	
Ammonium mercaptoacetate-----	EVN.
Calcium mercaptoacetate-----	EVN.
Sodium mercaptoacetate-----	EVN, X.
Mercaptoacetic acid (Thioglycolic acid) salts, all other-----	CCA.
Mercaptopropionic acid, dibutyltin salt-----	WTC.
NEODECANOIC ACID SALTS:	
*Calcium neodecanoate-----	CCA, MCI, SHP.
Cobalt neodecanoate-----	MCI, SHP.
Lead-cobalt neodecanoate-----	MCI.
Lead neodecanoate-----	MCI.
Lithium neodecanoate-----	MCI.
Manganese neodecanoate-----	MCI, SHP.
Rare earths neodecanoate-----	MCI, SHP.
Zinc/calcium/cobalt neodecanoate-----	MCI.
Zinc neodecanoate-----	SHP.
Zirconium neodecanoate-----	MCI, SHP.
Neodecanoic acid salts, all other-----	AIP.
OCTANOIC ACID (CAPRYLIC ACID) SALTS:	
Aluminum octanoate-----	SYP.
Stannous octanoate-----	SYP.
Octanoic acid (Caprylic acid) salts, all other-----	WTC.
OLEIC ACID SALTS:	
Calcium oleate-----	X.
Copper oleate-----	MCI.
OXALIC ACID SALTS:	
*Ammonium oxalate-----	ACS, BKC, HML, WTK.
*Potassium oxalate-----	ACS, BKC, HML, WTK.
Sodium oxalate-----	BKC, HML, WTK.
PALMITIC ACID SALTS:	
Aluminum palmitate-----	SYP.
PHOSPHORODITHIOIC ACID SALTS (DITHIOPHOSPHATES):	
Potassium dihexyl phosphorodithioate-----	ACY.
Sodium di-sec-butyl/diethyl phosphorodithioate-----	ACY.
Sodium di-sec-butyl phosphorodithioate-----	ACY.
Sodium dihexyl phosphorodithioate-----	ACY.
Sodium diisopropyl phosphorodithioate-----	ACY.
Phosphorodithioic acid salts (Dithiophosphates), all other-----	ESX.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE  
REPORTED, IDENTIFIED BY MANUFACTURER, 1985

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
*SALTS OF ORGANIC ACIDS--CONTINUED	
PROPIONIC ACID SALTS:	
*Calcium propionate-----	HFT, KMI, NCC.
Cobalt propionate-----	MCI.
Sodium propionate-----	HFT, NCC, X.
Propionic acid salts, all other-----	X.
Silver trifluoroacetate-----	EK.
Sodium di-2-ethylhexyl sulfosuccinate-----	WPG.
RICINOLEIC ACID SALTS:	
Calcium ricinoleate-----	CAS.
Sodium formaldehyde bisulfite-----	EK.
Sodium formaldehyde sulfoxylate-----	DA.
Sodium-N-methyl-N-oleyl taurate-----	WPG.
Ricinoleic acid salts, all other-----	CAS, WTC.
*STEARIC ACID SALTS:	
*ALUMINUM STEARATES:	
Aluminum distearate-----	MAL, NOC, NOD, SYP, WTC.
Aluminum monostearate-----	MAL, NOD, SYP.
Aluminum tristearate-----	MAL, NOC, NOD, SYP, WTC, X.
Ammonium stearate-----	DA, WPG.
*Barium stearate-----	ALI, FER, NOD, SYP, VNC, WTC.
*Cadmium stearate-----	SYP, VNC, WTC.
*Calcium stearate-----	ALI, DA, FER, MAL, NOC, NOD, SNW, SYP, WTC.
*Cobalt stearate-----	MCI, SHP, WTC.
Ferric stearate-----	WTC.
Lead stearate-----	WTC.
Lead stearate, dibasic-----	ALI.
Lithium stearate-----	NOC, SYP, WTC.
*Magnesium stearate-----	ALI, MAL, NOC, NOD, SYP, WTC.
Trioxy aluminum tristearate-----	KCH.
*Zinc stearate-----	CCC, DA, MAL, NOC, NOD, PLS, SYP, VNC, WTC.
Stearic acid salts, all other-----	WTC.
TARTARIC ACID SALTS:	
Potassium sodium tartrate-----	PFZ.
Zinc formaldehyde sulfoxylate-----	DA.
Salts of organic acids, all other-----	DA, EK, EKX, RSA, SK, TCH, WTC.



TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1985

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
*ALDEHYDES:	
Acetaldehyde	CEL, EKK, UCC.
Acrolein (Acrylaldehyde)	UCC.
*Butyraldehyde	CEL, DBC, EKK, UCC.
Crotonaldehyde	EKT.
2-Ethylhexanal ( $\alpha$ -Ethylcaproaldehyde)	EKK, UCC.
*Formaldehyde (37% HCHO by Weight)	BOR, CBD, CEL, DUP, GAF, GP, HPC, IMC, MON, NOD, PKI, RCI, WCL.
Glutaraldehyde	UCC.
Glyoxal	AGY.
Isobutyraldehyde	CEL, DBC, EKK, TU, UCC.
Isopentaldehyde, mixed isomers	UCC.
Methacrolein (methacrylaldehyde)	RDA.
*Propionaldehyde	CEL, EKK, UCC.
Succinaldehyde-sodium bisulfite complex	EK.
Valeraldehyde (Pentanal)	UCC.
Aldehydes, acyclic, all other	ASL, UCC.
*KETONES:	
*Acetone:	
*Acetone from cumene	ACS, BTL, CLK, DOW, GE, GGC, GYR, TX.
*Acetone from isopropyl alcohol	EKT, ENJ, SHC, UCC, VSS.
Acetone, crude	ATR.
5-Chloro-2-pentanone	SDW.
1-Chloropinacolone	CHG.
Chloro-2-propanone (Chloroacetone)	AIP, MRK.
Diisoamyl ketone	EKT.
Diisopropyl ketone (2,4-Dimethyl-3-pentanone)	EKK.
2-Heptanone (Methyl amyl ketone)	EKT.
*4-Hydroxy-4-methyl-2-pentanone (Diacetone alcohol)	CEL, SHC, UCC.
Isovalerone (Diisobutyl ketone)	EKT, UCC.
*Methyl ethyl ketone	ATR, CEL, ENJ, SHC.
5-Methyl-2-hexanone (Methyl isoamyl ketone)	EKT.
*Methyl isobutyl ketone	EKT, ENJ, SHC, UCC.
4-Methyl-3-penten-2-one (Mesityl oxide)	UCC.
Methylpseudoionone	NCI.
2-Octanone (Hexyl methyl ketone)	WTH.
2,4-Pentanedione (Acetylacetone)	UCC.
3-Pentanone (Diethyl ketone)	EKT, HEX, ORT, UCC.
Pseudoionone	NCI, SCM.
2,6,8-Trimethyl-4-nonanone (Isobutyl heptyl ketone)	UCC.
Ketones, all other	HEX.

TABLE 2.—MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1985

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC—CONTINUED	
*ALCOHOLS, MONOHYDRIC, UNSUBSTITUTED:	
*ALCOHOLS, C <sub>11</sub> OR LOWER, UNMIXED (95% OR MORE PURE):	
Allyl alcohol	FMC.
AMYL ALCOHOLS:	
2-Methyl-1-butanol	UCC.
1-Pentanol	UCC.
*BUTYL ALCOHOLS:	
*n-Butyl alcohol (n-Propylcarbinol)	CEL, DBC, EKK, GAF, SHC, UCC, VST.
sec-Butyl alcohol (Methylethylcarbinol)	ENJ, SHC.
tert-Butyl alcohol (Trimethylcarbinol)	ATR, SHC.
*Isobutyl alcohol (Isopropylcarbinol)	CEL, CPS, DBC, EKK, SHC, UCC.
1-Decanol	TNA, VST.
*Ethyl alcohol, synthetic only	CEL, DOW, EKK, SHC, UCC, USI, VST.
*2-Ethyl-1-hexanol	DBC, EKK, SHC, TU, UCC.
n-Heptyl alcohol	EKK.
n-Hexyl alcohol	TNA, VST.
Isodecyl alcohol	ENJ.
Isohexyl alcohol (2,2-Dimethylbutanol)	ENJ.
Isononyl alcohol	ENJ, SHC.
Iso-octadecyl alcohol	SHX.
Iso-octyl alcohol	ENJ.
*Isopropyl alcohol	ACS, ATR, ENJ, SHC, UCC.
*Methanol, synthetic only	AIP, ATR, BOR, CEL, DUP, EKT, GGC, HST, LYP, MON, TX.
2-Methyl-1-pentanol	UCC.
4-Methyl-2-pentanol (1-Methylisobutylcarbinol)	UCC.
1-Octanol	TNA, VST.
2-Octanol (sec-Capryl alcohol)	WTH.
*Propyl alcohol (Propanol)	CEL, EKK, UCC.
2-Propyn-1-ol (Propargyl alcohol)	GAF.
Alcohols, unmixed C or lower, all other	SHC, UCC.
*ALCOHOLS C <sub>12</sub> OR HIGHER, UNMIXED (95% OR MORE PURE):	
Dodecyl alcohol (Lauryl alcohol)	TNA, VST.
1-Hexadecanol (Cetyl alcohol)	CRN, PG, VST.
2-Hexyl-1-decanol	SCP.
1-Octadecanol (Stearyl alcohol)	CRN, PG, TNA, VST.
cis-9-Octadecen-1-ol (Oleyl alcohol)	SHX.
1-Tetradecanol (Myristyl alcohol)	VST.
1-Tridecanol	ENJ.
2,6,8-Trimethyl-4-nonanol	UCC.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE  
REPORTED, IDENTIFIED BY MANUFACTURER, 1985

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
*ALCOHOLS, MONOHYDRIC, UNSUBSTITUTED--CONTINUED	
MIXTURES OF ALCOHOLS:	
*Alcohol mixtures, C- <sub>11</sub> or lower only	EKK, ENJ, NCI, PG, SHC, TNA, UCC, VST.
Alcohol mixtures, C- <sub>19</sub> and C- <sub>20</sub> only	TNA.
*Alcohol mixtures, C- <sub>12</sub> through C- <sub>18</sub> only	SHC, SHX, TNA, VST, WTH.
*Alcohol mixtures, other	CO, ENJ, SCP, TNA, VST.
*ESTERS OF MONOHYDRIC ALCOHOLS:	
Acrylic monomers, mixed	AAC.
*Allyl methacrylate	AAC, CPS, GLY.
AMYL ACETATES:	
Amyl acetate (n-Pentyl acetate)	UCC.
Amyl acetates, all other	WTL.
*BUTYL ACETATES:	
*n-Butyl acetate	CEL, DBC, EKT, UCC.
*Isobutyl acetate	CEL, DBC, EKT, EKK, UCC.
*Butyl acrylate	CEL, DBC, RH, UCC.
n-Butyl chlorocrotonate	MAL.
sec-Butyl chloroformate	PPG.
Butyl lactate	CPS.
Butyl maleate	TCH.
Butyl mercaptopropionate	EVN.
Butyl methacrylate	DUP, RH.
Butyl oleate	ELC.
tert-Butyl peroxyacetate	AZT, WTL.
*tert-Butyl peroxy-2-ethylhexanoate	AZT, WTC, WTL.
tert-Butyl peroxyisobutyrate	AZT, WTL.
tert-Butyl peroxyisopropylcarbonate	CAD, PPG, WTL.
tert-Butyl peroxyneodecanoate	WTC, WTL.
*tert-Butyl peroxy-pivalate	AZT, WTC, WTL.
Butyl stearate	CRN.
Cetylcicosyl methacrylate	RH.
Cetyl lactate	VND.
Diallyl maleate	AAC, FMC.
Dibutyl fumarate	RCI.
*Dibutyl maleate	NOD, RCI, USS.
Di(sec-butyl)peroxydicarbonate	WTL.
Diethyl carbonate (Ethyl carbonate)	PPG.
Diethyl dipropylmalonate	ABB.
Di(2-ethyl-1-hexyl) maleate	CCC, CHP, RPC, STC.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1985

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
*ESTERS OF MONOHYDRIC ALCOHOLS--CONTINUED	
Di(2-ethyl-1-hexyl) peroxydicarbonate-----	WTL.
Diethyl maleate-----	ACY.
Diethyl oxalate (Ethyl oxalate)-----	TLI, X.
Dilauryl-3,3'-thiodipropionate-----	CCW, EVN.
Dimethyl carbonate-----	PPG.
Dimethyl maleate-----	AAC.
Dimyristyl-3,3'-thiodipropionate-----	CCW.
*Dioctyl maleate-----	FTX, NOD, RCI, USS.
Distearyl-3,3'-thiodipropionate-----	CCW, EVN.
Dithiobis(stearyl propionate)-----	EVN.
Ditridecyl maleate-----	EFH.
Di(tridecyl)-3,3'-thiodipropionate-----	EVN.
Dodecylpentadecyl methacrylate-----	RH.
Dodecyl succinic lactate-----	SM.
*2-Ethoxyethyl acetate-----	EKT, ICI, UCC.
*Ethyl acetate (100% basis)-----	CEL, EKT, EKK, MON, UCC.
Ethyl acetoacetate-----	BRD, EKT.
*Ethyl acrylate-----	CEL, RH, UCC.
Ethyl chloroacetate-----	DA, SK.
Ethyl chloroformate-----	ESX, PPG.
Ethyl chlorothiolformate-----	SFA.
Ethylene carbonate-----	TX.
2-Ethyl-1-hexyl acetate-----	EKT, MRF.
*2-Ethyl-1-hexyl acrylate-----	CEL, DBC, UCC.
2-Ethylhexyl chloroformate-----	PPG, VCM.
2-Ethyl-1-hexyl methacrylate-----	DUP.
Ethyl sulfate (Diethyl sulfate)-----	UCC.
*FATTY ACID ESTERS, NOT INCLUDED WITH PLASTICIZERS OR SURFACE ACTIVE AGENTS:	
Dialkyl dimerate-----	WTC.
Dimethyl brassylate-----	EMR.
Docosanyl docosenoate-----	SBC.
Dodecanyl succinic 12-hydroxystearate-----	TX.
Heptyl acetate-----	ENJ.
Isocetyl stearate-----	SCP.
Isopropyl lanolate-----	VND.
Isopropyl linoleate-----	VND.
Methyl esters of coconut oil-----	FTX, PG, WTC.
Methyl esters of lard-----	FER.

TABLE 2.—MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1985

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
*ESTERS OF MONOHYDRIC ALCOHOLS--CONTINUED	
*FATTY ACID ESTERS, NOT INCLUDED WITH PLASTICIZERS OR SURFACE ACTIVE AGENTS--CONTINUED:	
Methyl esters of tallow-----	CHL, FER.
Methyl 12-hydroxystearate-----	CAS, WTH.
Methyl iso-octadecenoate-----	SYL.
Methyl linoleate-----	HRT.
Methyl stearate-----	CHL, WTC.
*Myristyl myristate-----	CYL, SBC, VND.
*Tridecyl stearate-----	DA, RPC, SCP, STC, WM, WTC.
Fatty acid esters, not included with plasticizers surface-active agents, all other-----	ALI, DA, SBC.
Hexyl acetate-----	ENJ, UCC.
Hexyl acrylate-----	AAC, CPS.
Isobutyl acrylate-----	DBC.
Isobutyl chloroformate-----	PPG, VCM.
Isobutyl isobutyrate-----	EKK.
Isobutyl methacrylate-----	RH.
Isodecyl acrylate-----	CPS.
Isodecyl methacrylate-----	RH.
Iso-octyl mercaptoacetate-----	CCW, EVN.
Iso-octyl-3-mercaptopropionate-----	EVN.
Isopropyl acetate-----	EKT, UCC.
Isopropyl borate-----	ADC.
Isopropyl chloroformate-----	PPG, VCM.
Isostearyl neopentanoate-----	SBC, VND.
Lauryl acrylate-----	CPS.
Lauryl lactate-----	VND.
Lauryl methacrylate-----	AAC, CPS, RH, TX.
Maleic esters and copolymers-----	GAF.
Menthallylidene diacetate-----	RDA.
2-Methoxyethyl acrylate-----	CPS.
Methyl acetate-----	EKT, MON.
Methyl acetoacetate-----	BRD, EKT.
Methyl acrylate, monomer-----	CEL.
Methyl chloroacetate-----	DA.
Methyl chloroformate-----	PPG.
Methyl formate-----	CEL.
*Methyl methacrylate, monomer-----	CYR, DUP, RH.
Octadecyl-3-mercaptopropionate-----	DUP, EVN.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE  
REPORTED, IDENTIFIED BY MANUFACTURER, 1985

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
*ESTERS OF MONOHYDRIC ALCOHOLS--CONTINUED	
*PHOSPHORUS ACID ESTERS:	
Amyl hydrogen phosphate	: HK.
Bis (2-Chloroethyl)-2-chloroethylphosphonate	: ALW.
Bis(2-ethylhexyl) hydrogen phosphate	: ALW.
Butyl hydrogen phosphate	: ALW, HK.
Dibutyl butylphosphonate	: ALW.
Dibutyl hydrogen phosphite	: ALW, SFS.
Dibutyl pyrophosphate	: ALW.
Diethyl hydrogen phosphite	: ALW.
Diethyl phosphorochloridothionate	: SFS, TNA.
Dimethyl hydrogen phosphite	: ALW.
Dimethyl methylphosphonate	: ALW, SFS.
Dimethyl phosphoridothionate	: SFS.
Dioleyl hydrogen phosphite	: ALW.
2-Ethylhexyl hydrogen phosphate	: ALW.
Iso-octyl hydrogen phosphate	: ALW.
Methyl dihydrogen phosphate	: HK.
Mixed dialkyl hydrogen phosphates	: ELC.
Mixed dialkyl hydrogen phosphates, amine salts	: ELC.
Stearyl acid phosphate	: HK.
Tetrakis(2-chloroethyl)ethylene diphosphate	: OMC.
Trialkyl phosphite	: MCB.
Tributyl phosphate	: FMC.
Triethyl phosphite	: ALW, SFA.
Triiso-octyl phosphite	: ALW, MCB.
Trimethyl phosphite	: ALW, SFA.
Tris(chloroisopropyl)thionophosphate	: ALW.
Tris(2-ethylhexyl) phosphite	: ALW.
Phosphorus acid esters, all other	: ALW, AZT, CED, MCB, MON, SFS, X.
*Propyl acetate	: CEL, EKT, UCC.
Propylene carbonate	: TX.
Stearyl methacrylate	: CPS, RH, TX.
Tetraalkyl silicate	: MON.
Tetraethyl orthosilicate (Tetraethyl silicate)	: SFS, UCC.
Tetraethyl silicate, condensed	: SFS, UCC.
TITANIC ACID ESTERS:	
Bis(2-[bis(2-hydroxyethyl)amino]ethyl)diisopropyl titanate	: DUP.
Di(hydroxy)bis(ammoniumlactato)titanium	: DUP.
Diisopropyltitanate bis(ethyl-3-oxobutanoate)	: DUP.

TABLE 2.—MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1985

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
*ESTERS OF MONOHYDRIC ALCOHOLS--CONTINUED	
TITANIC ACID ESTERS--CONTINUED	
Tetrabutyl titanate	DUP.
Tetraisopropyl titanate	DUP.
Tetrakis(2-ethylhexyl)titanate	DUP, KF.
Triethanolamine titanate	KF.
Titanic acid esters, all other	DUP.
Trichloromethyl chloroformate	MHI.
Triethyl orthoacetate	KF.
Triethyl orthoformate	KF.
Triethyl orthopropionate	KF.
Trimethyl borate	SFX, X.
Trimethyl orthoacetate	KF.
Trimethyl orthoformate	KF.
Tristearyl citrate	CYL.
*Vinyl acetate, monomer	CEL, DUP, UCC, USI.
Vinyl crotonate	FER.
Monohydric alcohol esters, all other	AAC, DA, KF, ICI, PAH, PIC, USR, WTL, X.
*POLYHYDRIC ALCOHOLS:	
2,2-Bis(bromomethyl)-1,3-propanediol	DOW.
1,2(and 1,3)-Butanediol	CEL.
*1,4-Butanediol	BAS, DUP, GAF, X.
2-Butene-1,4-diol	GAF.
2-Butyne-1,4-diol	BAS, GAF.
3-Chloro-1,2-propanediol (Glycerol $\alpha$ -chlorohydrin)	DIX, EKT, EVN.
2,2-Dimethyl-1,3-propanediol (Neopentyl glycol)	DBC, EKK.
*Ethylene glycol	BAS, CEL, DA, DOW, EKK, HCF, ICI, NWP, OMC, SHC, TX, UCC.
2-Ethyl-1,3-hexanediol	DA, UCC.
2-Ethyl-2-(hydroxymethyl)-1,3-propanediol (Trimethylolpropane)	CEL.
Glycerol, synthetic only	DOW.
1,6-Hexanediol	DBC.
2-(Hydroxymethyl)-2-methyl-1,3-propanediol (Trimethylolmethane)	IMC.
Mannitol	ICI.
3-Mercapto-1,2-propanediol (Thioglycerol)	EVN.
2-Methyl-2,4-pentanediol (Hexylene glycol)	SHC.
*Pentaerythritol	CEL, DOW, HPC, IMC, PST.
*Propylene glycol (1,2-Propanediol)	ATR, DOW, OMC, TX, UCC.

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MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
*POLYHYDRIC ALCOHOLS--Continued	
*Sorbitol (70% by Weight)-----	BRD, EHC, ICI, PFZ.
2,2,4-Trimethyl-1,3-pentanediol-----	EKK.
Polyhydric alcohols, all other-----	ICI, SHC.
*ESTERS AND ETHERS OF POLYHYDRIC ALCOHOLS:	
*POLYHYDRIC ALCOHOL ESTERS:	
2-(2-Butoxyethoxy)ethyl acetate-----	EKT, ICI.
2-Butoxyethyl acetate-----	EKT, ICI, UCC.
1,3-Butylene glycol diborate-----	USB.
1,3-Butylene glycol diborate/hexylene glycol boric anhydride-----	USB.
Diethylene glycol adipate-----	CMB.
Diethylene glycol, borated-----	OMC.
Diethylene glycol chloroformate-----	VCM.
Diethylene glycol dimethacrylate-----	CPS, RH.
Dihydromyrcene-----	SCH, X.
2-(2-Ethoxyethoxy)ethyl acetate-----	AAC, EKT.
Ethylene glycol diacetate-----	EKT.
Ethylene glycol dimercaptoacetate-----	EVN.
Ethylene glycol dimethacrylate-----	RH.
Ethylene glycol hydroxyacetate-----	CCA.
Ethylene glycol phosphite-----	ALW.
2-Ethyl-2(hydroxymethyl)-1,3-propanediol trimethacrylate-----	WM.
Glycerol tricaprylate caprate-----	WM.
Glyceryl diacetate (Diacetin)-----	HAL.
Glyceryl monothioglycolate-----	EVN.
Glyceryl triacetate (Triacetin)-----	EKT.
Glyceryl tristearate-----	GLY.
1,6-Hexanediol diacrylate-----	RH.
Hydroxyethyl acrylate-----	DOW, RH.
Hydroxyethyl methacrylate-----	RH.
Hydroxypropyl acrylate-----	DOW, NEV, RH.
Hydroxypropyl methacrylate-----	AAC, CEL, RH.
2-Methoxyethyl acetate-----	UCC.
Pentaerythritol caprylate/caprate-----	WM.
Pentaerythritol stearate-----	GLY.
Pentaerythritol tetraacrylate-----	CEL.
Pentaerythritol tetrakis (3-Mercaptopropionate)-----	EVN.
Polyethylene polypropylene glycol glyceryl triether maleate-----	X.



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MISCELLANEOUS CHEMICALS.	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC—CONTINUED	
*ESTER AND ETHERS OF POLYHYDRIC ALCOHOLS—CONTINUED	
*POLYHYDRIC ALCOHOL ESTERS—CONTINUED	
Polyol aluminum chelate	SNW.
Polypropylene-polyethylene glycol glyceryl triether citrate	X.
Propylene glycol dicaprylatecaprate	WM.
Propylene oxide, polymer with polyethylene glycol adipate	X.
Sucrose octa-acetate	HFT, PD.
Tetraethylene glycol diacrylate	CEL.
Tetraethylene glycol diheptanoate	WM.
Tetraethylene glycol dimethacrylate	AAC.
Triethylene glycol diacetate	EKT.
Triethylene glycol diacrylate	CEL.
Trimethylolthane pelargonate	WM.
Trimethylolpropane triacrylate	AAC, RH.
Trimethylolpropane triacrylate, ethoxylated	AAC.
Trimethylolpropane tridecanoate	SM.
Trimethylolpropane tri(2-mercaptopropionate)	EVN, RH.
2,2,3-Trimethyl-1,3-pentanediol monoisobutyrate	EKK.
Tripropylene glycol diacrylate	CEL.
Polyhydric alcohol esters, all other	ARA, CEL, EKK, SHX, SNW, SOL, UCC.
*POLYHYDRIC ALCOHOL ETHERS:	
Bis(2-butoxyethyl)ether (Diethylene glycol di-n-butyl ether)	ASL, FER.
Bis(2-ethoxyethyl)ether (Diethylene glycol diethyl ether)	ASL, FER.
Bis[2-(2-methoxyethoxy)ethyl] ether (Tetraethylene glycol dimethyl ether)	ASL, FER.
Bis(2-methoxyethyl)ether (Diethylene glycol dimethyl ether)	ASL, FER.
*2-Butoxyethanol (Ethylene glycol monobutyl ether)	DOW, EKK, ICI, OMC, SHC, UCC.
*2-(2-Butoxyethoxy)ethanol (Diethylene glycol monobutyl ether)	DOW, EKK, ICI, OMC, SHC, UCC.
*2-[2-(2-Butoxyethoxy)ethoxy]ethanol (Triethylene glycol monobutyl ether)	DOW, OMC, UCC.
1-Butoxyethoxy-2-propanol	UCC.
Butyl ethers of tetra- and higher ethylene glycols(high boiling)	EKK, ICI.
*Diethylene glycol	BAS, CEL, DOW, EKK, HST, ICI, OMC, SHC, TX, UCC.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1985

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
*ESTER AND ETHER OF POLYHYDRIC ALCOHOLS--CONTINUED	
*POLYHYDRIC ALCOHOL ETHERS--CONTINUED	
Diethylene glycol divinyl ether-----	GAF.
Dimethoxyethane (Ethylene glycol dimethyl ether)-----	ASL, FER.
*Dipropylene glycol-----	ATR, DOW, OMC, TX, UCC.
Dipropylene glycol monomethyl ether-----	OMC.
*2-Ethoxyethanol (Ethylene glycol monoethyl ether)-----	EKX, ICI, OMC, SHC, UCC.
*2-(2-Ethoxyethoxy)ethanol (Diethylene glycol monoethyl ether)-----	DOW, EKX, ICI, OMC, UCC.
*2-[2-(2-Ethoxyethoxy)ethoxy]ethanol (Triethylene glycol monoethyl ether)-----	DOW, OMC, UCC.
Ethylene glycol di-tributyl ether-----	EKX, OMC.
Ethylene glycol monoisobutyl ether-----	OMC.
Ethyl ethers of tetra- and higher ethylene glycols(high boiling)-----	EKX, ICI.
2-[2-(Hexyloxy)ethoxy]ethanol-----	UCC.
*2-Methoxyethanol (Ethylene glycol monomethyl ether)-----	ICI, OMC, UCC.
*2-(2-Methoxyethoxy)ethanol (Diethylene glycol monomethyl ether)-----	DOW, ICI, OMC, UCC.
*2-[2-(2-Methoxyethoxy)ethoxy]ethanol (Triethylene glycol monomethyl ether)-----	DOW, ICI, OMC, UCC.
2-(2-Methoxyethoxy)ethyl-2-methoxyethyl ether (Triethylene glycol dimethyl ether)-----	ASL, OMC.
Methoxypolyethylene glycol-----	STC, UCC.
1-Methoxy-2-propanol-----	DOW, OMC.
3-(3-Methoxypropoxy)propanol-----	DOW.
3-3-(3-Methoxypropoxy)propoxypropanol-----	DOW.
Paraformaldehyde-----	CEL.
*Polyethylene glycol-----	DA, DOW, HDG, OMC, STC, TX, UCC, WTC, X, X.
Polyethylene glycol dimethyl ether-----	SHX, X.
Polyethylene glycol monodecyl ether-----	X.
*Polyglycols, ethylene glycol and glycol ether, mixed--	ASL, CEL, DOW, UCC, X.
Polymethylvinyl ether monoethylmaleate-----	TNI.
Polyoxyalkylene glycol-----	OMC.
POLYPROPOXY ETHERS:	
Poly(propoxy)butyl ether, ethoxylated-----	TX.
Polypropoxybutyl ether-----	DA.
Polypropoxy ethers, all other-----	ICI, OMC.
Polyoxypropylene polyoxyethylene glycol, mixed-----	ICI, UCC, WTC.
*Polypropylene glycol-----	DOW, HDG, OMC, SM, TX, X.

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MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
*ESTER AND ETHER OF POLYHYDRIC ALCOHOLS--CONTINUED	
*POLYHYDRIC ALCOHOL ETHERS--CONTINUED	
Polypropylene glycol glycerol tri-ether-----	X.
Polytetramethylene glycol ether-----	DUP, QKO.
Poly(1,1,1-trichlorobutane-2-ol)ethylene glycol	
dextrose ether-----	EKK.
Propoxyethanol (Ethylene glycol monopropyl ether)-----	EKK, OMC.
Propoxyethoxyethanol (Diethylene glycol	
monopropyl ether)-----	OMC.
Sorbitol, ethoxylated-----	GLY, ICI.
Sorbitol, propoxylated-----	ICI.
*Tetraethylene glycol-----	DOW, EKK, ICI, UCC.
2,2'-Thiodiethanol (Thiodiglycol)-----	PLC.
*Triethylene glycol-----	CEL, CXI, DOW, EKK, ICI, OMC, SHC, TX, UCC.
Tripropylene glycol-----	DOW, OMC, UCC.
Tripropylene glycol monomethyl ether-----	OMC.
Tri- and tetraethylene glycol monoethyl ethers,	
borate esters-----	OMC.
Polyhydric alcohol ethers, all other-----	DA, HTM, MIL, UCC, WTC, X.
HALOGENATED HYDROCARBONS:	
BROMINATED (INCLUDING BROMOCHLORINATED)	
HYDROCARBONS:	
1-Bromobutane (n-Butyl bromide)-----	DAZ.
Bromochlorinated paraffin C <sub>10</sub> C <sub>20</sub> -----	FER.
Bromochloromethane-----	BKM, DOW.
Bromoethane (Ethyl bromide)-----	DOW, GTL.
1-Bromohexadecane-----	HMY.
1-Bromo-3-methyl-2-butene-----	SD.
1-Bromo-octadecane-----	HMY.
1-Bromopentane (n-Amyl bromide)-----	GTL, WCC.
1-Bromopropane (n-Propyl bromide)-----	DAZ, WCC.
2-Bromopropane (Isopropyl bromide)-----	WCC.
Dibromohexadecane-----	TNA.
Dibromomethane (methylene bromide)-----	DOW.
1,1,2,2-Tetrabromoethane (Acetylene tetrabromide)	
Vinyl bromide (Bromoethylene)-----	DOW.
Brominated (Including bromochlorinated)	
hydrocarbons, all other-----	DAZ, HMY, TNA, WTC.

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MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
*CHLORINATED (NOT OTHERWISE HALOGENATED) HYDROCARBONS:	
*Carbon tetrachloride	DA, DOW, DUP, FRO, LCP, SFC.
CHLORINATED PARAFFINS (C <sub>10</sub> -C <sub>30</sub> ):	
*Chlorinated paraffins, 35-64% chlorine	DA, DVC, FER, NEV, WTC, X.
Chlorinated paraffins, less than 35% chlorine	DVC, SHC.
Chlorinated paraffins, 65% or more chlorine	DA, DOW, DVC, FER.
1-Chlorobutane (n-Butyl chloride)	UCC.
*Chloroform	DA, DOW, FRO, LCP.
*Chloromethane (Methyl chloride)	DCC, DOW, LCP, TNA, VST.
3-Chloro-2-methyl-1-propene (Methallyl chloride)	FMC.
3-Chloropropene (Allyl chloride)	DOW, SHC.
1,2-Dichloropropane (Propylene dichloride)*	DOW.
2,3-Dichloropropane	DOW.
2,2-Dimethylchloropropane(neopentyl chloride)	TNA.
*Ethyl chloride (Chloroethane)	DOW, DUP, PPG, TNA.
*Ethylene dichloride	BFG, DA, DOW, FOR, FRO, GGC, OMC, PPG, SHC, TNA, VST.
Hexyl chloride	TNA.
Lauryl chlorides	SHC, TNA.
*Methylene chloride (Dichloromethane)	DA, DOW, FRO, LCP.
Octyl chloride	TNA.
*Perchloroethylene (Tetrachloroethane)	DA, DOW, DUP, FRO, PPG, SFC.
*1,1,1-Trichloroethane (Methyl chloroform)	DOW, FRO, PPG.
1,1,2-Trichloroethane (Vinyl trichloride)	DOW, RSA.
Trichloroethylene	DOW, PPG.
1,2,3-Trichloropropane	DOW.
1,2,3-Trichloropropene	DOW.
*Vinyl chloride, monomer (Chloroethylene)	BFG, BOR, DOW, FOR, GGC, PPG, SHC, VST.
Vinylidene chloride, monomer (1,1-Dichloroethylene)	DOW, PPG.
Chlorinated (Not otherwise halogenated) hydrocarbons, all other	WTC, X.
*FLUORINATED (INCLUDING OTHER FLUOROHALOGENATED) HYDROCARBONS:	
2-Bromo-2-chloro-1,1,1-trifluoroethane	HOC.
Bromotrifluoroethylene	DUP, GTL.
1-Chloro-1,1-difluoroethane	PAS.
*Chlorodifluoromethane (F-22)	ACS, DUP, KAI, PAS, RCN.
Chlorotrifluoroethylene (Trifluorovinyl chloride)	ACS.
Chlorotrifluoromethane	DUP.
*Dichlorodifluoromethane (F-12)	ACS, DUP, KAI, PAS, RCN.
Dichlorotetrafluoroethane	ACS, DUP.
1,1-Difluoroethane	DUP, PAS.

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MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
HALOGENATED HYDROCARBONS--CONTINUED	
*FLUORINATED (INCLUDING OTHER FLUORAHALOGENATED) HYDROCARBONS--CONTINUED	
Hexafluoropropylene, monomer-----	DUP.
1-Iodoperfluorohexane-----	DUP.
Polyhexafluoropropylene oxide-----	DUP.
Polytetrafluoroethylene ethyl iodide-----	X.
Tetrafluoroethylene, monomer-----	DUP, ICI.
Tetrafluoromethane-----	DUP.
*Trichlorofluoromethane (F-11)-----	ACS, DUP, KAI, PAS, RCN.
Trichlorotrifluoroethane-----	ACS, DUP.
Trifluoroethanol-----	HOC.
Trifluoropropene-----	HOC.
Vinyl fluoride, monomer-----	DUP.
Vinylidene fluoride, monomer-----	PAS.
Fluorinated (Including other fluorohalogenated) hydrocarbons, all other-----	DUP, HOC, ICI, OH, REG.
*IODINATED (NOT OTHERWISE HALOGENATED) HYDROCARBONS:	
Diiodomethane (Methylene iodide)-----	DPW, NTB.
Iodobutane-----	RSA.
Iodoethane (Ethyl iodide), non-medical-----	COC, DPW, RSA.
Iodomethane (Methyl iodide)-----	COC, DPW, RSA.
Iodinated (Not otherwise halogenated) hydrocarbons, all other-----	DPW.
*OTHER MISCELLANEOUS ACYCLIC CHEMICALS:	
Acetone sodium bisulfite-----	EK.
ACYCLIC PEROXIDES:	
Acetylacetone peroxide-----	CAD.
Acetyl peroxide-----	WTL.
*2-Butanone peroxide-----	CAD, FRE, NOC, WTC, WTL.
n-Butyl-4,4-bis[t-butylperoxy]valerate-----	CAD.
tert-Butyl hydroperoxide-----	ATR, AZT, FRE, WTC, WTL.
tert-Butyl peroxide (Di-tert-butyl peroxide)-----	AZT, WTC, WTL.
Decanoyl peroxide-----	WTC, WTL.
Diisopropyl peroxydicarbonate (Isopropyl percarbonate)-----	EKX, PPG.
2,5-Dimethyl-2,5-bis(2-ethyl-1-hexanoyl peroxy) hexane-----	WTC, WTL.
2,5-Dimethyl-2,5-di(tert-butylperoxy)hexane-----	CAD, WTL.
2,5-Dimethyl-2,5-di(tert-butylperoxy)hexyne-3-----	WTL.

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MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
*OTHER MISCELLANEOUS ACYLIC CHEMICALS--CONTINUED	
ACYCLIC PEROXIDES--CONTINUED	
Diperoxydodecanedioic acid-----	MMC.
Di-n-propyl peroxydicarbonate-----	WTL.
Lauroyl peroxide-----	WTL.
Aluminum isopropoxide (Aluminum isopropylate)-----	CHT, KCH.
Carbon disulfide-----	PAS, SFI.
Chromium acetylacetonate complex-----	NCK, SHP.
Cobalt acetylacetonate complex-----	SHP.
2,3-Dibromopropanol-----	GTL.
*EPOXIDES, ETHERS, AND ACETALS:	
Bis(2-Chloroethyl)ether (Dichlorodiethyl ether)-----	BKM.
Butylene oxide-----	DOW.
Butyl vinyl ether-----	GAF.
Chloromethyl methyl ether-----	RH.
2,2-Dichloro-1,1-difluoroethyl methyl ether-----	OH.
Epichlorohydrin-----	DOW, SHC.
*Ethylene oxide-----	BAS, CEL, DOW, EKK, ICI, NWP, OMC, SHC, SNO, TX, UCC.
Ethyl ether, U.S.P.-----	USI.
Ethyl ether, absolute-----	EKK, USI.
Ethyl ether, tech.-----	DOW, USI.
1,2-Ethanedithiol-----	RBC.
2-(Ethylmercapto)ethanol-----	DOM.
Glycidol (2,3-Epoxy-1-propanol)-----	DIX.
*GLYCIDYL ETHERS:	
Alkyl glycidyl ethers, C <sub>12</sub> -C <sub>14</sub> -----	WLN.
Alkyl glycidyl ethers, C <sub>8</sub> -C <sub>10</sub> -----	WLN.
Allyl glycidyl ether (Allyloxy-2,3-epoxypropane)-----	AAC, CPS.
1,4-Butanediol diglycidyl ether-----	CEL, WLN.
*1-Butoxy-2,3-epoxypropane (Butyl glycidyl ether)-----	AAC, CEL, CPS, WLN.
tert-Butyl glycidyl ester-----	WLN.
2-Ethylhexyl glycidyl ether-----	WLN.
Polyol glycidyl ether-----	CEL, WLN.
Glycidyl ethers, all other-----	CEL, WLN.
Isopropyl ether-----	ENJ, SHC.
Malonaldehyde bis(dimethyl) acetal-----	KF.
Methylal (Dimethoxymethane)-----	CEL.
Methyl ether (Dimethyl ether)-----	DUP.
Methyl vinyl ether-----	GAF, UCC.
Propylene oxide-----	ATR, DOW.
Epoxides, ethers, acetals, all other-----	STC, UCC, VIK.

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MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
*OTHER MISCELLANEOUS ACYCLIC CHEMICALS--CONTINUED	
FATS AND OILS, CHEMICALLY MODIFIED:	
Hydrogenated tallow glycerides-----	CHL.
Linseed oil, oxygenated-----	CJO.
Sulfurized corn oil-----	SM.
Vegetable glycerides, hydrogenated-----	GLY.
Fats and oils, chemically modified, all other-----	CAS, CHL, DA.
Glutaraldehyde bis(sodium bisulfite)-----	EK.
Hexachlorodimethyl sulfone-----	SFS.
1-Hexadecanethiol-----	HMY.
*HYDROCARBONS:	
n-Decane-----	HMY, PLC.
3,3-Dimethylbutene-----	PLC.
n-Dodecane-----	HMY, PLC.
Hexadecane-----	HMY.
Isononanoyl peroxide-----	WTL.
Myrcene-----	SCM, X.
n-Nonane-----	HMY, PLC.
n-Octadecane-----	HMY.
n-Octane-----	HMY, PLC.
n-Tetradecane-----	HMY.
Hydrocarbons, all other-----	PAS, WTK.
Iron acetylacetonate complex-----	MCK, SHP.
Manganese acetylacetonate complex-----	SHP.
2-Mercaptoethanol-----	PLC.
Methyl sulfide (Dimethyl sulfide)-----	CRZ, PAS.
Methyl sulfoxide (Dimethyl sulfoxide)-----	CRZ.
1-Octadecanethiol-----	HMY.
ORGANO-ALUMINUM COMPOUNDS:	
Aluminum acetylacetonate complex-----	MCK.
Aluminum di-sec-butoxide acetoacetic ester chelate-----	CHT.
Aluminum diisopropoxide acetoacetic ester chelate-----	CHT, KCH.
Aluminum ethyl-3-oxobutanoate-0,0-dihydroxy T-4-----	CHT.
Aluminum (2-ethyl hexanoate)-oxo-homopolymer-----	KCH.
Aluminum tri-sec-butoxide-----	CHT.
Diethylaluminum chloride-----	TNA, TSA.
Diethyl aluminum ethoxide-----	TSA.
Diethylaluminum iodide-----	TNA, TSA.
Diisobutylaluminum chloride-----	TNA, TSA.
Diisobutylaluminum hydride-----	TNA, TSA.

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MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
*OTHER MISCELLANEOUS ACYCLIC CHEMICALS--CONTINUED	
ORGANO-ALUMINUM COMPOUNDS--CONTINUED	
Ethylaluminum dichloride-----	TNA, TSA.
Ethylaluminum sesquichloride-----	TNA, TSA.
Isopropenylaluminum-----	TSA.
Methylaluminum sesquichloride-----	TNA.
Oxy-aluminum octanoate-----	CHT.
Sodium dihydrobis(2-methoxyethoxy)aluminum hydride-----	HXL.
Triethylaluminum-----	TNA, TSA.
Tri-n-hexyl aluminum-----	TSA.
Triisobutylaluminum-----	AIP, TNA, TSA.
Trimethylaluminum-----	MHI, TNA.
Tri-n-octylaluminum-----	TSA.
Tri-oxyaluminum tri-isopropoxide-----	CHT, KCH.
Organo-aluminum compounds, all other-----	TNA, TSA.
*ORGANO-BORON COMPOUNDS:	
Boron fluoride - ethyl ether complex-----	ACS.
Ethylamine with borane (1:1)-----	ACS.
1-Hexyl-1,2-dicarbododecaborane-----	X.
N-Methyl-methanamine with borane (1:1)-----	X.
2-Methyl-2-propanamine with borane(1:1)-----	X.
Triethylborane-----	X.
Trimethoxyboroxine-----	X.
N,N,N-Trimethyl methanaminium octahydrotriborate	X.
Organo-boron compounds, all other-----	MHI, STC, TSA.
ORGANO-LITHIUM COMPOUNDS	
n-Butyllithium-----	FTE.
sec-Butyllithium-----	FTE.
Butyl ethyl magnesium-----	TSA.
Di-n-hexyl magnesium-----	TSA.
Methylmagnesium bromide-----	ARA.
Methylmagnesium chloride-----	ARA.
ORGANO-SILICON COMPOUNDS:	
γ-Aminopropyltriethoxysilane-----	SCM.
α-Chloropropyltrichlorosilane-----	DCC.
Chloropropyltrimethoxysilane-----	DCC, KF.
Chlorotrimethylsilane-----	DCC.
Dichlorodimethylsilane-----	DCC.
Dichloromethylsilane-----	DCC.
Dichloromethylvinylsilane-----	DCC, UCC.



TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1985

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
*OTHER MISCELLANEOUS ACYCLIC CHEMICALS--CONTINUED	
ORGANO-SILICON COMPOUNDS:	
Diethoxyphosphorylethyltriethoxysilane-----	UCC.
α-Glycidoxypropyltrimethoxysilane-----	UCC.
Hexamethyldisilazane-----	KF, SCM.
Isobutyltrimethoxysilane-----	KF.
Mercaptopropyltrimethoxysilane-----	KF.
α-Methacryloxypropyltrimethoxysilane-----	UCC.
Methyltrimethoxysilane and polymethyltrisiloxane	DCC, KF, UCC.
Polyoxyalkene silicones-----	UCC.
*Silicone fluids-----	DCC, MON, SPD, SWS, UCC.
Trichloromethylsilane-----	DCC.
Trichloropropylsilane-----	DCC.
Trichlorovinylsilane-----	UCC.
Tris(2-methoxyethoxy)vinyl silane-----	KF.
Vinyltriethoxysilane-----	KF, UCC.
Organo-silicone compounds, all other-----	DA, KF, SFS, UCC, X.
ORGANO-TIN COMPOUNDS:	
Dibutyltin bis(butylmaleate)-----	CCA.
Dibutyltin bis(isooctylmercaptoacetate)-----	X.
Dibutyltin bis(mercaptolaurate)-----	X.
Dibutyltin oxide-----	WTC, X.
Ester tin mercaptoesters-----	CCA.
Octyltin-----	CCA, X.
Tributyltin acetate-----	X.
Tributyltin fluoride-----	X.
Tributyltin propylene glycol maleate-----	CCA.
Organo-tin compounds, all other-----	CCW, COS, FER, WTC.
ORGANO-ZINC COMPOUNDS:	
Diethylzinc-----	MHI, TSA.
Zinc acetylacetonate complex-----	SHP.
Organo-zinc compounds, all other-----	FER.
Perchloromethanethiol (Perchloromethyl mercaptan)-----	SFC.
Perfluoroalkyl polyether-----	X.
*Phosgene (Carbonyl chloride)-----	DUP, ICI, OMC, UPJ, VDM.
Potassium 2-methyl-2-butanol-----	X.
Potassium 2-methyl-2-propanol-----	X.
Sodium ethoxide-----	RBC.
Sodium methoxide (Sodium methylate)-----	DA, OMC, RBC.
Succinyl peroxide-----	WTL.

TABLE 2.—MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1985

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC—CONTINUED	
*OTHER MISCELLANEOUS ACYCLIC CHEMICALS—CONTINUED	
Titanium acetylacetonate complex-----	KF.
Zirconium acetylacetonate complex-----	MCK.
Miscellaneous acyclic chemicals, all other-----	ANG, CPS, CRZ, DUP, IFF, NOD, PLC, SFS, SHP, TNA, X.
*MIXTURES NOT SPECIFICALLY ITEMIZED:	
C <sub>12</sub> -C <sub>15</sub> Alcohol lactates-----	VND.
Alcohols, monohydric, and their esters, C <sub>8</sub> and higher, mixed-----	EKX, MON, X.
Butanol residue stream-----	CEL.
Butyl formcel-----	CEL.
Celtone-----	CEL.
Fatty acid amide mixtures-----	SHX.
Fatty acid residues-----	SHX.
Gluconic acid and salts, mixed-----	PMP.
*Glycol residues-----	CXI, ICI, OMC.
Methacrylate based cationic polyelectrolytes-----	GOS.
Methyl formcel-----	CEL.
Mixed alcohol borates-----	X.
Mixed chain length fatty acid, synthetic-----	ENJ, PG.
Morpholine residue stream-----	TX.
Oxidate light ends-----	HCF.
Polymethacrylic acid esters-----	ABB, DUP.
Silicone resins for mold release agents-----	CMI.
Mixtures of miscellaneous acyclic chemicals not specifically itemized, all other-----	BTL, DIX, MCB, UCC.

TABLE 3.--MISCELLANEOUS CYCLIC AND ACYCLIC CHEMICALS: DIRECTORY OF MANUFACTURERS, 1985

## ALPHABETICAL DIRECTORY BY CODE

Names of manufacturers that reported production and/or sales of miscellaneous cyclic and acyclic chemicals to the U.S. International Trade Commission for 1985 are listed below in the order of their identification codes as used in table 2]

CODE :	NAME OF COMPANY	CODE :	NAME OF COMPANY
AAC :	Alcolac, Inc.	DA :	Diamond Shamrock Corp., Chemicals Div.
ABB :	Abbott Laboratories	DAZ :	Diaz Chemical Corp.
ACS :	Allied Corp., Chemical Sector	DBC :	Badische Corp.
ACY :	American Cyanamid Co.	DCC :	Dow Corning Corp.
ADC :	Anderson Development Co.	DIX :	Dixie Chemical Co., Inc.
AGC :	Alberta Gas Chemicals, Inc.	DKA :	Denka Chemical Corp.
ATP :	Air Products & Chemicals, Inc.	DOM :	Dominion Products, Inc.
ALI :	Anzon, Inc.	DOW :	Dow Chemical Co.
ALW :	Albright & Wilson, Inc.	DPW :	Deepwater, Inc.
AMB :	American Bio-Synthetics Corp.	DRL :	Unichema Chemicals, Inc.
AHO :	Amoco Corp.	DUP :	E. I. duPont de Nemours & Co., Inc.
ANG :	Angus Chemical Co.	DVC :	Dover Chemical Corp. Sub. of ICG Industries, Inc.
ARA :	Syntex Chemicals, Inc.		
ARC :	Azko Chemie America, ArmaK Chemicals	EFH :	E. F. Houghton & Co.
ARS :	Arsynco, Inc.	EHC :	Ethichem Corp.
ARZ :	Arizona Chemical Co.	EK :	Eastman Kodak Co.:
ASH :	Ashland Oil, Inc.	EKT :	Tennessee Eastman Co. Div.
ASL :	Specialtychem Products Corp.	EKX :	Texas Eastman Co. Div.
ATL :	Atlantic Industries, Inc.	ELC :	Elco Corp. Sub of Detrex Chemical Industries, Inc.
ATR :	Atlantic Richfield Co., Arco Chemical Co.		
AZT :	Catalyst Resources, Inc.	EMR :	Emery Industries Div. of National Distillers & Chemical Corp.
		ENJ :	Exxon Chemical Americas
BAS :	BASF Corp.	ESA :	East Shore Chemical Co.
BCC :	Buffalo Color Corp.	ESX :	Essex Chemical Corp., Essex Industrial Chemicals, Inc.
BFG :	B. F. Goodrich Co., B. F. Goodrich Chemical Group		
BKC :	J. T. Baker Chemical Co.	EVN :	W. R. Grace & Co., Organic Chemicals Div., Evans Chemetics
BKM :	Buckman Laboratories, Inc.		
BOC :	Biocraft Laboratories, Inc.		
BOR :	Borden Inc., Borden Chemical Div.	FER :	Ferro Corp.:
BRD :	Lonza, Inc.		Ferro Chemical Div.
BTL :	BTL of Illinois, Inc.		Grant Chemical Div.
			Keil Chemical Div.
CAD :	Akzo Chemie America, Noury Chemicals	FKE :	Frank Enterprises, Inc.
CAS :	Caschem, Inc.	FMC :	FMC Corp.:
CBD :	Chembond Corp.	FMB :	Specialty Chemicals Div.
CCA :	Interstab Chemicals, Inc.	FMT :	Fairmount Chemical Co., Inc.
CCC :	C.N.C. Chemical Corp.	FOC :	Handschy Industries, Inc., Farac Varnishes Chemicals
CCW :	Morton-Thiokol, Inc., Carstab Div.		
CED :	Cedar Chemical Co.	FOR :	Formosa Plastics Corporation Louisiana
CEL :	Celanese Corp.:	FRE :	Freeman Chemical Corp.
	Celanese Chemical Co., Inc.	FRO :	Vulcan Materials Co., Chemicals Div.
	Celanese Fibers Operations	FTE :	Foote Mineral Co.
	Celanese Specialties Resins	FTX :	Finetex, Inc.
CGY :	Ciba-Geigy Corp.		
CHG :	Mobay Chemical Corp., Agricultural Chemicals Div.	GAF :	GAF Corp., Chemical Group
CHL :	Chemol, Inc.	GAN :	Gane's Chemicals, Inc.
CHP :	C. H. Patrick & Co., Inc.	GE :	General Electric Co.
CHT :	Chattem, Inc.	GGC :	Georgia-Gulf Corp.:
CJO :	C. J. Osborn Chemicals, Inc.		Boundbrook Div.
CLX :	Clark Oil & Refining Corp.		Plaquemine Div.
CHB :	Cambridge Industries Co.	GIV :	Givaudan Corp.
CHI :	Conap, Inc.	GLY :	Glyco, Inc.
CHP :	Nipro, Inc.	GP :	Georgia-Pacific Corp.:
COC :	Columbia Organic Chemicals Co., Inc.		Plaquemine Div.
COS :	Cosan Chemical Corp.		Resins Operations
CPS :	CPS Chemical Co., Inc.	GTL :	Great Lakes Chemical Corp.
CRH :	CPC International, Inc., Amerchol Corp.	GYR :	Goodyear Tire & Rubber Co.
CRZ :	Crown Zellerbach Corp., Chemical Products Div.		
		HAL :	C. P. Hall Co.
CNI :	Upjohn Co., Fine Chemicals	HCC :	Hatco Chemical Corp.
CXI :	Chemical Exchange Industries, Inc.	HCF :	Cape Industries
CYL :	Cyclo Chemical Corp.	HCP :	Honig Chemical & Processing Corp.
CYR :	CYRO Industries	HDG :	Hodag Chemical Corp.
		HEX :	Hexagon Laboratories, Inc.

TABLE 3.--MISCELLANEOUS CYCLIC AND ACYCLIC CHEMICALS: DIRECTORY OF MANUFACTURERS, 1985--CONTINUED

CODE	NAME OF COMPANY	CODE	NAME OF COMPANY
HFT	Syntex Agribusiness, Inc., Nutrition & Chemical Div.	PCI	Piedmont Chemical Industries, Inc.
HK	Occidental Chemical Corp., Industrial & Specialty Chemical Div.	PEL	Pelron Corp.
HML	Hummel Chemical Co.	PEN	CPC International, Inc., Penick Corp.
HMP	W. R. Grace & Co., Hampshire Chemicals Div.	PFN	Pfanstiehl Laboratories, Inc.
HMY	Humphrey Chemical Co.	PFZ	Pfizer, Inc. and Pfizer Pharmaceuticals, Inc.
HOC	Halocarbon Products Corp.	PG	Procter & Gamble Co., Procter & Gamble Mfg. Co.
HPC	Hercules, Inc.	PIC	Pierce Chemical Co.
HRT	Hart Products Corp.	PKI	Perkins Industries, Inc.
HST	American Hoechst Corp., Hoechst Fiber Industries Div.	PLC	Phillips Petroleum Co.
HTM	Haltermann Ltd. Co.	PLS	Plastics Engineering Co.
HXL	Hexcel Corp., Hexcel Chemical Products	PMP	PMP Fermentation Products, Inc.
ICI	ICI Americas, Inc., Chemicals Div.	PPG	PPG Industries, Inc.
IFF	International Flavors & Fragrances, Inc.	PSG	PMC Specialities Group Inc.
IMC	International Minerals & Chemical Corp., Industries Chemicals Div.	PST	Perstorp Polyols, Inc.
IOC	Sybron Chemicals, Inc.	QKO	QO Chemicals, Inc.
JRC	Jarchem Industries, Inc.	RBC	Fike Chemicals, Inc.
KAI	Kaiser Aluminum & Chemical Corp.	RCI	Reichhold Chemicals, Inc.
KCH	Joseph Ayers, Inc.	RCN	Racon, Inc.
KF	Dynamit Nobel of America, Dynamit Nobel Chemical Div.	RDA	Rhone-Poulenc, Inc.
KLM	Kalama Chemical, Inc.	REG	Regis Chemical Co.
KMI	Kemin Industries, Inc.	REM	Remington Arms Co., Inc.
KPT	Koppers Co., Inc.	RH	Rohm & Haas Co.
LCP	LCP Chemicals - West Virginia, Inc.	RPC	Millmaster Onyx Group, Inc., Lyndall Chemical Co. Div.
LEM	Napp Chemicals, Inc.	RSA	R.S.A. Corp.
LIL	Eli Lilly & Co.	RUC	Rubicon, Inc.
LYP	Lyondell Petrochemical Co.	SBC	Scher Chemicals, Inc.
MAL	Mallinckrodt, Inc.	SCM	SCM Corp.: Organic Chemicals Div.
MCB	Borg-Warner Corp., Borg-Warner Chemicals	PCR	PCR, Inc.
MCI	Mooney Chemicals, Inc.	SCP	Henkel Corp.
MCK	MacKenzie Chemical Works, Inc.	SD	Sterling Drug, Inc.: Sterling Pharmaceuticals, Inc.
MET	M & T Chemicals, Inc.	SDC	Sandoz Chemicals Corp.
MHI	Morton-Thiokol, Inc., Ventron Chemical.	SDH	Hilton Davis Chemical Co. Div.
MIL	Milliken & Co., Milliken Chemical Co.	SDW	Sterling Organics Div.
MLS	Miles Laboratories, Inc., Biotechnology Group	SFA	Stauffer Chemical Co.: Agricultural Div.
MMC	EM Industries, Inc., EM Science Div.	SFC	Calhio Chemicals, Inc.
MOB	Mobay Chemical Corp., Pittsburgh Div.	SFS	Specialty & Intermediates Chemical Div.
MON	Monsanto Co.	SHC	Shell Oil Co., Shell Chemical Co. Div.
MRF	Morflex Corp.	SHP	Shepherd Chemical Co.
MRK	Merck & Co., Inc.	SHX	Sherex Chemical Co., Inc.
NCC	Niacet Corp.	SK	SmithKline Beckman Corp., SmithKline Chemicals Div.
NCI	Union Carbide Corp., Terpene & Aromatics Div.	SM	Mobil Oil Corp.: Mobil Chemical Co. Chemical Products Div.
NES	Rutgers-Nease Chemical Co.	SNO	SunOlin Chemical Co.
NEV	Neville Chemical Co.	SNW	Sun Chemical Corp., Chemicals Div.
NOC	Norac Co., Inc.: Mathe Div.	SOH	Standard Oil Chemical Co.
NOD	Nuodex, Inc.	SOL	Southland Corp., Fine Chemical Div.
NSC	National Starch & Chemical Corp.	SPD	General Electric Co., Silicone Products Dept.
NTB	National Biochemical Co.	STC	American Hoechst Corp., Sou-Tex Works
NWP	Norchem, Inc.	SWS	Stauffer Chemical Co., Stauffer-Wacker Silicones Div.
OH	Anaquest	SYL	Sylvachem Corp.
OMC	Olin Corp.	SYP	Plastic Specialties & Technology, Inc.: Synthetic Products Co. Div.
ORT	Roehr Chemicals, Inc.	TCC	Sybron Chemicals, Inc.
PAC	Pacific Anchor Chemical Corp.	TCH	Emery Industries, Inc., Tylon Div.
PAH	Parish Chemical Co.	TIL	Tillett Chemical Co.
PD	Parke-Davis, Div. of Warner-Lambert Co.	TLC	Twin Lake Chemical, Inc.
PAS	Pennwalt Corp.		

TABLE 3.--MISCELLANEOUS CYCLIC AND ACYCLIC CHEMICALS: DIRECTORY OF MANUFACTURERS, 1985--CONTINUED

CODE	NAME OF COMPANY	CODE	NAME OF COMPANY
TNA	Ethyl Corp.	VGC	Virginia Chemicals, Inc.
TNI	Gillette Co., Chemical Div.	VIK	Viking Chemical Co.
TRO	Troy Chemical Corp.	VNC	Vanderbilt Chemical Corp.
TSA	Texas Alkyls, Inc.	VND	Van Dyk, Div. of Mallinckrodt, Inc.
TU	Tenn-USS Chemicals Co.	VST	Vista Chemical Co.
TX	Texaco, Inc., Texaco Chemical Co.	VTC	Vertac Chemical Corp.
TZC	Magnesium Elektron, Inc.		
UCG	Union Carbide Corp.	WAG	West Design-Chemical, Inc.
UPJ	Upjohn Co. and Polymer Chemical Div.	WCC	White Chemical Corp.
USB	U. S. Borax & Chemical Corp., U.S. Borax Research Corp.	WCL	Wright Chemical Corp.
USI	National Distillers & Chemicals Corp., U.S. Industrial Chemicals Co.	WLN	Wilmington Chemical Corp.
USR	Uniroyal, Inc., Uniroyal Chemical Div.	WM	Inolex Chemical Co.
USS	U.S. Steel Corp., USS Chemicals Div.	WPG	West Point-Pepperell, Inc., Grifftex Chemical Co. Sub.
VAL	United Merchants & Manufacturers, Inc., Valchem Div.	WTC	Witco Chemical Corp.
VCM	Vanchem, Inc.	WTH	Union Camp Corp.
VDM	Van De Mark Chemical Co., Inc.	WTK	Whittaker Corp., Heico Chemicals Div.
VEL	Velsicol Chemical Corp.	WTL	Pennwalt Corp., Lucidol Div.
		WVA	Westvaco Corp.,
		WYT	Wyeth Laboratories, Inc., Wyeth Laboratories Div. of American Home Products Corp.

Note.--Complete names, telephone number, and addresses of the above reporting companies are listed in table 1 of the appendix.

APPENDIX

TABLE 1.--SYNTHETIC ORGANIC CHEMICALS: ALPHABETICAL DIRECTORY OF MANUFACTURERS, BY COMPANY, 1985

[Names of synthetic organic chemicals manufacturers that reported production and/or sales to the U.S. International Trade Commission for 1985 are listed below alphabetically, together with their identification codes as used in table 2 of the 15 individual sections of this report]

IDENTIFICATION CODE	NAME OF COMPANY	TELEPHONE NUMBER	OFFICE ADDRESS
AEP	A & E Plastic Inc-----	818-968-3801	14505 Proctor Ave., P. O. Box 1268, Industry, CA 91749.
AZS	AZS Corp-----	404-873-1851	762 Marietta Blvd., N.W., Atlanta, GA 30318.
	AZS Chemical Corp-----	404-873-1850	762 Marietta Blvd., N.W., Atlanta, GA 30318.
ABB	Abbott Laboratories-----	312-937-7262	14th St. & Sheridan Rd., N. Chicago, IL 60064.
ABS	Abex Corp., Friction Products Div.-- U.S.	703-662-3871	P. O. Box 3250, Winchester, VA 22601.
ACO	Adco Chemical Co-----	201-589-0880	49-129 Rutherford St., Newark, NJ 07105.
WLC	Agrico Chemical Co-----	918-588-2000	One William Center, Tulsa, OK 74172.
AIP	Air Products & Chemicals, Inc-----	215-481-4911	P. O. Box 538, Allentown, PA 18105.
AJY	Ajay Chemicals, Inc-----	404-943-6202	1400 Industry Rd., Powder Springs, GA 30073.
AJI	Ajinomoto U.S.A., Inc-----	919-832-2890	4020 Ajinomoto Dr., Raleigh, NC 27610.
ARC	Akzo Chemie America, Armak Chemicals----	312-786-0400	300 S. Wacker Dr., Chicago, IL 60614.
CAD	Noury Chemicals-----	716-778-8554	2153 Lockport-Olcott Rd., Burt, NY 14028.
ABP	Alabama By-Products Corp-----	205-250-5400	P. O. Box 10246, Birmingham, AL 35202.
AGG	Alberta Gas Chemicals, Inc-----	201-267-1400	7 Century Dr., Parsippany, NJ 07054.
ALW	Albright & Wilson, Inc-----	804-798-4291	P.O. Box 26229, Richmond, VA 23260-6229.
ALC	Alco Chemical Corp-----	615-629-1405	909 Mueller Dr., Chattanooga, TN 37406.
AAC	Alcolac, Inc-----	301-355-2600	3440 Fairfield Rd., Baltimore, MD 21226.
ALD	Aldrich Chemical Co., Inc-----	414-273-3850	940 W. St. Paul Ave., Milwaukee, WI 53233.
ALE	Alex Chemical Co-----	717-462-3500	119 N. Union St., Shenandoah, PA 17976.
ALG	Allegheny Chemical Corp-----	814-776-1186	Gillis Ave., Ridgway, PA 15853.
ALL	Alliance Chemical, Inc-----	201-344-2344	33 Avenue P, Newark, NJ 07657.
	Allied Corp.:		
ACS	Chemical Section-----	201-455-5000	P. O. Box 1087-R, Morristown, NJ 07960.
ACU	Union Texas Petroleum Corp-----	713-960-7500	P. O. Box 2120, Houston, TX 77001.
BHE	Allied-Bendix Corp., Friction Materials Div.	518-273-6550	P. O. Box 238, Green Island, NY 12180.
ALX	Alox Corp-----	716-282-1295	3943 Buffalo Ave., Niagara Falls, NY 14303.
APH	Alpha Corporation of Tennessee-----	901-853-2450	P. O. Drawer A, Hwy. 57 E, Collierville, TN 38017.
ALP	Alpha Laboratories, Inc-----	303-756-1338	1685 S. Fairfax St., P. O. Box 22223, Denver, CO 80222.
HRS	Amerada Hess Corp. (Hess Oil Virgin Island Corp.)	201-750-6000	1 Hess Plaza, Woodbridge, NJ 07095.
AMB	American Bio-Synthetics Corp-----	414-384-7017	710 W. National Ave., Milwaukee, WI 53204.
ACY	American Cyanamid Co-----	201-831-2768	One Cyanamid Plaza, Wayne, NJ 07470.
HST	American Hoechst Corp.:		
	Hoechst Fibers Industries Div-----	803-579-5750	P. O. Box 5887, Spartanburg, SC 29301.
STC	Petrochemicals/Plastics Group-----	201-231-2954	Route 202-206 North, Somerville, NJ 08876.
	Sou-tex Works-----	704-827-7531	P. O. Box 866, Mount Holly, NC 28120.
	Specialty Products Group, Rhode Island Works.	401-823-2000	129 Quidnick St., Coventry, RI 02816.
ASY	American Synthetic Rubber Corp-----	502-448-2761	P. O. Box 32960, Louisville, KY 40232.
HVG	Ametek, Inc., Haveg Div-----	302-995-0410	900 Greenbank Rd., Wilmington, DE 19808.
AMO	Amoco Corporation-----	312-856-6111	P. O. Box 87703 Mail Code 1201, Chicago, IL 60680-0703.
AMV	Amvac Chemical Corp-----	213-264-3910	4100 E. Washington Blvd., Los Angeles, CA 90023.
OH	Anaquest-----	608-273-0019	2005 W. Beltline Hwy., Madison, WI 53713.
ADC	Anderson Development Co-----	517-263-2121	1415 E. Michigan St., Adrian, MI 49221.
ANG	Angus Chemical Co-----	312-498-6700	2211 Sanders Rd., Northbrook, IL 60062.
ALI	Anzon, Inc-----	215-427-3000	2545 Aramingo Ave., Philadelphia, PA 19125.
APX	Apex Chemical Co., Inc-----	201-354-5420	200 S. First St., P. O. Box 254, Elizabethport, NJ 07206.
APO	Apollo Colors, Inc-----	312-564-9190	899 Skokie Blvd., Northbrook, IL 60062.
ADM	Ardmore Chemical Co-----	201-481-2406	29 Riverside Ave., Newark, NJ 07104.

TABLE 1.--SYNTHETIC ORGANIC CHEMICALS: ALPHABETICAL DIRECTORY OF MANUFACTURERS, BY COMPANY, 1985--CONTINUED

IDENTIFICATION CODE	NAME OF COMPANY	TELEPHONE NUMBER	OFFICE ADDRESS
ARN	Arenol Chemical Corp	718-784-0948	40-33 - 23d St., Long Island City, NY 11101
ARZ	Arizona Chemical Co	201-794-3200	200 So. Sudduth Pl., Panama City, FL 32404
ALS	Armco, Inc, Eastern Steel Div	513-425-5000	703 Curtis St., Middletown, OH 45043
ARP	Armour Pharmaceutical Co	815-932-6771	P. O. Box 511, Kankakee, IL 60901
ARK	Armstrong World Industries, Inc	717-397-0611	Liberty & Charlotte Sts., Lancaster, PA 17604
ARO	ARNCO	213-567-1378	5141 Firestone Place, South Gate, CA 90280
ARL	Arol Chemical Products Co	201-344-1510	649 Ferry St., Newark, NJ 07105
ARS	Arsynco, Inc	201-933-2323	126-20 Northern Blvd., Flushing, NY 11368
ASH	Ashland Oil, Inc	614-889-3333	P. O. Box 2219, Columbus, OH 43216
	Ashland Petroleum Co	606-329-3333	P. O. Box 391, Ashland, KY 41101
API	Asoma Polymers, Inc	617-987-0144	Old Webster Rd., Oxford, MA 01540
BLA	Astor Products, Inc., Blue Arrow Div.	904-783-5000	5244 Edgewood Ct., Jacksonville, FL 32205
ATL	Atlantic Industries, Inc	201-235-1800	10 Kingsland Rd., Nutley, NJ 07110
ATR	Atlantic Richfield Co., Arco Chemical Co.	215-557-2846	1500 Market St., Philadelphia, PA 19101
APD	Atlas Powder Co. Sub. of Tyler Corp	417-624-0212	P. O. Box 87, Joplin, MO 64802
APR	Atlas Processing Co	318-636-2711	P. O. Box 3099, Shreveport, LA 71139
AUX	Auralux Corp	203-886-2616	29 Stott Ave., Norwich, CT 06360
KCH	Joseph Ayers, Inc	215-837-1808	275 Keystone Dr., Bethlehem, PA 18017
BTL	BTL of Illinois, Inc	419-244-5856	2112 Sylvan Ave., Toledo, OH 43606
BAS	BASF Corp	616-392-2391	491 Columbus Ave., Holland, MI 49423
		201-263-4050	and 100 Cherry Hill Rd., Parsippany, NJ 07054
ICG	Inmont Div	201-263-4050	100 Cherry Hill Rd., Parsippany, NJ 07054
ICF	Inmont Div	201-365-3400	1255 Broad St., Clifton, NJ 07015
		201-263-4050	and 100 Cherry Hill Rd., Parsippany, NJ 07054
DBC	Badische Corp	804-887-6000	P. O. Box Drawer D, Williamsburg, VA 23187
BKC	J. T. Baker Chemical Co	201-859-2151	222 Red School Lane, Phillipsburg, NJ 08865
BAX	Baxter Travenol Laboratories, Inc	312-948-2000	Route 120 & Wilson Rd., Round Lake, IL 60053
BCK	Beckman Instruments, Inc	619-438-9151	6200 El Camino Real, Carlsbad, CA 92008
BIB	Spinco Div	714-871-4848	1050 Page Mill Rd., Palo Alto, CA 94304
BEE	Beecham, Inc., Beecham Laboratories Div.	201-469-5200	101 Possumtown Rd., Piscataway, NJ 08854
BEW	Beecham, Inc: Beecham Western Hemisphere, Inc	201-881-3000	3 Garret Mountain Plaza, West Paterson, NJ 07424
BCM	Belding Chemical Industries	212-944-6040	P. O. Box 300, Grosvenor Dale, CT 06246
BLZ	Belzak Corp	201-773-0602	850 Bloomfield Ave., Clifton, NJ 07012
BEN	Bennett's Paint Corp	801-486-2211	2131 South West Salt Lake City, UT 84115
BTS	Bethlehem Steel Corp	215-694-4522	Martin Tower - 8th Fl., Bethlehem, PA 18016
BDS	Biddle Sawyer Corp	212-736-1580	2 Penn Plaza - Suite 2439, New York, NY 10121
BNS	Binney and Smith, Inc	215-253-6271	P. O. Box 431, 1100 Church Lane, Easton, PA 18044-0431
BOC	Biocraft Laboratories, Inc	201-796-3434	12 Industrial Park, Waldwick, NJ 07463
BNP	Bison Nitrogen Products Co	712-277-1340	Terra Centre, 600 4th St., Sioux City, IA 51101
BMX	Blu-Max Pigments Div	312-586-8400	7000 W. 60th, Chicago, IL 60638
LAK	Bofors Nobel, Inc	616-788-2341	5025 Evanston Ave., Muskegon, MI 49443
BOR	Borden, Inc.: Borden Chemical Div	614-225-4000	180 E. Broad St., Columbus, OH 43215
MGB	Borg-Warner Corp., Borg-Warner Chemicals	304-424-5411	International Center, Parkersburg, WV 26101
BFP	Breddo Inc	913-321-5300	18th & Kansas Ave., Kansas City, KS 66108
BMC	Brin-Mont Chemicals, Inc	919-292-0566	3921 Spring Garden St., Greensboro, NC 27409



## APPENDIX

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TABLE 1.--SYNTHETIC ORGANIC CHEMICALS: ALPHABETICAL DIRECTORY OF MANUFACTURERS, BY COMPANY, 1985--CONTINUED

IDENTIFICATION CODE	NAME OF COMPANY	TELEPHONE NUMBER	OFFICE ADDRESS
BRS	Bristol-Myers Co	212-546-4000	345 Park Ave., 5th Fl., New York, NY 10154.
BRU	M. A. Bruder & Sons, Inc	215-353-5100	52nd St. & Grays Ave., Philadelphia, PA 19143.
BKM	Buckman Laboratories, Inc	901-278-0330	1256 N. McLean Blvd., Memphis, TN 38122.
BCC	Buffalo Color Corp	716-827-4500	100 Lee St., Buffalo, NY 14210.
BUR	Burroughs Wellcome Co	919-248-3000	3030 Cornwallis Rd., Research Triangle Park, NC 27709.
CFI	CF Industries, Inc	312-438-9500	Salem Lake Dr., Long Grove, IL 60047.
CLU	CL Industries, Inc	217-662-2136	P. O. Box 218 Georgetown, IL 61846.
CCC	C.N.C. International, Inc	401-751-7711	20 Priviledge St., Woonsocket, RI 02895.
	CPC International, Inc.:		
AGR	Acme Resin Corp	312-771-9600	1401 Circle Ave., Forest Park, IL 60130.
GRN	Amerchol Corp	201-287-1600	136 Talmadge Rd., P. O. Box 4051, Edison, NJ 08818-4051.
PEN	Penick Corp	201-935-6600	158 Mount Olivet Ave., Newark, NJ 07114.
GPS	GPS Chemical Co., Inc	201-727-3100	P. O. Box 162, Old Bridge, NJ 08857.
CYR	CYRO Industries	201-930-0100	155 Tice Blvd., P. O. Box 8588, Woodcliff Lake, NJ 07675.
CHB	Cambridge Industries Co	617-924-0026	440 Arsenal St., Watertown, MA 02172.
HCF	Cape Industries	919-343-1150	310 N. Front St., P. O. Box 1694, Wilmington, NC 28402.
SVC	Capital City Products Co., Armstrong Chemical Plant.	608-752-9007	1530 S. Jackson St., Janesville, WI 53545.
CBC	Carbose Corp	814-443-1611	100 Maple St., Somerset, PA 15501.
CGL	Cargill, Inc	612-475-7634	P. O. Box 5630, Minneapolis, MN 55440.
CHC	Carpenter Chemical Co	804-359-0800	P. O. Box 27205, Richmond, VA 23261.
BSC	Cascade Resins, Inc	503-343-2111	P. O. Box 1989, Eugene, OR 97440.
CAS	Caschem, Inc	201-858-7900	40 Avenue A, Bayonne, NJ 07002.
AZT	Catalyst Resources, Inc	713-682-5300	P. O. Box 250, Elyria, OH 44035.
CCL	Catawba-Charlab, Inc	704-523-4242	5046 Old Pineville Rd., P. O. Box 240497, Charlotte, NC 28224.
GED	Cedar Chemical Co	901-767-6851	P. O. Box 3, Rifle Range Road, Vicksburg, MS 39180.
CEL	Celanese Corp.:		
	Celanese Chemical Co., Inc	214-689-4000	1250 W. Mockingbird Lane, Dallas, TX 75247.
	Celanese Fibers Operations	704-554-2000	P. O. Box 32414, Charlotte, NC 28232.
	Celanese Specialities	201-635-2600	26 Main St., Chatham, NJ 07928.
	Celanese Specialty Resins	502-585-8011	P. O. Box 37600, Louisville, KY 40233.
CLP	Cell Products, Inc	201-828-6100	5 Georges Rd., New Brunswick, NJ 08901.
CNT	Certainteed Corp	215-341-7000	P. O. Box 860, Valley Forge, PA 19482.
CPR	Certified Processing Corp	201-923-5200	U.S. Highway #22, Hillside, NJ 07205.
GRS	Champlin Petroleum Co	512-882-8871	P. O. Box 9176, Corpus Christi, TX 78469.
SOG	Charter International Oil Co	713-923-3578	P. O. Box 5008, Houston, TX 77012.
CHA	Chattanooga Coke & Chemicals Co., Inc	615-821-3541	4800 Central Ave., P. O. Box 2339, Chattanooga, TN 37409.
CHT	Chattem, Inc	615-821-4571	1715 W. 38th St., Chattanooga, TN 37409.
CBD	Chembond Corp	503-746-6501	1600 Valley River Dr., Suite 390, Eugene, OR 97401.
CFX	Chemfax, Inc	601-863-6511	Three Rivers Rd., Gulfport, MS 39503.
CI	Chem-Fleur, Inc	201-589-4266	200 Pulaski St., Newark, NJ 07105.
CKI	Chemical Exchange Industries, Inc	713-526-8291	3813 Buffalo Speedway, Houston, TX 77098.
CWT	The Chemithon Corp	206-937-9954	5430 W. Marginal Way, SW., Seattle, WA 98106.
CHL	Chemol Co	919-272-3121	2410 Randolph Ave., Greensboro, NC 27420.
CRT	Chemos Corp	201-623-3334	225-235 Emmett St., Newark, NJ 07114.
CCG	Chevron Chemical Co	713-754-2000	595 Market St., San Francisco, CA 94120.
SOC	Chevron Corp., Chevron Chemical Corp	415-894-7700	575 Market St., San Francisco, CA 94105.
CHH	CHR. Hansen's Laboratory, Inc	414-476-3630	9015 W. Maple St., West Allis, WI 53214.
GGY	Giba-Geigy Corp	914-478-3131	444 Saw Mill River Rd., Ardsley, NY 10502.
CGO	Agricultural Div	919-292-7100	P. O. Box 18300, Greensboro, NC 27419.
CLX	Citgo Petroleum Corp	314-491-7356	P. O. Box 1562, Lake Charles, LA 70602.
	Clark Oil & Refining Corp	314-889-9600	7930 Clayton Rd., St. Louis, MO 63117.

## SYNTHETIC ORGANIC CHEMICALS, 1985

TABLE 1.--SYNTHETIC ORGANIC CHEMICALS: ALPHABETICAL DIRECTORY OF MANUFACTURERS, BY COMPANY, 1985--CONTINUED

IDENTIFICATION CODE	NAME OF COMPANY	TELEPHONE NUMBER	OFFICE ADDRESS
CLI	Clintwood Chemical Co-----	312-890-5790	4342 S. Wolcott Ave., Chicago, IL 60609
CSP	Coastal Refining & Marketing Inc-----	512-887-4100	Nine Greenway Plaza, Houston, TX 77048
CP	Colgate-Palmolive Co-----	212-310-2000	300 Park Ave., New York, NY 10022
CLD	Colloids, Inc-----	201-926-6100	394 Frelinghuysen Ave., Newark, NJ 07111
CCS	Colorado Chemical Specialties, Inc-----	303-278-1963	4880 Robb St. - Unit #2, Wheat Ridge, CO 80033.
CRS	Colorado Resins, Inc-----	303-278-1963	4880 Robb St. - Unit #2, Wheat Ridge, CO 80033.
CIC	Color Chem International Corp-----	201-444-8563	7 Plymouth Rd., Glen Rock, NJ 07452
CNC	Columbia Nitrogen Corp-----	404-823-4000	P. O. Box 1483(13), Augusta, GA 30913
COC	Columbia Organic Chemical Co., Inc-----	803-425-1786	P. O. Box 1045, Camden, SC 29020
CEI	Combustion Engineering, Inc., C-E Cast Products.	412-344-7500	305 Mt. Lebanon Blvd., Pittsburgh, PA 15112
CAC	Cominco American, Inc-----	509-747-6111	W. 818 Riverside Ave., Spokane, WA 99201
CMP	Commercial Products Co., Inc-----	201-427-6887	117 Ethel Ave., Hawthorne, NJ 07506
CNI	Conap, Inc-----	716-372-9650	1405 Buffalo St., Olean, NY 14760
CON	Concord Chemical Co., Inc-----	609-966-1526	17th & Federal Sts., Camden, NJ 08105
CO	Conoco Specialty Products, Inc-----	713-293-1767	600 N Daisy Ashford Rd., P. O. Box 2197, Houston, TX 77252.
CTL	Continental Chemical Co-----	201-472-5000	270 Clifton Blvd., Clifton, NJ 07015
CTP	Continental Polymers, Inc-----	213-637-2103	2225 E. Del Amo Blvd., Compton, CA 90228
CPV	Cook Paint & Varnish Co-----	816-391-6000	P. O. Box 389, Kansas City, MO 64141
COP	Coopers Creek Chemical Corp-----	215-828-0375	River Rd., West Conshohocken, PA 19388
CPY	Copolymer Rubber & Chemical Corp-----	504-355-5655	P. O. Box 2591, Baton Rouge, LA 70821
CRP	Corpus Christi Petrochemicals Co-----	713-751-7100	1000 Louisiana St., Suite 2700, Houston, TX 77002.
GOS	Cosan Chemical Corp-----	201-460-9300	400 - 14th St., Carlstadt, NJ 07072
CRD	Croda, Inc-----	212-683-3089	183 Madison Ave., New York, NY 10016
CK	Crompton & Knowles Corp-----	215-376-8749	P. O. Box 341, Reading, PA 19603
CCP	Crown Central Petroleum Corp-----	301-539-7400	1 N Charles St., Baltimore, MD 21203
USM	Crown Metro, Inc-----	803-277-1870	P. O. Box 5695, Greenville, SC 29605
CRZ	Crown Zellerbach Corp., Chemical Products Div.	206-254-0922	P. O. Box 4266, Vancouver, WA 98662
CYT	Cumberland International Corp-----	713-682-1221	1523 N. Post Oak Rd., Houston, TX 77055
CUS	Custom Pigments Corp-----	312-252-7273	2125 W. Rice St., Chicago, IL 60622
CTR	Customs Resins Div. of Bemis Co., Inc-----	612-340-6000	800 Northstar Ctr., Minneapolis, MN 55424
CYH	Cychem, Inc-----	513-641-4371	P. O. Box 16056, Cincinnati, OH 45216
CYL	Cyclo Chemical Corp-----	305-592-6700	7500 N.W. 66th St., Miami, FL 33166
AMD	Cyclo Products, Inc-----	213-582-6411	1922 E. 64th St., Los Angeles, CA 90001
DAN	Dan River, Inc., Chemical Products Div.	804-799-7000	P. O. Box 261, Danville, VA 24543
DPI	Dart Polymers, Inc., Sub. of Dart Container Corp.	517-676-3800	432 Hogsback Rd., Mason, MI 48854
DGO	Day-Glo Color Corp-----	216-391-7070	4515 St. Clair Ave., Cleveland, OH 44103
DPW	Deepwater, Inc-----	714-751-3522	P. O. Box 17599, Irvine, CA 92713
DGC	Degussa Corp-----	201-288-6500	Rt. 46 at Hollister Rd., Teterboro, NJ 07608.
DRR	Delta Resins & Refractories, Inc-----	414-462-1200	6263 N. Teutonia Ave., Milwaukee, WI 53212
DKA	Denka Chemical Corp-----	713-477-8821	8701 Park Place Blvd., Houston, TX 77017
DNS	Dennis Chemical Co-----	314-771-1800	2700 Papin St., St. Louis, MO 63103
DRB	Derby Co., Inc-----	617-342-5831	231 Industrial Park, 119 Authority Dr., Fitchburg, MA 01420.
DSO & PLX	DeSoto, Inc-----	312-391-9000	1700 S. Mt. Prospect Rd., Des Plaines, IL 60018.
UDI	DeSoto Petrochemicals Inc-----	817-625-2111	510 E. Central St., Fort Worth, TX 76113
DEX	Dexter Chemical Corp-----	212-542-7700	845 Edgewater Rd., Bronx, NY 10474
HYA	Dextex Corp., Hysol Aerospace & Industrial Products Div., Dexter Specialty Chemicals Group.	818-968-6511	15051 East Don Julian Rd., Industry, CA 91746.
HYG	Hysol Electronic Chemical Div., Dexter Specialty Chemicals Group.	818-968-6511	15051 E. Don Julian Rd., Industry, CA 91749.
MID	Midland Div-----	312-623-4200	E. Water St., Waukegan, IL 60085.
AGP	Dial Corp-----	312-892-4381	2000 Aucutt Rd., Montgomery, AL 36108

TABLE 1.--SYNTHETIC ORGANIC CHEMICALS: ALPHABETICAL DIRECTORY OF MANUFACTURERS,  
BY COMPANY, 1985--CONTINUED

IDENTIFICATION CODE	NAME OF COMPANY	TELEPHONE NUMBER	OFFICE ADDRESS
DA	Diamond Shamrock Chemicals Co-----	214-659-7000	351 Phelps Ct., Irving, TX 75015.
DAZ	Diaz Chemical Corp-----	716-638-6321	P. O. Box 194, Holley, NY 14470.
PLN	Disogrin Industries Corp-----	603-669-4050	Grenier Industrial Airpark, Manchester, NH 03130.
GWT	Diversitech General, Polymers Div-----	216-798-3320	1 General St., Akron, OH 44329.
DIX	Dixie Chemical Co., Inc-----	713-526-2604	3635 W. Dallas Ave., Houston, TX 77019.
DRC	Dock Resins Corp-----	201-862-2351	1512 W. Elizabeth Ave., Linden, NJ 07036.
DOM	Dominion Products, Inc-----	718-499-3050	882 - 3d Ave., Brooklyn, NY 11232.
DVC	Dover Chemical Corp. Sub. of ICG Industries, Inc.	216-343-7711	W. 15th & Davis Sts., P. O. Box 40, Dover, OH 44622.
DOW	Dow Chemical Co-----	517-636-6125	2020 Willard H. Dow Center, Midland, MI 48674.
TCI	Chemical Corp., Texize Division-----	803-963-4261	P. O. Box 368, Greenville, SC 29602.
DCC	Dow Corning Corp-----	517-496-4000	2200 W. Salzburg Rd., Auburn, MI 48640.
DRX	Drexel Chemical Co-----	901-774-4370	2487 Penn St., P. O. Box 9306, Memphis, TN 38109.
DUP	E. I. duPont de Nemours & Co., Inc-----	302-774-0911	DuPont Bldg., Wilmington, DE 19898.
DSC	Dye Specialties, Inc-----	201-866-9504	100 Plaza Center, Secaucus, NJ 07094.
KF	Dynamit Nobel of America, Dynamit Nobel Chemicals Div.	201-784-0200	10 Link Dr., Rockleigh, NJ 07647.
MHC	EM Industries, Inc., EM Science Div-----	609-354-9200	2909 Highland Ave., Cincinnati, OH 45212.
AGI	EMS-American Grilon, Inc-----	803-481-9173	P. O. Box 1948, Sumter, SC 29151.
EPI	Eagle Pitcher Industries, Ohio Rubber Co. Div.	216-942-0500	P. O. Box 1398, Denton, TX 76201.
ECC	Eastern Color & Chemical Co-----	401-331-9000	35 Livingston St., Providence, RI 02904.
EK	Eastman Kodak Co-----	716-724-4000	343 State St., Rochester, NY 14650.
EKT	Tennessee Eastman Co. Div-----	615-229-2000	P. O. Box 1974, Kingsport, TN 37662.
EKX	Texas Eastman Co. Div-----	214-236-5000	P. O. Box 1974, Kingsport, TN 37662.
ESA	East Shore Chemical Co, Inc-----	616-726-3106	1221 E. Barney Ave., Muskegon, MI 49443.
EEP	Eaton Corp., Industrial Polymers Products Div.	216-523-5000	1199 S. Chillicothe Rd., Aurora, OH 44202.
ELN	Elan Chemical Co-----	201-344-8014	268 Doremus Ave., Newark, NJ 07105.
ELC	Elco Corp. Sub. of Detrex Chemical Industries, Inc.	216-749-2605	P. O. Box 09186, Cleveland, OH 44109.
ELP	El Paso Products Co-----	915-333-7200	619 N. Grant, Odessa, TX 79760.
EHR	Emery Chemicals, Division of National Distillers & Chemical Corp.	513-530-7300	11501 North Lake Dr., Cincinnati, OH 45249.
TGH	Emery Industries, Inc., Tylon Div-----	803-963-4031	P. O. Box 628, Mauldin, SC 29662.
USH	Emhart Corp., Bostik U.S. Div-----	617-777-0100	Boston St., Middleton, MA 01949.
EMK	Emkay Chemical Co-----	201-352-7053	319 - 2d St., Elizabeth, NJ 07206.
EKO	Empire Coke Co-----	205-323-2400	1927 1st Ave., N. Birmingham, AL 35203.
EHO	Enenco, Inc-----	901-320-5800	P. O. Box 125, Memphis, TN 38101.
EPC	Enterprise Products Co. of Mississippi.	713-880-6500	P. O. Box 4324, Houston, TX 77210.
ESS	Essential Chemicals Corp-----	404-691-3000	28391 Essential Rd., Merton, WI 53056.
ESX	Essex Chemical Corp., Essex Industrial Chemicals, Inc.	201-773-6300	1401 Broad St., Clifton, NJ 07015.
BHC	Ethichem Corp-----	201-933-7880	150 Grand St., Carlstadt, NJ 07072.
TNA	Ethyl Corp-----	804-788-5000	330 S. 4th St., Richmond, VA 23219.
ENJ	Exxon Chemical Americas-----	713-870-6000	13501 Katy Freeway, Houston, TX 77079.
FMC	FMC Corp-----	215-299-6000	2000 Market St., Philadelphia, PA 19103.
FMN	Agricultural Chemical Group-----	215-299-6000	2000 Market St., Philadelphia, PA 19103.
FMB	Specialty Chemicals Div-----	716-876-8300	Sawyer Ave. & River Rd., Town of Tonawanda, NY 14150.
FRP	FRP Co-----	912-367-3616	P. O. Box 349, Baxley, GA 31513.
FAB	Fabricolor Manufacturing Corp-----	201-742-3900	24-1/2 Van Hoaten St., Paterson, NJ 07505.
FMT	Fairmount Chemical Co., Inc-----	201-344-5790	117 Blanchard St., Newark, NJ 07105.
FRI	Farmland Industries, Inc-----	816-459-6000	3315 North Oak Trafficway, Kansas City, MO 64116.
FRI	Farmland Industries, Inc-----	913-843-7300	P. O. Box 69, Lawrence, KS 66044.
FEL	Felton International, Inc-----	718-497-4664	599 Johnson Ave., Brooklyn, NY 11237.

## SYNTHETIC ORGANIC CHEMICALS, 1985

TABLE 1.--SYNTHETIC ORGANIC CHEMICALS: ALPHABETICAL DIRECTORY OF MANUFACTURERS, BY COMPANY, 1985--CONTINUED

IDENTIFICATION CODE	NAME OF COMPANY	TELEPHONE NUMBER	OFFICE ADDRESS
FER	Ferro Corp.:		
	Ferro Chemical Div-----	216-641-8580	7050 Krick Rd., Bedford, OH 44146.
	Grant Chemical Div-----	504-654-6801	P. O. Box 263, Baton Rouge, LA 70821.
	Keil Chemical Div-----	219-931-2630	3000 Sheffield Ave., Hammond, IN 46320.
	Productol Chemical Div-----	213-945-3401	10051 Romandel Ave., Santa Fe Springs, CA 90670.
RBC	Fike Chemicals, Inc-----	304-755-3336	P. O. Box 550, Nitro, WV 25143.
GSD	Fina Oil & Chemical Co., Cosden Chemical Div.	214-750-2400	8350 N. Central, Dallas, TX 75206.
FTX	Finetex, Inc-----	201-797-4686	418 Falmouth Ave., Elmwood Park, NJ 07407.
	Firestone Tire & Rubber Co.:		
FRF	Firestone Fibers & Textile Co-----	804-541-2000	P. O. Box 450, Hopewell, VA 23869.
FRS	Firestone Synthetic Rubber & Latex Co. Div.	216-379-7495	P. O. Box 2786, Akron, OH 44301.
FST	First Chemical Corp-----	601-762-0870	P. O. Box 1427, Pascagoula, MS 39567.
FPC	Flambeau Paper Corp-----	715-762-3231	P. O. Box 340, Park Falls, WI 54552.
FLM	Fleming Laboratories, Inc-----	704-372-5613	2215 Thrift Rd., P. O. Box 34384, Charlotte, NC 28234.
CIK	Flint Ink Corp., Cal/Ink Div-----	415-525-1188	1404 - 4th St., Berkeley, CA 94710.
FTE	Foot Mineral Co-----	215-363-6500	Route 100, Exton, PA 19341.
FMO	Ford Motor Co., Paint Operations-----	313-466-1913	400 Groesbeck Hwy., Mt. Clemens, MI 48043.
FOR	Formosa Plastics Corp:		
	Louisiana-----	504-356-3341	P. O. Box 271, Baton Rouge, LA 70821.
	USA-----	201-966-6980	66 Hanover Rd., Florham Park, NJ 07932.
FJI	Foy-Johnston, Inc-----	513-631-4270	1776 Mentor Ave., Cincinnati, OH 45212.
FKE	Frank Enterprise, Inc-----	614-253-5519	700 Rose Ave., Columbus, OH 43219.
FLN	Franklin International-----	614-443-0241	2020 Bruck St., Columbus, OH 43207.
FRE	Freeman Chemical Corp-----	414-284-5541	P. O. Box 247, Port Washington, WI 53074.
FB	Fritzsche Dodge & Olcott, Inc-----	212-929-4100	76 - 9th Ave., New York, NY 10011.
FLH	H. B. Fuller Co-----	612-645-3401	3520 Lexington Ave. N., St. Paul, MN 55126.
GAF	GAF Corp., Chemical Corp-----	201-862-2600	P. O. Box 12, Linden, NJ 07036.
GLX	Galkie Chemicals Corp-----	201-279-0558	26 Piercy St., Paterson, NJ 07524.
GAN	Gane's Chemicals, Inc-----	212-391-2580	1114 Avenue of the Americas, New York, NY 10036.
GNR	Genencor, Inc-----	415-588-3475	180 Kimball Way, S. San Francisco, CA 94080.
GE	General Electric Co-----	614-622-5310	1350 S. Second St., Coshocton, OH 43812
		413-494-4793	and 1 Plastics Ave., Pittsfield, MA 01201.
GEI	Insulating Materials-----	518-385-7999	RV-28, 1 Campbell Rd., Schenectady, NY 12345.
SPD	Silicone Products Div-----	518-266-3330	Mechanicville Rd., Waterford, NY 12188.
GNF	General Foods Manufacturing Corp., Maxwell House Coffee Div.	201-420-3436	1125 Hudson St., Hoboken, NJ 07030.
GLC	General Latex & Chemical Corp-----	617-576-8000	675 Mass. Ave., Cambridge, MA 02139.
GRG	P D George Co-----	314-621-5700	5200 N. Second St., St. Louis, MO 63147.
GGC	Georgia Gulf Corp., Bound Brook Div-----	404-395-4533	400 Perimeter Ctr., Terr. Suite 595, Atlanta, GA 30348.
GGC	Houston Div-----	404-521-4000	400 Perimeter Ctr., Terr. Suite 595, Atlanta, GA 30348.
GGC	Plaquemine Div-----	404-521-4000	400 Perimeter Ctr., Terr. Suite 595, Atlanta, GA 30348.
GGC	PVC Compound Div-----	404-521-5200	P. O. Box 629, Evergreen Rd., Plaquemine, LA 70765.
	Georgia-Pacific Corp.:		
PSP	Bellingham Div-----	206-733-4410	P. O. Box 1236, Bellingham, WA 98227.
GP	Resins Inc-----	404-521-4000	133 Peachtree St. NE., Atlanta, GA 30361.
TNI	The Gillette Co., Chemical Div-----	617-421-7000	3500 W. 16th St., N. Chicago, IL 60064.
GBF	Gist-Brocades, USA, Inc-----	704-527-9000	5550 - 77 Center Dr., P. O. Box 241068, Charlotte, NC 28224.
GIV	Givaudan Corp-----	201-365-8000	100 Delawanna Ave., Clifton, NJ 07014.
GAI	Glasurit America, Inc-----	313-861-1000	3301 Bourke Ave., Detroit, MI 48238.

## APPENDIX

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TABLE 1.--SYNTHETIC ORGANIC CHEMICALS: ALPHABETICAL DIRECTORY OF MANUFACTURERS, BY COMPANY, 1985--CONTINUED

IDENTIFICATION CODE	NAME OF COMPANY	TELEPHONE NUMBER	OFFICE ADDRESS
GLY	Glyco, Inc-----	203-847-1191	488 Main St., P. O. Box 5100, Norwalk, CT 06856.
BFG	B.F. Goodrich-Ameripol SBR Div-----	216-374-2000	500 S. Main St., Akron, OH 44318.
BFG	B. F. Goodrich Co.:		
	B. F. Goodrich Chemical Group-----	216-447-6000	6100 Oak Tree Blvd., Cleveland, OH 44131.
HGC	Goodson Chemical Corp-----	801-278-5311	3760 S. Highland Dr., Suite 200, Salt Lake City, UT 84106.
GYR	Goodyear Tire & Rubber Co-----	216-796-7383	1144 E. Market St., Akron, OH 44316.
	W. R. Grace & Co.:		
GCC	Agricultural Chemicals Group-----	901-357-2311	P. O. Box 27147, Memphis, TN 38127.
HMP	Hampshire Chemicals Div-----	617-861-6600	55 Hayden Ave., Lexington, MA 02173.
EVN	Organic Chemicals Div., Evans Chemetics.	203-655-8741	90 Tokeneke Rd., Darien, CT 06820.
GRD	Polymers & Chemicals Div-----	617-861-6600	55 Hayden Ave., Lexington, MA 02173.
GPG	Grain Processing Corp-----	319-264-4211	P. O. Box 349, Muscatine, IA 52761.
GPC	Grant Industries, Inc-----	201-791-6700	P. O. Box 360, Elmwood Park, NJ 07407.
GTL	Great Lakes Chemical Corp-----	317-463-2511	P. O. Box 2200, Hwy. 52, W. Lafayette, IN 47906.
GNW	Greenwood Chemical Co-----	703-456-6832	P. O. Box 26, State Hwy. #690, Greenwood, VA 22943.
GDC	Gresto Mfg. Inc-----	919-475-8101	216 E. Holly Hill Rd., Thomasville, NC 27360.
GRV	Guardsman Chemicals, Inc-----	616-452-5181	1350 Steele Ave., S.W., Grand Rapids, MI 49507.
HAR	Haarmann & Reimer Corp-----	201-686-3132	70 Diamond Rd., Springfield, NJ 07081.
HAL	C. P. Hall Co-----	312-767-4600	7300 S. Central Ave., Chicago, IL 60638.
HOC	Halocarbon Products Corp-----	201-343-8703	82 Burlews Ct., Hackensack, NJ 60638.
HWM	Haltermann Ltd. Co-----	713-452-5951	16717 Jacintoport Blvd., Houston, TX 77015.
FOC	Handschy Industries, Inc., Farac Varnishes & Chemicals.	312-597-7990	13601 S. Ashland Ave., Riverdale, IL 60627.
HAN	Hanna Chemical Coatings Corp-----	614-294-3361	1313 Windsor Ave., P. O. Box 147, Columbus, OH 43216.
HSH	Harshaw/Filtrol Partnership-----	216-292-9200	3400 Bank St., Louisville, KY 40212.
HRT	Hart Products Corp-----	201-433-6665	173 Sussex St., Jersey City, NJ 07302.
HCC	Natco Chemical Co-----	201-738-1000	King George Post Rd., Fords, NJ 08863.
HKY	Hawkeye Chemical Co-----	319-243-5800	P. O. Box 899, Clinton, IA 52733.
HAP	Helmerich & Payne, Inc., Natural Gas Odorizing Div.	713-424-5568	3601 Decker Dr., P. O. Box 4176, Baytown, TX 77520.
SCP	Henkel Corp-----	612-828-8000	7900 W. 78th St., Minneapolis, MN 55435.
HPC	Hercules, Inc-----	302-594-5000	Hercules Plaza, Wilmington, DE 19899.
HER	Heresite-Sackaphen, Inc-----	414-684-6646	822 S. 14th St., Manitowoc, WI 54220.
HTN	Heterene Chemical Corp-----	201-278-2000	790 - 21st Ave., Paterson, NJ 07513.
HET	Heterochemical Corp-----	516-561-8225	111 E. Hawthorne Ave., P. O. Box 157, Valley Stream, NY 11580.
HEU	Heubach Inc-----	201-242-1800	Heubach Ave., Newark, NJ 07114.
HEC	Hewchem-----	601-863-6600	2500 - 33d Ave., Gulfport, MS 39501.
HEW	Hewitt Soap Co., Inc-----	513-253-1151	333 Linden Ave., Dayton, OH 45403.
HEX	Hexagon Laboratories, Inc-----	212-324-7550	4166 Boston Rd., Bronx, NY 10475.
XL	Hexcel Corp., Hexcel Chemical Products.	201-472-6800	205 Main St., Lodi, NJ 07644.
HIP	High Point Chemical Corp-----	919-884-2214	601 Taylor Ave., High Point, NC 27261.
HIM	Himont, U.S.A., Inc-----	302-594-5500	1313 N. Market St., Wilmington, DE 19894.
HDC	Hodag Chemical Corp-----	312-675-3950	7247 N. Central Park Ave., Skokie, IL 60076.
HOF	Hoffmann-LaRoche, Inc-----	201-235-5000	340 Kingsland St., Nutley, NJ 07110.
HCP	Honig Chemical & Processing Corp-----	201-344-0881	414 Wilson Ave., Newark, NJ 07105.
EPH	E. F. Houghton & Co-----	215-666-4000	Madison & Van Buren Aves., Valley Forge, PA 19482.
HML	Hummel Chemical Co., Inc-----	201-754-1800	P. O. Box 250, S. Plainfield, NJ 07080.
HMY	Humphrey Chemical Co-----	203-281-0012	P. O. Box 325, N. Haven, CT 06473-0325.
WAY	Philip A. Hunt Chemical Corp., Organic Chemical Div.	201-977-6000	One Wellington Rd., Lincoln, RI 02865.
HNT	Huntington Laboratories, Inc-----	219-356-8100	970 E. Tipton St., Huntington, IN 46750.

## SYNTHETIC ORGANIC CHEMICALS, 1985

TABLE 1.--SYNTHETIC ORGANIC CHEMICALS: ALPHABETICAL DIRECTORY OF MANUFACTURERS, BY COMPANY, 1985--CONTINUED

IDENTIFICATION CODE	NAME OF COMPANY	TELEPHONE NUMBER	OFFICE ADDRESS
HUS	Husky Industries, Inc	404-393-1430	P. O. Drawer I, Dickinson, ND 58601.
HYN	Hynson, Westcott, & Dunning, Inc	301-837-0890	Charles & Chase Sts., Baltimore, MD 21202.
ICI	ICI Americas, Inc	302-575-3000	Concord Pike & Murphy Rd., Wilmington, DE 19897.
	Chemicals Div	302-575-3000	Wilmington, DE 19897.
RAY	ITT Rayonier, Inc	203-348-7000	1177 Summer St., Stamford, CT 06904.
IGC	Indiana Gas & Chemical Corp	812-232-0231	1341 Hulman St., Terre Haute, IN 47808.
IND	Indol Color Co., Inc	201-242-1300	1029 Newark Ave., Elizabeth, NJ 07201.
IDC	Industrial Color, Inc	815-722-7402	50 Industry Ave., Bldg. 28, Joliet, IL 60435.
INL	Inland Steel Co	219-392-5408	3210 Watling, E. Chicago, IL 46312.
WM	Inolex Chemical Co	215-271-0800	Jackson & Swanson Sts., Philadelphia, PA 19148.
	Insilco Corp.:		
ENP	Enterprise Co	312-541-9000	1191 S. Wheeling Rd., Wheeling, IL 60090.
SPC	Sinclair Paint Co. Div	213-268-2511	3960 E. Washington Blvd., Los Angeles, CA 90023.
ILI	Interlake, Inc	312-986-6600	2015 Spring Rd., Oak Brook, IL 60521.
IFF	International Flavor & Fragrances, Inc.	212-765-5500	521 W. 57th St., New York, NY 10019.
IMC	International Minerals & Chemical Corp.:	812-232-0121	P. O. Box 207, Terra Haute, IN 47808.
	Industrial Chemicals Div	312-566-2600	421 E. Hawley St., Mundelein, IL 60060.
IPC	Interplastic Corp	612-331-6850	2015 NE Broadway, Minneapolis, MN 55413.
CCA	Interstab Chemicals, Inc	201-247-2202	500 Jersey Ave., New Brunswick, NJ 08903.
IOV	Iovite, Inc	312-481-8900	21625 Oak St., P. O. 129, Matteson, IL 60443.
IRI	Ironsides Co	614-224-2228	270 W. Mound St., Columbus, OH 43215.
JRC	Jarchem Industries, Inc	201-344-0600	40 Ball St., Newark, NJ 07105.
JFR	George A. Jeffreys & Co., Inc	703-389-8220	P. O. Box 909, Salem, VA 24153.
JRG	Andrew Jergens Co	513-421-1400	2535 Spring Grove Ave., Cincinnati, OH 45214.
JTO	Jetco Chemicals, Inc	214-872-3011	P. O. Box 1898, Corsicana, TX 75110.
UPF	Jim Walter Resources, Inc., CIC Div	205-849-3032	P. O. Box 5327, Birmingham, AL 35217.
MRX	Johnson Matthey, Inc., Pigments Dept	201-373-7801	1200 Grove St., Irvington, NJ 07111.
JNS	S. C. Johnson & Son, Inc	414-631-2000	1525 Howe St., Racine, WI 53403.
JOB	Jones-Blair Co	214-353-1600	2728 Empire Central, Dallas, TX 75235.
JOR	Jordan Chemical Co	215-583-7000	1830 Columbia Ave., Folcroft, PA 19032.
KAI	Kaiser Aluminum & Chemical Corp	415-271-3300	P. O. Box 337, Gramercy, LA 70052.
KLM	Kalama Chemical, Inc	206-682-7890	Suite 1110, Bank of California Center, Seattle, WA 98164.
KAN	Kanasco, Ltd	301-789-7800	6110 Robinwood Road, Baltimore, MD 21175.
KMP	Kelly-Moore Paint Co., Inc	415-592-8337	987 Commercial St., San Carlos, CA 94070.
KMI	Kemlin Industries, Inc	515-266-2111	2100 Maury St., Des Moines, IA 50301.
KGU	Kennecott Minerals Co., Utah Copper Div.	801-322-6178	P. O. Box 31838, Salt Lake City, UT 84106.
KPI	Kenrich Petrochemicals, Inc	201-823-9000	P. O. Box 32, 140 E. 22nd St., Bayonne, NJ 07002.
KTP	Kent Polymers, Inc	717-455-2021	666 Dietrich Ave., P. O. Box 658, Hazelton, PA 18201.
KYS	Keysor Century Corp	805-259-2360	P. O. Box 308, Saugus, CA 91350.
KCW	Keystone Color Works, Inc	717-854-9541	151 W. Gay Ave., York, PA 17403.
CHF	Kincaid Enterprises, Inc	304-755-3377	P. O. Box 671, Nitro, WV 30067.
KHI	Koch Refining Co	316-832-5217	P. O. Box 2302, Wichita, KS 67201.
KON	H. Kohnstamm & Co., Inc	212-620-4800	161 Avenue of the Americas, New York, NY 10013.
KMC	Komac Paint, Inc	303-534-5191	201 Osage ST., Denver, CO 80204.
KPT	Koppers Co., Inc	412-227-2228	Koppers Bldg., K-1050, 10th Fl., Pittsburgh, PA 15219.
LCP	LCP Chemicals:		
	Maine	201-225-4840	P. O. Box 149, Orrington, ME 04474.
	West Virginia, Inc	304-843-1310	P. O. Box Box J, Moundsville, WV 26041.

## APPENDIX

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TABLE 1.--SYNTHETIC ORGANIC CHEMICALS: ALPHABETICAL DIRECTORY OF MANUFACTURERS,  
BY COMPANY, 1985--CONTINUED

IDENTIFICATION CODE	NAME OF COMPANY	TELEPHONE NUMBER	OFFICE ADDRESS
LTV	LTV Steel Co., Inc	216-622-5000	LTV Steel Bldg., 25 W. Prospect Ave., Cleveland, OH 44115.
LKY	Lake States Div. of Rhineland Paper Co.	715-369-4356	515 W. Davenport St., Rhineland, WI 54501.
LUR	Laurel Products Corp	215-423-5300	2600 E. Tioga St., Philadelphia, PA 19134.
LUI	Lawter International, Inc	312-498-4700	990 Skokie Blvd., Northbrook, IL 60062.
LLI	Lee Laboratories, Inc	804-862-2534	P. O. Box 1658, Petersburg, VA 23805.
SAR	Leksi, Inc	215-521-3800	P. O. Box 56, Essington, PA 19029.
LEV	Lever Brothers Co	212-906-6000	390 Park Ave., New York, NY 10022.
LVR	C. Lever Co., Inc	215-639-8640	736 DunksFerry Rd., Bensalem, PA 19020.
LIL	Eli Lilly & Co	317-261-2000	307 E. McCarthy St., Indianapolis, IN 46285.
	Eli Lilly Industries, Inc	809-757-4150	Call Box 1198 - Pueblo Station, Carolina, PR 00628-1198.
LIC	Lilly Industrial Coatings, Inc	317-634-8512	P. O. Box 946, Indianapolis, IN 46206.
BRD	Lonza, Inc	201-794-2400	22-10 Route 208, Fair Lawn, NJ 07410.
LC	Lord Corp., Chemical Products Group	814-868-3611	2000 W. Grandview Blvd., P. O. Box 10038, Erie, PA 16514-0038.
LAS	Los Angeles Soap Co	213-627-5011	617 E. 1st St., P. O. Box 2198 T.A., Los Angeles, CA 90051.
LCS	Louisiana Chemical Specialties, Inc	504-775-1801	12537 Scenic Hwy., Baton Rouge, LA 70807.
LYP	Lyondell Petrochemical Co	713-652-7200	1221 McKinney, Suite 1600, Houston, TX 77253.
MCK	MacKenzie Chemical Works, Inc	516-234-8600	1 Cordello Ave., Central Islip, NY 11722.
MCC	McCloskey Varnish Co	215-624-4400	7600 State Rd., Philadelphia, PA 19136.
MCG	McCloskey Varnish Co., Oregon	503-226-3751	4155 N.W. Yeon Ave., Portland, OR 97210.
MCG	McCloskey Varnish Co., California	213-726-7272	5501 W. Slauson, Commerce, CA 90040.
STG	McCormick & Co., Inc., McCormick- Strange, Flavor Div.	301-667-7400	230 Schilling Circle S., Hunt Valley, MD 21031.
MKG	McLaughlin Gormley King Co	612-544-0341	8810 - 10th Ave., N., Minneapolis, MN 55427.
MWP	McWhorter, Inc	312-428-2657	400 E. Cottage Place, Carpentersville, IL 60110.
MAK	MAK Chemical Corp	317-288-4464	1200 Rochester Ave., P. O. Box 2423, Muncie, IN 47302.
SOR	MW Manufacturers, Inc., Southern Resin Div.	703-483-0211	P. O. Box 68, Thomasville, NC 27360.
TZC	Magnesium Elektron, Inc	201-782-5800*	R.D. #2, Box 251, Flemington, NJ 08822.
MGR	Magruder Color Co., Inc	201-242-1300	1029 Newark Ave., Elizabeth, NJ 07201.
MAL	Mallinckrodt, Inc	314-895-2000	675 McDonnell Blvd., Building-10-3-5, St. Louis, MO 63134.
MOC	Marathon Petroleum Co., Texas Refining Div.	419-422-2121	539 S. Main St., Findlay, OH 45840.
MRD	Marden-Wild Corp	617-666-0400	500 Columbia St., P.O. Box 499, Somerville, MA 02143.
HRV	Marlowe-Van Loan Corp	919-886-7126	1511 Joshua Circle, P. O. Box 1851, High Point, NC 27261.
MCA	Masonite Corp., Alpine Resin Div	601-863-5772	P. O. Box 2392, Gulfport, MS 39505.
MYO	Mayo Chemical Co	404-696-6711	5544 Oakdale Rd., Smyrna, GA 30080.
MZC	Mazer Chemicals, Inc	312-244-3410	3938 Porett Dr., Gurnee, IL 60031.
HLC	Melamine Chemicals, Inc	504-473-3121	P. O. Box 748, Donaldsonville, LA 70346.
MRK	Merck & Co., Inc	201-574-4000	P. O. Box 2000, Rahway, NJ 07065.
HER	Merichem Co	713-455-1311	1914 Haden Rd., Houston, TX 77015.
MLS	Miles Laboratories, Inc., Biotechnology Group.	219-262-7445	1127 Myrtle St., Elkhart, IN 46515.
MIL	Milliken & Co., Milliken Chemical Div	803-472-9041	P. O. Box 817, Inman, SC 29349.
RPC	Millmaster Onyx Group, Inc., Lyndal Chemical Co. Div.	212-687-2757	Coronet Dr., Dalton, GA 30720.
MMH	Minnesota Mining & Manufacturing Co	612-736-0940	3M Center 224-6SE, St. Paul, MN 55144.
MIR	Miranol Chemical Co., Inc	201-329-3900	P. O. Box 436, Dayton, NJ 08810.
MSC	Mississippi Chemical Corp	601-746-4131	P. O. Box 388, Yazoo City, MS 39194.
CHG	Mobay Chemical Corp.: Agricultural Chemicals Div	816-242-2345	P. O. Box 4913, Hawthorne Rd., Kansas City, MO 64120
VPC	Dye & Pigment Div	201-686-3700	P. O. Box 385, Union, NJ 07083.
MOB	Pittsburgh Div	412-777-2000	Mobay Rd., Pittsburgh, PA 15205.

## SYNTHETIC ORGANIC CHEMICALS, 1985

TABLE 1.--SYNTHETIC ORGANIC CHEMICALS: ALPHABETICAL DIRECTORY OF MANUFACTURERS, BY COMPANY, 1985--CONTINUED

IDENTIFICATION CODE	NAME OF COMPANY	TELEPHONE NUMBER	OFFICE ADDRESS
SM	Mobil Oil Corp.:		
	Gas Liquids Dept-----	703-849-3000	P. O. Box 900, Dallas, TX 75221.
	Mobil Chemical Co-----	212-883-4242	P. O. Box 726, Paramus, NJ 07652.
	Chemical Products Div-----	201-321-6000	P. O. Box 250, Edison, NJ 08818.
	Petrochemicals Div-----	713-590-7700	World Tower One, 15600 Drummit Blvd., Houston, TX 77032.
MOA	Mona Industries, Inc-----	201-345-8220	76 E. 24th St., Paterson, NJ 07544.
MON	Monsanto Co-----	314-694-1000	800 N. Lindberg Blvd., St. Louis, MO 63167.
MCI	Mooney Chemicals, Inc-----	216-781-8383	2301 Scranton Rd., Cleveland, OH 44113.
MCP	Moretex Chemical Products, Inc-----	803-583-8441	314 W. Henry St., Spartanburg, SC 29304.
MRF	Morflex Chemical Co., Inc-----	919-292-1781	2110 High Point Road, Greensboro, NC 27403.
	Morton Thiokol, Inc.:		
GCW	Carstab Div-----	513-733-2100	West St., Reading, OH 45215.
MRT	Morton Chemical Div-----	312-621-5555	2 N. Riverside Plaza, Chicago, IL 60606.
MHI	Ventron Div-----	617-774-3100	150 Andover St., Danvers, MA 01923.
MOT	Motomco, Ltd-----	608-244-2904	P. O. Box 8422, Madison, WI 53708.
PNX	The Murphy-Phoenix Co-----	216-831-0404	23811 Chagrin Blvd., Beechwood, OH 44122.
NTL	NL Industries, Inc-----	212-621-9400	1230 Avenue of the Americas, New York, NY 10020.
	NL Chemicals Div-----	609-443-2450	P. O. Box 700, Hightstown, NJ 08520.
CHN	N-Ren Corp., Cherokee Nitrogen Div-----	800-543-6736	P. O. Box 429, Pryor, OK 74362.
LEM	Napp Chemicals, Inc-----	201-773-3900	199 Main St., Lodi, NJ 07644.
NTB	National Biochemical Co-----	312-722-0126	3127 W. Lake St., Chicago, IL 60612.
NTC	National Casein Co-----	312-846-7300	601 W. 80th St., Chicago, IL 60620.
NCJ	National Casein of New Jersey-----	609-829-1880	P. O. Box 226, Riverton, NJ 08077.
USI	National Distillers & Chemicals Corp., U.S. Industrial Chemicals Co-----	513-530-6500	11500 N. Lake Dr., P. O. Box 429550, Cincinnati, OH 45249.
NMC	National Milling & Chemical Co., Inc-----	215-482-6600	4601 Flat Rock Rd., Philadelphia, PA 19127.
NSC	National Starch & Chemical Corp-----	201-685-5000	10 Finderne Ave., Bridgewater, NJ 08807.
NTS	National Steel Corp., Great Lakes Plant-----	313-297-3601	1 Quality Dr., Ecorse, MI 48229.
NEP	Nepera, Inc-----	914-782-8171	Route #17, Harriman, NY 10926.
NVM	Nevamar Corp-----	301-569-5000	8339 Telegraph Rd., Odenton, MD 21113.
NEV	Neville Chemical Co-----	412-331-4200	Grand Avenue, Neville Island, Pittsburgh, PA 15225.
NCC	Niacet Corp-----	716-285-1474	400 - 47th St., Niagara Falls, NY 14304.
NLO	Niklor Chemical Co., Inc-----	213-830-2253	2060 E. 220th St., Long Beach, CA 90810.
NCP	Niles Chemical Paint Co-----	616-683-3377	P. O. Box 307, Niles, MI 49120.
	Kordell Industries Div-----	219-255-9678	413 Clover Rd., P. O. Box 930, Mishawaka, IN 46544.
GNP	Nipro, Inc-----	404-823-4000	P. O. Box 1483(13), Augusta, GA 30913.
NOC	The Norac Co., Inc-----	818-334-2908	405 S. Motor Ave., Azusa, CA 91702.
	Mathe Div-----	201-779-4981	169 Kennedy Dr., P. O. Box 2230, Lodi, NJ 07644.
FSN	NOR-AM Chemical Co-----	302-575-2000	3509 Silverside Road, P. O. Box 7495, Wilmington, DE 19803.
NWP	Norchem, Inc-----	402-633-5735	Two Center Park Plaza, Norchem Center, Omaha, NB 68102.
NW	Northwestern Chemical Co-----	312-231-6111	120 N. Aurora St., West Chicago, IL 60185.
NPC	Northwest Petrochemical Corp-----	206-293-3176	P. O. Box 99, Anacortes, WA 98221.
NOR	Norwich Eaton Pharmaceutical, Inc-----	607-335-2111	17 Eaton Ave., Norwich, NY 13815.
NBI	Novo Biochemical Industries Inc-----	919-494-2014	P. O. Box 576, Franklinton, NC 27525.
NOD	Nuodex, Inc-----	201-981-5000	P. O. Box 365, Turner Place, Piscataway, NJ 08854.
NSW	The Nutrasweet Co-----	312-982-7000	4711 Golf Rd., Skokie, IL 60076.
NUT	Nutrius, Inc-----	216-526-5522	8221 Brecksville Rd., Brecksville, OH 44111.
OBC	The O'Brien Corp-----	415-761-2300	450 E. Grand Ave., S. San Francisco, CA 94080.
	Occidental Chemical Corp.:		
HKD	Durez Div-----	716-696-6000	Walck Rd., N. Tonawanda, NY 14120.
HK	Industrial & Specialty Chemical Div-----	716-286-3000	360 Rainbow Blvd. S., Niagara Falls, NY 14303.



## APPENDIX

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TABLE 1.--SYNTHETIC ORGANIC CHEMICALS: ALPHABETICAL DIRECTORY OF MANUFACTURERS, BY COMPANY, 1985--CONTINUED.

IDENTIFICATION CODE	NAME OF COMPANY	TELEPHONE NUMBER	OFFICE ADDRESS
HKP	PVC Div-----	215-327-6400	P. O. Box 699, Pottstown, PA 19464.
OMC	Olin Corp-----	203-356-2000	120 Long Ridge Rd., Stamford, CT 06904.
ONX	Onyx Chemical Co-----	201-434-1700	190 Warren St., Jersey City, NJ 07302.
ORG	Organics/LaGrange, Inc-----	312-764-6700	7125 N. Clark St., Chicago, IL 60626.
OCC	Orient Chemical Corp-----	201-465-0714	121 Tyler St., Port Newark, NJ 07114.
BSW	Original Bradford Soap Works, Inc-----	401-821-2141	200 Providence St., W. Warwick, RI 02893.
CJO	G. J. Osborn Chemicals, Inc-----	609-662-0128	820 Sherman Ave., Pennsauken, NJ 08109.
OCF	Owens-Corning Fiberglas Corp-----	419-248-8000	Fiberglas Tower, Toledo, OH 43659.
PBI	PBI-Gordon Corp-----	816-421-4070	1217 W. 12th St., Kansas City, MO 64101-9984.
PSG	PMC Specialities Group, Inc-----	216-356-0700	20525 Center Ridge Rd, Suite 235, Rocky River, OH 44116.
PHP	PMP Fermentation Products, Inc-----	414-352-3001	7670 N. Port Washington Rd., Milwaukee, WI 53217.
PPG	PPG Industries, Inc-----	412-434-3131	PPG Place, Pittsburgh, PA 15272.
PAC	Pacific Anchor Chemical Corp-----	213-725-1800	6055 E. Washington Blvd., Suite 700, Los Angeles, CA 90040.
PNT	Pantasote, Inc., Film/Compound Div-----	201-777-8500	26 Jefferson St., Passaic, NJ 07055.
PAH	Parish Chemical Co-----	801-226-2018	145 N. Geneva Rd., Orem, UT 84057.
PD	Parke-Davis Div. of Warner Lambert Co--	201-540-2000	188 Howard Ave., Holland, MI 49423.
PSG	Passaic Color & Chemical Co-----	201-279-0400	28-36 Paterson St., Paterson, NJ 07501.
CHP	G. H. Patrick & Co., Inc-----	803-244-4831	P. O. Box 2526, Greenville, SC 29602.
PEL	Pelron Corp-----	312-442-9100	7847 W. 47th St., Lyons, IL 60534.
PAS	Pennwalt Corp-----	215-587-7000	Three Parkway, Philadelphia, PA 19102.
WTL	Lucidol Div-----	716-877-1740	1740 Military Rd., Buffalo, NY 14240.
MOR	Pennzoil Co., Pennzoil Morco Co-----	713-337-1534	P. O. Drawer C, Dickinson, TX 77539.
PAR	Pennzoil Co., Penreco Div-----	412-283-5600	Union Bank Bldg. Butler, PA 16001.
PKI	Perkins Industries, Inc-----	913-677-5831	6405 Metcalf St., Suite 422, Overland Park, KS 66202.
BPT	Permuthane, Inc-----	617-531-1880	Corwin St., Peabody, MA 01960.
PER	Perry & Derrick Co., Inc-----	513-351-5800	2510 Highland Ave., Cincinnati, OH 45212.
PST	Perstorp Compounds, Inc-----	413-584-2472	238 Nonotuck St., Florence, MA 01060.
PST	Perstorp Polyols, Inc-----	419-729-5448	600 Matzinger Rd., Toledo, OH 43612.
UDI	Petrochemicals/Desoto, Inc-----	817-625-2111	510 E. Central St., Fort Worth, TX 76113.
PFN	Pfanstiehl Laboratories, Inc-----	312-623-0370	1219 Glen Rock Ave., Waukegan, IL 60085.
PCW	Pfister Chemical, Inc-----	201-945-5400	Linden Ave., Ridgefield, NJ 07657.
PFZ	Pfizer, Inc-----	212-573-2323	235 E. 42d St., New York, NY 10017.
	Pfizer Pharmaceuticals, Inc-----	809-846-4300	P. O. Box 628, Barceloneta, PR 00617.
PHR	Pharmachem Corp-----	215-867-4654	719 Stefko Blvd., Bethlehem, PA 18016.
PLB	Pharmacia P-L Biochemicals, Inc-----	414-225-2600	2202 N. Bartlett Ave., Milwaukee, WI 53202.
PDI	Phelps Dodge Industries, Inc., Phelps Dodge Magnet Wire Co. Div.	219-456-4444	4300 New Haven Ave., Fort Wayne, IN 46803.
PPX	Phillips Paraxylene, Inc-----	809-864-1515	P. O. Box 1166, Guayama, PR 00655.
PLG	Phillips Petroleum Co-----	918-661-6600	15 Al Phillips Bldg., Bartlesville, OK 74004.
PPR	Phillips Puerto Rico Core, Inc-----	809-864-1515	P. O. Box 1166, Guayama, PR 00655.
PHG	Phthalchem, Inc-----	513-681-0099	6675 Beechlands Dr., Cincinnati, OH 45237.
PCI	Piedmont Chemical Industries, Inc-----	919-885-5131	331 Burton Ave., High Point, NC 27260.
PIC	Pierce Chemical Co-----	815-968-0747	3747 N. Meridan Rd., Rockford, IL 61103.
PLL	Pilot Chemical Co-----	213-723-0036	11756 Burke St., Santa Fe Springs, CA 90670.
PPL	Pioneer Plastics Div. of LOF Plastics, Inc.	207-784-9111	Pionite Rd., Auburn, ME 04210.
PKL	Plaskolite, Inc-----	614-294-3281	P. O. Box 1497, Columbus, OH 43216.
PSL	Plaslok Corp-----	716-681-7755	3155 Broadway, Buffalo, NY 14227.
PLS	Plastics Engineering Co-----	414-458-2121	3518 Lakeshore Rd., Sheboygan, WI 53081.
PHG	Plastics Manufacturing Co-----	214-330-8671	2700 S. Westmoreland, Dallas, TX 75233.
SYF	Plastics Specialities & Technology, Inc., Synthetic Products Co.	216-531-6010	16601 St. Clair Ave., Cleveland, OH 44110.
FTG	Polycast Technology Corp-----	203-327-6010	69 Southfield Ave., Stamford, CT 06902.
PAI	Polymer Applications, Inc-----	716-875-0775	3445 River Rd., Tonawanda, NY 14150.
PVI	Polymer Industries-----	803-244-5351	P. O. Box 2184, Roberts Rd., Greenville, SC 29602.
PYZ	Polyrez Co., Inc-----	609-845-1813	S. Columbia St. & R.R., Woodbury, NJ 08096.

TABLE 1.--SYNTHETIC ORGANIC CHEMICALS: ALPHABETICAL DIRECTORY OF MANUFACTURERS, BY COMPANY, 1985--CONTINUED

IDENTIFICATION CODE	NAME OF COMPANY	TELEPHONE NUMBER	OFFICE ADDRESS
PLR	Polysar, Inc.:		
	Latex Div-----	216-836-0451	1795 W. Market St., Akron, OH 44313.
	Plastics Div-----	671-537-9901	29 Fuller St., Leominster, MA 01453.
PVI	Polyvinyl Chemical Industries-----	617-658-6600	730 Main St., Wilmington, MA 01887.
POP	Pope Chemical Corp-----	201-279-2702	33 - 6th Ave., Paterson, NJ 07524.
PRT	Pratt & Lambert, Inc., Paint Div-----	716-873-6000	75 Tonawanda, Buffalo, NY 14207.
JLP	J. L. Prescott Co-----	201-777-4200	27 - 8th St., Passaic, NJ 07055.
PG	Procter & Gamble Co., Procter & Gamble Mfg. Co.-----	513-627-5194	P. O. Box 599, Cincinnati, OH 45201.
PRC	Products Research & Chemical Corp-----	818-240-2060	5430 San Fernando Rd., P. O. Box 1800, Glendale, CA 91209.
QKO	QO Chemicals, Inc-----	312-850-2330	823 Commerce Dr., Suite 200, Oak Brook, IL 60521.
QCP	Quaker Chemical Corp-----	215-828-4250	Elm & Lee Sts., Conshohocken, PA 19428-0809.
QUN	K. J. Quin & Co., Inc-----	617-321-3200	195 Canal St., Malden, MA 02148.
RSA	R.S.A. Corp-----	914-693-1818	690 Saw Mill River Rd., Ardsley, NY 10502.
RCN	Racon, Inc-----	316-524-3245	6040 S. Ridge Rd., P. O. Box 198, Wichita, KS 67201.
RAS	Raffi and Swanson, Inc-----	617-933-4200	100 Eames St., Wilmington, MA 01887.
BLC	Ranbar Technology, Inc., Ball Chemical Co.-----	412-486-1111	1114 William Flinn Highway, Glenshaw, PA 15116.
RAB	Raymark Corp-----	203-371-0101	1204 Darlington Ave., Crawfordsville, IN 47933.
MAR	Reed Lignin, Inc-----	203-625-0710	81 Holly Hill Lane, Greenwich, CT 06830.
RBI	Reeves Brothers, Inc-----	803-576-1210	P. O. Box 1898, Spartanburg, SC 29304.
REG	Regis Chemical Co-----	312-967-6000	8210 Austin Ave., Morton Grove, IL 60053.
RCI	Reichhold Chemicals, Inc-----	914-682-5700	525 N. Broadway, White Plains, NY 10603.
RIL	Reilly Tar & Chemical Corp-----	317-247-8141	1510 Market Square Center, 151 N. Delaware St., Indianapolis, IN 46204.
REL	Reliance Universal, Inc., Louisville Resins Div.-----	502-459-9110	P. O. Box 37510, Louisville, KY 40232.
REM	Remington Arms Co., Inc-----	203-333-1112	939 Barnum Ave., Bridgeport, CT 06601.
RDA	Rhone-Poulenc, Inc-----	201-846-7700	120 Jersey Ave., New Brunswick, NJ 08903.
RCD	Richardson Polymer Corp-----	203-245-0441	17 Woodland Rd., Madison, CT 06443.
AMS	Ridgway Color Co-----	814-776-2151	75 Front St., Ridgway, PA 15853.
RTG	Riegel Textile Corp., Riechem Div-----	803-242-6050	P. O. Box 3478, Greenville, SC 29602.
RIK	Riker Laboratories, Inc. Sub. of 3M Co.-----	818-341-1300	19901 Nordhoff St., Northridge, CA 91324.
RSN	Rilsan Corp-----	201-447-3300	266 Harristown Rd., Glen Rock, NJ 07452.
RIV	Riverdale Chemical Co-----	312-756-2010	220 E. 17th St., Chicago Heights, IL 60411.
ROB	Robeco Chemicals, Inc., Div. of Aceto Corp.-----	212-986-6410	99 Park Ave., New York, NY 10016.
ORT	Roehr Chemicals, Inc-----	718-784-8473	52-20 - 37th St., Long Island City, NY 11101.
RH	Rohm & Haas Co-----	215-592-3000	Independence Mall West., Philadelphia, PA 19105.
ROM	Roma Color, Inc-----	617-676-3481	749 Quequechan St., P. O. Box 268, Fall River, MA 02722.
RUC	Rubicon, Inc-----	302-575-3596	P. O. Box 751, Wilmington, DE 19897 and P. O. Box 517, Geismar, LA 70734.
RUO	Ruco Polymer Corp-----	516-931-8104	New South Rd., Hicksville, NY 11804.
NES	Ruetgers-Nease Chemical Co-----	814-238-2424	201 Struble Rd., College, PA 16801.
SBP	SBS Products Inc-----	517-799-4941	302 Waller St., P. O. Box 1387, Saginaw, MI 48605.
SCM	SCM Corp.:		
	Coatings & Resins Div-----	216-344-8000	925 Euclid Ave., Cleveland, OH 44115.
	Organic Chemicals Div-----	904-764-1711	P. O. Box 389, Jacksonville, FL 32201.
	PCR, Inc-----	904-764-1711	P. O. Box 389, Jacksonville, FL 32201.
SDS	S.D.S. Biotech Corp-----	216-357-3000	7528 Auburn Rd., P. O. Box 348, Painesville, OH 44077.

## APPENDIX

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TABLE 1.--SYNTHETIC ORGANIC CHEMICALS: ALPHABETICAL DIRECTORY OF MANUFACTURERS,  
BY COMPANY, 1985--CONTINUED

IDENTIFICATION CODE	NAME OF COMPANY	TELEPHONE NUMBER	OFFICE ADDRESS
SOS	SSC Industries, Inc-----	404-762-9651	1550 E. Taylor Ave., East Point, GA 30344.
NPR	Safeway Stores, Inc-----	415-944-4473	2800 Ygnacio Valley Rd., Walnut Creek, CA 94598.
STX	St. Croix Petrochemical Corp-----	809-778-6450	P. O. Box 6801, Christiansted, St. Croix, U.S., VI 00820.
SLM	Salem Oil & Grease Co-----	617-745-0585	60 Grove ST., Salem, MA 01970.
SAL	Salsbury Laboratories, Inc-----	515-257-2422	2000 Rockford Rd., Charles City, IA 50616.
SBG	Samuel Bingham Co-----	312-298-6777	11101 W. Franklin Ave., Franklin Park, IL 60131.
SDC	Sandoz Chemicals Corp-----	704-372-0120	4000 Monroe Rd., Charlotte, NC 28205.
S	Sandoz, Inc., Colors & Chemicals Div-----	704-372-0210	4000 Monroe Rd., Charlotte, NC 28205.
SCN	Schenectady Chemicals, Inc-----	518-370-4200	P. O. Box 1046, Schenectady, NY 12306.
SBC	Scher Chemicals, Inc-----	201-471-1300	Industrial West, Clifton, NJ 07012.
SCH	The Schering Corp-----	201-558-4000	1011 Morris Ave., Union, NJ 07083.
SCO	Scholler, Inc-----	215-739-0900	P. O. Box 26968, Philadelphia, PA 19134.
SPR	Scientific Protein Laboratories-----	608-849-5944	700 E. Main St., Waunakee, WI 53597.
SPA	Scott Paper Co-----	215-521-5000	P. O. Box 925, Everett, WA 98206.
SEA	Seaboard Chemicals, Inc-----	617-745-1915	30 Foster St., P. O. Box 707, Salem, MA 01970.
SRL	G. D. Searle & Co-----	312-982-7000	5200 Old Orchard Rd., Skokie, IL 60076.
SKP	Shakespeare Monofilament Div-----	803-754-7011	6111 Shakespeare Rd., Columbia, SC 29223.
SHO	Shell Oil Co-----	713-241-5105	P. O. Box 3105, Houston, TX 77002.
SHC	Shell Chemical Co-----	713-241-5105	P. O. Box 3105, Houston, TX 77002.
SGO	Shenango, Inc-----	412-771-4400	200 Neville Rd., Pittsburgh, PA 15225.
SHP	Shepherd Chemical Co-----	513-731-1110	4900 Beech St., Cincinnati, OH 45212.
SHX	Sherex Chemical Co., Inc-----	614-764-6500	P. O. Box 646, Dublin, OH 43017.
BAL	The Sherwin-Williams Co.: Consumer Div-----	301-837-3030	2325 Hollins Ferry Rd., Baltimore, MD 21230.
SHT	Shintech, Inc-----	713-965-0713	24 Greenway Plaza, Suite 811, Houston, TX 77046.
SMP	J. R. Simplot Co-----	208-336-2110	151 North 3rd Ave., Pocatello, ID 83204.
STM	Simpson Timber Co-----	503-289-1111	2301 N. Columbia Blvd., Portland, OR 97217.
GFS	G. Frederick Smith Chemical Co-----	614-881-5501	P. O. Box 23214, Columbus, OH 43223.
SK	SmithKline Beckman Corp., SmithKline Chemicals Div-----	215-270-7000	P. O. Box 900, 900 River Rd., Conchohocken, PA 19428.
SMO	Smooth-On, Inc-----	201-647-5800	1000 Valley Rd., Gillette, NJ 07933.
SLT	Soltex Polymer Corp-----	713-522-1781	P. O. Box 1000, Deer Park, TX 77536.
SLC	Soluol Chemical Co., Inc-----	401-821-8100	Green Hill & Market Sts., P. O. Box 112, W. Warwick, RI 02893.
SAC	Southeastern Adhesives Co-----	704-754-3493	P. O. Box 2070, Lenoir, NC 28645.
SOP	Southern Chemical Products Co-----	912-746-5147	430 Lower Boundary St., P. O. Box 205, Macon, GA 31202.
ACT	Southland Corp.: Chemical Div-----	312-458-8450	7666 W. 63d St., Summit, IL 60501.
SOL	Fine Chemical Div-----	214-828-7011	2828 N. Haskell Ave., Dallas, TX 75204.
SWR	Southwestern Refining Co., Inc-----	512-884-8863	P. O. Box 9217, Corpus Christi, TX 78469.
SPL	Spaulding Fibre Co., Inc., Industrial Plastics Div-----	716-692-2000	310 Wheeler St., Tonawanda, NY 14150.
ASL	SpecialtyChem Products Corp-----	715-735-9033	2 Stanton St., Marinette, WI 54143.
SOI	Specialty Organics, Inc-----	818-962-2008	5623 N. 4th St., Irwindale, CA 91706.
IPP	Spectrachem Corp-----	201-595-8181	200 Sheridan Ave., Paterson, NJ 07502.
TRD	Squibb Manufacturing, Inc-----	809-852-1255	P. O. Box 609, Humacao, PR 00661.
SCC	Standard Chlorine of Delaware, Inc-----	201-997-1700	1015 Belleville Turnpike, Kearny, NJ 07032.
SOH	Standard Oil Chemical Co-----	216-575-4141	200 Public Square, Cleveland, OH 44114.
SIO	Standard Oil Co-----	216-586-5180	200 Public Square, Cleveland, OH 44114.
SIF	Standard Oil Co., Filon Div., Engineered Materials Co-----		12333 S. Van Ness Ave., Hawthorne, CA 90250.
SIC	Standard Oil Co., Silmer Div., Engineered Materials Co-----		12333 S. Van Ness Ave., Hawthorne, CA 90250.
SFA	Stauffer Chemical Co.: Agricultural Product Div-----	203-222-3521	Nyala Farm Rd., Westport, CT 06881.
SFC	Calhio Chemicals, Inc-----	203-222-3521	Nyala Farm Rd., Westport, CT 06881.
SFI	Chlor Alkali Products-----	203-222-3000	Nyala Farm Rd., Westport, CT 06880.
SFS	Specialty Group-----	203-222-3000	Nyala Farm Rd., Westport, CT 06881.
SWS	Stauffer-Wacker Silicones Corp-----	517-263-5711	3301 Sutton Rd., Adrian, MI 49221.

## SYNTHETIC ORGANIC CHEMICALS, 1985

TABLE 1.--SYNTHETIC ORGANIC CHEMICALS: ALPHABETICAL DIRECTORY OF MANUFACTURERS, BY COMPANY, 1985--CONTINUED

IDENTIFICATION CODE	NAME OF COMPANY	TELEPHONE NUMBER	OFFICE ADDRESS
STP	Stepan Chemical Co-----	312-446-7500	RR #1, Elwood, IL 60421 and 100 W. Henter Ave., Maywood, NJ 07607.
SD	Sterling Drug, Inc-----	212-907-2000	2144 E. State St., Trenton, NJ 08619.
SDH & TMS	Hilton Davis Chemical Co. Div-----	513-841-4000	2235 Langdon Farm Rd., Cincinnati, OH 45237.
SDW	Sterling Organics Div-----	212-907-2000	90 Park Ave., New York, NY 10016.
SD	Sterling Pharmaceuticals, Inc-----	212-907-2000	P. O. Box 11247, Barcelonita, PR 00617.
GIN	Stockhausen, Inc-----	919-378-9393	P. O. Box 16025, Greensboro, NC 27406.
	Sun Chemical Corp.:		
SNW	Chemicals Div-----	201-224-4600	P. O. Box 70, Chester, SC 29706.
SNA	Pigments Div-----	212-986-5500	411 Sun Ave., Cincinnati, OH 45232.
SUN	Sun Company, Inc-----	215-293-6600	100 Matsonford Rd., Radnor, PA 19087.
SNO	SunOlin Chemical Co-----	302-792-3100	P. O. Box 609, Claymont, DE 10703.
IOC, JSC & TCG	Sybron Chemical, Inc-----	609-893-1100	P. O. Box 66, Birmingham Rd., Birmingham, NJ 08011.
SYL	Sylvachem Corp-----	904-764-1711	P. O. Box 690, Jacksonville, FL 32218.
INP	Synair Corp-----	615-698-8801	2003 Amnicola Hwy., P. O. Box 5269, Chattanooga, TN 37406.
BUC	Synalloy Corp., Blackman Uhler Chemical Div.	803-585-3661	P. O. Box 5627, Craft Industrial Park, Spartanburg, SC 29304.
SPO	Synpol, Inc-----	409-722-8321	P. O. Box 667, Port Neches, TX 77651.
SRY	Synray Corp-----	201-245-2600	209 N. Michigan Ave., Kenilworth, NJ 07033.
HFT	Syntex Agribusiness, Inc., Nutrition & Chemical Div.	417-866-7291	P. O. Box 1246 S.S.S., Springfield, MO 65805.
ARA	Syntex Chemicals, Inc-----	303-443-1926	2075 N. 55th St., Boulder, CO 80302.
SYT	Synthron, Inc-----	704-437-8611	P. O. Box 1111, Morganton, NC 28655.
TEK	Teknor Apex Co-----	401-725-8000	505 Central Ave., Pawtucket, RI 02861.
TLI	Teledyne Industries, Inc., Teledyne McCormick Selph.	408-637-3731	3601 Union Rd., Hollister, CA 95024-8006.
TOC	Tenneco Oil Co-----	713-757-2635	P. O. Box 2511, Houston, TX 77001.
HN	Tenneco Polymers, Inc-----	713-475-5000	1149 Ellsworth Dr., Pasadena, TX 77501.
TEN	Tennessee Chemical Co-----	615-496-3331	1 Ocoee St., Copperhill, TN 37317.
TVA	Tennessee Valley Authority, NFDC, TVA, OACD, Div. of Developmental Production.	205-386-2377	Muscle Shoals, AL 35660.
TU	Tenn-USS Chemicals Co-----	713-884-4400	P. O. Box 600, Pasadena, TX 77501.
TER	Terra International, Inc-----	712-277-1340	Terra Centre, 600 - 4th St., Sioux City, IA 51101.
TER	Terra Nitrogen, Inc-----	712-277-1340	Terra Centre, 600 - 4th St., Sioux City, IA 51101.
COO	Terrell Corp-----	616-658-3351	820 Woburn St., Wilmington, MA 01887.
TX	Texaco, Inc., Texaco Chemical Co-----	713-666-8000	4800 Fournace Place, Bellaire, TX 77401.
TUS	Texaco Butadiene Co-----	713-666-8000	P. O. Box 430, Bellaire, TX 77401.
TSA	Texas Alkyls, Inc-----	713-479-8411	P. O. Box 600, Deer Park, TX 77536.
TCR	Texas City Refining, Inc-----	409-945-4451	P. O. Box 1271, Texas City, TX 77592-1271.
TPC	Texas Petrochemicals Corp-----	713-477-9211	8600 Park Place Blvd., Houston, TX 77017.
TXS	Texstyrene Plastics, Inc-----	817-831-0533	3607 N. Sylvania Ave., Fort Worth, TX 76111.
TMH	Thompson Hayward Chemical Co-----	913-321-3131	5200 Speaker Rd., Kansas City, KS 66106.
TRI	Triad Chemical-----	504-473-9231	P. O. Box 310, Donaldsonville, LA 70346.
TRO	Troy Chemical Co-----	201-589-2500	One Avenue L, Newark, NJ 07105.
TUL	Tull Chemical Co., Inc-----	205-831-1154	P. O. Box 3246, Oxford, AL 36203.
TLC	Twin Lake Chemical, Inc-----	716-433-3824	540 Mill St., P. O. Box 411, Lockport, NY 14094.
UPM	UOP, Inc., UOP Process Div-----	312-391-2000	Box 5017, Des Plaines, IL 60017.
UHL	Paul Uhlich & Co., Inc-----	914-478-2000	1 Railroad Ave., Hastings-on-Hudson, NY 10706.
UNG	Ungerer & Co-----	201-628-0600	4 Bridgewater Lane, Lincoln Park, NJ 07035.
DRL	Unichema Chemical, Inc-----	201-327-6100	4650 S. Racine Ave., Chicago, IL 60609.
WTH	Union Camp Corp-----	201-628-2000	P. O. Box 220, Dover, OH 44622.
NGI	Chemical Products Div-----	201-628-2000	1600 Valley Rd., Wayne, NJ 07470.
NGI	Terpene & Aromatics Div-----	201-628-2000	P. O. Box 60369, Jacksonville, FL 32236.

## APPENDIX

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TABLE 1.--SYNTHETIC ORGANIC CHEMICALS: ALPHABETICAL DIRECTORY OF MANUFACTURERS,  
BY COMPANY, 1985--CONTINUED

IDENTIFICATION CODE	NAME OF COMPANY	TELEPHONE NUMBER	OFFICE ADDRESS
UCC	Union Carbide Corp	203-794-3113	39 Old Ridgebury Rd., Danbury, CT 06817.
UOC	Union Oil Co. of California	213-977-7746	461 S. Boylston St., Los Angeles, CA 90017.
USR	Uniroyal, Inc., Uniroyal Chemical Div	203-573-3886	World Headquarters, Middlebury, CT 06749
URN	United Chemical Corp. of Norwood	617-762-4057	P. O. Box 367, Endicott St., Norwood, MA 02062.
UNO	United Erie, Inc	814-456-7561	438 Huron St., Erie, PA 16502.
VAL	United Merchants & Manufacturers, Inc., Valchem Div.	201-837-1700	1650 Palisades Ave., Teaneck, NJ 07666.
USB	U.S. Borax & Chemical Corp., U.S. Borax Research Corp.	213-381-5311	3075 Wilshire Blvd., Los Angeles, CA 90010.
USS	U.S. Steel Corp.: Clairton Plant	412-433-5425	600 Grant St., Rm. 1937, Pittsburgh, PA 15230.
	Gary Works	412-433-5425	600 Grant St., Rm. 1937, Pittsburgh, PA 15230.
	Geneva Plant	412-433-5425	600 Grant St., Rm. 1937, Pittsburgh, PA 15320.
ARM	USS Agri-Chemicals Div	404-572-4000	P. O. Box 1685, Atlanta, GA 30301.
	USS Chemicals Div	412-433-7636	600 Grant St., Rm. 2880, Pittsburgh, PA 15230.
UPJ	The Upjohn Co	616-323-4000	7000 Portage Rd., Kalamazoo, MI 49001 and 555 Alaska Ave., Torrance, CA 90503.
CWN	Fine Chemicals	203-281-2722	410 Sackett Point Rd., North Haven, CT 06473.
UPJ	Polymer Chemical Div	713-479-1541	P. O. Box 685, LaPorte, TX 77571.
VSV	Valentine Sugars, Inc., Valite Div	504-532-2541	Rt 2, Box 625, Lockport, LA 70374.
VCM	Vanchem, Inc	716-434-2624	1 North Transit Rd., Lockport, NY 44094.
VDM	Van De Mark Chemical Co., Inc	716-433-6764	1 N Transit Rd., Lockport, NY 14094.
VNC	Vanderbilt Chemical Corp	203-744-3900	31 Taylor Ave., P. O. Box 20, Bethel, CT 06801 and Rt. #2, Box 54, Penny Rd., Murray, KY 42071.
VND	Van Dyk, Div. of Mallinckrodt, Inc	201-759-3225	Main & William Sts., Belleville, NJ 07109.
INL	Van Leer Containers, Inc	312-568-3535	4300 W. 130th St., Chicago, IL 60658.
VEL	Velsicol Chemical Corp	312-670-4500	341 E. Ohio St., Chicago, IL 60611.
VTC	Vertac Chemical Corp	901-767-6851	P. O. Box 69, Jacksonville, AR 72076.
	West Helena Plant	501-572-3701	Hwy. 242 S., West Helena, AR 72390.
GRL	Vestal Laboratories, Inc	314-535-1810	5035 Manchester Ave., St. Louis, MO 63110.
VIK	Viking Chemical Co	612-333-0394	838 Baker Bldg., Minneapolis, MN 55402.
VIN	Vineland Chemical Co., Inc	609-691-3535	W. Wheat Rd., Vineland, NJ 08360.
VCC	Vinings Chemical Co	404-436-1542	3950 Cumberland Pkwy., Atlanta, GA 30339.
VGC	Virginia Chemicals, Inc	804-483-7000	801 Water Street, Portsmouth, VA 23704.
VST	Vista Chemical Co	713-531-3200	15990 N. Barker's Landing Rd., P. O. Box 19029, Houston, TX 77224.
VST	Vista Polymers, Inc	713-531-3200	15990 N. Barker's Landing Rd., P. O. Box 19029, Houston, TX 77224.
VTH	Vitamins, Inc	312-861-0700	200 E. Randolph Dr., Chicago, IL 60601.
VIT	Vititek Corp	805-725-5637	Rt. #2, P. O. Box 580, Delano, CA 93215.
PRO	Vulcan Materials Co., Chemicals Div	205-877-3000	P. O. Box 7689, Birmingham, AL 35208.
WJ	Warner-Jenkinson Mfg. Co	314-658-7315	2526 Baldwin St., St. Louis, MO 63106.
WCA	West Coast Adhesives Co	503-286-3515	11104 NW Front Ave., Portland, OR 97231.
EW	Westinghouse Electric Corp., Insulating Materials Div.	412-864-7960	Manor, PA 15665.
WAG	West Design Chemical, Inc	913-384-4646	4350 Johnson Drive, Suite 280, Fairway, KS 66205.
WPG	West Point-Pepperell, Inc., Griffitex Chemical Co. Sub.	404-645-4000	1900 Cunningham Dr., Opelika, AL 36801.
WVA	Westvaco Corp	212-688-5000	P. O. Box 70848, Charleston Heights, SC 29415.
WRD	Weyerhaeuser Co	715-384-2141	1401 E. 4th St., Marshfield, WI 54449.
WPS	Wheeling-Pittsburgh Steel Corp	412-288-3600	Four Gateway Center, Pittsburgh, PA 15230.
WBG	The White & Bagley Co	617-791-3201	P. O. Box 706, Worcester, MA 01613.
WCC	White Chemical Corp	201-621-4100	660 Frelinghuysen Ave., Newark, NJ 07114.
WHL	Whitmoyer Laboratories, Inc	717-866-2151	99 S. Fairlane Ave., Myerstown, PA 17067.

## SYNTHETIC ORGANIC CHEMICALS, 1985

TABLE 1.--SYNTHETIC ORGANIC CHEMICALS: ALPHABETICAL DIRECTORY OF MANUFACTURERS,  
BY COMPANY, 1985--CONTINUED

IDENTIFICATION CODE	NAME OF COMPANY	TELEPHONE NUMBER	OFFICE ADDRESS
WTK	Whittaker Corp., Heico Chemicals Div---	717-476-0353	Rt. 611, Delaware Water Gap, PA 18327.
WHW	Whittmore-Wright Co., Inc-----	617-242-1180	62 Alford St., Boston, MA 02129.
WLN	Wilmington Chemical Corp-----	302-658-3515	Pyles Lane, Wilmington, DE 19899.
WTC	Witco Chemical Corp-----	201-573-2800	155 Tice Blvd., Woodcliff Lake, NJ 07675.
WCL	Wright Chemical Corp-----	919-655-2263	P. O. Box 402, Riegelwood, NC 28456.
WYK	Wyckoff Chemical Co., Inc-----	616-637-8474	1421 Kalamazoo St., S. Haven, MI 49090.
WYC	Wycon Chemical Co-----	307-637-2700	P. O. Box 1287, Cheyenne, WY 82003.
WYT	Wyeth Laboratories, Inc., Wyeth Laboratories Div. of American Home Products Corp.	215-644-8000	P. O. Box 831, Lancaster Pike, Paoli, PA 19301.
ZOC	Zoecon Corp-----	415-847-1130	P. O. Box 10975, 975 California Ave., Palo Alto, CA 94301.

TABLE 2.--CYCLIC INTERMEDIATES: GLOSSARY OF SYNONYMOUS NAMES

COMMON NAME	STANDARD (CHEMICAL ABSTRACTS) NAME
A Acid	3,5-Dihydroxy-2,7-naphthalenedisulfonic acid.
Acetyl-p-phenylenediamine	4'-Aminoacetanilide.
1,2,4-Acid	4-Amino-3-hydroxy-1-naphthalenesulfonic acid (1-Amino-2-naphthol-4-sulfonic acid).
Acid yellow 9	6-Amino-3,4'-azodibenzenesulfonic acid.
p-Aminobenzenesulfonic acid	Sulfanilic acid and salt.
m-Aminobenzoyl J acid	4-Hydroxy-7-(m-aminobenzamido)-2-naphthalenesulfonic acid.
Aminoepsilon acid	8-Amino-1,6-naphthalenedisulfonic acid.
Amino G acid	7-Amino-1,3-naphthalenedisulfonic acid.
Amino J acid	6-Amino-1,3-naphthalenedisulfonic acid.
Amino R salt	3-Amino-2,7-naphthalenedisulfonic acid.
Aniline oil	Aniline
Anthraflavic acid	2,6-Dihydroxyanthraquinone.
Anthrarufin	1,5-Dihydroxyanthraquinone.
Armstrong & Wynne's acid	4-Hydroxy-2-naphthalenesulfonic acid.
B Acid	5-Amino-4-hydroxy-1,7-naphthalenedisulfonic acid.
2B Acid	6-Amino-4-chloro-m-toluenesulfonic acid.
4B Acid	6-Amino-m-toluenesulfonic acid.
Benzal chloride	$\alpha,\alpha$ -Dichlorotoluene.
Benzanthrone	7H-Benz[de]anthracen-7-one.
Benzotrichloride	$\alpha,\alpha,\alpha$ -Trichlorotoluene.
Bisphenol A	4,4'-Isopropylidenediphenol.
B.O.N.	3-Hydroxy-2-naphthoic acid.
Broenner's acid	6-Amino-2-naphthalenesulfonic acid.
Bromamine acid	1-Amino-4-bromo-2-anthraquinonesulfonic acid.
Bromobenzanthrone	3-Bromo-7H-benz[de]anthracen-7-one
C Acid	3-Amino-1,5-naphthalenedisulfonic acid.
C.A. Acid	3-Amino-6-chloro-4-sulfobenzoic acid.
C-Amine (Lake Red C acid)	2-Amino-5-chloro-p-toluenesulfonic acid.
Cassella acid	5-Hydroxy-1-naphthalenesulfonic acid.
Chicago Acid (SS acid)	4-Amino-5-hydroxy-1,3-naphthalenedisulfonic acid.
Chlorobenzanthrone	Chloro-7H-benz[de]anthracen-7-one.
Chromotropic acid	4,5-Dihydroxy-2,7-naphthalenedisulfonic acid.
Chrysazin	1,8-Dihydroxyanthraquinone.
1,6-Cleve's acid	5-Amino-2-naphthalenesulfonic acid.
1,7-Cleve's acid	8-Amino-2-naphthalenesulfonic acid.
Crocein acid	7-Hydroxy-1-naphthalenesulfonic acid.
2-Cyanopyridine	Picolinonitrile.
3-Cyanopyridine	Nicotinonitrile.
Cyanuric chloride	2,4,6-Trichloro-s-triazine.
D Acid	6-Amino-1-naphthalenesulfonic acid.
DADI	Dianisidine diisocyanate.
DDB	p-Dibutoxybenzene.
Decacyclene	Diacenaphtho[1,2-j:1',2'-k]fluoranthene.
Dehydrothio-p-toluidine	2-(p-Aminophenyl)-6-methylbenzothiazole.
Developer Z	3-Methyl-1-phenyl-2-pyrazolin-5-one.
o-Dianisidine	3,3'-Dimethoxybenzidine.
1,1'-Dianthrimide	1,1'-Iminodianthraquinone.
Dibenzanthrone	Violanthrone.
Dichlone	2,3-Dichloro-1,4-naphthoquinone.
4,4'-Dihydroxydiphenylsulfone	4,4'-Sulfonyldiphenol.
Dimethyl POPOP	1,4-Bis[2-(4-methyl-5-phenyloxazolyl)]benzene.
4,5-Dinitrochrysazin	1,8-Dihydroxy-4,5-dinitroanthraquinone.
Dioxy S acid	4,5-Dihydroxy-1-naphthalenesulfonic acid.
Diphenyl Epsilon Acid	6,8-Dianilino-1-naphthalenesulfonic acid.
Durene	1,2,4,5-Tetramethylbenzene.
Epsilon Acid (Andresen's acid)	8-Hydroxy-1,6-naphthalenedisulfonic acid.
F Acid	7-Hydroxy-2-naphthalenesulfonic acid.
Fast Red G base	2-Nitro-p-toluidine [ $\text{NH}_2=1$ ].
Fast Scarlet R base	5-Nitro-o-anisidine [ $\text{NH}_2=1$ ].
Fischer's aldehyde	1,3,3-Trimethyl- $\delta^2$ , $\alpha$ -indolineacetaldehyde.
Fischer's base	1,3,3-Trimethyl-2-methyleneindoline.
Freund's acid	4-Amino-2,7-naphthalenedisulfonic acid.

TABLE 2.--CYCLIC INTERMEDIATES: GLOSSARY OF SYNONYMOUS NAMES--CONTINUED

COMMON NAME	STANDARD (CHEMICAL ABSTRACTS) NAME
G salt	7-Hydroxy-1,3-naphthalenedisulfonic acid.
Gamma acid	6-Amino-4-hydroxy-2-naphthalenesulfonic acid, sodium salt.
Gold salt	9,10-Dihydro-9,10-dioxo-1-anthracenesulfonic acid and salt.
H Acid	4-Amino-5-hydroxy-2,7-naphthalenedisulfonic acid, (8-Amino-1-naphthol-3,6-disulfonic acid).
Hellimellitene	1,2,3-Trimethylbenzene.
Indoxyl	3(2H)-Indolone.
Isodurene	1,2,3,5-Tetramethylbenzene.
J Acid	7-Amino-4-hydroxy-2-naphthalenesulfonic acid, sodium salt.
J Acid Urea	7,7'-Ureylenebis[4-hydroxy-2-naphthalenesulfonic acid].
K Acid	4-Amino-5-hydroxy-1,7-naphthalenedisulfonic acid.
Koch's Acid	8-Amino-1,3,6-naphthalenetrisulfonic acid.
L Acid	5-Hydroxy-1-naphthalenesulfonic acid.
Lake Red C amine	2-Amino-5-chloro-p-toluenesulfonic acid.
Laurent's acid	5-Amino-1-naphthalenesulfonic acid.
M Acid	8-Amino-4-hydroxy-2-naphthalenesulfonic acid.
MEP	5-Ethyl-2-picoline (2-Methyl-5-ethylpyridine).
Mesitylene	1,3,5-Trimethylbenzene.
Methane base	4,4'-Methylenebis[N,N-dimethylaniline].
Michler's hydrol	4,4'-Bis[dimethylamino]benzhydrol.
Michler's ketone	4,4'-Bis[dimethylamino]benzophenone.
MOCA	3,3'-Dichloro-4,4'-diaminodiphenylmethane
MVP	5-Vinyl-2-picoline.
Naphthionic acid	4-Amino-1-naphthalenesulfonic acid.
o-Naphthionic acid	1-Amino-2-naphthalenesulfonic acid.
$\beta$ -Naphthol	2-Naphthol, tech.
Naphthol AS	3-Hydroxy-2-naphthanilide.
$\alpha$ -Naphthylamine	1-Naphthylamine.
Neville & Winther's acid	4-Hydroxy-1-naphthalenesulfonic acid.
m-Nitrobenzoyl J acid	4-Hydroxy-7-(m-nitrobenzamido)-2-naphthalenesulfonic acid.
Oxy Koch's acid	1-Naphthol-3,6,8-trisulfonic acid.
Pentaanthrimide	1,4,5,8-Tetrakis(1-anthraquinonylamino)anthraquinone.
Peri Acid	8-Amino-1-naphthalenesulfonic acid.
Phenylbiphenyl	Terphenyl.
N-Phenyldiethanolamine	2,2'-[(Phenyl)imino]diethanol.
Phenyl Gamma acid	6-Anilino-4-hydroxy-2-naphthalenesulfonic acid.
Phenyl J acid	7-Anilino-4-hydroxy-2-naphthalenesulfonic acid.
Phenyl peri acid	8-Anilino-1-naphthalenesulfonic acid.
Picric acid	2,4,6-Trinitrophenol.
POPOP	1,4-Bis[2-(5-phenyloxazolyl)]benzene.
Pseudocumene	1,2,4-Trimethylbenzene.
Pyrazoleanthrone	Anthra[1,9-cd]pynazol-6(2H)-one.
Pyrazoleanthrone yellow	[3,3'-Bianthra[1,9-cd]pyrazole]-6,6'-(2H,2'H)dione.
Pyrazolone T	5-Oxo-1-(p-sulfohenyl)-2-pyrazoline-3-carboxylic acid.
Quinizarin	1,4-Dihydroxyanthraquinone.
2-Quinizarinsulfonic acid	9,10-Dihydro-1,4-dihydroxy-9,10-dioxo-2-anthracenesulfonic acid.
Quinoline yellow base	Quinophthalone.
R salt	3-Hydroxy-2,7-naphthalenedisulfonic acid, disodium salt.
RG Acid (Violet acid)	4-Hydroxy-2,7-naphthalenedisulfonic acid.
Rhoduline acid (J Acid Imide)	7,7'-Iminobis[4-hydroxy-2-naphthalenesulfonic acid].
RR acid	3-Amino-5-hydroxy-2,7-naphthalenedisulfonic acid.
S Acid	4-Amino-5-hydroxy-1-naphthalenesulfonic acid.
Schaffer's acid	6-Hydroxy-2-naphthalenesulfonic acid.
Silver salt	9,10-Dihydro-9,10-dioxo-2-anthracenesulfonic acid and salt.
Solvent Yellow 1	p-Phenylazoaniline and hydrochloride.
Solvent Yellow 3	4-(o-Tolylazo)-o-toluidine.
SS Acid (Chicago acid)	4-Amino-5-hydroxy-1,3-naphthalenedisulfonic acid.
Sulfanilic acid	p-Aminobenzenesulfonic acid.
o-Sulfobenzaldehyde	o-Formylbenzenesulfonic acid.



TABLE 2.--CYCLIC INTERMEDIATES: GLOSSARY OF SYNONYMOUS NAMES--CONTINUED

COMMON NAME	STANDARD (CHEMICAL ABSTRACTS) NAME
Tetralin	1,2,3,4-Tetrahydronaphthalene.
Thioindoxyl	3(2H)-Thianaphthenone.
Thiosalicylic acid	o-Mercaptobenzoic acid.
Tobias Acid	2-Amino-1-naphthalenesulfonic acid.
TODI	Bitolylene diisocyanate.
o-Tolidine	3,3'-Dimethylbenzidine.
α-Toluic acid	Phenylacetic acid.
α-Tolunitrile	Phenylacetonitrile.
4-m-Tolylendiamine	Toluene-2,4-diamine.
Trimellitic anhydride	1,2,4-Benzenetricarboxylic acid, 1,2-anhydride.
Trimethyl base	1,3,3-Trimethyl-2-methyleneindoline.
Trinitrophenol	Picric acid.
Urea J Acid (J Acid Urea)	7,7'-Ureylenebis[4-hydroxy-2-naphthalenesulfonic acid].
Veratraldehyde	3,4-Dimethoxybenzaldehyde
Veratrole	o-Dimethoxybenzene.
Vinyltoluene	ar-Methylstyrene.
Violet acid (RG Acid)	4-Hydroxy-2,7-naphthalenedisulfonic acid.

**SYNTHETIC ORGANIC CHEMICALS, U.S. PRODUCTION AND SALES, 1985,  
HARMONIZED SYSTEM BASIS**

The following table contains 1985 U.S. production and sales data for synthetic organic chemicals in the proposed 6-digit Harmonized System (HS) format. The Commission decided to compile such data in this format in response to the decision by the U.S. Bureau of the Census to publish Standard Industrial Classification (SIC) data which will be convertible to the HS beginning with the 1987 *Census of Manufactures*. The U.S. Bureau of the Census has historically referred to the *Synthetic Organic Chemicals, United States Production and Sales* (SOC) report in the chemicals section of the *Census of Manufactures*, which permits them to omit collecting synthetic organic chemicals production and shipments data from its respondents. Because of this situation, the SOC data will now also be compiled on an HS basis to provide comparability with the new SIC format.

The table provides production and sales data on a 6-digit HS basis only where publication would not violate the statutory provisions relating to unlawful disclosure of information accepted in confidence by the Commission. It includes only the 6-digit item numbers with publishable data from a number of HS chapters in which these chemicals are classified, but does not provide totals by chapter or overall total figures.

TABLE 3.—SYNTHETIC ORGANIC CHEMICALS: U.S. PRODUCTION AND SALES, 1985, HARMONIZED SYSTEM BASIS

HS NUMBER	DESCRIPTION	PRODUCTION		SALES	
		QUANTITY (POUNDS)	QUANTITY (POUNDS)	VALUE (DOLLARS)	
151800	Chemically modified fats and oils and their fractions (except those of heading 1516)	122,807,141	123,356,180	73,388,784	
151919	Other industrial monocarboxylic fatty acids nspf	.....	78,949,001	30,940,155	
220720	Ethyl alcohol and other spirits, denatured, of any strength	648,784,109	.....	.....	
271113	Butanes, liquefied	3,853,212,562	2,018,651,787	240,840,411	
271114	Ethylene, propylene, butylene and butadiene, liquefied	2,076,792,925	1,418,842,149	237,764,042	
271119	Other petroleum gases and other gaseous hydrocarbons nspf, liquefied	5,631,262,233	2,769,056,755	185,230,581	
271129	Other petroleum gases and other gaseous hydrocarbons nspf, in gaseous state	10,305,103,235	6,240,393,468	685,713,446	
290110	Acyclic hydrocarbons, saturated	1,886,147,097	759,382,864	167,179,173	
290121	Ethylene	29,846,725,767	9,728,703,105	1,527,216,484	
290122	Propene (Propylene)	14,886,848,689	7,677,850,673	1,183,802,614	
290123	Butene (Butylene) and isomers thereof	.....	303,384,313	66,057,409	
290124	Buta-1,3-diene and isoprene	2,406,060,505	2,084,241,947	693,468,280	
290129	Unsaturated acyclic hydrocarbons nspf	2,467,226,243	1,362,274,895	368,130,008	
290211	Cyclohexane	1,657,169,298	1,264,448,976	317,680,579	
290219	Other cyclanes, cyclenes and cycloterpenes nspf	225,582,382	132,027,875	58,623,600	
290220	Benzene	9,389,805,477	.....	.....	
290230	Toluene	5,073,965,774	.....	.....	
290250	Styrene	7,622,245,000	3,842,582,000	930,288,000	
290260	Ethylbenzene	7,386,036,846	185,808,806	32,962,268	
290270	Cumene	2,626,548,725	1,228,011,867	253,969,464	

APPENDIX

TABLE 3.--SYNTHETIC ORGANIC CHEMICALS: U.S. PRODUCTION AND SALES, 1985, HARMONIZED SYSTEM BASIS--CONTINUED

HS NUMBER	DESCRIPTION	PRODUCTION		SALES	
		QUANTITY (POUNDS)	QUANTITY (POUNDS)	VALUE (DOLLARS)	
290290	Other cyclic hydrocarbons nspf	2,623,309,790	2,014,389,410	522,192,345	
290311	Chloromethane (Methyl chloride) and chloroethane (Ethyl chloride)	.....	256,703,017	49,846,407	
290312	Dichloromethane (Methylene chloride)	467,118,422	502,502,540	94,519,356	
290313	Chloroform (Trichloromethane)	275,255,111	383,722,660	54,507,729	
290314	Carbon tetrachloride	645,617,544	360,327,642	58,219,847	
290315	1,2-Dichloroethane (Ethylene dichloride)	12,100,887,859	409,989,526	38,775,916	
290319	Other saturated chlorinated derivs of acyclic hydrocarbons nspf	1,699,151,778	1,159,567,835	316,855,579	
290321	Vinyl chloride (Chloroethylene)	9,462,978,782	2,868,762,390	459,809,976	
290329	Other unsaturated chlorinated derivs of acyclic hydrocarbons nspf	.....	105,706,000	61,857,506	
290330	Fluorinated, brominated or iodinated derivs of acyclic hydrocarbons	163,883,375	88,770,832	74,003,149	
290340	Halogenated derivs of acyclic hydrocarbons containing two or more different halogens	963,161,784	777,950,943	602,838,575	
290369	Other halogenated derivs of aromatic hydrocarbons nspf	169,596,768	115,727,929	115,791,976	
290410	Hydrocarbon derivs containing only sulfo groups, their salts and ethyl esters	797,881,980	358,953,022	182,090,334	
290420	Hydrocarbon derivs containing only nitro or only nitroso groups	1,721,667,356	432,073,737	129,607,394	
290490	Other sulfonated, nitrated or nitrosated derivs of hydrocarbons nspf, whether or not halogenated	189,091,160	41,537,028	27,038,504	
290511	Methanol (Methyl alcohol)	5,002,918,000	2,656,904,000	192,377,000	
290512	Propan-1-ol (Propyl alcohol) and propan-2-ol (Isopropyl alcohol)	1,379,836,327	937,504,486	231,599,302	
290513	Butan-1-ol (n-Butyl alcohol)	716,241,905	459,627,954	100,957,875	

TABLE 3.—SYNTHETIC ORGANIC CHEMICALS: U.S. PRODUCTION AND SALTS, 1985, HARMONIZED SYSTEM BASIS—CONTINUED

HS NUMBER	DESCRIPTION	PRODUCTION	SALES	
		QUANTITY (POUNDS)	QUANTITY (POUNDS)	VALUE (DOLLARS)
290514	Other butanols nspf-----	2,127,454,015	.....	.....
290519	Other saturated acyclic monohydric alcohols nspf-----	635,563,692	292,999,985	114,871,219
290522	Acyclic terpene alcohols-----	1,841,840	1,729,986	5,681,930
290531	Ethylene glycol (Ethanediol)-----	4,178,310,455	2,896,756,605	500,861,744
290532	Propylene glycol (Propane-1,2-diol)-----	499,529,000	466,912,690	148,351,507
290539	Other acyclic diols nspf-----	2,382,474,677	1,586,358,568	927,818,978
290542	Pentaerythritol-----	93,725,650	116,551,000	59,072,000
290544	D-glucitol (Sorbitol)-----	179,087,065	133,998,380	49,884,961
290549	Other acyclic polyhydric alcohols nspf-----	947,205,748	894,852,353	67,291,721
290550	Halogenated, sulfonated, nitrated or nitrosated derivs of acyclic alcohols-----	48,913,807	18,354,011	19,293,536
290629	Other aromatic cyclic alcohols and their halo, sulfo, nitro or nitroso derivs nspf-----	1,080,431	460,181	2,527,174
290711	Phenol (Hydroxybenzene) and its salts-----	2,840,712,000	1,431,310,000	403,389,000
290723	4,4'-Isopropylidenediphenol (Bisphenol A, Diphenylolpropane) and its salts-----	949,253,000	329,739,000	158,439,000
290810	Derivatives of phenols or phenol-alcohols containing only halogen substituents and their salts-----	80,208,229	53,199,180	40,710,088
290820	Derivatives of phenols or phenol-alcohols containing only sulfo groups, their salts and esters-----	6,362,821	3,227,371	2,462,912
290890	Other halo, sulfo, nitro or nitroso derivs of phenols or phenol-alcohols nspf-----	60,233,610	29,896,484	32,180,739
290919	Other acyclic ethers, and their halo, sulfo, nitro or nitroso derivs-----	2,050,320,216	1,640,488,447	411,917,685
290930	Aromatic ethers and their halo, sulfo, nitro or nitroso derivs-----	143,215,034	94,702,228	73,571,772

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TABLE 3.--SYNTHETIC ORGANIC CHEMICALS: U.S. PRODUCTION AND SALES, 1985, HARMONIZED SYSTEM BASIS--CONTINUED

HS NUMBER	DESCRIPTION	PRODUCTION		SALES	
		QUANTITY (POUNDS)	QUANTITY (POUNDS)	VALUE (DOLLARS)	
290941	2,2'-Oxydiethanol (Diethylene glycol, Digol)	440,549,038	336,662,377	53,952,582	
290942	Monomethyl ethers of ethylene glycol or of diethylene glycol	123,659,643	110,542,992	32,489,244	
290943	Monobutyl ethers of ethylene glycol or of diethylene glycol	347,182,096	332,103,089	103,868,428	
290944	Other monoalkyl ethers of ethylene glycol or of diethylene glycol nspf	165,809,063	98,246,031	35,265,169	
290949	Other ether-alcohols and their halo, sulfo, nitro or nitroso derivs nspf	602,877,188	435,909,540	240,879,914	
290950	Ether-phenols, ether-alcohol-phenols and their halo, sulfo, nitro or nitroso derivs	348,865,826	319,573,125	141,081,255	
290960	Alcohol-, ether- and ketone peroxides and their halo, sulfo, nitro or nitroso derivs	66,580,824	36,376,718	53,818,682	
291010	Oxirane (Ethylene oxide)	5,430,359,182	615,170,283	130,971,316	
291090	Other epoxides, epoxyalcohols, epoxyphenols and epoxyethers, with 3-membered ring, and halo, sulfo, nitro or nitroso derivs	20,028,504	13,296,720	27,199,315	
291211	Methanal (Formaldehyde)	5,606,139,746	1,742,408,655	108,780,083	
291213	Butanal (Butyraldehyde, normal isomer)	1,286,228,576	38,258,061	6,380,895	
291219	Other acyclic aldehydes without other oxygen function nspf	681,654,217	94,127,452	51,446,910	
291229	Other cyclic aldehydes without other oxygen function nspf	8,193,404	5,961,840	17,588,173	
291230	Aldehyde-alcohols	.....	2,303,313	9,608,364	
291411	Acetone	1,787,800,192	1,533,978,283	266,656,640	
291413	4-Methylpentan-2-one (Methyl isobutyl ketone)	144,300,469	146,142,855	55,879,567	
291422	Cyclohexanone and methylcyclohexanones	790,825,388	.....	.....	

TABLE 3.—SYNTHETIC ORGANIC CHEMICALS: U.S. PRODUCTION AND SALES, 1985, HARMONIZED SYSTEM BASIS—CONTINUED

HS NUMBER	DESCRIPTION	PRODUCTION	SALES	
		QUANTITY (POUNDS)	QUANTITY (POUNDS)	VALUE (DOLLARS)
291430	Aromatic ketones without other oxygen function	3,819,584	2,289,337	5,109,033
291441	4-Hydroxy-4-methylpentan-2-one (Diacetone alcohol)	36,924,700	30,636,885	12,468,079
291521	Acetic acid	2,897,465,000	1,027,636,000	141,730,000
291522	Sodium acetate	13,195,004	.....	.....
291529	Acetic acid salts nspf	5,766,569	6,446,850	6,846,960
291531	Ethyl acetate	191,981,484	178,402,921	44,573,044
291532	Vinyl acetate	2,112,433,487	1,309,337,594	278,455,035
291533	n-Butyl acetate	179,140,127	112,601,064	48,479,055
291534	Isobutyl acetate	76,732,292	57,032,551	17,121,773
291535	2-Ethoxyethyl acetate (Ethylene glycol, Monoethyl ether acetate)	103,037,675	101,556,889	43,776,417
291539	Other esters of acetic acid nspf	198,024,966	172,961,808	106,582,093
291540	Mono-, di- or trichloroacetic acids, their salts and esters	14,737,079	.....	.....
291550	Propionic acid, its salts and esters	147,496,663	93,156,004	42,905,279
291570	Palmitic acid, stearic acid, their salts and esters	195,605,441	176,234,507	134,105,420
291590	Other saturated acyl monocarboxylic acids, their anhydrides, halides, peroxides, peroxyacids; halo, sulfo, nitro, nitroso derivs nspf	371,014,188	208,081,347	156,937,724
291611	Acrylic acid and its salts	795,014,900	142,677,105	63,505,800
291612	Esters of acrylic acid	902,584,789	550,052,940	264,860,727
291614	Esters of methacrylic acid	969,503,877	204,409,148	169,175,414
291615	Oleic, linoleic or linolenic acids, their salts and esters	77,791,590	70,485,081	39,668,412

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TABLE 3.--SYNTHETIC ORGANIC CHEMICALS: U.S. PRODUCTION AND SALES, 1985, HARMONIZED SYSTEM BASIS--CONTINUED

HS NUMBER	DESCRIPTION	PRODUCTION		SALES	
		QUANTITY (POUNDS)	QUANTITY (POUNDS)	VALUE (DOLLARS)	
291619	Other unsaturated acyc monocarboxylic acids, their : anhydrides, halides, peroxides, peroxyacids nspf; : halo, sulfo, nitro, nitroso deriv-----	43,088,958	40,509,815	53,909,694	
291620	Cyclanic, cyclenic or cycloterpenic monocarboxylic : acids, their anhydrides, halides, peroxides, : peroxyacids and their derivs-----	22,964,220	20,417,930	98,291,554	
291639	Other aromatic monocarboxylic acids, their anhydrides : halides, peroxides, peroxyacids and their derivs nspf----	14,748,173	12,108,191	43,648,343	
291719	Other acyc. polycarboxylic acids, their anhydrides, : halides, peroxides, peroxyacids nspf; halo, sulfo, : nitro or nitroso derivs-----	584,310,281	464,955,374	265,804,879	
291732	Diocetyl orthophthalates-----	275,391,735	288,312,758	87,724,202	
291734	Esters of orthophthalic acid nspf-----	414,803,348	381,861,447	154,571,258	
291735	Phthalic anhydride-----	820,222,394	523,568,910	134,447,113	
291739	Other aromatic polycarboxylic acids, their anhydrides : halides, peroxides, peroxyacids nspf and their derivs----	3,728,897,758	711,743,938	298,316,461	
291819	Other carbox. acids w/ add alcohol function only, : anhydrides, halides, peroxides, peroxyacids nspf; : halo, sulfo, nitro, nitroso derivs-----	32,310,642	16,774,124	22,503,476	
291822	O-Acetylsalicylic acid (Aspirin), its salts and esters----	28,159,765	.....	.....	
291829	Other carboxylic acids w/ add phenol funct only, : anhydrides, halides, peroxides, peroxyacids nspf; : halo, sulfo, nitro, nitroso derivs-----	3,206,195	2,877,171	9,006,418	
291830	Other carboxylic acids with add aldehyde or ketone : function only, anhydrides, halides, peroxides, : peroxyacids nspf; halo, etc. derivs-----	540,358,405	29,308,138	18,900,499	
291890	Other carboxylic acids w/ add oxygen function, : anhydrides, halides, peroxides, peroxyacids nspf; halo : sulfo, nitro, nitroso derivs-----	105,928,563	114,346,178	293,902,926	
291900	Phosphoric esters and their salts, incl. : lactophosphates; their halo, sulfo, nitro, nitroso : derivs-----	161,219,360	131,813,915	149,498,899	

SYNTHETIC ORGANIC CHEMICALS, 1985



TABLE 3.—SYNTHETIC ORGANIC CHEMICALS: U.S. PRODUCTION AND SALTS, 1985, HARMONIZED SYSTEM BASIS—CONTINUED

HS NUMBER	DESCRIPTION	PRODUCTION	SALES	
		QUANTITY (POUNDS)	QUANTITY (POUNDS)	VALUE (DOLLARS)
292010	Thiophosphoric esters (phosphorothioates), their salts; their halo, sulfo, nitro, nitroso derivs-----	126,397,564	96,803,620	186,651,106
292090	Other esters of inorg. acids (excl. esters of hydrogen halides) nspf, their salts; halo, sulfo, nitro, nitroso derivs-----	219,279,505	152,308,013	189,575,979
292111	Methylamine, di- or trimethylamine, and their salts-----	147,809,861	112,644,332	45,055,893
292112	Diethylamine and its salts-----	19,882,661	6,465,212	4,876,086
292119	Other acyclic monoamines and their derivs nspf; salts thereof-----	261,593,588	217,116,919	154,875,497
292129	Other acyclic polyamines and their derivs nspf; salts thereof-----	120,167,605	109,633,328	129,874,074
292130	Cyclanic, cyclenic, cycloterpenic mono- or polyamines and their derivs; salts thereof-----	21,275,212	21,938,818	47,659,405
292141	Aniline and its salts-----	716,035,849	309,442,004	98,131,656
292211	Monoethanolamine and its salts-----	215,593,185	154,496,829	41,684,869
292212	Diethanolamine and its salts-----	168,458,008	159,220,887	43,192,648
292213	Triethanolamine and its salts-----	176,637,251	211,799,509	53,456,600
292219	Other amino-alcohols nspf, their ethers and esters, containing only one kind of oxygen function; salts thereof-----	109,089,464	88,116,988	96,949,352
292229	Other amino-naphthols and amino-phenols nspf, their ethers, esters, containing only one kind of oxygen function; salts thereof-----	5,243,003	.....	.....
292230	Amino-aldehydes, amino-ketones and amino-quinones, containing only one kind of oxygen function; salts thereof-----	.....	16,808	310,672
292249	Other amino-acids nspf and their esters, containing only one kind of oxygen function; salts thereof-----	90,972,369	56,362,454	144,451,653

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TABLE 3.--SYNTHETIC ORGANIC CHEMICALS: U.S. PRODUCTION AND SALES, 1985, HARMONIZED SYSTEM BASIS

HS NUMBER	DESCRIPTION	PRODUCTION		SALES	
		QUANTITY (POUNDS)	QUANTITY (POUNDS)	VALUE (DOLLARS)	
292250	Amino-alcohol-phenols, amino-acid-phenols and other amino-compounds with oxygen function-----	33,448,407	26,898,053	59,428,390	
292390	Other quaternary ammonium salts and hydroxides nspf-----	37,930,240	35,183,750	49,386,901	
292410	Acyclic amides (including acyclic carbamates), and their derivs; salts thereof-----	264,047,827	181,335,188	160,784,585	
292421	Ureines and their derivs; salts thereof-----	39,286,814	27,615,041	98,870,204	
292429	Other cyclic amides nspf (including cyclic carbamates) and their derivs; salts thereof-----	178,264,145	161,511,732	507,549,440	
292519	Other imides nspf and their derivs; salts thereof-----	10,784,822	7,481,750	18,825,334	
292520	Imines and their derivs; salts thereof-----	257,703,469	148,301,939	87,494,841	
292690	Other nitrile-function compounds nspf-----	4,136,751,238	1,733,334,976	704,850,455	
292700	Diazo-, azo-, or azoxy-compounds-----	16,609,754	11,157,928	41,955,863	
292800	Organic derivs of hydrazine or of hydroxylamine-----	3,750,142	4,031,348	12,910,386	
292910	Isocyanates-----	1,355,957,038	1,228,086,536	952,799,104	
292990	Other compounds nspf with other nitrogen functions-----	102,574,963	66,697,513	34,963,237	
293020	Thiocarbamates and dithiocarbamates-----	73,421,216	92,902,261	238,725,336	
293090	Other organo-sulfur compounds nspf-----	626,484,978	209,918,347	350,591,581	
293100	Other organo-inorganic compounds-----	547,736,230	152,535,404	789,506,096	
293211	Tetrahydrofuran-----	120,208,627	46,250,746	43,279,019	
293229	Other lactones nspf with oxygen hetero-atom(s) only-----	113,310,805	23,375,972	71,530,007	
293290	Other heterocyclic compounds with oxygen hetero atom(s) only nspf-----	74,562,183	42,217,808	211,228,374	
293319	Other heterocyclic cmpds with nitrogen hetero-atom(s) only nspf, with unfused pyrazole ring (hydrogenated or not) in structure-----	225,252	.....	.....	

TABLE 3.—SYNTHETIC ORGANIC CHEMICALS: U.S. PRODUCTION AND SALES, 1985, HARMONIZED SYSTEM BASIS—CONTINUED

HS NUMBER	DESCRIPTION	PRODUCTION	SALES	
		QUANTITY (POUNDS)	QUANTITY (POUNDS)	VALUE (DOLLARS)
293329	Other heterocyclic cmpds with nitrogen hetro-atom(s) only nspf, with unfused imidazole ring (hydrogenated or not) in structure	3,689,326	.....	.....
293339	Other heterocyclic cmpds with nitrogen hetero-atom(s) only nspf, with unfused pyridine ring (hydrogenated or not) in structure	94,588,787	62,718,754	387,834,984
293359	Heterocyc cmpds w/ nitrogen hetero-atom(s) only, pyrimidine (hydrogenated or not) or piperazine ring in struct; nucleic acids, salts	34,877,633	16,309,968	111,151,378
293369	Other heterocyc cmpds w/ nitrogen hetero-atom(s) only nspf, with unfused triazine ring (hydrogenated or not) in the structure	438,726,672	270,616,727	689,943,480
293371	6-Hexanelactam (epsilon-Caprolactam)	1,089,497,100	.....	.....
293390	Other heterocyclic compounds with nitrogen hetero atom(s) only nspf	167,368,798	95,441,648	147,694,332
293420	Heterocyclic compounds containing a benzothiazole ring-system (hydrogenated or not), not further fused	82,411,510	44,277,895	107,104,563
293490	Other heterocyclic compounds nspf	72,777,699	47,091,994	208,214,100
293500	Sulfonamides	14,193,130	9,239,114	56,360,038
293722	Halogenated derivs of adrenal cortical hormones	25,959	.....	.....
293799	Other hormones, natural or synthetic nspf, derivs used primarily as hormones; steroids used primarily as hormones	.....	10,440	39,227,650
294110	Penicillins and their derivs with a penicillanic acid structure; salts thereof	6,749,329	1,623,665	37,178,890
294190	Other antibiotics nspf	4,438,774	2,684,853	261,010,643
294200	Organic compounds nspf	394,990,206	354,894,211	260,634,581
310210	Urea, whether or not in aqueous solution	11,136,899,409	9,099,806,645	664,198,976
320411	Disperse dyes and preparations based thereon	25,091,100	25,734,531	94,318,078

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TABLE 3.--SYNTHETIC ORGANIC CHEMICALS: U.S. PRODUCTION AND SALES, 1985, HARMONIZED SYSTEM BASIS--CONTINUED

HS NUMBER	DESCRIPTION	PRODUCTION		SALES	
		QUANTITY (POUNDS)	QUANTITY (POUNDS)	VALUE (DOLLARS)	
320412	Acid dyes, premetallized or not, mordant dyes and preparations based thereon-----	19,374,237	33,188,310	84,963,131	
320413	Basic dyes and preparations based thereon-----	11,661,379	11,156,290	56,146,356	
320414	Direct dyes and preparations based thereon-----	29,661,057	56,414,838	79,393,941	
320415	Vat dyes (including those usable in that state as pigments) and preparations based thereon-----	36,330,312	39,089,976	84,095,008	
320417	Pigments and preparations based thereon-----	85,681,716	73,306,952	453,003,006	
320419	Other synth. organic coloring matter nspf and preparations based thereon, incl mixtures of items of subheadings 3204.11 thru 3204.19-----	35,400,557	33,434,150	127,948,152	
320420	Fluorescent brightening agents-----	58,028,454	61,369,944	73,884,103	
380610	Rosin-----	169,420,597	150,708,734	49,187,646	
380630	Ester gums-----	170,976,264	165,351,810	109,379,574	
380991	Other finishing agents, dye carriers, like products nspf, for textile industry use-----	40,996,359	39,567,256	19,396,954	
380999	Other finishing agents, dye carriers, like products nspf, for leather industry use-----	23,535,159	24,407,708	15,548,763	
381121	Lubricating oil additives containing petroleum oils or oils obtained from bituminous minerals-----	1,468,680,460	1,042,502,300	798,961,636	
381210	Prepared rubber accelerators-----	.....	2,870,862	7,516,209	
381230	Antioxidizing preps and compound stabilizers for rubber or plastics-----	35,548,755	29,575,676	42,251,046	
381590	Reaction initiators, reaction accelerators, and catalytic preps, nspf-----	87,917,577	12,761,389	32,352,467	
382320	Naphthenic acids, their water-insoluble salts and their esters-----	69,162,172	69,250,631	20,400,105	
382390	Other chemical products, preparations, and residual products of the chemical or allied industries nspf-----	8,732,418,924	3,472,445,116	739,534,977	

TABLE 3.—SYNTHETIC ORGANIC CHEMICALS: U.S. PRODUCTION AND SALES, 1985, HARMONIZED SYSTEM BASIS—CONTINUED

HS NUMBER	DESCRIPTION	PRODUCTION		SALES	
		QUANTITY (POUNDS)	QUANTITY (POUNDS)	VALUE (DOLLARS)	
390110	Polyethylene having a specific gravity of less than 0.94	8,804,592,087	7,687,157,549	2,645,416,856	
390120	Polyethylene having a specific gravity of 0.94 or more	6,513,464,986	6,172,680,297	1,879,478,567	
390210	Polypropylene	5,654,450,319	4,393,155,314	1,489,417,572	
390311	Polystyrene, expandable	513,238,333	479,756,659	227,026,522	
390319	Polystyrene, other than expandable	3,415,665,710	2,799,178,822	982,133,026	
390320	Styrene-acrylonitrile (SAN) copolymers	769,561,699	598,128,778	251,563,332	
390330	Acrylonitrile-butadiene-styrene (ABS) copolymers	1,347,657,836	1,038,888,525	846,227,987	
390390	Other polymers of styrene nspf, in primary forms	1,167,245,448	1,062,834,541	729,046,759	
390461	Polytetrafluoroethylene (PTFE)	25,493,750	20,017,035	126,933,447	
390511	Polymers of vinyl acetate in aqueous dispersion	635,589,415	495,603,278	301,834,117	
390520	Polyvinyl alcohols, whether or not containing unhydrolyzed acetate groups	166,819,000	143,391,267	119,638,444	
390590	Polymers of vinyl esters nspf, in primary forms; other vinyl polymers nspf, in primary forms	569,172,221	497,213,058	428,853,632	
390610	Polymethyl methacrylate	482,612,049	336,887,004	358,136,178	
390690	Other acrylic polymers nspf in primary forms	1,943,105,890	1,034,350,903	1,089,524,011	
390730	Epoxide resins	420,760,000	323,332,000	389,781,000	
390750	Alkyd resins	830,372,000	458,565,000	296,297,000	
390760	Polyethylene terephthalate	3,663,183,411	.....	.....	
390791	Other polyesters nspf, unsaturated, in primary forms	1,358,912,021	1,278,995,353	828,861,667	
390799	Other polyesters nspf, saturated, in primary forms	218,168,021	156,361,405	194,418,368	
390890	Other polyamides nspf in primary forms	395,364,085	316,884,013	527,291,985	
390920	Melamine resins	208,316,034	177,353,893	154,623,201	

APPENDIX

TABLE 3.--SYNTHETIC ORGANIC CHEMICALS: U.S. PRODUCTION AND SALTS, 1985, HARMONIZED SYSTEM BASIS--CONTINUED

HS NUMBER	DESCRIPTION	PRODUCTION	SALES	
		QUANTITY (POUNDS)	QUANTITY (POUNDS)	VALUE (DOLLARS)
390940	Phenolic resins-----	1,713,618,000	1,206,766,000	659,773,000
390950	Polyurethanes-----	339,717,786	230,954,383	373,572,251
391290	Cellulose and its chemical derivatives nspf, in primary forms-----	813,064,898	165,512,057	137,455,225
400219	Styrene-butadiene rubber (SBR), carboxylated styrene butadiene rubber (XSBR), except latex-----	1,456,171,872	691,010,118	379,574,512
400299	Other synthetic rubber nspf-----	1,177,268,110	712,478,295	918,936,884

## ALPHABETICAL CHEMICAL INDEX

The alphabetical index of chemicals contained in this appendix table is an outgrowth of the processing of data by the U.S. International Trade Commission for its annual report *Synthetic Organic Chemicals, United States Production and Sales*. This index will aid those who have an interest in the report, either as users of the published data or as suppliers of individual company data to the Commission, principally by showing the section number and line item number of specific chemicals. This information can be used to assist in locating a chemical in the report and to provide respondents to the Commission's questionnaire with information on where to list their production and sales data. The index shows only those chemicals for which production or sales were reported to the Commission for this edition of the report.

The index, initially designed for Commission use in computer processing of data for the annual report, has certain characteristics that should be noted to increase its usefulness. For example, superior headings for individual entries are not shown in the index. Thus, understanding the contents of the first item in the index, "accelerators, activators, and vulcanizing agents, acyclic, *other*," necessitates that the index user turn to the individual section (in the report) and item number (in the questionnaire) to find those acyclic accelerators, activators, and vulcanizing agents already specified. Similarly, the index entry "specific gravity 0.940 and below" does not by itself identify the chemical product. The index user will need to turn to the indicated section number and item number to determine the chemical referred to—in this case, polyethylene.

The chemical names used in this report and in the questionnaires sent to U.S. producers to obtain the data aggregated in the report are listed alphabetically in the first column of each listing in the index. The second column refers to the section in the report and questionnaire containing the chemical, and the third column shows the appropriate item number in that section in the questionnaire.

Table 4.—Alphabetical Chemical Index

CHEMICAL NAME	SECT. NO.	ITEM NO.	CHEMICAL NAME	SECT. NO.	ITEM NO.
Accelerators, activators, and vulcanizing agents, cyclic, other	09	49.000	N-[(Acetylamino)methyl]-2-chloro-N-(2,6-diethylphenyl) acetamide	13	168.995
Acacainide	06	378.100	Acetyl-n-butyryl (2,3-Hexanedione)	07	126.100
Acetaldehyde	15	782.000	Acetyl cedrene (Vertoflex)	07	93.550
Acetal resins	08	19.000	Acetyl chloride	15	490.500
Acetamide	15	227.000	Acetylcyclohexane sulfonyl peroxide	15	2.000
Acetamidine hydrochloride	15	219.000	Acetylene (For chemical use only)	02	38.000
Acetamidoethanol (N-Acetyl-ethanolamine)	15	220.000	Acetyl isovaleryl (5-Methyl-2,3-hexanedione)	07	126.500
3-Acetamido-N-(2-succinimidoethyl)-N-ethylaniline	03	6.275	N-Acetyl methyl anthranilate	07	93.555
Acetaminophen	06	392.000	Acetyl peroxide	15	1282.000
Acetanilide, tech.	03	7.000	Acetyl propionyl (2,3-Pentanedione)	07	126.600
Acetazolamide	06	736.000	2-Acetylpyridine	03	19.450
Acetic acid, amides with polyalkylene polyamines, salt	12	357.900	5-Acetylsalicylamide	03	19.470
Acetic acid, phenyl ester	03	8.000	Acid Black 1	04	203.000
Acetic acid, recovered (100%)	15	485.000	Acid Black 24	04	206.000
Acetic acid salts, all other	15	608.000	Acid Black 52	04	211.000
Acetic acid, synthetic (100%)	15	486.000	Acid Black 58	04	213.000
Acetic anhydride from acetaldehyde (100%)	15	487.000	Acid Black 60	04	214.000
Acetic anhydride from acetic acid, other than recovered, by the vapor-phase process (100%)	15	488.000	Acid Black 63	04	214.063
Acetic anhydride from acetic acid, recovered, by vapor-phase process	15	489.000	Acid Black 92	04	215.000
Acetoacetanilide	03	9.000	Acid Black 107	04	216.000
o-Acetoacetanisidide	03	10.000	Acid Black 172	04	218.172
Acetoacetarylide yellows, all others	05	7.000	Acid Black 194	04	218.194
o-Acetoacetotoluidide	03	11.000	Acid black dyes, all other	04	219.000
p-Acetoacetotoluidide	03	11.050	Acid Blue 9	04	132.000
2',4'-Acetoacetoxylidide	03	11.500	Acid Blue 15	04	133.000
Acetoacet-m-xylylidide	03	11.513	Acid Blue 25	04	136.000
Acetohexamide	06	686.000	Acid Blue 27	04	137.000
1'-Acetonaphthone	03	12.000	Acid Blue 29	04	138.000
2'-Acetonaphthone ( $\beta$ -Methyl naphthyl ketone)	07	1.500	Acid Blue 40	04	140.000
Acetone, crude	15	809.000	Acid Blue 41	04	141.000
Acetone from cumene	15	806.000	Acid Blue 45	04	143.000
Acetone-formaldehyde resins	08	1.000	Acid Blue 80	04	149.000
Acetone from isopropyl alcohol	15	807.000	Acid Blue 104	04	156.000
Acetone sodium bisulfite	15	1281.500	Acid Blue 113	04	157.000
Acetonitrile	15	432.000	Acid Blue 118	04	158.000
3-( $\alpha$ -Acetonylbenzyl)-4-hydroxycoumarin (Warfarin)	13	169.000	Acid Blue 145	04	161.000
Acetophenone, tech.	03	14.000	Acid Blue 158, 158:1, and 158:2	04	162.000
p-Acetotoluidide	03	15.000	Acid Blue 231	04	168.000
1-Acetoxy-2-sec-butyl-1-ethenylcyclohexane	07	93.500	Acid Blue 277	04	168.277
6-Acetoxy-2,4-dimethyl-1,3-dioxane	15	1.000	Acid Blue 283	04	168.283
4-Acetoxyethyl-4-nonene	07	126.050	Acid Blue 298	04	168.298
Acetylacetone peroxide	15	1281.990	Acid Blue 321	04	168.321
			Acid Blue 324	04	168.324
			Acid Blue 330	04	168.330
			Acid Blue 595	04	168.595
			Acid blue dyes, all other	04	169.000

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Table 4.—Alphabetical Chemical Index

CHEMICAL NAME	SECT. NO.	ITEM NO.	CHEMICAL NAME	SECT. NO.	ITEM NO.
Acid Brown 14	04	189.000	Acid Red 114	04	92.000
Acid Brown 19	04	190.000	Acid Red 119	04	94.000
Acid Brown 45	04	194.000	Acid Red 137	04	97.000
Acid Brown 50	04	194.050	Acid Red 151	04	99.000
Acid Brown 97	04	196.000	Acid Red 167	04	100.000
Acid Brown 98	04	197.000	Acid Red 174	04	100.174
Acid Brown 147	04	197.147	Acid Red 182	04	103.000
Acid Brown 160	04	199.160	Acid Red 186	04	105.000
Acid Brown 161	04	199.161	Acid Red 194	04	107.000
Acid Brown 165	04	199.165	Acid Red 213	04	110.000
Acid Brown 227	04	200.227	Acid Red 226	04	110.226
Acid Brown 239	04	200.239	Acid Red 257	04	110.257
Acid Brown 264	04	200.264	Acid Red 266	04	111.000
Acid brown dyes, all other	04	202.000	Acid Red 296	04	111.296
(Acid Green 3)	05	230.003	Acid Red 299	04	112.000
Acid Green 1	04	170.000	Acid Red 337	04	114.000
Acid Green 5	04	172.000	Acid Red 361	04	115.361
Acid Green 20	04	177.000	Acid Red 364	04	115.364
Acid Green 25	04	179.000	Acid Red 392	04	115.392
Acid Green 70	04	184.000	Acid Red 396	04	115.396
Acid green dyes, all other	04	186.000	Acid Red 408	04	115.408
Acid Orange 7	04	43.000	Acid Red 410	04	115.410
Acid Orange 8	04	44.000	Acid red dyes, all other	04	116.000
Acid Orange 10	04	45.000	Acids, acid anhydrides, and acyl halides, all other	15	586.000
Acid Orange 24	04	47.000	Acid Violet 3	04	118.000
Acid Orange 47	04	49.047	Acid Violet 7	04	119.000
Acid Orange 60	04	54.000	Acid Violet 12	04	120.000
Acid Orange 64	04	57.000	Acid Violet 17	04	121.000
Acid Orange 69	04	58.000	Acid Violet 49	04	126.000
Acid Orange 86	04	61.000	Acid violet dyes, all other	04	129.000
Acid Orange 89	04	61.089	(Acid Yellow 1)	05	204.001
Acid Orange 116	04	62.000	(Acid Yellow 23)	05	204.023
Acid Orange 128	04	64.000	Acid Yellow 3	04	3.000
Acid Orange 152	04	65.152	Acid Yellow 17	04	6.000
Acid Orange 156	04	65.156	Acid Yellow 19	04	7.000
Acid Orange 161	04	65.161	Acid Yellow 23	04	8.000
Acid orange dyes, all other	04	66.000	Acid Yellow 34	04	11.000
Acid Red 1	04	67.000	Acid Yellow 36	04	12.000
Acid Red 4	04	68.000	Acid Yellow 40	04	14.000
Acid Red 14	04	69.000	Acid Yellow 49	04	17.000
Acid Red 18	04	71.000	Acid Yellow 54	04	18.000
Acid Red 57	04	79.000	Acid Yellow 59	04	19.000
Acid Red 73	04	81.000	Acid Yellow 65	04	21.000
Acid Red 85	04	83.000	Acid Yellow 73	04	22.000
Acid Red 87	04	84.000	Acid Yellow 87	04	24.087
Acid Red 88	04	85.000	Acid Yellow 99	04	25.000
Acid Red 97	04	87.000	Acid Yellow 119	04	26.119

Table 4.—Alphabetical Chemical Index

CHEMICAL NAME	SECT. NO.	ITEM NO.	CHEMICAL NAME	SECT. NO.	ITEM NO.
Acid Yellow 127	04	29.000	Alcohols, monohydric, and their esters, C <sub>8</sub> and higher,		
Acid Yellow 129	04	31.000	mixed	15	1425.200
Acid Yellow 135	04	32.000	Alcohols and phenols, alkoxyated and phosphated or		
Acid Yellow 151	04	33.000	polyphosphated, all other	12	91.000
Acid Yellow 159	04	34.000	Alcohols, unmixed C <sub>11</sub> or lower, all other	15	870.000
Acid Yellow 174	04	35.000	Aldehyde-amine reaction products, cyclic, other	09	8.000
Acid Yellow 198	04	37.000	Aldehydes, acyclic, all other	15	805.000
Acid Yellow 200	04	37.200	Aliphatic hydrocarbon sulfides	14	253.000
Acid Yellow 216	04	37.216	Alkanolamine condensates, all other	12	575.000
Acid Yellow 219	04	37.219	Alkene thiophosphonate	14	265.000
Acid Yellow 226	04	24.096	Alkenyl succinimide	14	245.000
Acid Yellow 239	04	37.239	3-Alkoxy-2-hydroxypropyl trimethyl ammonium chloride	13	245.021
Acid yellow dyes, all other	04	38.000	Alkoyl phenol	08	1.905
Aclomethasone	06	648.100	Alkyd copolymers, all other	08	3.900
Acrolein (Acrylaldehyde)	15	783.000	Alkylalcohol ethoxyated and carbonated, sodium salt	12	318.600
Acrylamide-2-acrylamido-2-methylpropanesulfonic acid,			N-alkylamine bismethylenephosphonic acid	14	27.000
sodium salt polymer	14	395.000	Alkyl C <sub>12</sub> -C <sub>14</sub> amine hydrochloride	15	307.950
Acrylamide-acrylic acid copolymer	14	396.000	N-alkylaminobismethylene phosphonic acid salts	14	28.000
Acrylamide-acrylic acid copolymer, sodium salt	14	397.000	Alkyl aromatics: all other	02	4.000
Acrylamide N-dimethylaminomethylacrylamide copolymer	14	399.000	Alkylaryl-p-phenylenediamines	09	55.100
Acrylamide monomer	15	228.000	Alkylaryl phosphites mixed	09	84.800
Acrylate-alkyd copolymer resins	08	1.900	Alkylbenzene all other (Except dodecyl, tridecyl and		
Acrylic acid	15	491.000	stright-chain)	03	23.000
Acrylic monomers, mixed	15	884.000	Alkylbenzene straight-chain (Except dodecyl and		
Acrylonitrile-butadiene-styrene (ABS) terpolymer resins	08	42.000	tridecyl)	03	22.000
Acrylonitrile, monomer	15	433.000	Alkylbenzene sulfonates, all other	12	142.000
Acyclic amphoteric surface-active agents, all other	12	19.000	Alkyl dimethyl amine oxide	12	423.200
Acyclic fungicides, all other	13	195.000	Alkyl glycidyl ethers, C <sub>12</sub> -C <sub>14</sub>	15	1317.320
Acyclic herbicides	13	212.000	Alkyl glycidyl ethers, C <sub>8</sub> -C <sub>10</sub>	15	1317.300
Acyclic plasticizers, all other	11	130.000	3-(C <sub>12</sub> -15 alkyloxy)-1-propanamine	12	321.045
Acyclovir	06	186.800	3-(C <sub>12</sub> -18 alkyloxy)-1-propanamine	12	321.050
Acyclic elastomers, all other	10	21.000	N-(C <sub>12</sub> -18 alkyl)oxypropyl trimethylene diamine	12	321.065
Adipic acid	15	492.000	Alkylphenol formaldehyde condensate, alkoxyated	15	3.450
Adipic acid, ammonium salt	15	613.000	Alkylphenol-formaldehyde condensates, alkoxyated, all		
Adipic acid-crosslinked polyacrylamide	14	405.000	other	12	726.000
Adipic acid-diethylenetriamine-epichlorohydrin polymer	14	153.000	Alkylphenol formaldehyde copolymer	15	3.510
Adipic acid esters, all others	11	66.000	Alkyl phenols	14	219.000
Adipic acid type complex linear polyesters and			Alkylphenols, mixed	03	23.100
polymeric plasticizers	11	131.100	Alkylpyridines, mixed	03	23.350
Adiponitrile	15	434.000	Alkyl succinic anhydride	14	268.000
Aklomide	06	163.000	Alkyl terephthalamate	14	269.000
Albumin	06	574.800	All other (specify)	14	252.000
C <sub>12</sub> -C <sub>15</sub> Alcohol lactates	15	1432.000	All other acyclic flavor and perfume materials	07	172.000
Alcohol mixtures, other	15	883.400	All other benzenoid or naphthalenoid chemicals	07	93.000
Alcohol mixtures, C-11 or lower only	15	883.100	All other dyes	04	1215.000
Alcohol mixtures, C-19 and C-20 only	15	883.300	All other octanoic acid esters	11	89.900
Alcohol mixtures, C-12 through C-18 only	15	883.200	Allo-ocimene	07	126.800

Table 4.—Alphabetical Chemical Index

CHEMICAL NAME	SECT. NO.	ITEM NO.	CHEMICAL NAME	SECT. NO.	ITEM NO.
Allopurinol	06	829.000	Amikacin sulfate	06	38.500
All other products from petroleum and natural gas, cyclic	02	36.000	Amiloride hydrochloride	06	736.500
All other terpenoid, heterocyclic, or alicyclic flavor and perfume chemicals	07	126.000	Amine oxides and oxygen-containing amines (Except those with amide linkages), acyclic, all other	12	341.000
Allyl alcohol	15	840.000	Amine oxides and oxygen-containing amines (Except those having amine linkages), cyclic, all other	12	357.000
Allylamines	15	258.000	Amines, all other	15	307.000
p-Allylanisole	07	2.600	Amine salts (Not containing oxygen), all other	12	403.000
Allyl anthranilate	07	2.605	Amine salts of fatty, rosin, and tall oil acids, all other	12	35.000
Allyl cyclohexyl propionate	07	93.560	3'-Aminoacetanilide	03	26.000
4-Allyl-1,2-dimethoxybenzene (4-Allylveratrole)	07	4.000	4'-Aminoacetanilide (Acetyl-p-phenylenediamine)	03	27.000
Allyl disulfide	07	126.900	3'-Amino-p-acetanilide	03	27.100
Allyl glycidyl ether (allyloxy-2,3-epoxypropane)	15	1317.330	Amino acids and salts, acyclic, all other	14	22.000
Allyl heptanoate	07	126.990	Amino acids and salts, cyclic, all other	14	23.000
Allyl hexanoate	07	127.000	2-(p-Aminoanilino)-5-nitrobenzenesulfonic acid	03	34.000
Allyl isovalerate	07	127.260	3-Amino-p-anisanilide	03	35.000
Allyl mercaptan	07	127.265	1-Aminoanthraquinone and salt	03	37.000
Allyl methacrylate	15	885.000	6-Amino-3,4'-azodibenzenesulfonic acid (C.I. Acid Yellow 9)	03	44.000
4-Allyl-2-methoxyphenol (Eugenol)	07	5.000	p-Aminobenzamide	03	45.100
4-Allyl-2-methoxyphenol acetate (Eugenol acetate)	07	5.100	3'-Aminobenzanilide	03	50.500
Allyl octanoate (Allyl caprylate)	07	127.270	o-Aminobenzenethiol	03	53.000
Allyl resins	08	4.000	Aminobenzoic acid	06	393.000
Allyl sulfide	07	127.290	p-Aminobenzoic acid, tech.	03	56.000
Allyl sulfonate, sodium salt	12	209.500	2-Amino-6-benzothiazolesulfonic acid	03	58.090
Allylsulfonic acid, sodium salt	15	614.000	1-Amino-4-bromo-9,10-dihydro-9,10-dioxo-2-anthracenesulfonic acid and sodium salt	03	61.000
Alpha olefins, C <sub>6</sub> -C <sub>10</sub>	02	60.100	1-Amino-2-bromo-4-hydroxyanthraquinone	03	62.000
Alpha olefins, C <sub>11</sub> and higher	02	62.100	7-Aminocephalosporanic acid	03	64.500
Alprazolam	06	466.500	2-Amino-5-chlorobenzophenone	03	72.200
Alprostadiol	06	679.100	2-Amino-5-chloro-p-toluenesulfonic acid [SO <sub>2</sub> H=1]	03	82.000
Aluminum acetate	15	587.000	6-Amino-5-chloro-m-toluenesulfonic acid [SO <sub>2</sub> H=1] (2B Acid)	03	83.000
Aluminum acetylacetonate complex	15	1355.200	p-Aminocyclohexylmethane carbonate	09	156.100
Aluminum di-sec-butoxide acetoacetic ester chelate	15	1355.560	3-Amino-2,5-dichlorobenzoic acid, ammonium salt (2,5-Dichloro-3-aminobenzoic acid, ammonium salt)	13	40.500
Aluminum diisopropoxide acetoacetic ester chelate	15	1355.580	4-Amino-N,N-di(β-hydroxyethyl)aniline sulfate	03	91.503
Aluminum distearate	15	746.000	2-Amino-4,5-dimethoxybenzoic acid, methyl ester	03	92.300
Aluminum 2-ethylhexanoate	15	629.000	5-Amino-2,3-dimethylbenzenesulfethanolamide	03	92.503
Aluminum ethyl-3-oxobutanoate-0 <sup>1</sup> ,0 <sup>3</sup> -dihydroxy T-4	15	1355.600	4-Amino-6-(1,1-dimethylethyl)-3-(methylthio)-1,2,4-triazin-5-(4H)-one	13	40.600
Aluminum isopropoxide (Aluminum isopropylate)	15	1296.500	2-Aminoethanol hydrochloride	15	309.900
Aluminum monostearate	15	747.000	2-Aminoethanol (Monoethanol amine) sulfite	15	310.000
Aluminum octanoate	15	713.000	Aminoethoxyethanol	15	311.000
Aluminum (2-ethyl hexanoate)-oxo-homopolymer	15	1355.590	2-(2-Aminoethylamino)ethanol (Aminoethylethanolamine)	15	312.000
Aluminum palmitate	15	728.000	3-Amino-9-ethylcarbazole	03	95.000
Aluminum phenolsulfonate	06	552.000			
Aluminum tri-sec-butoxide	15	1355.750			
Aluminum tridecanate	15	587.050			
Aluminum tristearate	15	748.000			
Amides, all other	15	257.000			
Amido amine salts as curing agents	15	228.300			

Table 4.—Alphabetical Chemical Index

CHEMICAL NAME	SECT. NO.	ITEM NO.	CHEMICAL NAME	SECT. NO.	ITEM NO.
(2-Aminoethyl)ethyl(hydrogenated tallow alkyl)(2-hydroxyethyl)ammonium ethyl sulfate	12	448.000	p-[(p-Aminophenyl)azo]benzenesulfonic acid	03	188.000
2-Aminoethyl mercaptoacetate (Monoethanolamine thioglycolate)	15	313.000	2-(4-Aminophenylazo)-4-methylphenol	03	188.500
1-(2-Aminoethyl)-2-nor(tall oil alkyl)-2-imidazoline	12	406.000	7-[(4-Aminophenyl)azo]-1,3-naphthalenedisulfonic acid	03	189.000
1-(2-Aminoethyl)piperazine	15	4.000	2,2'-(m-Aminophenylimino)diethanol, diacetate ester	03	190.300
1-(2-Aminoethyl)piperazine, technical	15	5.000	2-(p-Aminophenyl)-6-methyl-7-benzothiazolesulfonic acid and salt	03	192.000
2-Amino-2-ethyl-1,3-propanediol	15	314.000	1-(3-Aminopropyl)morpholine	15	6.000
Aminoglutethimide	06	417.000	7-Aminopropyltriethoxysilane	15	1378.700
Aminoguanidine hydrochloride	15	315.020	2-Aminopyridine	03	194.000
N-Aminohexamethyleneimine	03	99.100	4-Aminopyridine	03	195.000
Aminohippuric acid	06	574.900	Amino resins, all other	08	17.500
2-Amino-2-(hydroxymethyl)-1,3-propanediol [Tris(hydroxymethyl)aminomethane]	15	316.000	Aminosalicyclic acid	06	142.000
4-Amino-3-hydroxy-1-naphthalenesulfonic acid	03	109.000	5-Aminotetrazole	14	321.000
2-(2-Amino-5-hydroxy-7-sulfo-1-naphthylazo)-5-nitrobenzoic acid	03	113.500	2-Aminothiazole nitrate	03	200.050
2-Amino-5-mercapto-1,3,4-thiadiazole	14	320.000	4-Amino-m-toluenesulfonic acid [SO <sub>3</sub> H=1]	03	202.000
3-Amino-4-methoxyacetanilide	03	115.800	6-Amino-m-toluenesulfonic acid [SO <sub>3</sub> H=1]	03	203.000
4-Amino-5-methoxy-2-methylbenzenesulfonic acid (5-methyl-o-anisidinesulfonic acid)	03	116.803	m-[(4-Amino-3-tolyl)azo]benzenesulfonic acid	03	206.000
m-[(4-Amino-3-methoxyphenyl)azo]benzenesulfonic acid	03	118.000	4-Amino-3,5,6-trichloropicolinic acid (Picloram)	13	41.000
3-Amino-3-methyl-1-butyne	15	316.700	Aminotrimethyl phosphonic acid	14	30.000
2-Amino-2-methyl-1,3-propanediol	15	317.000	Amitriptyline	06	524.900
2-Amino-2-methyl-1-propanol	15	319.000	Amitriptyline hydrochloride	06	525.000
2-Amino-2-methyl-1-propanol hydrochloride	15	320.000	Ammonium acetate	15	588.000
2-Amino-2-methylpropyl 8-bromotheophyllinate	03	130.100	Ammonium benzoate	15	9.100
2-Amino-3-methylpyridine	03	133.500	Ammonium citrate	15	621.000
2-Amino-4-methylpyridine	03	133.550	Ammonium heparin	06	623.000
2-Amino-5-methylpyridine	03	133.600	Ammonium mercaptoacetate	15	691.000
2-Amino-6-methylpyridine	03	134.000	Ammonium oxalate	15	722.000
7-Amino-1,3-naphthalenedisulfonic acid (Amino G acid)	03	150.000	Ammonium phenolsulfonate	06	553.000
6-Amino-2-naphthalenesulfonic acid (Broenner's acid)	03	159.000	Ammonium polyacrylate	14	426.000
8-Amino-2-naphthalenesulfonic acid (1,7-Cleve's acid)	03	162.000	Ammonium stearate	15	749.000
5(and 8)-Amino-2-naphthol	03	168.000	Amobarbital	06	443.000
8-Amino-2-naphthol	03	169.000	Amobarbital, sodium	06	444.000
2-(4-Amino-2-nitroanilino)ethanol	03	169.890	Amodiaquine hydrochloride	06	165.000
2-Amino-6-nitrobenzothiazole	03	171.202	Amoxicillin (trihydrate)	06	9.600
2-Amino-4-nitrophenol	03	175.000	Amoxicillin (anhydrous)	06	9.500
2-[(2-Amino-4nitrophenyl)amino]-2-hydroxymethyl-1,3-propanediol	03	176.200	Amphetamine	06	512.000
4-Amino-4'-nitro-2,2'-stilbenedisulfonic acid	03	177.000	Amphetamine sulfate	06	513.000
2-Amino-5-nitrothiazole	03	178.000	Amphotericin B	06	1.000
2-Amino-4-nitrotoluene hydrochloride	03	178.400	Ampicillin (anhydrous)	06	10.000
3-Amino-2-oxazolidinone	03	181.000	Ampicillin (trihydrate)	06	10.100
6-Aminopenicillanic acid	03	182.100	Ampicillin, sodium	06	11.000
p-Aminophenol	03	186.000	Amprolium	06	166.000
			Amyl acetate (n-Pentyl acetate)	15	886.000
			Amyl acetates, all other	15	888.000
			Amyl alcohol, ethoxylated and phosphated	12	76.050
			Amylases, all other	14	98.000
			α-Amyl cinnamic aldehyde	07	5.550

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Table 4.—Alphabetical Chemical Index

CHEMICAL NAME	SECT. NO.	ITEM NO.	CHEMICAL NAME	SECT. NO.	ITEM NO.
Amyl cinnamyl acetate	07	5.600	Arachidylbehenylalkyl amine	12	417.900
Amyl cinnamyl alcohol	07	5.650	Aromatics, C,	02	36.010
Amyl cyclohexyl acetate	07	94.100	Arsanilic acid	06	151.000
Amyl p-dimethylaminobenzoate	15	8.000	Aryl alkyl polyether alcohol	14	324.000
Amyl hydrogen phosphate	15	1016.500	Ascorbic acid	06	807.000
Amyl nitrite	06	367.000	Aspartic acid	14	2.000
t-Amylphenol, ethoxylated	12	742.050	Aspirin	06	385.000
p-tert-Amylphenol sulfide (Tackifier)	09	124.000	Atracurium besylate	06	745.200
Amyl vinyl carbonyl acetate	07	127.340	Aurantiol	07	7.100
Amyris acetate	07	93.650	Aurothioglucose	06	398.000
Anabolic agents and androgens, all other	06	644.000	Azathioprine	06	277.000
Analgesics and antipyretics, other than salicylates, all other	06	416.000	Azelaic acid	15	493.000
Anhydrosorbitol dioleate	12	589.000	1,1'-Azobisformamide	15	229.000
Anhydrosorbitol esters, all other	12	603.000	2,2'-Azobis[2-methylpropionitrile] (Azobisisobutyronitrile)	15	435.000
Anhydrosorbitol monoester of tall oil acids	12	590.000	Azoic Black 4	04	251.000
Anhydrosorbitol monolaurate	12	591.000	Azoic black compositions, all other	04	253.000
Anhydrosorbitol mono-oleate	12	592.000	Azoic Blue 3	04	238.000
Anhydrosorbitol monopalmitate	12	593.000	Azoic Brown 7	04	245.000
Anhydrosorbitol monostearate	12	594.000	Azoic Brown 9	04	246.000
Anhydrosorbitol sesquioleate	12	596.000	Azoic brown compositions, all other	04	249.000
Anhydrosorbitol sesquistearate	12	596.500	Azoic Coupling Component 3	04	298.000
Anhydrosorbitol trioleate	12	600.000	Azoic Coupling Component 7	04	301.000
Anhydrosorbitol tristearate	12	602.000	Azoic Coupling Component 8	04	302.000
Aniline (Aniline oil)	03	212.000	Azoic Coupling Component 12	04	305.000
Aniline, ethoxylated	12	342.200	Azoic Coupling Component 21	04	314.000
2-Anilinoethanol	03	215.000	Azoic Coupling Component 29	04	316.000
7-Anilino-4-hydroxy-2-naphthalenesulfonic acid	03	218.000	Azoic Coupling Component 35	04	318.000
Anilinoethanesulfonic acid and salt	03	219.000	Azoic Coupling Component 43	04	319.000
p-Anilinophenol	09	66.000	Azoic Diazo Component 4, base	04	256.000
Animal grease, sodium salt	12	52.100	Azoic Diazo Component 5, base	04	257.000
Anionic surface-active agents, all other	12	320.000	Azoic Diazo Component 13, base	04	262.000
p-Anisaldehyde	07	6.000	Azoic Diazo Component 14, base	04	263.000
o-Anisidinomethanesulfonic acid	03	228.000	Azoic Diazo Component 32, base	04	265.000
Anisole, tech.	03	230.000	Azoic Diazo Component 1, salt	04	271.000
Anisoyl chloride	03	230.090	Azoic Diazo Component 3, salt	04	273.000
Anisyl acetate	07	7.000	Azoic Diazo Component 5, salt	04	275.000
Anisyl butyrate	07	7.010	Azoic Diazo Component 6, salt	04	276.000
Anthracene, redefined	01	30.010	Azoic Diazo Component 8, salt	04	277.000
N,N'-(1,5-Anthraquinonylene)dianthranilic acid	03	237.000	Azoic Diazo Component 9, salt	04	278.000
Antifungal agents, all other	06	141.000	Azoic Diazo Component 10, salt	04	279.000
Anti-infective agents, all other	06	276.000	Azoic Diazo Component 11, salt	04	280.000
Antineoplastic agents, all other	06	283.000	Azoic Diazo Component 12, salt	04	281.000
Antiprotozoan agents, arsenic and bismuth compounds, all other	06	162.000	Azoic Diazo Component 13, salt	04	282.000
Antiviral agents, all other	06	189.000	Azoic Diazo Component 14, salt	04	283.000
l-Arabinose	14	455.000	Azoic Diazo Component 20, salt	04	284.000
			Azoic Diazo Component 32, salt	04	285.000

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CHEMICAL NAME	SECT. NO.	ITEM NO.	CHEMICAL NAME	SECT. NO.	ITEM NO.
Azoic Diazo Component 34, salt	04	286.000	Basic Green 4	04	354.000
Azoic Diazo Component 35, salt	04	287.000	Basic green dyes, all other	04	354.100
Azoic Diazo Component 42, salt	04	291.000	(Basic Green 1, PMA)	05	230.101
Azoic Diazo Component 48, salt	04	293.000	Basic Orange 1	04	326.000
Azoic Diazo Component 49, salt	04	294.000	Basic Orange 2	04	327.000
Azoic diazo components, salt, all other	04	296.000	Basic Orange 21	04	372.000
Azoic Orange 3	04	224.000	Basic orange dyes, all other	04	329.000
Azoic Red 1	04	227.000	Basic orange dyes, all other, modified	04	381.000
Azoic Red 2	04	228.000	(Basic Red 1)	05	215.001
Azoic Red 6	04	229.000	Basic Red 12	04	333.000
Azoic red compositions, all other	04	234.000	Basic Red 14	04	383.000
Azoic Violet 1	04	235.000	Basic Red 15	04	384.000
Azoic violet compositions, all other	04	236.000	Basic Red 17	04	386.000
Azoic Yellow 1	04	220.000	Basic Red 18	04	387.000
Aztreonam	06	38.700	Basic Red 22	04	389.000
Bacillus thuringiensis	13	166.010	Basic Red 23	04	389.023
Bacitracin (medicinal grade)	06	39.000	Basic Red 29	04	390.000
Bacitracin (animal feed grade)	06	63.000	Basic Red 46	04	391.046
Bacterial amylase	14	93.000	Basic Red 49	04	392.000
Barium acetate	15	589.000	Basic Red 51	04	392.051
Barium cadmium laurate	15	677.000	Basic Red 54	04	392.054
Barium 2-ethylhexanoate	15	630.000	Basic Red 73	04	392.073
Barium stearate	15	750.000	Basic Red 104	04	392.104
Basic black dyes, all other	04	359.999	Basic red dyes, all other	04	334.000
Basic black dyes, all other, modified	04	420.000	Basic red dyes, all other, modified	04	393.000
(Basic Blue 7)	05	123.007	(Basic Red 81, PMA)	05	210.050
Basic Blue 1	04	343.000	(Basic Violet 1)	05	221.001
Basic Blue 2	04	344.000	(Basic Violet 4)	05	221.004
Basic Blue 3	04	400.000	(Basic Violet 10)	05	221.010
Basic Blue 7	04	347.000	Basic Violet 1	04	335.000
Basic Blue 21	04	401.000	Basic Violet 3	04	337.000
Basic Blue 26	04	350.000	Basic Violet 4	04	338.000
Basic Blue 41	04	404.000	Basic Violet 10	04	339.000
Basic Blue 54	04	407.000	Basic Violet 16	04	396.000
Basic Blue 60	04	408.000	Basic violet dyes, all other	04	342.000
Basic Blue 69	04	409.000	Basic Yellow 2	04	323.000
Basic Blue 77	04	412.000	Basic Yellow 11	04	360.000
Basic Blue 94 and 94:1	04	414.094	Basic Yellow 13	04	361.000
Basic Blue 140	04	414.140	Basic Yellow 15	04	362.000
Basic blue dyes, all other	04	351.000	Basic Yellow 21	04	363.000
Basic blue dyes, all other, modified	04	415.000	Basic Yellow 24	04	364.000
(Basic Blue 14, PMA)	05	227.014	Basic Yellow 25	04	365.000
(Basic Blue 1, PTA)	05	227.001	Basic Yellow 28	04	367.000
Basic Brown 1	04	355.000	Basic Yellow 29	04	368.000
Basic Brown 4	04	357.000	Basic Yellow 37	04	324.000
Basic brown dyes, all other	04	358.000	Basic Yellow 49	04	370.049
Basic Green 1	04	352.000	Basic Yellow 53	04	370.053

Table 4.--Alphabetical Chemical Index

CHEMICAL NAME	SECT. NO.	ITEM NO.	CHEMICAL NAME	SECT. NO.	ITEM NO.
Basic Yellow 58	04	370.058	Benzoic acid, tech.	03	275.000
Basic Yellow 65	04	370.065	Benzoin	03	277.000
Basic Yellow 78	04	370.078	Benzoin isobutyl ether	03	277.100
Basic Yellow 79	04	370.079	Benzonate	06	425.000
Basic Yellow 83	04	370.083	Benzonitrile	03	278.000
Basic Yellow 96	04	370.096	Benzophenone	07	8.000
Basic yellow dyes, all other	04	325.000	Benzothiazole	15	15.000
Basic yellow dyes, all other, modified	04	371.000	2-Benzothiazolethiol, sodium salt	03	278.200
(Basic Yellow 2), fugitive	05	15.000	1H-Benzotriazole	03	281.000
Benzal acetone	07	7.400	Benzotriazole, substituted	15	15.500
Benzaldehyde glyceryl acetal	07	7.500	2-Benzoxazolethiol	03	283.200
Benzaldehyde, tech.	03	247.000	Benzoyl chloride	03	286.000
Benzalkonium heparin	06	624.500	Benzoyl peroxide	15	16.000
Benzamidine hydrochloride	03	248.700	Benzphetamine hydrochloride	06	535.000
7-Benzamido-4-hydroxy-2-naphthalenesulfonic acid	03	256.000	Benzthiazide	06	718.000
Benzanilide	03	259.000	Benztropine mesylate	06	308.000
7H-Benz[de]lanthracen-7-one (Benzanthrone)	03	260.000	Benzyl acetate	07	9.000
Benzenamine, 4,4'-[(2-chlorophenyl)-methylene]bis[N,N-dimethyl]-	03	261.000	Benzyl alcohol	15	17.000
Benzene (Benzol) 90-100%	01	2.000	Benzyl(alkylpyridinium)chloride	12	508.190
Benzene High purity (98-100%)	02	5.500	Benzylamine	03	289.000
Benzene-methan ammonium-N-(3-aminopropyl)-N,N-dimethyl-N-cocoacyl derivatives-chlorides	12	448.400	2-(Benzylamino)ethanol	03	290.000
Benzene-methan ammonium-N,N-dimethyl-N-tetradecyl-chloride	12	448.410	Benzyl (polyoxyethylene, octadecylamine) ammonium chloride with benzyl (polyoxyethylene, tallowamine) ammonium chloride	12	453.230
Benzene Other	02	6.500	Benzyl benzoate	07	11.000
Benzenephosphinic acid	15	9.250	Benzyl butyrate	07	12.000
Benzenephosphonic acid	15	9.252	Benzyl chloroformate	15	71.115
Benzenesulfonic acid	03	264.000	Benzyl-2-chloro-4-(trifluoromethyl)-5-thiazolecarboxylate	13	175.012
Benzenesulfonic acid, 2-formyl-, sodium salt	03	264.200	Benzyl cinnamate	07	13.000
Benzenesulfonic acid, 3,3'-(1-methylethylidene)-bis(6-hydroxydisodium salt), polymer with formaldehyde and 4,4'-sulfonylbis(phenol)	12	142.900	Benzyl cocoalkyl dimethyl ammonium chloride	15	17.200
Benzenesulfonic acid, mixed linear (c9-14)	12	137.700	Benzyl (coconut oil alkyl)bis(2-hydroxyethyl)ammonium chloride	12	449.000
Benzenesulfonyl chloride	03	266.000	Benzyl (coconut oil alkyl)dimethylammonium chloride	12	509.000
Benzene, toluene, xylene, mixtures	02	33.000	Benzyl-di(hydrogenated tallow alkyl)methylammonium chloride	12	509.900
1,2,4-Benzenetricarboxylic acid, 1,2-dianhydride (Trimellitic anhydride)	03	268.100	Benzyl dimethyl (mixed alkyl) ammonium chloride	12	510.000
Benzhydrol (Diphenylmethanol)	03	269.000	Benzyl dimethyloctadecylammonium chloride	12	511.000
Benzil	03	272.200	Benzyl dimethyl oleyl ammonium chloride	12	512.000
Benzimidazole	03	273.100	Benzyl dimethyl (tallow alkyl) ammonium chloride	12	512.800
Benzocaine	06	704.000	Benzyl dimethyl tetradecyl ammonium chloride	12	513.000
1,3-Benzodioxole	03	273.500	Benzyl dodecyl dimethyl ammonium chloride	12	514.000
Benzoic acid	06	134.000	3-(Benzylethylamino)acetanilide	03	292.200
Benzoic acid, 2-[4-(dimethylamino)-benzoyl]-	03	274.850	Benzyl formate	07	15.000
Benzoic acid, methyl ester	03	274.903	(5-Benzyl-3-furyl)methyl-2,2-dimethyl-3-(2-methylpropenyl)cyclopropane carboxylate (Resmethrin)	13	166.016
Benzoic acid salts, all other	15	13.000	Benzylhexadecyldimethylammonium chloride	12	515.000

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CHEMICAL NAME	SECT. NO.	ITEM NO.	CHEMICAL NAME	SECT. NO.	ITEM NO.
Benzyl(hydrogenated tallow alkyl)dimethylammonium chloride	12	516.000	Bis(N-amidopropyl)-N,N-dimethyl-N-ethylammonium ethyl sulfate, dimer acid	12	467.500
2-Benzyl-2'-hydroxy-5,9-dimethyl-6,7-benzomorphanhydrobromide	03	294.950	Bis(p-aminocyclohexyl)methane	03	309.100
1-Benzyl-1-(2-hydroxyethyl)-2-nor(tall oil alkyl)-2-imidazoline	12	453.000	2,6-Bis(p-azidobenzylidene)-4-methylcyclohexanone	03	311.400
Benzyl isobutyrate	07	15.400	1,3-Bis(2-benzothiazolylmercaptomethyl) urea	09	24.000
Benzyl isopentyl ether	07	15.600	4,4'-bis(2-Benzoxazolyl)stilbene	14	474.000
Benzyl isovalerate	07	15.700	Bis(2-[bis(2-hydroxyethyl)amino]ethyl)diisopropyl titanate	15	1063.100
Benzyl laurate	07	15.900	Bis-1,4-bromoacetoxy-2-butene	13	176.000
Benzyl-methyl-bis(hydrogenated tallow)ammonium chloride	12	516.500	2,2-Bis(bromomethyl)-1,3-propanediol	15	1071.000
1-(Benzyl-oxy)-2-methoxy-4-propenylbenzene (Benzyl isoeugenyl ether)	07	16.000	Bis(2-butoxyethyl)ether (Diethylene glycol di-n-butyl ether)	15	1142.000
p-(Benzyl-oxy)phenol	03	297.500	1,1-Bis(carboxymethyl)-2-undecyl-2-imidazolinium chloride, disodium salt	12	20.000
Benzyl phenylacetate	07	17.000	1,1-Bis(carboxymethyl)-2-undecyl-2-imidazolinium hydroxide, disodium salt	12	21.500
1-Benzyl-4-phenylisonipecotonitrile	03	298.200	Bis[p-chlorobenzoyl]peroxide	15	17.900
Benzyl picolinium chloride	12	517.100	Bis(2-chloroethyl)ether (Dichlorodiethyl ether)	15	1300.000
Benzyl(polyoxyethylene cocoamine) ammonium chloride with benzyl (polyoxyethylene, tallowamine) ammonium chloride	12	453.200	Bis(2-Chloroethyl)-2-chloroethylphosphonate	15	1017.000
Benzyl propionate	07	18.000	Bis(coconut oil alkyl)amine	12	431.000
1-Benzylpyridinium chloride	12	518.000	Bis(coconut oil alkyl)dimethylammonium chloride	12	480.000
Benzyl(rosin amine)ammonium chloride, ethoxylated	12	450.500	Bis(coconut oil alkyl) dimethylammonium nitrate	12	483.025
Benzyl salicylate	07	19.000	Bis-cumylphenyl-oxoethylene titanate	12	775.800
Benzyl(tallow alkyl)bis(2-hydroxyethyl)ammonium chloride	12	453.500	Bis(dibutylthiocarbonyl) disulfide	09	144.950
Benzyltriethylammonium chloride	03	298.400	Bis(2,4-dichlorobenzoyl) peroxide	15	18.000
Benzyltriethylammonium chloride	12	518.900	Bis(diethylthiocarbonyl) disulfide	09	146.000
Benzyltrimethylammonium chloride	12	519.000	4,4'-Bis(dimethylamino)benzhydrol (Michler's hydrol)	03	322.000
Benzyltrimethylammonium hydroxide	03	300.000	Bis(beta-dimethylaminoethyl)phenylacetoneitrile	03	324.200
Benzyltrimethylammonium methoxide	03	301.000	Bis(alpha,alpha-dimethylbenzyl)peroxide	15	19.000
Beta carotene (provitamin A)	06	769.000	bis(1,3-Dimethylbutyl)phosphorodithioate oleyl amine salt	14	232.000
Betaine hydrochloride	06	614.000	N,N'-Bis(1,4-dimethylpentyl)-p-phenylenediamine	09	55.551
Betamethasone	06	649.000	Bis(dimethylthiocarbonyl) disulfide	09	147.000
Betamethasone dipropionate	06	649.500	Bis(dimethylthiocarbonyl) sulfide	09	149.000
Betamethasone sodium phosphate	06	650.000	1,5-Bis[2,4-dinitrophenoxy]-4,8-dinitroanthraquinone	03	325.000
Betamethasone valerate	06	651.000	Bis(diphenylsulfonophenyl) sulfide	03	325.250
Beta methyl ionone coevr	07	104.100	S-[1,2-Bis(ethoxycarbonyl)ethyl]0,0-dimethyl phosphorodithioate (Malathion)	13	215.000
Bethanechol chloride	06	314.500	Bis(2-ethoxyethyl)ether (Diethylene glycol diethyl ether)	15	1143.000
Biological stains	14	24.000	Bis(2-ethylhexyl) hydrogen phosphate	15	1018.000
Biotin	06	794.000	Bis(2-ethylhexyl)tecephthlate	11	16.550
Biphenyl	03	307.000	N,N'-Bis(1-ethyl-3-methylpentyl)-p-phenylenediamine	09	56.000
4,4'-Biphenyldisulfonylazide	03	307.050	Bis(N,N1-ethyl(stearic/arachidic/behenic)amide) cyanoethyl ethylammonium ethosulfate	12	470.400
N,N-Bis(2,2-acetamido)glycine	14	3.000	2,2-Bis(ferrocenyl)propane	15	19.200
Bis(alkyl-aryl)alcohols, ethoxylated	12	758.800	Bis-hexamethylenetriamine amine	15	260.000
Bis(N-Amidopropyl, N,N-dimethyl, N-benzyl ammonium chloride)	12	453.950			



Table 4.--Alphabetical Chemical Index

CHEMICAL NAME	SECT. NO.	ITEM NO.	CHEMICAL NAME	SECT. NO.	ITEM NO.
Bis(hydrogenated tallow alkyl)amine	12	432.000	Bis(triphenylsilyl)chromate	15	21.400
Bis(hydrogenated tallow alkyl)dimethylammonium chloride	12	481.000	Bitolylene diisocyanate (TODI)	03	1017.000
Bis(hydrogenated tallow alkyl)dimethylammoniummethyl sulfate	12	482.000	Blend of fatty and phosphate esters	12	111.800
Bis-Hydroxyethyl coco amine oxide, phosphated potassium salt	12	321.095	Blend of hydrocarbons and esters	12	318.610
N,N-Bis(2-hydroxyethyl)(coconut oil alkyl)amine oxide	12	321.110	Bornyl phenylamine	14	271.000
Bis(2-hydroxyethyl, ethoxylated)methyl(9-octadecenyl)ammonium chloride	12	454.000	Boron fluoride - ethyl ether complex	15	1368.000
Bis(2-hydroxyethyl, ethoxylated)methyloctadecylammonium chloride	12	455.000	Boron fluoride - phenol complex	15	22.000
Bis-2-hydroxyethyl-hydrogenated tallow-ethyl sulfate	12	455.500	Brominated (Including bromochlorinated) hydrocarbons, all other	15	1216.000
Bis-(2-hydroxyethyl)isodecylloxypropylamine oxide	12	321.700	N-Bromoacetamide	15	230.000
Bis[2-hydroxyethylmethyl(tallow alkyl)ammonium chloride]	12	455.540	Bromoacetic acid	13	245.017
N,N-bis-(2-Hydroxyethyl)octadecanamide	14	489.000	Bromoacetic acid	15	495.000
N,N-Bis(2-hydroxyethyl)octadecylamine	12	322.000	p-Bromoaniline	03	332.000
Bis-2-hydroxyethyl-octyl-methyl-p-toluene sulfonate	12	455.600	Bromobenzaldehyde	03	333.100
N,N-Bis(2-hydroxyethyl)(tallow alkyl)amine	12	324.000	Bromobenzene, mono	03	335.000
N,N-Bis(2-hydroxyethyl)(tallow alkyl)amine acetate	12	325.000	o-Bromobenzoic acid	03	336.000
Bis(2-hydroxyethyl)tallowammonium ethanoate	12	0.500	3-[3-(4'-Bromo[1,1'-biphenyl]-4-yl)-1,2,3,4-tetrahydro-1-naphthalenyl]-4-hydroxy-2H-1-benzopyran-2-one	13	169.500
Bis(hydroxymethyl)oleyl oxazoline	15	20.500	1-Bromobutane (n-Butyl bromide)	15	1197.000
2,2-bis(Hydroxy-methyl)-propionic acid	15	494.500	5-Bromo-3-sec-butyl-6-methyluracil (Bromacil)	13	42.000
Bis(hydroxypropyl) azelate	11	66.600	Bromobutyric acid	15	496.000
bis(2-Hydroxypropyl)methyl(tallow alkyl)methosulfate	12	455.900	Bromochlorinated paraffin C <sub>10</sub> -C <sub>28</sub>	15	1198.500
4,6-Bis(isopropylamino)-2-methoxy-s-triazine (Prometon)	13	118.010	Bromochloro-5,5'-dimethyl hydantoin	15	21.900
2,4-Bis(isopropylamino)-6-(methylthio)-s-triazine (Prometryn)	13	41.500	Bromochloromethane	15	1199.000
Bis[2-(2-methoxyethoxy)ethyl] ether (Tetraethylene glycol dimethyl ether)	15	1145.000	2-Bromo-2-chloro-1,1,1-trifluoroethane	15	1253.000
Bis(2-methoxyethyl)ether (Diethylene glycol dimethyl ether)	15	1146.000	4-Bromo-3,5-dihydroxybenzamide	03	343.503
Bis(1,1,3,3-methyl-butyl-phenyl)ether	15	20.750	4-Bromo-3,5-dihydroxybenzoic acid	03	343.700
N,N'-Bis(1-methylheptyl)-p-phenylenediamine	09	60.000	2-Bromo-4,6-dinitroaniline	03	344.000
N,N-Bis(4-methylphenyl)sulfonylamine, potassium salt	03	327.500	2-(2-Bromo-4,6-dinitrophenylazo)-5-diethylaminoacetanilide	03	344.803
Bis(morpholinothiocarbonyl) disulfide	09	38.500	Bromoethane (Ethyl bromide)	15	1202.000
Bismuth subsalicylate	06	154.000	1-Bromo-4-ethoxy-2-methylbenzene	03	344.900
Bis[2-(octadecylamido)ethyl]-N-(2-cyanoethyl)-N-ethyl ammonium ethyl sulfate	15	229.500	1-Bromohexadecane	15	1202.990
Bisphenol, hindered	09	88.100	2-Bromo-4'-hydroxyacetophenone	13	40.017
N,N-Bis(phosphonomethyl)glycine	13	212.013	1-Bromo-2-methyl-2-butene	15	1205.000
1,3-Bis(Stearyl)dimethyl ammonium chloride)-2-propanol	12	455.700	1-Bromonaphthalene	03	354.000
Bis(tallow alkyl)amine	12	432.300	β-Bromo-β-nitrostyrene	15	22.400
Bis(tallow alkyl)dimethylammonium chloride	12	482.500	α-Bromo-p-nitrotoluene (p-Nitrobenzyl bromide)	03	356.100
1,2-Bis(tribromophenoxy)ethane	03	330.218	1-Bromo-octadecane	15	1206.000
Bis(tributyltin) oxide	13	195.015	1-Bromopentane (n-Amyl bromide)	15	1207.000
1,1-Bis[3,3,5-trimethyl]dicyclohexane	15	21.300	Bromopheniramine base	03	358.500
			1-Bromopropane (n-Propyl bromide)	15	1209.000
			2-Bromopropane (Isopropyl bromide)	15	1210.000
			3-Bromo-propyl-amine hydrobromide	07	127.460
			2-Bromopyridine	03	359.000
			5-Bromopyrimidine	03	359.500

Table 4.--Alphabetical Chemical Index

CHEMICAL NAME	SECT. NO.	ITEM NO.	CHEMICAL NAME	SECT. NO.	ITEM NO.
Bromotrifluoromethane	15	1254.000	Butyl alcohol, ethoxylated and phosphated	12	76.100
Brompheniramine maleate	06	85.000	n-Butylamine, mono	15	261.000
Butabarbital	06	447.000	sec-Butylamine, mono	15	264.000
Butabarbital, sodium	06	448.000	tert-Butylamine, mono	15	265.000
Butadiene and butylene fractions	02	49.000	tert-Butylaminoethanol	15	327.400
1,3-Butadiene, grade for rubber (Elastomers)	02	48.000	2-(tert-Butylamino)-4-ethylamino-6-(methylthio)-s-triazine	13	118.017
Butadiene styrene copolymer	14	192.000	tert-Butylaminoethyl methacrylate	15	327.455
Butalbital	06	449.000	p-Butylaniline	03	368.000
Butamben	06	700.000	m-n-Butylaniline	03	368.005
n-Butane	02	44.000	p-tert-Butylbenzaldehyde	03	370.000
1,2(and 1,3)-Butanediol	15	1072.000	m-n-butyl benzenesulfonamide	11	0.500
1,4-Butanediol	15	1073.000	Butyl benzoate	15	23.000
1,4-Butanediol diglycidyl ether	15	1317.400	m-tert-Butyl-2-benzothiazolesulfenamide	09	25.000
Butanediol, ethoxylated	12	758.900	Butyl benzyl phthalate	11	17.000
Butanol, ethoxylated	12	726.900	n-Butyl-4,4-bis[t-butylperoxy]valerate	15	1284.200
2-Butanol, ethoxylated and propoxylated	12	726.910	Butyl butyl lactate	07	127.500
Butanol residue stream	15	1429.000	Butyl carbitol, ethoxylated and propoxylated	12	758.920
2-Butanone peroxide	15	1284.000	n-Butyl chlorocrotonate	15	896.400
1-Butene	02	45.000	sec-Butyl chloroformate	15	898.000
2-Butene	02	46.000	tert-Butyl 4(or 5)-chloro-2-methylcyclohexanecarboxylate (Trimedlure)	13	119.000
1-Butene and 2-butene, mixed	02	47.000	3-tert-Butyl-5-chloro-6-methyluracil	13	118.018
2-Butenedioic acid-( $\epsilon$ )-diamine - 1-(2-aminoethyl)-2-(tall oil alkyl)-2-imidazoline condensate	12	342.220	2-tert-Butyl-p-cresol	03	377.000
2-Butene-1,4-diol	15	1074.000	6-tert-Butyl-m-cresol	03	376.000
2,3,4,5- $\delta$ -2-Butenylene-tetrahydrofurfural	13	166.014	2-tert-Butyl cyclohexanol	07	93.710
1-Butoxy-2,3-epoxypropane (Butyl glycidyl ether)	15	1317.460	p-tert-Butylcyclohexanone	07	93.750
2-Butoxyethanol (Ethylene glycol monobutyl ether)	15	1147.000	2-sec-Butylcyclohexanone	07	93.700
2-(2-Butoxyethoxy)ethanol (Diethylene glycol monobutyl ether)	15	1148.000	p-tert-Butylcyclohexyl acetate (Verbeniax)	07	94.000
2-[2-(2-Butoxyethoxy)ethoxy]ethanol (Triethylene glycol monobutyl ether)	15	1149.000	4-tert-Butylcyclohexyl peroxydicarbonate	15	23.500
$\alpha$ -[2-(2-n-Butoxyethoxy)ethoxy]-4,5-methylenedioxy-2-propyltoluene (Piperonyl butoxide)	13	172.000	tert-Butyldiethanolamine	15	327.500
2-(2-Butoxyethoxy)ethyl acetate	15	1098.000	4-tert-Butyl-2',6'-dimethyl-3',5'-dinitroacetophenone (Musk Ketone)	07	20.000
1-Butoxyethoxy-2-propanol	15	1150.000	Butylene glycol adipate	11	58.750
2-Butoxyethyl acetate	15	1099.000	1,3-Butylene glycol diborate	15	1100.150
2-Butoxyethyl benzoate	15	22.990	1,3-Butylene glycol diborate/hexylene glycol boric anhydride	15	1100.155
p-Butoxyphenol	03	364.000	1,3-Butylene glycol, ethoxylated	12	758.940
Butter acids	07	127.480	Butylene oxide	15	1303.000
Butter esters	07	127.485	Butyl ethers of tetra- and higher ethylene glycols (high boiling)	15	1151.500
n-Butyl acetate	15	890.000	n-Butylethylamine	15	267.000
n-Butyl acetylricinoleate	11	106.000	Butyl 2-ethylhexyl phthalate	11	21.000
Butyl acrylate	15	893.000	Butyl ethyl magnesium	15	1374.800
Butyl acrylate ethyl acrylate copolymer resins	08	19.950	1-Butyl-3-ethyl-2-thiourea	15	328.000
n-Butyl alcohol (n-Propylcarbinol)	15	845.000	m-Butyl-m-ethyl- $\alpha,\alpha,\alpha$ -trifluoro-2,6-dinitro-p-toluidine (Benefin)	13	43.000
sec-Butyl alcohol (Methylethylcarbinol)	15	846.000			
tert-Butyl alcohol (Trimethylcarbinol)	15	847.000			

Table 4.—Alphabetical Chemical Index

CHEMICAL NAME	SECT. NO.	ITEM NO.	CHEMICAL NAME	SECT. NO.	ITEM NO.
Butyl formcel	15	1430.000	N-sec-Butyl-N-phenylphenylenediamine	14	155.000
tert-Butyl glycidyl ether	15	1317.470	Butyl phosphate, potassium salt	12	92.500
Butyl hydrogen phosphate	15	1021.000	Butyl phthalyl butyl glycolate	11	41.400
tert-Butyl hydroperoxide	15	1285.000	Butyl and propyl oleate, sulfated, sodium salt	12	257.300
tert-Butylhydroquinone	15	24.850	4-tert-Butylpyrocatechol	15	26.750
4,4'-Butylidenebis(6-tert-butyl-m-cresol)	09	88.200	Butyl ricinoleate	11	107.000
Butyl(isobutylene-isoprene) type	10	9.000	Butyl stearate	15	911.000
Butyl isocyanate	15	329.000	n-Butyl stearate	11	117.000
Butyl and isopropyl phthalimides	15	27.495	p-tert-Butyltoluene	03	388.000
Butyl lactate	15	900.000	Butyl 2-[4-[[5-(trifluoromethyl)-2-pyridinyl]oxy]phenyl]propanoate	13	43.050
n-Butyllithium	15	1372.000	5-tert-Butyl-1,2,3-trimethylbenzene	03	389.000
sec-Butyllithium	15	1373.000	1-tert-Butyl-3,4,5-trimethyl-2,6-dinitrobenzene (Musk tibetene)	07	22.000
Butyl maleate	15	901.000	5-tert-Butyl-2,4,6-trinitro-m-xylene (Musk xylol)	07	23.000
n-Butyl mercaptan (1-Butanethiol)	02	90.910	Butyl undecylenate	07	127.650
sec-Butyl mercaptan (2-Butanethiol)	02	90.915	Butyl vinyl ether	15	1305.000
tert-Butyl mercaptan (2-Methyl-2-propanethiol)	02	91.000	5-tert-Butyl-m-xylene	03	390.000
Butyl mercaptopropionate	15	901.800	6-tert-Butyl-2,4-xyleneol	03	391.000
Butyl methacrylate	15	902.000	2-Butyne-1,4-diol	15	1075.000
Butyl methacrylate-ethyl methacrylate copolymer resins	08	19.960	Butynediol, ethoxylated	12	758.950
2(and 3)-tert-Butyl-4-methoxyphenol (BHA)	15	25.000	Butyraldehyde	15	784.000
p-tert-Butyl- $\alpha$ -methylhydrocinnamalehyde	07	21.900	Butyraldehyde-aniline condensate	09	52.000
2-[(1-Butyl-2-methylindol-3-yl)carbonyl]benzoic acid	03	382.200	n-Butyraldehyde-butylamine condensate	09	156.800
Butyl methyl pyrophosphate isopropoxy titanium salt octyl phosphite adduct	12	92.300	Butyric acid	15	499.000
Butylnaphthalenesulfonic acid, sodium salt	12	162.000	Butyric anhydride	15	500.000
Butyl octyl phthalates	11	23.000	Butyrolactone	15	104.500
Butyl oleate	11	90.000	n-Butyronitrile	15	436.000
Butyl oleate	15	909.000	Butyryl chloride	15	501.000
Butyl oleate, sulfated, sodium salt	12	257.000	Cadinene	07	94.500
n-Butyl palmitate	11	96.200	Cadmium benzoate	15	10.000
tert-Butyl peroxide (Di-tert-butyl peroxide)	15	1286.000	Cadmium 2-ethylhexanoate	15	631.000
tert-Butyl peroxyacetate	15	903.000	Cadmium naphthenate	14	297.000
tert-Butyl peroxybenzoate	15	26.000	Cadmium stearate	15	751.000
tert-Butyl peroxy-2-ethylhexanoate	15	904.000	Caffeine, natural	06	537.000
tert-Butyl peroxyisobutyrate	15	905.000	Caffeine, synthetic	06	538.000
tert-Butyl peroxyisopropylcarbonate	15	907.000	Calcitonin	06	691.500
tert-Butylperoxy maleic acid	15	498.000	Calcium acetate	15	591.000
tert-Butyl peroxyneodecanoate	15	908.000	Calcium t- $\alpha$ -alkylcarboxylate	15	668.000
tert-Butyl peroxy-pivalate	15	910.000	Calcium ascorbate	06	808.000
tert-Butyl peroxy-3,5,5-trimethyl cyclohexane	15	26.500	Calcium citrate	15	622.000
o-sec-Butylphenol	03	383.000	Calcium 2-ethylhexanoate	15	632.000
o-tert-Butylphenol	03	385.000	Calcium gluceptate	06	759.000
p-sec-Butylphenol	03	384.000	Calcium linoleate	15	681.000
p-tert-Butylphenol	03	386.000	Calcium manganese tallate	15	170.000
Butylphenols, mixed	03	387.000	Calcium mercaptoacetate	15	693.000
2-(p-tert-Butylphenoxy)cyclohexyl-2-propynyl sulfite	13	166.017	Calcium naphthenate	14	298.000
Butyl-o-phenylphenol sulfonic acid, sodium salt	12	162.100			

Table 4.—Alphabetical Chemical Index

CHEMICAL NAME	SECT. NO.	ITEM NO.	CHEMICAL NAME	SECT. NO.	ITEM NO.
Calcium neodecanoate	15	703.000	(1-Carboxyheptadecyl)trimethylammonium hydroxide, inner salt	12	1.000
Calcium oleate	15	718.500	5(or 6)carboxy-4-hexyl-2-cyclohexene-1-octanoic acid, potassium/sodium salts	12	52.500
Calcium polycarboxiphil	06	591.600	5(or 6)-Carboxy-4-hexyl-2-cyclohexene-1-octanoic acid, reaction products with castor oil	12	38.500
Calcium propionate	15	737.000	Carboxylic acid - alkanolamine condensates, all other	12	582.000
Calcium ricinoleate	15	740.000	Carboxylic acid amides, all other	12	588.000
Calcium stearate	15	752.000	Carboxylic acid-diamine and polyamine condensate, all other	12	587.000
Calcium tallate	15	171.000	Carboxylic acid-diamine and polyamine condensates, all other	12	374.000
Calcium undecylenate	06	135.000	Carboxylic acid-diamine and polyamine condensates, alkoxylated, all other	12	384.000
Camphene	15	29.000	Carboxylic acid esters, all other	12	721.000
α-Campholenic aldehyde	07	94.600	Carboxylic acids with amide, ester or ether linkage, other	12	51.000
*Canrenoate, potassium	06	736.700	N-Carboxy-N-methylanthranilic anhydride	03	351.400
Canrenoate, potassium	07	111.500	Carboxymethyl-3-coccoamidopropyl dimethyl ammonium chloride, sodium salt	12	3.980
Capreomycin	06	253.500	(Carboxymethyl)[3-(coconut oil amido)propyl]dimethylammonium hydroxide, inner salt	12	4.000
Capric acid (Ratio =2/1)	12	530.000	1-Carboxymethyl-2-heptadecyl-1-(2-hydroxyethyl)-2-imidazolium hydroxide, sodium derivative, sodium salt	12	22.000
Capric acid (Ratio=1/1)	12	546.010	1-Carboxymethyl-1-(2-hydroxyethyl)-2-heptyl-2-imidazolium hydroxide, sodium derivative, sodium salt	12	22.600
Caprolactam (2-Oxohexamethylenimine)	15	29.500	1-Carboxymethyl-1-(2-hydroxyethyl)-2-nonyl-2-imidazolium hydroxide, sodium derivative, sodium salt	12	24.000
Caprolactam magnesium bromide	15	29.505	1-Carboxymethyl-1-(2-hydroxyethyl)-2-undecyl-2-imidazolium hydroxide, sodium derivative, sodium salt	12	25.000
Caprolactone	15	104.600	1-Carboxymethyl-1-(2-hydroxyethyl)-2-undecyl-2-imidazolium hydroxide, sodium derivative, sodium salt	12	21.300
3-[Caprylamidoethylene-(2-hydroxyethyl)amino]propionic acid	12	0.700	(Carboxymethyl)-3-(lauryl amido propyl dimethyl ammonium hydroxide inner salt	12	21.400
Caprylamphopropionate	12	9.800	Carvacrol	07	23.500
Caprylic acid tetraethylene-pentamine condensate	12	358.700	l-Carvone	07	94.700
Caprylic amphopropionate	12	705.300	β-Caryophyllene	07	95.000
Captopril	06	355.400	Caryophyllene oxide	07	95.090
Caramiphen edisylate	06	426.000	Castor oil acids (Ratio = 2/1)	12	531.000
Carbarsone	06	155.000	Castor oil acids-polyalkylene polyamine maleic anhydride condensate	12	583.500
Carbenicillin, disodium	06	12.000	Castor oil acids, sodium salt	12	53.000
Carbenicillin indanyl, sodium	06	12.500	Castor oil, ethoxylated	12	669.000
Carbenicillin, sodium	06	12.300	Castor oil fatty acids, dehydrated	15	502.000
Carbidopa	06	830.500			
1-(Carboethoxy)ethyl-3-(2-chloro-4-(trifluoromethyl)phenoxy)benzoate	03	398.000			
2-Carbomethoxy-1-propen-2-yl dimethyl phosphate	13	216.000			
Carbon black feedstock	02	36.050			
Carbon Black oil	01	21.010			
Carbon disulfide	15	1296.600			
Carbon tetrachloride	15	1217.000			
Carboprost tromethamine	06	679.150			
1-Carboxyethyl-1-(2-ethoxycarboxyethyl)-2-coccoimidazolium, disodium salt	12	21.150			
1-Carboxyethyl-1-(2-hydroxyethyl)-2-heptyl-2-imidazolium hydroxide, sodium derivative, sodium salt	12	21.200			
1-Carboxyethyl-1-(2-hydroxyethyl)-2-nonyl-2-imidazolium hydroxide, sodium derivative, sodium salt	12	21.250			

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Table 4.—Alphabetical Chemical Index

CHEMICAL NAME	SECT: NO.	ITEM NO.	CHEMICAL NAME	SECT: NO.	ITEM NO.
Castor oil, sulfated, sodium salt	12	305.000	Chlorinated paraffins, 65% or more chlorine	15	1220.000
Cationic cellulosic ether	14	406.000	Chloroacetic acid, mono	15	503.000
Cationic surface-active agents, all other	12	529.000	4'-Chloroacetophenone	03	411.000
$\alpha$ -Cedrene epoxide (Andrane)	07	95.500	N-(Chloroacetyl)-N-(2,6-diethylphenyl)glycine, ethyl ester	13	43.025
Cedrenol	07	95.800	1-(3-Chloroallyl)-3,5,7-triazo-1-azoniaadamantane chloride	15	32.000
Cedrol	07	96.000	o-Chloroaniline	03	414.000
Cedryl acetate	07	97.000	m-Chloroaniline	03	413.000
Cedryl formate	07	97.100	p-Chloroaniline	03	415.000
Cefaclor	06	39.300	2-Chloroanthraquinone	03	422.000
Cefamandole	06	39.500	p-Chlorobenzaldehyde	03	425.000
Cefazolin, sodium	06	40.000	Chloro-7H-benz[de]anthracen-7-one (Chlorobenzanthrone)	03	426.000
Cefonicid	06	40.100	Chlorobenzene, mono	03	427.000
Cefoxitin	06	40.200	p-Chlorobenzenesulfonic acid	03	430.000
Ceftazidime	06	255.500	4-Chloro-2-benzothiazolemine	03	435.100
Cellulose acetate	14	384.000	5-Chlorobenzotriazole	14	329.000
Cellulose acetate	08	20.990	4-Chloro-2,6-bis(2,4-dihydroxybenzyl)phenol	09	124.200
Cellulose acetate butyrate	08	21.000	2-Chloro-4,6-bis(ethylamino)-s-triazine (Simazine)	13	44.050
Cellulose acetate hexahydrophthalate	15	29.900	2-Chloro-4,6-bis(isopropylamino)-s-triazine (Propazine)	13	44.100
Cellulose acetate phthalate	15	30.000	1-Chlorobutane (n-Butyl chloride)	15	1221.000
Cellulose acetate propionate	08	21.010	Chlorobutanol	06	257.000
Cellulose ethers and esters, all other	14	413.000	2-Chloro-N,N-didisopropylethylamine hydrochloride	03	447.010
Cellulose, oxidized	06	635.000	2-Chloro-N,N-diallylacetamide (CDAA)	13	199.000
Cellulose plastics, all other	08	21.040	2-Chloro-1,4-dibutoxybenzene	03	440.780
Celtone	15	1430.250	1-Chloro-2,5-dibutoxy-4-nitrobenzene	03	440.803
Cephalexin	06	41.000	2-Chloro-1,4-diethoxybenzene	03	440.900
Cephalexidine	06	42.000	1-Chloro-2,5-diethoxy-4-nitrobenzene	03	441.000
Cephalosporin D	03	407.100	3-Chloro-4-diethylaminobenzenediazonium chloride (p-Diazo-2-chloro-N,N-diethylaniline zinc choride)	14	330.000
Cephalothin, sodium	06	43.000	2-Chloro-2',6'-diethyl-N-(n-butoxymethyl)acetanilide (Butachlor)	13	44.160
Cephapirin	06	43.200	2-Chloro-N,N-diethylethylamine hydrochloride	15	333.000
Cephapirin, sodium	06	43.300	2-Chloro-2',6'-diethyl-N-(methoxymethyl)acetanilide (Alachlor)	13	44.180
Cephradine	06	43.600	1-Chloro-1,1-difluoroethane	15	1255.000
Cerex/nylon polymer	14	385.000	Chlorodifluoromethane (F-22)	15	1256.000
Cetylcocoyl methacrylate	15	911.700	4'-Chloro-2',5'-dimethoxyacetoacetanilide	03	448.000
Cetyl lactate	15	912.000	5-Chloro-2,4-dimethoxyaniline	03	450.000
Cetylpyridinium chloride	06	256.000	2-[p-Chloro- $\alpha$ -(2-dimethylaminoethyl)benzyl]pyridine	03	451.300
Chelating agents, nitriloacids and salts, all other	14	90.000	2-Chloro-10-[3-(dimethylamino)propyl]phenothiazine	03	451.600
Chemical indicators	14	91.000	2-Chloro-N,N-dimethylethylamine (Dimethylamino ethyl chloride) hydrochloride	15	334.000
Chemically defined linear alcohol, alkoxyated, all other	12	734.000	2-Chloro-N,N-dimethylpropylamine hydrochloride	15	336.000
Chemical reagents and fine chemicals	14	92.000	3-Chloro-N,N-dimethylpropylamine hydrochloride	15	337.000
Chloramphenicol	06	44.000	1-Chloro-2,4-dinitrobenzene (Dinitrochlorobenzene)	03	453.000
Chloramphenicol, monosuccinic acid ester	06	44.500			
Chlorhexidine gluconate	06	256.500			
Chlorinated (Not otherwise halogenated) hydrocarbons, all other	15	1252.000			
Chlorinated paraffins, 35-64% chlorine	15	1219.000			
Chlorinated paraffins, less than 35% chlorine	15	1218.000			

Table 4.--Alphabetical Chemical Index

CHEMICAL NAME	SECT. NO.	ITEM NO.	CHEMICAL NAME	SECT. NO.	ITEM NO.
2-Chloro-N-(2,6-dinitro-4-(trifluoromethyl)phenyl)-N-ethyl-6-fluorobenzenemethanamine	13	168.135	1-(4-Chlorophenoxy)-3,3-dimethyl-1-(1,2,4-triazol-1-yl)butan-2-one	13	40.009
3-Chlorodiphenylamine	03	457.000	α-(2-Chlorophenyl)-α-(4-chlorophenyl)-5-pyrimidinemethanol	13	40.020
2-Chloro-N-ethoxymethyl-N-(2-ethyl-6-methylphenyl)acetamide (Acetochlor)	13	44.190	o-Chlorophenylcyclopentyl ketone	03	522.300
2-Chloro-1-(3-ethoxy-4-nitrophenoxy)-4-(trifluoromethyl)benzene (Oxyfluorfen)	13	118.044	4-Chloro-o-phenylenediamine	03	523.000
2-Chloro-4-(ethylamino)-6-(isopropylamino)-s-triazine (Atrazine)	13	45.000	α-(2-Chlorophenyl)-α-(4-fluorophenyl)-5-pyrimidinemethanol	13	40.019
2-[4-Chloro-6-(ethylamino)-s-triazin-2-ylamino]-2-methylpropionitrile (Cyanazine)	13	45.100	β-(4-Chlorophenyl)methyl-α-(1,1-dimethylethyl)-1,2,4-triazole-1-ethanol	13	168.994
p-[(2-Chloroethyl)methylamino]benzaldehyde	03	463.000	2-(2-Chlorophenyl)methyl-4,4-dimethyl-3-isoxazolidinone	13	166.051
2-Chloroethylphenyl sulfone	03	463.500	S-[[p-Chlorophenyl]thio[methyl] 0,0-diethylphosphorodithioate (Carbophenothion)	13	152.000
2-(Chloroethyl)phosphonic acid	13	231.250	4-Chlorophthalic acid	03	528.000
N-(2-Chloroethyl)-α,α,α-trifluoro-2,6-dinitro-N-propyl-p-toluidine (Fluchloralin)	13	118.035	1-Chloropinacolone	15	812.320
Chloroform	15	1224.000	3-Chloro-1,2-propanediol (Glycerol α-chlorohydrin)	15	1076.000
Chlorohydroquinone	14	332.000	Chloro-2-propanone (Chloroacetone)	15	813.000
3-Chloro-2-hydroxypropyltrimethyl ammonium chloride	15	339.500	3-Chloropropene (Allyl chloride)	15	1229.000
2-Chloro-N-isopropylacetanilide (Propachlor)	13	45.200	α-Chloropropyltrichlorosilane	15	1379.000
Chloromethane (Methyl chloride)	15	1226.000	Chloropropyltrimethoxysilane	15	1380.000
2-Chloro-N-[4-methoxy-6-methyl-1,3,5-triazin-2-yl]aminocarbonylbenzenesulfonamide	13	118.054	2-Chloropyridine	03	532.000
Chloromethoxypropylmercuric acetate	13	177.100	4-Chlororesorcinol	03	537.000
5-Chloromethyl-1,3-benzodioxole	03	480.500	Chlorosulfurized sperm oil	14	197.000
Chloromethyl methyl ether	15	1307.000	7-Chloro-1,2,3,4-tetrahydro-2-methyl-3-(2-methylphenyl)-4-oxo-6-quinazolenesulfonamide	03	539.500
4-Chloro-N-methyl-3-nitrobenzenesulfonamide	03	484.000	Chlorothiaxanthone	15	34.600
4-Chloro-2-methylphenoxyacetic acid, iso-octyl ester	13	109.010	Chlorothiazide	06	719.000
2-(4-Chloro-2-methylphenoxy)propionic acid, dimethylamine salt	13	118.048	o-Chlorotoluene	03	543.000
p-(Chloromethyl)phenyl trimethoxysilane	15	33.880	m-Chlorotoluene	03	542.000
2-Chloro-10-[3(4-methyl-1-piperazinyl)propyl]phenothiazine	03	485.600	p-Chlorotoluene	03	544.000
3-Chloro-2-methyl-1-propene (Methallyl chloride)	15	1228.000	α-Chlorotoluene (Benzyl chloride)	03	545.000
2-[(Chloromethyl)thiol]benzothiazole	03	486.500	3-Chloro-p-toluidine [NH <sub>2</sub> =1]	03	547.000
1-Chloro-2-nitrobenzene (Chloro-o-nitrobenzene)	03	495.000	2-Chloro-6-(trichloromethyl)pyridine	13	168.991
1-Chloro-4-nitrobenzene (Chloro-p-nitrobenzene)	03	498.000	Chlorotrifluoroethylene (Trifluorovinyl chloride)	15	1258.000
4-Chloro-3-nitrobenzenesulfonamide	03	500.000	Chlorotrifluoromethane	15	1259.000
4-Chloro-3-nitrobenzenesulfonanilide	03	501.000	2-Chloro-N-[[4-(trifluoromethoxy)phenyl]amino]carbonylbenzamide	13	133.200
2-Chloro-4-nitrobenzoic acid	03	506.000	3-(2-Chloro-4-trifluoromethylphenoxy)toluene	03	556.050
2-Chloro-5-nitrobenzoic acid	03	507.000	4-Chloro-α,α,α-trifluoro-3-nitrotoluene	03	557.000
2-Chloro-4-nitrobenzoic acid, potassium salt	03	508.030	p-Chloro-α,α,α-trifluorotoluene	03	558.000
4-Chloro-3-nitrobenzotrifluoride	03	508.100	6-Chloro-α,α,α-trifluoro-m-toluidine	03	559.000
2-Chloro-4-nitrotoluene	03	512.000	Chlorotrimethylsilane	15	1381.000
5-Chloro-2-pentanone	15	811.000	4-Chloro-3,5-xyleneol	03	565.000
2-Chlorophenothiazine	03	519.000	Chlorphenesin carbamate	06	477.000
			Chlorpheniramine maleate	06	89.000
			Chlorpromazine hydrochloride	06	484.000
			Chlorpropamide	06	687.000

Table 4.—Alphabetical Chemical Index

CHEMICAL NAME	SECT. NO.	ITEM NO.	CHEMICAL NAME	SECT. NO.	ITEM NO.
: Chlortetracycline (animal feed grade) -----	: 06 :	: 64.000 :	: Cobalt linoleate -----	: 15 :	: 682.000 :
: Chlortetracycline (medicinal grade) -----	: 06 :	: 31.000 :	: Cobalt manganese acetate -----	: 15 :	: 593.010 :
: Cholecalciferol (Vitamin D <sub>3</sub> ) -----	: 06 :	: 811.000 :	: Cobalt manganese tallate -----	: 15 :	: 172.010 :
: Choleric and hydrocholeric, all other -----	: 06 :	: 604.000 :	: Cobalt naphthenate -----	: 14 :	: 301.000 :
: Cholesterol esterase -----	: 14 :	: 110.000 :	: Cobalt neodecanoate -----	: 15 :	: 705.000 :
: Cholesterol oxidase -----	: 14 :	: 122.000 :	: Cobalt-potassium 2-ethylhexanoate -----	: 15 :	: 633.010 :
: Choline -----	: 15 :	: 342.000 :	: Cobalt propionate -----	: 15 :	: 737.600 :
: Choline bicarbonate -----	: 06 :	: 605.000 :	: Cobalt stearate -----	: 15 :	: 753.000 :
: Choline bitartrate -----	: 06 :	: 606.000 :	: Cobalt tallate -----	: 15 :	: 172.000 :
: Choline chloride (animal feed grade) -----	: 06 :	: 607.000 :	: N-Cocoalkyl-1,3-propylenediamine acetate -----	: 13 :	: 245.011 :
: Choline chloride (medicinal grade) -----	: 06 :	: 608.000 :	: N-Cocoalkyl trimethylenediamine adipate -----	: 13 :	: 245.020 :
: Choline dihydrogen citrate -----	: 06 :	: 611.000 :	: Cocoamidoamphoglycinate -----	: 12 :	: 9.250 :
: Choline magnesium salicylate -----	: 06 :	: 385.300 :	: Cocoamidopropyl betaine -----	: 12 :	: 9.500 :
: Chromium acetate -----	: 15 :	: 592.000 :	: Cocoamidopropyl betaine -----	: 12 :	: 9.255 :
: Chromium acetylacetonate complex -----	: 15 :	: 1371.100 :	: Cocoamidopropyl dimethyl amine -----	: 12 :	: 328.300 :
: Chromium 2-ethylhexanoate -----	: 15 :	: 632.500 :	: Cocoamidopropyl dimethyl amine oxide -----	: 12 :	: 385.280 :
: Chromium naphthenate -----	: 14 :	: 299.000 :	: 3-[3-(Cocoamidopropyl)dimethylammonio]-2-hydroxypropane	: 12 :	: 9.600 :
: Cimetidine -----	: 06 :	: 619.400 :	: sulfonate -----	: 12 :	: 9.600 :
: Cimetidine hydrochloride -----	: 06 :	: 619.600 :	: N-Cocoamidopropyl-N,N-dimethyl-N-sodium acetate,	: 15 :	: 344.500 :
: Cineole (eucalyptol) -----	: 07 :	: 23.700 :	: ammonium salt -----	: 15 :	: 344.500 :
: Cinnamaldehyde -----	: 07 :	: 24.000 :	: (3-Cocoamidopropyl)(2-hydroxy-3-sulfopropyl)dimethyl,	: 12 :	: 9.720 :
: Cinnamyl acetate -----	: 07 :	: 25.000 :	: hydroxide, inner salt -----	: 12 :	: 9.720 :
: Cinnamyl alcohol -----	: 07 :	: 26.000 :	: (3-Cocoamidopropyl)-(2-hydroxy-3-sulfopropyl)-dimethyl	: 12 :	: 9.650 :
: Cinnamyl butyrate -----	: 07 :	: 27.100 :	: ammonium hydroxide, inner salt -----	: 12 :	: 9.650 :
: Cinnamyl cinnamate -----	: 07 :	: 27.200 :	: 3-Cocoamidopropyl-2-hydroxy-3-sulfopropyldimethyl	: 12 :	: 9.700 :
: Cinnamyl nitrile -----	: 07 :	: 27.500 :	: ammonium hydroxide, inner salt -----	: 12 :	: 9.700 :
: Cinnamyl propionate -----	: 07 :	: 28.000 :	: Cocoaminoamide -----	: 12 :	: 587.900 :
: Citral dimethyl acetal -----	: 07 :	: 127.700 :	: Cocoamphocarboxyglycinate -----	: 12 :	: 9.260 :
: Citric acid -----	: 15 :	: 505.000 :	: Cocoamphocarboxypropionate -----	: 12 :	: 9.265 :
: Citric acid salts, all other -----	: 15 :	: 627.000 :	: Cocoamphopropionate -----	: 12 :	: 9.280 :
: Citric acid, sodium salts (50%) in sodium phosphates	: 12 :	: 53.500 :	: Cocodimethyl ethyl ammonium ethyl sulfate -----	: 12 :	: 482.750 :
: (20%) -----	: 12 :	: 53.500 :	: Coconitrile -----	: 15 :	: 437.000 :
: Citronellic acid -----	: 07 :	: 127.950 :	: Coconut acids, dimethylpropylamine condensate,	: 12 :	: 359.950 :
: Citronellyl acetate -----	: 07 :	: 128.000 :	: carboxylated -----	: 12 :	: 569.000 :
: Citronellyl butyrate -----	: 07 :	: 129.000 :	: Coconut oil acids -----	: 12 :	: 564.000 :
: Citronellyl ethyl ether -----	: 07 :	: 131.700 :	: Coconut oil acids (Ratio = 1/1) -----	: 12 :	: 532.000 :
: Citronellyl formate -----	: 07 :	: 130.000 :	: Coconut oil acids (Ratio = 2/1) -----	: 12 :	: 546.000 :
: Citronellyl isobutyrate -----	: 07 :	: 131.000 :	: Coconut oil acids (Ratio = 1/1) -----	: 12 :	: 556.000 :
: Citronellyl propionate -----	: 07 :	: 131.500 :	: Coconut oil acids (Ratio = 2/1) -----	: 12 :	: 554.000 :
: Clindamycin -----	: 06 :	: 45.000 :	: Coconut oil acids -----	: 12 :	: 29.100 :
: Clorazepate dipotassium -----	: 06 :	: 498.000 :	: Coconut oil acids, diethanolamine salt -----	: 12 :	: 586.480 :
: Cloxacillin, benzathine -----	: 06 :	: 20.001 :	: Coconut oil acids-dimethylaminopropylamine condensate	: 12 :	: 360.000 :
: Cloxacillin, sodium -----	: 06 :	: 13.000 :	: (amine/acid ratio = 1/1) -----	: 12 :	: 576.000 :
: Cobalt acetate -----	: 15 :	: 593.000 :	: Coconut oil acids-N,N-dimethyltrimethylenediamine	: 12 :	: 29.200 :
: Cobalt acetylacetonate complex -----	: 15 :	: 1371.500 :	: condensate -----	: 12 :	: 360.000 :
: Cobalt t- $\alpha$ -alkylcarboxylate -----	: 15 :	: 669.000 :	: Coconut oil acids-ethanolamine condensate, ethoxylated -	: 12 :	: 576.000 :
: Cobalt 2-ethylhexanoate -----	: 15 :	: 633.000 :	: Coconut oil acids, ethanolamine salt -----	: 12 :	: 29.200 :

Table 4.--Alphabetical Chemical Index

CHEMICAL NAME	SECT: NO.	ITEM NO.	CHEMICAL NAME	SECT: NO.	ITEM NO.
Coconut oil acids-ethanolamine salt, sulfated, potassium salt	12	248.000	Cortisone acetate	06	653.000
Coconut oil acids, potassium salt	12	54.000	Coumarin	07	29.000
Coconut oil acids, sodium salt	12	55.000	Coumarone-indene plasticizers	11	1.100
Coconut oil acids, 2-sulfoethyl ester, sodium salt	12	198.000	Coumarone-indene resins	08	22.000
Coconut oil acids, triethanolamine salt	12	29.000	Creosote oil (Dead oil): creosote content in solution (100 Percent basis)	01	21.000
N-(Coconut oil acyl)-N-methyltaurine, sodium salt	12	183.000	Creosote oil (Dead oil): creosote in coal tar solution (100 Percent solution basis)	01	20.000
N-(Coconut oil acyl)sarcosine	12	39.990	Creosote oil (Dead oil): distillate as such (100 Percent creosote basis)	01	19.000
N-(Coconut oil acyl)sarcosine, sodium salt	12	40.000	Creosote tar acid oil	01	21.020
Coconut oil alcohol, ethoxylated	12	735.000	m-Cresol	03	569.000
N-(Coconut oil alkyl)- $\beta$ -alanine, partial sodium salt	12	10.100	p-Cresol	03	572.000
N-(Coconut oil alkyl)- $\beta$ -alanine, sodium salt	12	10.000	(o,m,p)-Cresol, from coal tar	03	575.000
3-[(Coconut oil alkyl)amidoethylene-(2-hydroxyethyl)aminopropionic acid	12	10.130	o-Cresol, from petroleum	03	571.000
(Coconut oil alkyl)amine	12	418.000	(m,p)-Cresol, from petroleum	03	574.000
(Coconut oil alkyl)amine, ethoxylated	12	326.000	Cresolsulfonic acid, formaldehyde condensate	15	34.830
(Coconut oil alkyl)amine, ethoxylated, acetate	12	327.000	m-Cresyl acetate	06	258.500
N-[(Coconut oil alkyl)amino]butyric acid	12	10.150	m-Cresylglycidyl ether	03	580.500
N-[(Coconut oil alkyl)amino]butyric acid, sodium salt	12	483.000	Cresylic acid (Less than 75 percent distilling over 215° C)	02	12.000
(Coconut oil alkyl)bis(2-hydroxyethyl, ethoxylated)-methylammonium chloride	12	456.000	Cresylic acid, refined from petroleum	03	580.000
N-[(Coconut oil alkyl)sulfosuccinamic and disodium salt	12	176.950	Crotonaldehyde	15	786.000
N-(Coconut oil alkyl)trimethylenediamine	12	407.000	Crotonic acid (2-Butenoic acid)	15	506.000
Coconut oil amide	15	232.000	Crotononitrile	15	438.000
Coconut oil, ethoxylated	12	669.200	Crude acetate mixture (Linalyl, neryl, geranyl acetates, main components)	07	162.100
Coconut oil fatty acid polyoxyethylene	12	456.100	Crude caryophyllene mixture ( $\alpha$ , $\beta$ , and $\gamma$ isomers)	07	162.130
Coconut oil, sulfated, sodium salt	12	306.000	Crude coal tar solvent	01	22.030
Coconut oil and tallow acids (Ratio = 2/1)	12	533.000	Crude light oil	01	1.000
Cocoyl amidopropyl dimethylamine oxide	12	327.600	Crude tar acid oils having a tar acid content of: 5 percent to less than 24 percent	01	15.000
Codeine	06	429.000	Cumene (Isopropyl benzene)	03	581.000
Cod oil, sulfated, sodium salt	12	298.000	Cumene hydroperoxide	15	35.000
Coolestipol hydrochloride	06	614.500	Cumenesulfonic acid, ammonium salt	12	144.000
Complex linear polyesters and polymeric plasticizers, all other	11	132.000	Cumenesulfonic acid, sodium salt	12	144.100
Copolyurethane urea	14	386.000	Cumyl acetate	07	29.200
Copper acetate	15	594.000	Cumyl alcohol	07	29.300
Copper t- $\alpha$ -alkylcarboxylate	15	669.050	Cumyl formate	07	29.400
Copper 2-ethylhexanoate	15	634.000	$\alpha$ -Cumyl peroxyneodecanoate	15	35.400
Copper gluconate	06	762.000	2-[p-(Cyanoacetamido)phenyl]-6-methyl-7-benzothiazolesulfonic acid	03	582.000
Copper naphthenate	14	302.000	Cyanoacetic acid	15	347.000
Copper oleate	15	718.000	4-(Cyanoacetyl)morpholine	03	582.200
Copper, [2,2',2'',2''']-[29H,31H-phthalocyaninepenty]pentakis(methylene)pentakis[1H-isoindole-1,3(2H)-dionato]]	03	568.603	Cyanocobalamin (animal feed grade)	06	795.000
Corn oil acids, potassium salt	12	56.000	Cyanocobalamin (U.S.P. crystalline)	06	797.000
Corticosteroids, all other	06	670.000	Cyanoethyl cellulose	03	582.500
Corticotropin	06	692.000			



Table 4.--Alphabetical Chemical Index .

CHEMICAL NAME	SECT. NO.	ITEM NO.	CHEMICAL NAME	SECT. NO.	ITEM NO.
1-(2-Cyanoethyl)ethyl urea	15	349.000	N-(Cyclohexylthio)phthalimide	09	124.250
Cyano(4-fluoro-3-phenoxyphenyl)methyl-3-(2,2-dichloroethenyl)-2,2-dimethylcyclopropanecarboxylate	13	166.050	Cyclol chloroacetate	15	41.800
N-Cyano-s-methyl-N-2(4-methyl-5-imidazolyl)-methylthioethylisothiouraea	03	584.213	cyclooctadiene	03	597.800
Cyano-3-phenoxybenzyl-cis, trans-3-(2,2-dichlorovinyl)-2,2-dimethylcyclopropane carboxylate	13	166.049	Cyclopentane	02	11.000
Cyanuric acid	15	36.000	Cyclopentane	03	600.000
Cyclacillin	06	13.500	Cyclopropane	15	42.000
Cyclic chemicals, all other	15	218.000	$\alpha$ -Cyclopropyl- $\alpha$ -(p-methoxyphenyl)-5-pyrimidine methanol (Ancymidol)	13	168.140
Cyclic elastomers, all other	10	6.000	Cyclosols	02	4.010
Cyclic fungicides, all other	13	40.000	p-Cymene	03	602.000
Cyclic herbicides, all other	13	118.000	Cypermethrin	13	166.029
Cyclic insecticides, all other	13	166.000	Cyproheptadine hydrochloride	06	91.000
Cyclic intermediates, all other	03	1554.000	Cytarabine	06	278.300
Cyclic plasticizers, all other	11	58.000	Danazol	06	692.500
Cyclized polyisoprene (Cyclorubber)	10	0.500	Decabromodiphenyl ether (DBDP)	15	43.005
Cyclizine hydrochloride	06	79.000	Decahydronaphthalene (Decalin)	15	44.000
Cyclobenzaprine hydrochloride	06	477.500	trans-Decahydro- $\beta$ -naphthol	07	29.700
Cyclohexadecen-7-olide	07	97.120	trans-Decahydro- $\beta$ -naphthyl acetate	07	29.710
2,5-Cyclohexadiene-1,4-dione, dioxime	03	585.700	Decanal (Capraldehyde)	07	132.000
Cyclohexane	03	586.000	n-Decane	15	1337.000
1,2-Cyclohexanedicarboxylic acid anhydride	03	588.000	1-Decanol	15	850.500
1,3-Cyclohexanedione	03	588.212	Decanoyl chloride	15	507.000
Cyclohexanesulfamic acid, calcium salt (Calcium cyclamate)	07	83.000	Decanoyl peroxide	15	1291.000
Cyclohexanesulfamic acid, sodium salt (Sodium cyclamate)	07	84.000	9-Decenyl acetate	07	132.450
Cyclohexanol	03	589.000	Decyl acetate	07	132.500
Cyclohexanone	03	590.000	Decyl alcohol, ethoxylated	12	727.000
Cyclohexanone oxime	03	591.000	Decyl alcohol, ethoxylated and phosphated	12	76.200
Cyclohexene	03	592.000	Decyl alcohol, ethoxylated and propoxylated	12	727.010
3-Cyclohexene-1-carboxaldehyde	03	592.100	Decyl alcohol, potassium salt	12	76.210
4-Cyclohexene-1,2-dicarboxylic anhydride	03	594.000	Decyl alcohol, propoxylated and sulfated, sodium salt	12	270.001
Cyclohexene oxide	03	594.100	n-Decyl mercaptan	09	170.800
$\beta$ -(1-Cyclohexenyl)ethylamine	03	594.296	Decyl and octyl alcohols, ethoxylated	12	736.000
Cycloheximide	06	65.000	Decyl and octyl phosphate	12	92.000
Cyclohexyl acetate	07	97.130	Decyl oleate	11	90.300
Cyclohexylamine	03	595.000	Decyloxypropyl(ethyleneoxy)ethyl chloride	12	728.000
N-Cyclohexyl-2-benzothiazolesulfenamide	09	26.000	Decyl sulfate, sodium salt	12	218.000
Cyclohexyl butyrate	07	97.140	Dehydroacetic acid or sodium salt	15	45.000
2-Cyclohexylcyclohexanone	07	97.200	Developmental alcohol, ethoxylated	12	736.500
3-Cyclohexyl-6-(dimethylamino)-1-methyl-1,3,5-triazine-2,4-(1H,3H)-dione	13	118.019	Dexamethasone	06	654.000
1,4-Cyclohexylenedimethanol	15	41.000	Dexamethasone acetate	06	654.500
Cyclohexyl ethyl acetate	07	97.215	Dexamethasone sodium phosphate	06	655.000
Cyclohexyl methanol dimethyl acetate	07	97.250	Dexbrompheniramine maleate	06	92.000
N-Cyclohexyl-N'-phenyl-p-phenylenediamine	09	58.000	Dexpanthenol	06	789.000
			Dextran	06	637.000
			Dextroamphetamine	06	514.000
			Dextroamphetamine sulfate	06	517.000
			Dextromethorphan hydrobromide	06	430.000

Table 4.--Alphabetical Chemical Index

CHEMICAL NAME	SECT. NO.	ITEM NO.	CHEMICAL NAME	SECT. NO.	ITEM NO.
Dextrothyroxine, sodium	06	614.700	2-4-Dibromo-6-nitro-m-cresyl methyl ether	07	29.750
Diacenaphtho[1,2-j:1',2'-1]fluoranthene (Decacyclene)	03	604.100	2,6-Dibromophenol	03	661.800
3-Diacetoxyethylaminobenzanilide	03	605.600	2,3-Dibromopropanol	15	1296.700
Dialkylbenzene	03	608.200	3,5-Dibromo-3'-trifluoromethylsalicylanilide (Fluorophene)	03	663.100
Dialkyl dimerate	15	968.970	Dibucaine	06	702.000
Dialkyldithiocarbamic acid derivative	09	127.950	Dibucaine hydrochloride	06	703.000
Di(C5-C6 alkyl)naphthalenesulfonic acid	12	162.500	p-Dibutoxybenzene (DEB)	03	665.100
Diallyl isophthalate	08	4.030	Di(2-(2-butoxyethoxy)ethyl) adipate	11	59.000
Diallyl maleate	15	913.000	Dibutoxyethyl adipate	11	59.200
Di-amine derivatives of dimer acids	15	258.500	Di(2-butoxyethyl) phthalate	11	24.000
Diamines and polyamines, all other	12	417.000	Dibutoxyethyl sebacate	11	111.900
1,5-Diaminoanthraquinone	03	611.000	2,5-Dibutoxy-4-morpholinobenzenediazonium sulfate salt (DEB Sulfate)	03	666.100
2,4-Diaminobenzenesulfonic acid [SO <sub>3</sub> H=1]	03	616.000	2,5-Dibutoxy-4-morpholinonitrobenzene	03	666.200
1,3-Diaminocyclohexane	03	618.100	Di-n-butylamine	15	262.000
1,5-Diamino-4,8-dihydroxyanthraquinone	03	626.000	2-Dibutylaminoethanol	15	350.000
2,6-Diaminopyridine	03	634.000	Dibutylaminomethanol	15	350.500
3,4-Diaminopyridine	03	634.050	Dibutyl butylphosphonate	15	1022.000
4,4'-Diamino-2,2'-stilbenedisulfonic acid	03	635.000	2,6-Di-tert-butyl-p-cresol, (BHT), Food grade	15	51.000
2,5-Dianilinoterephthalic acid	03	640.000	2,6-Di-tert-butyl-p-cresol, (BHT), Technical grade	15	52.000
Diarylenediamines, mixed	09	59.000	2,5-Di-sec-butyldecylhydroquinone	09	88.400
Diarylide yellows, other	05	12.000	Di-t-butyl diperoxyphthalate	15	53.200
Diatrizoate, meglumine	06	563.000	Di-tert-butyl disulfide	02	92.000
Diatrizoate, sodium	06	564.000	Dibutyldithiocarbamic acid, nickel salt	09	128.100
1,4-Diazobicyclo(2.2.2)octane	15	47.000	Dibutyldithiocarbamic acid, sodium salt	09	128.000
4-Diazo-2,5-diethoxymorpholinobenzene	14	336.000	Dibutyldithiocarbamic acid, zinc salt	09	130.000
4-Diazo-2,5-dimethoxyphenolmorpholine	03	642.894	Di-tert-butylethyldiamine	15	267.800
Diazodinitrophenol	15	48.000	Dibutyl fumarate	15	915.000
2-Diazo-1-naphthol-5-sulfonic acid, sodium salt	03	642.922	Dibutyl hydrogen phosphite	15	1023.000
N-(4-Diazo phenyl) aniline 1/2 sulfate	03	643.500	2,5-Di-tert-butylhydroquinone	15	53.000
Diazoxide	06	355.500	Dibutyl maleate	15	916.000
2,5-Di(benzoyl peroxy)-2,5-dimethylhexane	15	49.000	Dibutyl naphthalenesulfonic acid	12	163.000
Dibenzylamine	09	40.000	2,6-Di-tert-butyl-4-nonylphenol	03	666.500
Dibenzylazodicarboxylate	03	652.500	Di(sec-butyl)peroxydicarbonate	15	917.000
Dibenzylidithiocarbamic acid, sodium salt	09	9.000	2,4-Di-tert-butylphenol	03	667.000
Dibenzylidithiocarbamic acid, zinc salt	09	10.000	2,6-Di-sec-butylphenol	03	860.040
1,3-Dibenzylglycerol	03	654.300	2,6-Di-tert-butylphenol	03	860.050
N,N-Dibenzylhydroxylamine	14	476.000	2,6-Di-tert-4-sec-butylphenol	03	846.900
m-Dibromobenzene	03	658.000	N,N'-Di-sec-butyl-p-phenylenediamine	14	180.000
p-Dibromobenzene	03	659.000	Dibutyl phthalate (including diisobutyl phthalate)	11	25.000
1,2-Dibromo-2,2-dichloroethyl dimethyl phosphate (Naled)	13	217.000	Dibutyl pyrophosphate	15	1023.500
1,2-Dibromo-2,4-dicyanobutane	13	195.012	Dibutyl sebacate	11	112.000
(1,2-Dibromoethyl)benzene	03	659.300	1,3-Dibutyl-3-thiourea	15	351.000
Dibromohexadecane	15	1212.995	Dibutyltin bis(butylmaleate)	15	1401.100
3,5-Dibromo-4-hydroxybenzonitrile (Bromoxynil)	13	118.031	Dibutyltin bis(isooctylmercaptoacetate)	15	1401.200
Dibromomethane (methylene bromide)	15	1213.000	Dibutyltin bis(mercaptolaurate)	15	1402.000
2,6-Dibromo-4-nitroaniline	03	660.100			

Table 4.—Alphabetical Chemical Index

CHEMICAL NAME	SECT. NO.	ITEM NO.	CHEMICAL NAME	SECT. NO.	ITEM NO.
Dibutyltin di-2-ethylhexanoate	15	635.000	2,4-Dichlorophenoxyacetic acid, esters and salts, all other	13	99.000
Dibutyltin dilaurate	15	677.500	2,4-Dichlorophenoxyacetic acid, ethanolamine and isopropanolamine salts	13	92.000
Dibutyltin oxide	15	1404.000	2,4-Dichlorophenoxyacetic acid, iso-octyl ester	13	95.000
Di-n-butylxantho disulfide	09	152.000	2,4-Dichlorophenoxyacetic acid, isopropyl ester	13	96.000
N-(1,2-Dicarboxyethyl)-N-octadecylsulfosuccinamic acid, tetrasodium salt	12	177.000	2-(2,4-Dichlorophenoxy)propionic acid, isooctyl ester	13	118.060
Dicatechol borate, di-o-tolylguanidine salt	09	17.000	3-(3,4-Dichlorophenyl)-1,1-dimethylurea (Diuron)	13	53.000
2,2-dichloroacetyl chloride	15	507.500	O-(2,4-Dichlorophenyl) O-ethyl S-propyl phosphorodithioate	13	165.013
S-(2,3-Dichloroallyl) diisopropylthiocarbamate (Diallate)	13	200.000	3-(3,4-Dichlorophenyl)-1-methoxy-1-methylurea (Linuron)	13	54.000
3,4-Dichloroaniline	03	670.000	1,2-Dichloropropane (Propylene dichloride)	15	1235.000
3,6-Dichloro-2-anisic acid (Dicamba)	13	50.000	1,3-Dichloropropene	13	238.000
o-Dichlorobenzene	03	677.000	2,3-Dichloropropene	15	1236.000
m-Dichlorobenzene	03	676.000	3',4'-Dichloropropionanilide (Propanil)	13	56.000
p-Dichlorobenzene	03	679.000	2,2-Dichloropropionic acid, sodium salt (Dalapon)	13	201.000
3,3'-Dichlorobenzidine base and salts	03	682.000	2,5-Dichlorosulfanilic acid [SO <sub>3</sub> H=1]	03	706.000
2,6-Dichlorobenzonitrile	13	51.100	Dichlorotetrafluoroethane	15	1263.000
2,4-Dichlorobenzotrifluoride	03	683.200	p,α-Dichlorotoluene	03	708.000
3,4-Dichlorobenzotrifluoride	03	683.150	Dichloro-s-triazine-2,4,6(1H,3H,5H)trione (Dichloroisocyanuric acids and salts)	15	55.000
3,5-Dichlorobenzoyl chloride	03	684.050	4,4'-Dichloro-3-(trifluoromethyl)carbanilide	15	56.000
Dichlorobenzyl chloride	03	684.100	Dichlorophenamide	06	738.000
2,4-Dichlorobenzylidimethyl(mixed alkyl)ammonium chloride	12	519.900	Dicloxacillin, sodium	06	14.000
(3,4-Dichlorobenzyl)dodecyldimethylammonium chloride	12	520.000	Dicresylphosphorodithioic acid	14	130.000
2,4-Dichloro-6-(o-chloroanilino)-s-triazine	13	3.000	Dicresylphosphorodithioic acid, ammonium salt	14	131.000
2,2-Dichloro-1,1-difluoroethyl methyl ether	15	1308.000	Dicresylphosphorodithioic acid, sodium salt	14	132.000
Dichlorodifluoromethane (F-12)	15	1262.000	Dicyandiamide resins	08	4.050
1,4-Dichloro-2,5-dimethoxybenzene (Chloroneb)	13	4.000	Dicyanodiamide formaldehyde ammonium chloride/polymer	14	477.000
1,3-Dichloro-5,5-dimethylhydantoin	15	54.000	1,1-Dicyclohexane	15	56.950
Dichlorodimethylsilane	15	1382.000	Dicyclohexylamine	03	712.000
Dichlorodiphenylsilane	03	590.000	Dicyclohexylamine, nitrate salt	03	712.100
4,4'-Dichlorodiphenyl sulfone	03	690.100	Dicyclohexylammonium nitrite	15	57.000
3,3'-Dichloro-4,4'-(2-hydroxy-3-anilido-1-naphthazo) biphenyl	03	691.250	Dicyclohexyl phthalate	11	27.000
2,6-Dichloro-3-methylaniline	03	694.050	Dicyclopentadiene (includes Cyclopentadiene)	03	714.000
2,5-Dichloro-4-(3-methyl-5-oxo-2-pyrazolin-1-yl) benzenesulfonic acid	03	695.000	Dicyclopentadienylchromium	15	57.800
Dichloromethylphenylsilane	03	696.000	Dicyclopentadienyliron	15	57.850
Dichloromethylsilane	15	1383.000	Didecyltrimethylammonium chloride	12	483.500
Dichloromethylvinylsilane	15	1384.000	2,5-Di-(1,1-dimethylpropyl)hydroquinone	09	89.000
2,6-Dichloro-4-nitroaniline	03	697.000	Didodecylbenzenesulfonic acid	12	136.000
1,2-Dichloro-4-nitrobenzene	03	698.000	Dienestrol	06	672.000
2,4-Dichloro-5-nitrotrifluoromethylbenzene	03	699.900	Diesel fuel additives, acyclic, all other	14	151.000
2,4-Dichlorophenol	03	700.000	Diesel fuel additives, cyclic, all other	14	152.000
2,4-Dichlorophenoxyacetic acid (2,4-D)	13	86.000	Diethanolamine	15	380.000
2,4-Dichlorophenoxyacetic acid, butoxyethanol ester	13	86.500	Diethanolamine citrate	15	622.300
2,4-Dichlorophenoxyacetic acid, sec-butyl ester	13	90.000	Diethanolamine condensate, all other	12	555.000
2,4-Dichlorophenoxyacetic acid, dimethylamine salt	13	91.000			

Table 4.—Alphabetical Chemical Index

CHEMICAL NAME	SECT. NO.	ITEM NO.	CHEMICAL NAME	SECT. NO.	ITEM NO.
Diethanolamine condensates (Amine/acid = 2/1), all other	12	545.000	Diethylene glycol dimethacrylate	15	1103.000
$\alpha,\alpha$ -Diethoxyacetophenone	03	716.200	Diethylene glycol distearate	12	604.000
p-Diethoxybenzene	03	718.000	Diethylene glycol divinyl ether	15	1153.350
2,5-Diethoxy-4-morpholinobenzenediazonium chloride	14	338.000	Diethylene glycol esters, all other	12	615.000
2,5-Diethoxy-4-morpholinobenzenediazonium sulfate	14	339.000	Diethylene glycol monoester of tall oil acids	12	605.800
Diethoxyphosphorylethyltriethoxysilane	15	1385.000	Diethylene glycol monolaurate	12	607.000
Diethyl acetal	07	132.700	Diethylene glycol monostearate	12	610.000
Diethylaluminum chloride	15	1356.000	Diethylene glycol phthalate	11	27.500
Diethyl aluminum ethoxide	15	1356.200	Diethylene glycol sesquieater of tall oil acids	12	611.000
Diethylaluminum iodide	15	1357.000	Diethylene glycol sesquilaurate	12	612.000
Diethylamine	15	277.000	Diethylene glycol sesquisteate	12	614.000
p-(Diethylamino)benzaldehyde	03	721.000	Diethylene glycol succinate	11	125.500
p-Diethylaminobenzenediazonium chloride (p-Diazo-N,N-diethylaniline zinc chloride)	14	340.000	Diethylene glycol terephthalate	12	614.200
Diethylaminoethanethiol HCl	15	267.950	Diethylenetriamine	15	269.800
2-Diethylaminoethanol (N,N-Diethylethanolamine)	15	355.000	Diethylenetriamine, ethoxylated and propoxylated	12	327.700
2-(2-Diethylaminoethoxy)ethanol	15	356.000	Diethylenetriamine, propoxylated	12	327.710
2-Diethylaminoethyl acrylate	15	357.000	Diethylenetriamine, triethylphosphate, urea polymer, stearate	14	478.000
Diethylaminoethylacrylate, dimethyl sulfate, quaternary salt	15	357.100	(Diethylenetrinitrilo)pentaaetic acid	14	33.000
2-Diethylaminoethyl methacrylate	15	358.000	(Diethylenetrinitrilo)pentaaetic acid, monosodium hydrogen ferric salt	14	34.000
2[4-Diethylamino-2-hydroxybenzylbenzoic acid]	03	722.503	(Diethylenetrinitrilo)pentaaetic acid, pentasodium salt	14	35.000
m-(Diethylamino)phenol (N,N-Diethyl-3-aminophenol)	03	724.000	(Diethylenetrinitrilo)pentaaetic acid, sodium salt	14	36.000
N,N-Diethylaniline	03	727.000	N,N-Diethyl-3-ethoxyaniline	03	730.050
2,6-Diethylaniline	03	727.200	O,O-Diethyl S-[2-(ethylthio)ethyl] phosphorodithioate (Disulfoton)	13	218.000
Diethylbenzene	03	729.000	O,O-Diethyl O-[2-(ethylthio)ethyl] phosphorothioate (Demeton O)	13	219.000
Diethylcarbazine citrate	06	118.000	O,O-Diethyl S-[2-(ethylthio)methyl] phosphorodithioate (Phorate)	13	221.000
Diethylcarbonyl chloride	15	359.000	Di(2-ethylhexyl) adipate	11	60.000
Diethyl carbonate (Ethyl carbonate)	15	922.000	Di(2-ethylhexyl) azelate	11	67.000
N,N-Diethylcyclohexylamine	03	730.000	Di(2-ethylhexyl)chloredate	15	57.500
O,O-Diethyl O-(2-diethylamino-6-methyl-4-pyrimidinyl) phosphorothioate	13	166.034	Di(2-ethyl-1-hexyl) maleate	15	928.000
N,N'-Diethyl-N,N'-diphenylurea	15	57.400	Di(2-ethyl-1-hexyl) peroxydicarbonate	15	929.000
Diethyl dipropylmalonate	15	922.500	Di-2-ethylhexylphosphorodithioic acid	14	233.000
Diethyldithiocarbamic acid, cadmium salt and bis(diethylthiocarbonyl)disulfide, mixture	09	132.000	Di(2-ethylhexyl) phthalate	11	34.000
Diethyldithiocarbamic acid, selenium salt	09	134.000	Di(2-ethylhexyl) sebacate	11	113.000
Diethyldithiocarbamic acid, sodium salt	09	135.000	Diethyl hydrogen phosphite	15	1026.000
Diethyldithiocarbamic acid, tellurium salt	09	136.000	Diethylhydroxylamine	15	360.000
Diethyldithiocarbamic acid, zinc salt	09	137.000	Diethyl isobutylidene malonate	07	132.850
N,N-Diethyldodecanamide	15	235.000	Diethyl isophthalate	11	27.900
Diethylene glycol	15	1153.000	O,O-Diethyl O-(2-isopropyl-4-methyl-6-pyrimidinyl) phosphorothioate (Diazinon)	13	155.000
Diethylene glycol adipate	15	1100.800	Diethyl maleate	15	930.000
Diethylene glycol, borated	15	1101.000	N,N-Diethyl-N-methyl-2[(1-oxo-2-propenyloxy)ethaniminium sulfate	15	457.090
Diethylene glycol chloroformate	15	1102.000			
Diethylene glycol dibenzoate	11	1.300			

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Table 4.--Alphabetical Chemical Index

CHEMICAL NAME	SECT. NO.	ITEM NO.	CHEMICAL NAME	SECT. NO.	ITEM NO.
0,0-Diethyl 0-[4-(methylsulfinyl)phenyl]phosphorothioate	13	165.011	Dihydronordicyclopentadienyl acetate (Cyclacet)	07	97.400
0,0-Diethyl 0-(p-nitrophenyl)phosphorothioate (Parathion)	13	156.000	Dihydronordicyclopentadienyl propionate (Cyclaprop)	07	97.420
Diethyl oxalate (Ethyl oxalate)	15	934.000	(Verdyl propionate extra)	07	97.420
Diethyl phosphorochloridothionate	15	1027.000	Dihydro pentamethyl indanone	07	134.200
Diethyl phthalate	11	28.000	Dihydrophenylglycine dane salt	03	761.400
Diethylpropion hydrochloride	06	544.000	Dihydrophenylglycine sodium methyl dane salt	03	761.450
Diethyl sebacate	07	133.000	1,2-Dihydro-3,6-pyridazinedione (Maleic hydrazide)	13	168.300
Diethyl succinate	07	134.000	(MH)	06	6.000
Diethyl sulfide (Ethyl sulfide)	02	92.810	Dihydrostreptomycin	07	97.430
1,5-Diethyl-2-thio-4,6-pyrimidinedione	15	57.750	Dihydro terpineol	07	97.435
1,3-Diethyl-2-thiourea	15	361.000	Dihydroterpinyl acetate	07	166.367
N,N-Diethyltoluamide (DEET)	13	148.000	Dihydroterpinyl acetate	03	761.700
3,5-Diethyltoluene	03	827.700	1,2-Dihydro-2,2,4,7-tetramethylquinoline	15	58.000
N,N-Diethyltoluene-2,5-diamine, monohydrochloride	14	342.000	2,5-Dihydrothiophene-1,1-dioxide (Sulfolene)	09	69.000
N,N-Diethyl-m-toluidine	03	739.000	1,2-Dihydro-2,2,4-trimethylquinoline	06	620.000
N,N-Diethyl-p-toluidine	03	739.500	Dihydroxyaluminum aminoacetate	03	764.000
0,0-Diethyl 0-3,5,6-trichloro-2-pyridyl phosphorothioate	13	156.100	1,4-Dihydroxyanthraquinone	03	768.200
3,9-Diethyl-6-tridecyl sulfate, sodium salt	12	242.000	2,4-Dihydroxybenzaldehyde	03	769.200
Diethylzinc	15	1408.000	2,5-Dihydroxy-p-benzenedisulfonic acid, dipotassium salt	03	768.500
Diflorasone diacetate	06	655.400	3,4-Dihydroxybenzoic acid, methyl ester	03	769.100
Diflunisal	06	385.500	2,4-Dihydroxybenzophenone	15	1059.500
1,1-Difluoroethane	15	1264.000	Di(hydroxy)bis(ammoniumlactato)titanium	15	60.000
Digoxin	06	378.300	3,5-Dihydroxy-3,5-dimethyl-1,2-peroxycyclopentane	03	770.000
Di-(n-heptyl-n-nonyl) undecyl phthalate	11	28.925	1,5-Dihydroxy-4,8-dinitroanthraquinone	03	771.000
Di-n-hexyl adipate	11	60.600	1,8-Dihydroxy-4,5-dinitroanthraquinone	12	10.320
Dihexyl fumarate	07	134.020	N,N-di(hydroxyethyl)-n-carboxymethyl tallow ammonium quat, inner salt	03	771.300
Di-n-hexyl magnesium	15	1374.500	N,N-Di(β-hydroxyethyl)-m-chloroaniline	14	39.000
d-Dihydrocarveol	07	134.070	N,N-Dihydroxyethylglycine, sodium salt	12	10.310
Dihydrocarvone	07	134.050	Di-(hydrogenated tallow)methylammonium tallowate	15	1277.000
5,11-Dihydrodibenz(b,e)oxepin-11-one	03	740.500	Diiodomethane (Methylene iodide)	15	63.000
2,3-Dihydro-2,2-dimethyl-7-benzofuranyl	03	744.200	Diisomethyl-p-tolyl sulphone	15	816.300
2,3-Dihydro-2,2-dimethyl-7-benzofuranol	03	744.100	Diisobutyl ketone	11	61.000
2,3-Dihydro-2,2-dimethyl-7-benzofuranyl[(dibutylamino)thio]methyl carbamate	13	148.300	Diisobutyl adipate	15	1358.000
2,3-Dihydro-2,2-dimethyl-7-benzofuranyl methylcarbamate	13	148.400	Diisobutylaluminum chloride	15	1359.000
2-(2,3-Dihydro-1,3-dioxo-1H-inden-2yl)-(quinolinyl)-6-methylbenzothiazole-7-sulfonic acid	03	752.600	Diisobutylaluminum hydride	15	263.000
1,2-Dihydro-6-ethoxy-2,2,4-trimethylquinoline (Ethoxyquin)	09	68.000	Diisobutylamine	02	74.000
Dihydro-iso-jasmone	07	97.380	Di-isobutylene (Di-isobutene)	12	707.000
Dihydro-linalool	07	136.500	Di-isobutylene maleate	14	256.000
1,3-Dihydro-4(or 5)-methyl-2H-benzimidazole-2-thione	09	41.450	Diisobutylene polysulfide	11	62.000
2,3-Dihydro-2-[6-methyl-7-sulfo-2-benzothiazolyl]-2-quinolinyl-1,3-dioxo-1H-indene-5-carboxylic acid	03	756.500	Diisodecyl adipate	11	30.000
Dihydromyrcene	15	1137.500	Diisodecyl phthalate	11	30.050
Dihydro myrcenol	07	134.100	Diisohexyl phthalate	11	62.500
			Diisononyl adipate	11	30.100
			Diisononyl phthalate	11	63.000
			Diiso-octyl adipate	11	69.000
			Diiso-octyl azelate	11	

Table 4.—Alphabetical Chemical Index

CHEMICAL NAME	SECT. NO.	ITEM NO.	CHEMICAL NAME	SECT. NO.	ITEM NO.
Diiso-octyl phthalate	11	35.000	Dimethylamine sulfate	15	289.000
Di-isopropane (2,3-Dimethylbutane)	02	64.000	p-(Dimethylamino)benzaldehyde	03	795.250
Diisopropyl adipate	11	63.200	p-Dimethylaminobenzenediazonium chloride (p-Diazo-N,N-		
Diisopropylamine	15	286.000	dimethylaniline zinc chloride)	14	346.000
Diisopropylamine	15	408.000	m-(Dimethylamino)benzoic acid	03	796.000
2-Diisopropylaminoethanol (N,N-			2-[4-(Dimethylamino)benzoyl]benzoic acid	03	796.500
Diisopropylethanolamine)	15	362.000	2-Dimethylaminoethanethiol hydrochloride	15	365.000
Diisopropylaniline	03	778.000	2-Dimethylaminoethanol (N,N-Dimethylethanolamine)	15	366.000
Diisopropylbenzene	03	778.100	Dimethylaminoethyl acrylate	15	367.000
Diisopropylbenzene hydroperoxide	15	64.000	Dimethylaminoethylacrylate, methyl chloride, quaternary		
Diisopropyl Ketone (2,4-Dimethyl-3-pentanone)	15	817.000	salt	15	367.900
Diisopropyl naphthalenesulfonic acid, sodium salt	12	166.000	2-[2-(Dimethylamino)ethyl] (p-methoxybenzyl)		
Diisopropyl peroxydicarbonate (Isopropyl percarbonate)	15	1293.600	amino]pyridine	03	800.200
N,N'-Diisopropyl-p-phenylenediamine	14	181.000	Dimethylaminoethyl methacrylate	15	368.000
S-(O,O-Diisopropyl phosphorodithioate) ester of N-(α-			Dimethylaminoethylmethacrylate, dimethyl sulfate,		
mercaptoethyl)benzenesulfonamide (Bensulide)	13	58.000	quaternary salt	15	368.200
Diisopropyl sebacate	11	114.100	Dimethylaminoethylmethacrylate, methyl chloride,		
Diisopropyltititanate bis(ethyl-3-oxobutanoate)	15	1059.450	quaternary salt	15	369.000
Diketene	15	66.000	Dimethylaminomethanol	15	369.500
Dilauryl-3,3'-thiodipropionate	15	940.000	2-Dimethylamino-2-methyl-1-propanol hydrochloride	15	369.600
Dimenhydrinate	06	80.000	m-Dimethylaminophenol	03	802.000
Dimer acid (C-36 Aliphatic dibasic acid)	15	509.000	1-(Dimethylamino)-2-propanol	15	369.700
Dimeracidalkyl amine	12	419.300	Dimethylaminopropylamine	12	407.730
N-(Dimeracidalkyl)trimethylenediamine	12	407.700	Dimethylaminopropylamine	15	274.000
Dimer acid esters and polyesters	14	273.000	Dimethylaminopropylamine, propoxylated	15	274.006
Dimer acid esters with polyethylene glycol hydrogen			11-[3(Dimethylamino)propyl]-6H-hydroxydibenz(b,e)oxepin	03	803.000
phthalate and castor oil	15	66.900	Dimethylaminopropyl methacrylamide	15	236.780
2,5-Dimercapto-1,3,4-thiadiazole	09	27.800	4-Dimethylaminopyridine	03	803.500
Dimethindene maleate	06	94.000	Dimethylammonium hydrogen isophthalate	09	41.725
2,5-Dimethoxyaniline, ethoxylated	12	342.250	N,N-Dimethylaniline	03	805.000
m-Dimethoxybenzene	03	784.000	7,12-Dimethylbenz[a]anthracene	03	806.000
p-Dimethoxybenzene (Dimethyl ether of hydroquinone)	15	67.000	2,2-Dimethyl-1,3-benzodioxol-4-yl N-methylcarbamate	13	166.027
Dimethoxyethane (Ethylene glycol dimethyl ether)	15	1155.000	N,N-Dimethylbenzylamine	03	809.000
Di-(methoxyethyl)hydroxylamine	15	364.500	1,1'-Dimethyl-4,4'-bipyridinium dichloride	13	118.049
Di(2-methoxyethyl) phthalate	11	31.000	2,5-Dimethyl-2,5-bis(2-ethyl-1-hexanoyl peroxy) hexane	15	1294.000
1,1-Dimethoxy octane	07	134.250	Dimethyl brassylate	15	969.000
3-(Dimethoxyphosphinyloxy)-N,N-dimethyl-cis-crotonamide	13	222.000	2,2-Dimethylbutanol (isohexyl alcohol)	15	851.700
1,2-Dimethoxy-4-propenylbenzene (4-Propenylveratrole)	07	30.000	3,3-Dimethylbutene	15	1337.400
3,4-Dimethoxytoluene	03	794.400	N,N-Dimethylbutylamine	15	274.995
N,N-Dimethylacetamide	15	236.000	1,3-Dimethylbutylamine	15	275.000
N,N-Dimethylacetoacetamide	15	236.500	N-(1,3-Dimethylbutyl)-N'-phenyl-p-phenylenediamine	09	59.310
O,S-Dimethylacetylphosphoramidothioate (Acephate)	13	222.500	Dimethyl caprylamide capramide	15	236.800
Dimethyl adipate	11	63.225	Dimethyl carbonate	15	941.000
N,N-Dimethyl-N-alkylamine phosphate	12	393.200	2,2-Dimethylchloropropane(neopentyl chloride)	15	1239.800
Dimethylamine	15	288.000	N,N-Dimethyl(coconut oil alkyl)amine	12	433.000
Dimethylamine epichlorohydrin copolymer	15	364.750	N,N-Dimethyl(coconut oil alkyl)amine oxide	12	328.360
Dimethylamine epichlorohydrin ethylenediamine copolymer	14	417.000	Dimethyl-1,4-cyclohexanedicarboxylate	03	811.500

Table 4.--Alphabetical Chemical Index

CHEMICAL NAME	SECT. NO.	ITEM NO.	CHEMICAL NAME	SECT. NO.	ITEM NO.
Dimethyl cyclohexane methanol	07	97.436	N,N-Dimethyl(mixed alkyl)amine oxide	12	328.100
N,N-Dimethylcyclohexylamine	03	813.000	2,5-Dimethyl-4(2)-morpholinylmethylphenol, hydrochloride	03	819.600
Dimethyl diallyl ammonium chloride polymers	14	418.000	2,6-Dimethylnaphthalene	03	819.750
Dimethyldi(C12-18)ammonium chloride (mixed straight and branched chains)	12	485.780	0,0-Dimethyl 0-(p-nitrophenyl)phosphorothioate (Methyl parathion)	13	158.000
2,5-Dimethyl-2,5-di(tert-butylperoxy)hexane	15	1295.000	N,N-Dimethyl-p-nitrosoaniline	03	820.000
2,5-Dimethyl-2,5-di(tert-butylperoxy)hexyne-3	15	1296.000	N,N-Dimethyl-9-octadecenylamine	12	438.200
0,0-Dimethyl-0-2,2-dichlorovinyl phosphate (DDVP)	13	223.000	N,N-Dimethyloctadecylamine	12	438.000
Dimethyldioctadecylammonium choride	12	486.000	3,7-Dimethyl-trans-2,6-octadienal (Citral A geranial)	07	134.850
Dimethyldioctadecylammonium methyl sulfate	12	487.000	3,7-Dimethyl-2,6-octadienal (citral a b)	07	134.900
N,N-Dimethyl-2,2-diphenylacetamide (Diphenamid)	13	59.000	3,7-Dimethyl-cis-2,6-octadien-1-ol (Nerol)	07	135.000
N,N'-Dimethyl-N,N'-diphenylurea	15	67.800	3,7-Dimethyl-trans-2,6-octadien-1-ol (Geraniol)	07	138.000
Dimethyldithiocarbamic acid, bismuth salt	09	138.000	3,7-Dimethyl-1,6-octadien-3-ol (Linalool) (Linalyl alcohol)	07	136.000
Dimethyldithiocarbamic acid, copper salt	09	139.000	3,7-Dimethyl-cis-2,6-octadienol, acetate (Neryl acetate)	07	135.100
Dimethyldithiocarbamic acid, lead salt	09	140.000	3,7-Dimethyl-1,6-octadien-3-ol, acetate (Linalyl acetate)	07	137.000
Dimethyldithiocarbamic acid, potassium salt	13	181.100	3,7-Dimethyl-1,6-octadien-3-yl isobutyrate (Linalyl isobutyrate)	07	139.000
Dimethyldithiocarbamic acid, potassium salt	09	174.000	3,7-Dimethyl-2,6-octadienyl phenylacetate (Geranyl phenylacetate)	07	31.000
Dimethyldithiocarbamic acid, selenium salt	09	141.000	3,7-Dimethyl-1,6-octadien-3-yl propionate (Linalyl propionate)	07	140.000
Dimethyldithiocarbamic acid, sodium salt	09	175.000	Dimethyloctanal	07	140.100
Dimethyldithiocarbamic acid, sodium salt and sodium polysulfide	09	142.000	3,7-Dimethyloctanol-1 (Tetrahydrogeraniol)	07	140.450
Dimethyldithiocarbamic acid, zinc salt	09	143.000	3,7-Dimethyl-3-octanol	07	140.500
N,N-Dimethyldodecylamine	12	434.000	Dimethyloctanyl acetate	07	140.600
N,N-Dimethyldodecylamine oxide	12	327.910	3,7-Dimethyl-6-octen-1-al (Citronellal)	07	141.000
Dimethyl dodecyl ethyl ammonium ether sulfate	12	456.500	3,7-Dimethyl-6-octen-1-ol (Citronellol)	07	142.000
N-[5-(1,1-Dimethylethyl)-1,3,4-thiadiazol-2-yl]-N,N'-dimethylurea (Tebuthiuron)	13	212.015	3,7-Dimethyl-7-octenol 70%, 6-octenol isomer 30%	07	142.100
S-[[[(1,1-Dimethylethyl)thio]methyl] 0,0-diethyl phosphorodithioate (Turbufos)	13	223.500	Dimethyloldihydroxyethylene urea	14	479.000
N,N-Dimethylformamide	15	237.000	N,N-Dimethyl oleyl amine oxide	12	328.400
N,N-Dimethylglycine	14	5.000	Dimethyl oleylammonium ethanoate	12	10.336
N,N-Dimethylglycine hydrochloride	14	6.000	4,4-Dimethyl oxazolidine	15	3.660
2,6 Dimethyl-5-hepten-1-al	07	134.500	4,4-Dimethyl oxazoline	15	68.200
N,N-Dimethylhexadecylamine	12	435.000	0,0-Dimethyl S-[4-oxo-1,2,3-benzotriazin-3(3H)-yl] methyl phosphorodithioate (Azinphos-methyl)	13	159.000
N,N-Dimethylhexadecylamine oxide	12	328.000	$\alpha,\alpha$ -Dimethylphenethyl acetate	07	32.000
Dimethyl hexanediol	07	134.600	$\alpha,\alpha$ -Dimethylphenethyl alcohol	07	33.000
2,5-Dimethyl-3-hexyne-2,5-diol	07	134.650	Dimethyl phenylethyl carbinol	07	33.300
5,5-Dimethylhydantoin	03	816.000	Dimethyl phosphate of 3-hydroxy-N-methyl-cis-crotonamide	13	225.000
1,1-Dimethylhydrazine	15	373.000	O,S-Dimethyl phosphoramidothioate	13	229.012
N,N-Dimethyl(hydrogenated tallow alkyl)amine	12	436.000	Dimethyl phosphoridithionate	15	1030.000
Dimethyl hydrogen phosphite	15	1028.000	Dimethyl phthalate	11	32.000
Dimethyl isophthalate	11	31.500	1,1-Dimethylpiperidinium chloride	13	168.350
Dimethyl maleate	15	943.000			
Dimethyl methylphosphonate	15	1029.000			
0,0-Dimethyl 0-[4-(methylthio)-m-tolyl]phosphorothioate (Fenthion)	13	157.000			
N,N-Dimethyl(mixed alkyl)amine	12	437.000			

Table 4.--Alphabetical Chemical Index

CHEMICAL NAME	SECT. NO.	ITEM NO.	CHEMICAL NAME	SECT. NO.	ITEM NO.
N,N-Dimethyl-1,3-propanediamine polymer with epichlorohydrin, sulfate	14	160.000	2,4-Dinitrotoluene	03	844.000
2,2-Dimethyl-1,3-propanediol (Neopentyl glycol)	15	1080.000	2,4(and 2,6)-Dinitrotoluene	03	845.000
Dimethylpropionic acid	15	510.000	3,5-Dinitro-o-toluic acid	03	846.200
N-(1,1-Dimethyl-2-propynyl)-3,5-dichlorobenzamide (Pronamide)	13	118.023	Dinonylhydroxybenzenesulfonic acid	03	846.400
Dimethyl pseudo ionone	07	97.440	Dinonylphenol	03	846.700
Dimethyl sebacate	11	114.900	Dinonylphenol, ethoxylated	12	743.000
N,N-Dimethyl(soybean oil alkyl)amine	12	439.000	Dinonylphenol, ethoxylated and phosphated	12	76.300
Dimethyl succinate	07	142.700	Dinonyl phthalate	11	33.000
Dimethyl sulfide	02	92.820	Dinonyl undecyl phthalate	11	33.500
N,N-Dimethyl(tall oil alkyl)amine	12	439.400	Dinoprostone tromethamine	06	679.300
N,N-Dimethyl(tallow alkyl)amine	12	439.500	N,N'-Dioctadecyl-N,N'-diisopropyl thiuram disulfide	09	150.200
Dimethyl-2,3,5,6-tetrachloroterephthalate (DCPA)	13	62.000	Di-n-octyl adipate	11	63.300
N,N-Dimethyltetradecylamine	12	440.000	N,N-Dioctyl-N,N-dimethyl ammonium chloride	12	487.150
N-[5-1,1-Dimethyl-1,3,4-thiadiazol-2-yl]-N,N-dimethylurea (Tebuthiuron)	13	118.061	Diocetyl maleate	15	947.000
N,N-Dimethyl-o-toluidine	03	827.800	Di-n-octyl phthalate	11	36.000
N,N-Dimethyl-p-toluidine	03	828.000	Diocetyl phthalates, all other	11	37.000
N-[2,4-dimethyl-5-[[trifluoromethyl]sulfonylamino]phenyl]acetamide, diethanolamine salt	13	168.375	Dioleyl hydrogen phosphite	15	1031.000
1,1-Dimethyl-3-( $\alpha,\alpha,\alpha$ -trifluoro-m-tolyl)urea (Fluometuron)	13	118.040	Dioxane (1,4-Diethylene oxide)	15	72.000
Dimyrcetol	07	143.800	2,3-p-Dioxanedithiol S,S-bis-(O,O-diethyl phosphorodithioate (Dioxathion))	13	162.000
Dimyristyl-3,3'-thiodipropionate	15	946.000	1,3-Dioxolane	15	73.000
N,N'-Di-2-naphthyl-p-phenylenediamine	09	61.000	Dioxolane-2-acetate	07	143.850
Dinitolmide	06	171.000	Di-para-benzoquinone dioxime	03	847.100
2,4-Dinitroaniline	03	829.000	Di-para-xylene	15	74.066
1,5(and 1,8)-Dinitroanthraquinone	03	831.000	Di-N,N'-pentamethylenethiuram tetrasulfide	09	42.000
m-Dinitrobenzene	03	834.000	Dipentylamine	15	295.000
3,5-Dinitrobenzoyl chloride	03	837.000	2,4-Di-tert-pentylphenol	03	847.000
Dinitrobutylphenol (DNBP)	13	63.000	Diperoxododecanedioic acid	15	1296.200
Dinitrobutylphenol, ammonium salt	13	64.000	Diphenhydramine	06	115.001
Dinitrobutylphenol, triethanolamine salt	13	65.000	Diphenhydramine citrate	06	115.002
4,4-Dinitrocarbanilide-4,6-dimethyl-2-pyrimidinol	15	69.000	Diphenhydramine hydrochloride	06	95.000
2,6-Dinitro-N,N-dipropyl cumidine	13	118.038	1,5-Diphenoxyanthraquinone	03	848.000
3,5-Dinitro-N,N-dipropylsulfanilamide	13	118.032	1,4-Diphenoxybenzene	03	850.500
2,6-Dinitro-4-isopropylphenol	03	839.300	Diphenoxylate	06	620.300
2,4-Dinitrophenol, tech.	03	840.000	2-Diphenylacetyl-1,3-indandione and sodium salt	13	171.010
2,4-Dinitrophenoxyethanol	03	840.500	Diphenylalkane (Mixture)	03	852.500
Dinitrophenylacetic acid (mixture)	03	840.600	Diphenylamine	03	853.000
3,5-Dinitrosalicylic acid	03	842.000	Diphenylamine-acetone aldehyde	09	52.700
3,5-Dinitrosalicylic acid, methyl ester	03	842.200	Diphenylamine-acetone condensate	09	53.000
p-Dinitrosobenzene	03	842.800	p-Diphenylaminediazonium sulfate	14	350.000
Dinitrosopentamethylenetetramine	09	108.000	Diphenylamine-styrenated	09	70.300
4,4'-Dinitrostilbene-2,2'-disulfonic acid	03	843.000	Diphenyl-4,4'-diphenylmethylenedicarbamate	09	124.350
			Diphenyldisulfide	03	855.250
			Diphenylmercuric dodecanyl succinate	13	7.500
			Diphenylmethane	03	856.100
			Diphenylmethane-4,4'-diisocyanate (MDI)	03	1020.000
			Diphenyl octyl phosphate	11	12.000



Table 4.—Alphabetical Chemical Index

CHEMICAL NAME	SECT NO.	ITEM NO.	CHEMICAL NAME	SECT NO.	ITEM NO.
N,N'-Diphenyl-p-phenylenediamine	09	62.000	Direct Blue 267	04	570.267
Diphenylsulfide	03	855.400	Direct Blue 269	04	570.269
Diphenylsulfone sulfonic acid, potassium salt	12	210.700	Direct Blue 279	04	570.279
1,3-Di-4-piperidylpropane	03	858.313	Direct Blue 281	04	570.281
Dipolyetherdisulfonic acid, diethanolamine salt	12	205.910	Direct Blue 283	04	570.283
Dipropanediol dibenzoate (Dipropylene glycol dibenzoate)	11	4.000	Direct Blue 286	04	570.286
Di-n-propyl adipate	11	63.350	Direct blue dyes, all other	04	571.000
Dipropylamine	15	300.000	Direct Brown 44	04	597.000
Dipropylene glycol	15	1156.000	Direct Brown 229	04	606.229
Dipropylene glycol monomethyl ether	15	1156.500	Direct Brown 230	04	606.230
Dipropylene glycol salicylate	15	74.000	Direct Brown 231	04	606.231
Dipropylenetriamine	15	276.000	Direct Brown 232	04	606.232
Di-n-propylisocinchomeronate	13	148.500	Direct Brown 238	04	606.238
Di-n-propyl peroxydicarbonate	15	1296.300	Direct brown dyes, all other	04	607.000
Di-N-propylphosphorodithioic acid	14	234.000	Direct Green 1	04	573.000
Di(pyrrolidonyl ethyl)imine	12	328.435	Direct Green 92	04	586.092
Direct Black 4	04	608.000	Direct green dyes, all other	04	587.000
Direct Black 19	04	612.000	Direct Orange 6	04	457.000
Direct Black 22	04	613.000	Direct Orange 15	04	461.000
Direct Black 80	04	623.000	Direct Orange 26	04	462.000
Direct Black 165	04	623.165	Direct Orange 29	04	463.000
Direct Black 170	04	623.170	Direct Orange 34	04	464.000
Direct black dyes, all other	04	625.000	Direct Orange 39	04	466.000
Direct Blue 1	04	534.000	Direct Orange 72	04	470.000
Direct Blue 2	04	535.000	Direct Orange 80	04	475.000
Direct Blue 8	04	537.000	Direct Orange 102	04	479.000
Direct Blue 14	04	538.000	Direct Orange 105	04	479.105
Direct Blue 15	04	539.000	Direct Orange 118	04	479.118
Direct Blue 22	04	540.000	Direct orange dyes, all other	04	480.000
Direct Blue 25	04	542.000	Direct Red 4	04	483.000
Direct Blue 67	04	544.000	Direct Red 9	04	483.009
Direct Blue 71	04	545.000	Direct Red 16	04	488.000
Direct Blue 75	04	547.000	Direct Red 23	04	490.000
Direct Blue 76	04	548.000	Direct Red 24	04	491.000
Direct Blue 79	04	549.079	Direct Red 26	04	492.000
Direct Blue 80	04	550.000	Direct Red 28	04	493.000
Direct Blue 86	04	552.000	Direct Red 39	04	497.000
Direct Blue 91	04	554.000	Direct Red 72	04	499.000
Direct Blue 98	04	555.000	Direct Red 73	04	500.000
Direct Blue 108	04	557.108	Direct Red 79	04	503.000
Direct Blue 120, 120:1, 120:2, and 120:3	04	558.000	Direct Red 80	04	504.000
Direct Blue 160	04	564.000	Direct Red 81	04	505.000
Direct Blue 189	04	565.000	Direct Red 83	04	506.000
Direct Blue 191	04	566.000	Direct Red 149	04	517.000
Direct Blue 199	04	567.000	Direct Red 153	04	519.000
Direct Blue 218	04	568.000	Direct Red 236	04	521.236
Direct Blue 261	04	569.261	Direct Red 238	04	521.238

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CHEMICAL NAME	SECT. NO.	ITEM NO.	CHEMICAL NAME	SECT. NO.	ITEM NO.
Direct Red 239	04	521.239	Disperse Blue 73	04	729.000
Direct Red 253	04	521.253	Disperse Blue 77	04	730.000
Direct Red 254	04	521.254	Disperse Blue 79	04	731.000
Direct red dyes, all other	04	522.000	Disperse Blue 81	04	732.000
Direct Violet 9	04	525.000	Disperse Blue 86	04	732.086
Direct Violet 14	04	526.000	Disperse Blue 95	04	734.000
Direct Violet 66	04	531.000	Disperse Blue 102	04	735.000
Direct Violet 99	04	532.099	Disperse Blue 118	04	739.000
Direct Yellow 4	04	421.000	Disperse Blue 122	04	739.122
Direct Yellow 5	04	422.000	Disperse Blue 148	04	742.148
Direct Yellow 6	04	423.000	Disperse Blue 165	04	743.165
Direct Yellow 11	04	427.000	Disperse Blue 183	04	743.183
Direct Yellow 28	04	433.000	Disperse Blue 200	04	743.200
Direct Yellow 34	04	435.000	Disperse Blue 281	04	743.281
Direct Yellow 44	04	438.000	Disperse Blue 284	04	743.284
Direct Yellow 50	04	439.000	Disperse Blue 291	04	743.291
Direct Yellow 84	04	443.000	Disperse Blue 337	04	743.337
Direct Yellow 105	04	445.000	Disperse Blue 338	04	743.338
Direct Yellow 106	04	446.000	Disperse blue dyes, all other	04	744.000
Direct Yellow 107	04	447.000	Disperse Brown 1	04	746.000
Direct Yellow 118	04	450.000	Disperse Brown 2	04	747.000
Direct Yellow 119	04	451.000	Disperse Brown 10	04	747.010
Direct Yellow 127	04	453.000	Disperse Brown 18	04	747.018
Direct Yellow 132	04	454.132	Disperse Brown 22	04	747.022
Direct Yellow 133	04	454.133	Disperse brown dyes, all other	04	748.000
Direct Yellow 137	04	454.137	Disperse Green 9	04	745.009
Direct Yellow 147	04	454.147	Disperse green dyes, all other	04	745.999
Direct Yellow 148	04	454.148	Disperse Orange 3	04	653.000
Direct Yellow 150	04	454.150	Disperse Orange 5	04	654.000
Direct Yellow 152	04	454.152	Disperse Orange 17	04	656.000
Direct yellow dyes, all other	04	455.000	Disperse Orange 25 and 25:1	04	658.000
N,N'-Disalicylidene-1,2-propanediamine	14	161.000	Disperse Orange 29	04	659.000
Disodium cyanodithioimidocarbonate	13	179.000	Disperse Orange 30	04	660.000
Disopyramide phosphate	06	378.500	Disperse Orange 37	04	661.000
Disperse Black 1	04	749.000	Disperse Orange 41	04	662.000
Disperse Black 9	04	751.000	Disperse Orange 44 and 44:1	04	663.000
Disperse Black 33	04	752.000	Disperse Orange 73	04	667.073
Disperse black dyes, all other	04	753.000	Disperse Orange 79	04	668.079
Disperse Blue 3	04	716.000	Disperse Orange 88	04	668.088
Disperse Blue 7	04	717.000	Disperse Orange 89	04	668.089
Disperse Blue 26	04	718.026	Disperse Orange 94	04	668.094
Disperse Blue 27	04	719.000	Disperse Orange 129	04	668.129
Disperse Blue 56	04	722.000	Disperse Orange 136	04	668.136
Disperse Blue 60	04	723.000	Disperse Orange 138	04	668.138
Disperse Blue 62	04	725.000	Disperse Orange 145	04	668.145
Disperse Blue 64	04	727.000	Disperse orange dyes, all other	04	669.000
Disperse Blue 72	04	728.072	Disperse Red 1	04	670.000

Table 4.—Alphabetical Chemical Index

CHEMICAL NAME	SECT. NO.	ITEM NO.	CHEMICAL NAME	SECT. NO.	ITEM NO.
Disperse Red 5	04	672.000	Disperse Red 345	04	703.345
Disperse Red 9	04	674.000	Disperse red dyes, all other	04	704.000
Disperse Red 13	04	676.000	Disperse Violet 1	04	705.000
Disperse Red 15	04	677.000	Disperse Violet 27	04	709.000
Disperse Red 17	04	678.000	Disperse Violet 28	04	710.000
Disperse Red 22	04	679.022	Disperse Violet 33	04	710.033
Disperse Red 30	04	680.000	Disperse Violet 36	04	710.036
Disperse Red 35	04	682.000	Disperse Violet 40	04	710.040
Disperse Red 50	04	683.000	Disperse Violet 60	04	713.060
Disperse Red 55	04	684.000	Disperse Violet 64	04	713.064
Disperse Red 60	04	686.000	Disperse Violet 91	04	713.091
Disperse Red 65	04	687.000	Disperse violet dyes, all other	04	714.000
Disperse Red 73	04	688.000	Disperse Yellow 3	04	628.000
Disperse Red 82	04	689.000	Disperse Yellow 23	04	631.000
Disperse Red 86	04	690.000	Disperse Yellow 34	04	635.000
Disperse Red 88	04	691.000	Disperse Yellow 42	04	636.000
Disperse Red 90	04	692.000	Disperse Yellow 54	04	638.000
Disperse Red 91	04	692.091	Disperse Yellow 58	04	639.000
Disperse Red 117	04	694.000	Disperse Yellow 64	04	639.064
Disperse Red 128	04	694.128	Disperse Yellow 67	04	640.000
Disperse Red 133	04	695.000	Disperse Yellow 77	04	642.000
Disperse Red 135	04	695.135	Disperse Yellow 86	04	644.000
Disperse Red 136	04	696.000	Disperse Yellow 88	04	646.000
Disperse Red 137	04	697.000	Disperse Yellow 99	04	650.099
Disperse Red 153	04	699.153	Disperse Yellow 108	04	650.108
Disperse Red 159	04	700.000	Disperse Yellow 125	04	651.000
Disperse Red 167 and 167:1	04	700.167	Disperse Yellow 126	04	651.126
Disperse Red 177	04	701.000	Disperse Yellow 198	04	651.198
Disperse Red 179	04	702.000	Disperse Yellow 200	04	651.200
Disperse Red 195	04	703.195	Disperse Yellow 210	04	651.210
Disperse Red 207	04	703.207	Disperse Yellow 219	04	651.219
Disperse Red 263	04	703.263	Disperse yellow dyes, all other	04	652.000
Disperse Red 273	04	703.273	Distearyl-3,3'-thiodipropionate	15	949.000
Disperse Red 274	04	703.274	Distinnaxane, hexakis(2-methyl-2-phenylpropyl)	13	166.011
Disperse Red 278	04	703.278	N,N'-(Di-tall oil acid)amidoethylamine	12	385.500
Disperse Red 305	04	703.305	Ditallowamidoammonium sulfate	12	487.500
Disperse Red 307	04	703.307	Di-tertiary nonylpolysulfide	14	257.000
Disperse Red 309	04	703.309	2',2''-Dithiobis(benzanilide)	09	115.000
Disperse Red 311	04	703.311	2,2'-Dithiobis[benzothiazole]	09	29.000
Disperse Red 313	04	703.313	Dithiobis(stearyl propionate)	15	950.000
Disperse Red 316	04	703.316	2,5-Dithiobiurea	15	376.000
Disperse Red 319	04	703.319	Dithiocarbamic acid derivatives, acyclic, other	09	144.000
Disperse Red 325	04	703.325	4,4'-Dithiodimorpholine	09	43.000
Disperse Red 333	04	703.333	Dithiodipropionic acid	15	513.100
Disperse Red 339	04	703.339	Di-tridecyl adipate	11	63.400
Disperse Red 340	04	703.340	Ditridecyl maleate	15	951.000
Disperse Red 341	04	703.341	Di-tridecyl phthalate	11	39.000

Table 4.—Alphabetical Chemical Index

CHEMICAL NAME	SECT. NO.	ITEM NO.	CHEMICAL NAME	SECT. NO.	ITEM NO.
Di(tridecyl)-3,3'-thiodipropionate	15	952.000	N-Dodecyl-3-iminopropionic acid, monosodium salt	12	10.550
1,5-diureidonaphthalene	03	865.800	tert-Dodecyl mercaptan, ethoxylated	12	759.000
Divinylbenzene	03	866.000	n-Dodecyl mercaptans	09	171.000
Docosanyl docosenoate	15	969.050	Dodecylmethylbenzyl chloride	03	871.000
N-(Docosyl and eicosyl)trimethylenediamine	12	408.300	4-(Dodecyloxy)-2-hydroxybenzophenone	15	75.000
Docosate, calcium	06	591.700	Dodecyloxy poly(ethyleneoxy)acetic acid, sodium salt	12	40.400
Docosate, potassium	06	591.720	Dodecylpentadecyl methacrylate	15	952.700
Docosate, sodium	06	591.740	p-Dodecylphenol	03	873.000
n-Dodecane	15	1338.000	Dodecylphenol, ethoxylated	12	744.000
Dodecanedioic acid	15	514.000	Dodecylphenol, ethoxylated and phosphated	12	79.000
Dodecane nitrile	07	143.930	Dodecylphenol, ethylenediamine, formaldehyde polymer,		
Dodecene	02	78.000	calcium salt	14	227.000
Dodecenyl-acetic succinimide	14	247.000	Dodecylphenyl- $\alpha$ -naphthylamine	14	277.000
Dodecenyl succinic acid, benzotriazole salt	14	276.000	Dodecylphenyl- $\alpha$ -naphthylamine, dioctyl diphenylamine co-		
Dodecenylsuccinic anhydride	15	515.000	polymer	14	278.000
Dodecenyl succinic 12-hydroxystearate	15	969.070	Dodecyl pyridinium chloride	15	74.460
Dodecyl alcohol (Lauryl alcohol)	15	872.000	1-Dodecylpyridinium chloride	12	526.000
Dodecyl alcohol, ethoxylated	12	729.000	Dodecyl succinic lactate	15	952.800
Dodecyl alcohol, ethoxylated and phosphated	12	77.000	Dodecyl sulfate, ammonium salt	12	221.000
Dodecyl alcohol, ethoxylated and sulfated, ammonium salt	12	270.000	Dodecyl sulfate, diethanolamine salt	12	222.000
Dodecyl alcohol, ethoxylated and sulfated, sodium salt	12	271.000	Dodecyl sulfate, N,N-diethylcyclohexylamine salt	12	223.000
Dodecylamine	12	420.000	Dodecyl sulfate, isopropanolamine salt	12	224.000
Dodecylaniline	03	866.200	Dodecyl sulfate, magnesium salt	12	225.000
Dodecylbenzene, other	03	870.000	Dodecyl sulfate, potassium salt	12	226.000
Dodecylbenzene, straight-chain	03	869.000	Dodecyl sulfate, sodium salt	12	227.000
Dodecylbenzene sulfonates, all other	12	128.000	Dodecyl sulfate, triethanolamine salt	12	228.000
Dodecylbenzenesulfonic acid	12	114.000	Dodecyl sulfoacetate	12	199.000
Dodecylbenzenesulfonic acid, (Mixed alkyl)amine salt	12	122.000	Dodecyl sulfoacetate, sodium salt	12	199.100
Dodecylbenzenesulfonic acid, ammonium salt	12	115.000	Dodecyl and tetradecyl alcohols, ethoxylated and		
Dodecylbenzenesulfonic acid, calcium salt	12	117.000	sulfated, ammonium salt	12	273.000
Dodecylbenzenesulfonic acid, diethanolamine salt	12	118.000	Dodecyl and tetradecyl alcohols, ethoxylated and		
Dodecylbenzenesulfonic acid, isopropanolamine salt	12	120.000	sulfated, potassium salt	12	274.000
Dodecylbenzenesulfonic acid, isopropylamine salt	12	121.000	Dodecyltrimethylammonium chloride	12	489.000
Dodecylbenzenesulfonic acid, isopropoxy titanium salt	12	121.100	Doxapram hydrochloride	06	550.001
Dodecylbenzenesulfonic acid, monoethanolamine salt	12	122.500	Doxepin base	03	814.200
Dodecylbenzenesulfonic acid, oleyl amine, ethoxylated,			Doxepin hydrochloride	06	527.000
salt	12	122.700	Doxycycline	06	33.000
Dodecylbenzenesulfonic acid, potassium salt	12	123.000	Doxylamine succinate	06	96.000
Dodecylbenzenesulfonic acid, sodium salt	12	125.000	Drug and Cosmetic Green 5	04	793.000
Dodecylbenzenesulfonic acid, triethanolamine salt	12	127.000	Drug and Cosmetic Green 6	04	794.000
Dodecyl diphenyloxidedisulfonic acid	12	205.990	Drug and Cosmetic Green 8	04	796.000
Dodecyl diphenyloxidedisulfonic acid, disodium salt	12	206.000	Drug and Cosmetic Orange 4	04	797.000
n-Dodecylguanidine acetate (Dodine)	13	188.000	Drug and Cosmetic Orange 5	04	798.000
Dodecylguanidine hydrochloride	13	195.011	Drug and Cosmetic Orange 17	04	799.000
N-Dodecyl-3-iminodipropionic acid	12	10.500	Drug and Cosmetic Red 6	04	800.000
N-Dodecyl-3-iminodipropionic acid, disodium salt	12	11.000	Drug and Cosmetic Red 7	04	801.000
N-Dodecyl-3-imino-dipropionic acid, monosodium salt	12	11.020	Drug and Cosmetic Red 9	04	802.000

Table 4.—Alphabetical Chemical Index

CHEMICAL NAME	SECT. NO.	ITEM NO.	CHEMICAL NAME	SECT. NO.	ITEM NO.
Drug and Cosmetic Red 17	04	807.000	Ethanolamine condensates, all other	12	568.000
Drug and Cosmetic Red 19	04	808.000	Ethanolamine condensates, amine/acid ratio = 1/1, all other	12	566.000
Drug and Cosmetic Red 21	04	809.000	Ethanolamine, -N,N-dimethylene phosphonic acid	12	111.850
Drug and Cosmetic Red 22	04	810.000	Ethanol diglycine, disodium salt	14	43.000
Drug and Cosmetic Red 27	04	811.000	2-Ethanolpiperidine	03	873.500
Drug and Cosmetic Red 28	04	812.000	5-Ethanoxy-3-trichloromethyl-1,2,4-thiadiazole	03	873.700
Drug and Cosmetic Red 30	04	813.000	Ethchlorvynol	06	468.000
Drug and Cosmetic Red 33	04	815.000	2,2'-(1,2-Ethenediyl)bis[5[[4-chloro-6-(phenylamino)-1,3,5-triazin-2-yl]amino]benzenesulfonic acid, disodium salt		
Drug and Cosmetic Red 34	04	816.000	Ethers and thioethers, all other	12	775.000
Drug and Cosmetic Red 36	04	817.000	Ethisterone	03	873.800
Drug and Cosmetic Yellow 5	04	820.000	Ethopabate	06	172.000
Drug and Cosmetic Yellow 6	04	821.000	Ethosuximide	06	419.000
Drug and Cosmetic Yellow 8	04	822.008	Ethotoin	06	420.000
Drug and Cosmetic Yellow 10	04	823.000	p-Ethoxybenzaldehyde	07	33.900
Drug and Cosmetic Yellow 11	04	824.000	4(5)-Ethoxycarbonyl-5(4)-methylimidazole	03	874.000
Eicosane	02	79.000	6-Ethoxy-12-dihydro-2,2,4-trimethyl quinoline	15	76.500
Enalapril maleate	06	360.100	2-Ethoxyethanol (Ethylene glycol monoethyl ether)	15	1159.000
Enflurane	06	436.500	2-(2-Ethoxyethoxy)ethanol (Diethylene glycol monoethyl ether)	15	1160.000
Epichlorohydrin	15	1310.000	2-[2-(2-Ethoxyethoxy)ethoxy]ethanol (Triethylene glycol monoethyl ether)	15	1161.000
Epichlorohydrin bisphenol A, ethoxylated	12	744.500	2-(2-Ethoxyethoxy)ethyl acetate	15	1105.000
Epichlorohydrin elastomers (CO, ECO) type	10	1.000	2-Ethoxyethyl acetate	15	953.000
Epoxides, ethers, acetals, all other	15	1325.000	Ethoxylated acetic acid, sodium salt	12	318.100
Epoxidized esters, all other	11	80.000	Ethoxylated anhydrosorbitol monolaurate	12	616.000
Epoxidized linseed oils	11	75.400	Ethoxylated anhydrosorbitol mono-oleate	12	617.000
epoxidized pentaerythritol tetraphthalate	11	75.800	Ethoxylated anhydrosorbitol monopalmitate	12	618.000
Epoxidized soya oils	11	76.000	Ethoxylated anhydrosorbitol monostearate	12	619.000
Epoxy resins advanced	08	6.000	Ethoxylated anhydrosorbitol monotallate	12	619.100
Epoxy resins unmodified	08	5.000	Ethoxylated anhydrosorbitol triester of tall oil acids	12	621.000
Ergocalciferol (vitamin D <sub>2</sub> )	06	813.000	Ethoxylated anhydrosorbitol tricleate	12	622.000
Erucamide	15	238.000	Ethoxylated anhydrosorbitol tristearate	12	623.000
[Erucyl alkyl]amine	12	420.500	ethoxylated 1,3-butylene glycol condensed with oil		
Erythromycin	06	46.000	fatty acid ethoxylated 1,3-butylene glycol stearate	12	707.820
Erythromycin estolate	06	46.500	Ethoxylated castor oil, ditridecylmaleate	12	707.900
Erythromycin stearate	06	46.700	Ethoxylated glycerol mono- and diesters of hydrogenated tallow acids	12	708.800
Esters of sulfated oleic acid, all other	12	263.000	Ethoxylated glycerol and propylene glycol esters of coco fatty acids	12	708.780
Ester tin mercaptoesters	15	1404.500	Ethoxylated hydantoin glycol dicocoeate	14	162.000
Estradiol cypionate	06	674.500	Ethoxylated (hydrogenated tallow amine), methyl ammonium chloride	12	458.100
Estrogens, all other	06	679.000	Ethoxylated methylglucoside	15	76.400
Estrogens, conjugated	06	675.000	Ethoxylated 1,2-propanediol monostearate	12	711.000
Estrogens, esterified	06	676.000			
Estrone	06	679.001			
Ethacrynic acid	06	739.000			
Ethanaminium, 2-hydroxy-N,N-bis(2-hydroxyethyl)-N-methyl-, salt with sillicic acid	12	456.700			
Ethane	02	39.000			
1,2-Ethanedisulfonic acid	15	518.500			
1,2-Ethanedithiol	15	1325.800			

Table 4.--Alphabetical Chemical Index

CHEMICAL NAME	SECT. NO.	ITEM NO.	CHEMICAL NAME	SECT. NO.	ITEM NO.
Ethoxylated and propoxylated glycerol mono- and diesters of tallow acids	12	708.700	3-(N-Ethylanilino)propionitrile	03	886.000
Ethoxylated, quaternized(C12-18 alkyl) oxypropyl trimethylene diamine	12	458.200	$\alpha$ -(N-Ethylanilino)-m-toluenesulfonic acid	03	887.000
Ethoxylated and quaternized hydrogenated tallow alkyl amine	12	336.010	Ethyl anthranilate	07	35.800
Ethoxylated, quaternized reaction product of formaldehyde and tallow diamine	12	458.250	2-Ethylanthraquinone	03	891.000
Ethoxylated sorbitol beeswax ester	12	625.000	5-Ethyl-1-aza-3,7-dioxabicyclo[3.3.0]octane	15	76.900
Ethoxylated sorbitol esters, all other	12	637.000	Ethylbenzene	03	892.000
Ethoxylated sorbitol hexaester of tall oil acids	12	627.000	Ethyl benzoate	07	35.900
Ethoxylated sorbitol hexaoleate	12	628.000	Ethylbenzyl chloride	03	894.000
Ethoxylated sorbitol lanolin ester	12	629.000	(Ethylbenzyl)dimethyl(mixed alkyl)ammonium chloride	12	527.000
Ethoxylated sorbitol mono-oleate	12	630.000	N-Ethyl-N,N-bis(polyoxyethylene)tallow ammonium ethyl sulfate	12	458.850
Ethoxylated sorbitol oleate, acetylated	12	631.500	Ethyl butyrate	07	144.000
Ethoxylated sorbitol pentalaurate	12	633.000	Ethyl caprate	07	144.100
Ethoxylated sorbitol tetraester of lauric and oleic acids	12	635.000	Ethyl cellulose	08	21.030
Ethoxylated sorbitol tetraester of tall oil acids	12	636.000	Ethyl chloride (Chloroethane)	15	1223.000
Ethoxylated sorbitol tetraoleate	12	636.400	Ethyl chloroacetate	15	958.000
Ethoxylated sorbitol tetrastearate	12	636.500	Ethyl chloroformate	15	959.000
Ethoxylated sorbitol trioleate	12	636.600	Ethyl chloroethanolformate	15	959.600
Ethoxylated tallow amine, potassium propionate derivative	12	465.958	Ethyl chrysanthemate	15	77.150
1-Ethoxy-3-methylbenzene	03	877.700	Ethyl cinnamate	07	36.000
4-Ethoxy-2-methyl-N-phenylaniline	03	877.900	Ethyl crotonate	07	144.130
2-Ethoxynaphthalene	07	35.000	Ethyl cyanoacetate	15	387.000
2-Ethoxy-1-naphthoic acid	03	878.800	2-(N-Ethyl-N, $\beta$ -cyanoethyl)-4-acetaminoanisole	03	895.100
2-Ethoxy-1-naphthoyl chloride	03	879.000	5-Ethyl cyclohexylethylthiocarbamate	13	69.100
3-Ethoxypropionitrile	15	440.000	Ethyl 4,4'-dichlorobenzilate (Chlorobenzilate)	13	135.700
Ethyl acetate	07	143.950	N-Ethyl-N-(2,3-dihydroxypropyl)-m-toluidine	03	896.150
Ethyl acetate (100% basis)	15	954.001	S-Ethyl diisobutylthiocarbamate (Butylate)	13	202.500
Ethyl acetoacetate	15	955.000	Ethyl dimethyl(mixed alkyl)ammonium ethyl sulfate	12	490.000
Ethyl acrylate	15	956.000	O-Ethyl S,S-dipropyl phosphorodithioate	13	243.010
Ethyl acrylate	08	19.962	S-Ethyl dipropylthiocarbamate (EPTC)	13	202.000
Ethyl acrylate methacrylic acid copolymer	14	419.000	Ethylene	02	40.000
Ethyl alcohol, synthetic only	15	853.000	Ethylene-acrylic acid resins (EAA)	08	31.900
Ethylaluminum dichloride	15	1360.000	Ethylene bis(dithiocarbamic acid), disodium salt (Nabam)	13	183.000
Ethylaluminum sesquichloride	15	1361.000	Ethylene bis(dithiocarbamic acid), manganese salt (Maneb)	13	184.000
Ethylamine, mono-	15	278.000	Ethylene bis(dithiocarbamic acid), manganese salt with zinc ions	13	184.500
3'-(Ethylamino)acetanilide	03	880.200	(Ethylene-bis-nitrilo)dimethylene phosphonic acid, potassium salt	14	45.000
2-Ethylaminoethanol (Ethylmonoethanolamine)	15	385.000	N,N'-Ethylenebis-oleamide (Oleic acid-ethylenediamine condensate (Amine/acid ratio = 1/2))	15	240.000
2-(Ethylamino)-4-(isopropylamino)-6-(methylthio)-s-triazine (Ametryne)	13	69.000	N,N'-Ethylenebis(stearamide)	15	241.000
o-Ethylaniline	03	882.500	Ethylene carbonate	15	961.000
m-Ethylaniline, refined	03	883.000	Ethylenediamine	15	280.000
2-(N-Ethylanilino)ethanol	03	884.000	Ethylenediamine, alkoxylated	12	328.450
			Ethylenediamine dihydriodide	06	583.000

Table 4.—Alphabetical Chemical Index

CHEMICAL NAME	SECT. NO.	ITEM NO.	CHEMICAL NAME	SECT. NO.	ITEM NO.
Ethylenediamine dihydrochloride	15	387.990	Ethyl heptanoate	07	145.000
Ethylene dibromide	14	182.000	Ethylhexadecyldimethylammonium bromide	12	493.000
Ethylene dichloride	15	1233.000	N-Ethyl-N-hexadecylmorpholinium ethyl sulfate	12	461.000
(Ethylenedinitrilo)tetraacetic acid			S-Ethyl-hexahydro-1H-azepine-1-carbothioate (Molinate)	13	70.000
(Ethylenediaminetetraacetic acid) (EDTA)	14	47.000	2-Ethylhexanal ( $\alpha$ -Ethylcaproaldehyde)	15	789.000
(Ethylenedinitrilo)tetraacetic acid, calcium disodium salt			2-Ethyl-1,3-hexanediol	15	1082.000
(Ethylenedinitrilo)tetraacetic acid, diammonium salt	14	49.000	Ethyl hexanoate	07	146.000
(Ethylenedinitrilo)tetraacetic acid, disodium copper salt, dihydrate	14	50.000	2-Ethylhexanoic acid ( $\alpha$ -Ethylcaproic acid)	15	519.000
(Ethylenedinitrilo)tetraacetic acid, disodium salt	14	54.000	2-Ethylhexanoic acid, potassium salt	12	57.300
(Ethylenedinitrilo)tetraacetic acid, disodium zinc salt, dihydrate	14	53.000	2-Ethylhexanoic acid salts, all other	15	646.000
(Ethylenedinitrilo)tetraacetic acid, manganese salt	14	56.000	2-Ethyl-1-hexanol	15	854.000
(Ethylenedinitrilo)tetraacetic acid, monosodium iron salt	14	58.000	2-Ethylhexanol and ethoxylated nonylphenol, polyphosphated	12	80.090
(Ethylenedinitrilo)tetraacetic acid, tetraammonium salt	14	60.000	2-Ethylhexanol and ethoxylated nonylphenol, polyphosphated, sodium salt	12	80.100
(Ethylenedinitrilo)tetraacetic acid, tetrapotassium salt	14	61.000	2-Ethylhexanol, ethoxylated and phosphated	12	80.000
(Ethylenedinitrilo)tetraacetic acid, trisodium salt	14	62.000	2-Ethylhexanol, ethoxylated, phosphated, potassium salt	12	80.050
(Ethylenedinitrilo)tetraacetic acid, trisodium salt	14	63.000	2-Ethyl hexanol, phosphated, potassium salt	12	80.210
1,1-Ethylenediurea	15	64.000	2-Ethylhexanoyl chloride	15	520.000
Ethylene glycol	15	388.200	2-Ethyl-1-hexyl acetate	15	962.000
Ethylene glycol adipate	11	1081.000	2-Ethyl-1-hexyl acrylate	15	963.000
Ethylene glycol diacetate	15	63.450	2-Ethylhexyl acrylate-methyl acrylate copolymer resins	08	19.970
Ethylene glycol dimercaptoacetate	15	1106.000	(2-Ethylhexyl)amine, mono-	15	281.000
Ethylene glycol dimethacrylate	15	1107.000	2-Ethylhexyl benzoate	15	79.000
Ethylene glycol distearate	12	1108.000	N-(2-Ethylhexyl)bicyclo(2.2.1)-5-heptene-2,3-dicarboximide		
Ethylene glycol di-tributyl ether	15	638.000	2-Ethylhexyl chloroformate	13	173.000
Ethylene glycol esters, all other	12	1161.700	2-Ethylhexyl-p-dimethylaminobenzoate	15	963.600
Ethylene glycol hydroxyacetate	15	642.000	2-Ethylhexyl epoxytallates	11	79.100
Ethylene glycol monoisobutyl ether	15	1109.000	2-Ethylhexyl glycidyl ether	15	77.000
Ethylene glycol mono-oleate	15	1162.000	2-Ethylhexyl hydrogen phosphate	15	1317.500
Ethylene glycol monostearate	12	639.000	2-Ethyl-1-hexyl methacrylate	15	1032.000
Ethylene glycol phosphite	12	640.000	2-Ethylhexyl oleate	11	964.000
Ethylene oxide	15	1109.700	2-Ethylhexyl palmitate	11	90.600
Ethylene-propylene (EP) type	10	1312.000	2-Ethylhexyl phosphate	12	96.900
Ethylene-vinyl acetate (EVA) copolymer resins	08	10.000	2-Ethylhexyl phosphate, potassium salt	12	96.800
Ethyl- $\alpha$ , $\beta$ -epoxy- $\beta$ -methylhydrocinnamate	07	31.700	2-Ethylhexyl phosphate, sodium salt	12	96.900
Ethyl ether, U.S.P.	15	37.000	2-Ethylhexyl polyphosphate	12	98.000
Ethyl ether, absolute	15	1315.000	2-Ethylhexyl polyphosphate, sodium salt	12	99.000
Ethyl ethers of tetra and higher ethylene glycols (high boiling)			2-Ethyl hexyl salicylate	07	37.400
Ethyl ether, tech.	15	1313.000	2-Ethylhexyl stearate	11	119.000
Ethyl formate	07	1161.400	2-Ethylhexyl sulfate, sodium salt	12	243.000
Ethyl glycol monoricinoleate	11	1314.000	N-(Ethylhexyl)trimethylenediamine	12	408.500
1-Ethyl-2-(8-heptadecenyl)-1-(2-hydroxyethyl)-2-imidazolium ethyl sulfate	12	144.500	p-(Ethyl(2-hydroxyethyl)amino)benzenediazonium chloride		
		107.500	-diazo-n-hydroxyethylamine zinc chloride	14	352.000
		460.000	5-(N-Ethyl-N-hydroxyethylamino)-2-pentanone	15	392.000

Table 4.--Alphabetical Chemical Index

CHEMICAL NAME	SECT: NO.	ITEM NO.	CHEMICAL NAME	SECT: NO.	ITEM NO.
(N-Ethyl-N-(2-hydroxyethyl)-3-methyldehydrogen sulfate)			2-(Ethylthio)-4,6-bis(isopropylamino)-s-triazine	13	118.016
p-phenylenediamine	14	353.000	Ethylthioethanol	02	93.100
N-Ethyl-N-hydroxyethyl-1,4-pentanediamine	15	392.100	N-Ethyl-p-toluenesulfonamide	11	5.000
N-Ethyl-N-hydroxyethyl-p-phenylenediamine sulfate	14	354.000	N-Ethyl-m-toluidine	03	908.000
Ethyl hydroxymethyl oleyl oxazoline	15	79.700	3-(N-Ethyl-m-toluidino)propionitrile	03	911.000
2-Ethyl-2-(hydroxymethyl)-1,3-propanediol (Trimethylolpropane)	15	1083.000	Ethyl trimethyl cyclopentenyl buterol	07	150.250
2-Ethyl-2(hydroxymethyl)-1,3-propanediol trimethacrylate	15	1110.000	Ethyl 3,7,11-trimethyldodeca-2,4-dienoate	13	231.016
Ethylidene norbornene	15	80.000	Ethyl valerate	07	150.300
1-Ethyl-2-isoheptadecyl-1-(2-hydroxyethyl)-2-imidazolinium ethyl sulfate	12	460.020	Ethyl vinyl ether	15	1316.000
Ethyl isovalerate	07	146.500	Ethyl xanthogen disulfide	13	203.000
Ethyl laurate	07	147.000	Etidronate, disodium	06	837.001
N-Ethylmaleimide	03	896.600	Expandable polystyrene beads	08	44.010
Ethyl mercaptan (Ethanethiol)	02	93.000	External Drug and Cosmetic Orange 3	04	827.000
2-(Ethylmercapto)ethanol	15	1327.000	External Drug and Cosmetic Yellow 7	04	829.000
N-Ethyl-N-(8-methane sulfonamidoethyl)toluene-2,5-diaminesulfate	14	355.000	Fats and oils, chemically modified, all other	15	1331.000
1-Ethyl-3-methylhydantoin	03	897.030	Fatty acid alkenolamide	12	587.940
N-Ethyl-2-methylallylamine	15	281.500	Fatty acid amide mixtures	15	1434.000
6-Ethyl-2-methylaniline	03	897.000	Fatty acid esters, not included with plasticizers		
Ethyl-2-methyl butyrate	07	147.700	surface-active agents, all other	15	981.000
1-Ethyl-2-methylindole	03	897.050	Fatty acid polyamine condensate	14	280.000
Ethyl-2 methyl pentanoate	07	147.760	fatty acid residues	15	1434.300
N-[3-(1-Ethyl-1-methylpropyl)-5-isoxazolyl]-2,6-dimethoxybenzamide (Flexidor)	13	118.062	Fatty acids, hydrogenated	15	521.000
O-Ethyl O-[4-(methylthio)phenyl] S-propyl phosphorodithioate	13	165.012	Fatty acids, non-hydrogenated	15	522.000
7-Ethyl-2-methyl-4-undecyl sulfate, sodium salt	12	244.000	Fenoprofen	06	401.200
2-Ethylmexanol, phosphated, potassium salt	12	80.200	Ferric stearate	15	754.000
4-Ethylmorpholine	15	81.000	Ferrocene polymer with 2-propanone, in chlorinated wax	15	81.600
Ethyl myristate	07	148.000	Fish oil fatty acid amide	15	243.000
9-Ethyl-3-nitrocarbazole	03	899.000	Flavoxate hydrochloride	06	745.500
O-Ethyl O-(p-nitrophenyl)phenylphosphonothioate (EPN)	13	163.000	Flecainide acetate	06	378.001
2-Ethyl-2-nitro-1,3-propanediol	15	392.250	Flotation reagents, all other	14	147.000
Ethyl nonanoate	07	149.000	Fludrocortisone acetate	06	656.000
Ethyl octanoate	07	150.000	Fluorelastomers (CFM, FKM, FFKM) type	10	11.000
Ethyl phenylacetate	07	37.800	Fluorescent Brightener 290	04	780.290
N-Ethyl-N-phenylbenzylamine	03	901.000	Fluorescent Brightener 22	04	758.000
O-Ethyl-S-phenylethylphosphonodithioate	13	163.200	Fluorescent Brightener 24	04	759.000
Ethyl (polyoxyethylene, cocoamine) ethylsulfate	12	458.830	Fluorescent Brightener 28	04	761.000
Ethyl propionate	07	150.200	Fluorescent Brightener 46	04	765.000
N-(1-Ethylpropyl)-3,4-dimethyl-2,6-dinitrobenzenamine	13	118.030	Fluorescent Brightener 49	04	766.000
Ethyl salicylate	07	39.000	Fluorescent Brightener 52	04	767.000
N-Ethyl-N-(soybean oil alkyl)morpholinium ethyl sulfate	12	463.000	Fluorescent Brightener 51	04	770.000
Ethyl sulfate (Diethyl sulfate)	15	966.000	Fluorescent Brightener 71	04	771.000
N-Ethyl-N-(3'-sulfo)benzyl)aniline	03	906.103	Fluorescent Brightener 102	04	773.000
			Fluorescent Brightener 128	04	778.000
			Fluorescent Brightener 134	04	780.000
			Fluorescent Brightener 191	04	780.191
			Fluorescent Brightener 200	04	780.200
			Fluorescent brighteners, all other	04	781.000

APPENDIX



Table 4.--Alphabetical Chemical Index

CHEMICAL NAME	SECT. NO.	ITEM NO.	CHEMICAL NAME	SECT. NO.	ITEM NO.
Fluorinated (Including other fluorohalogenated)			Gemfibrozil	06	620.500
hydrocarbons, all other	15	1276.000	Gentamycin	06	48.000
Fluorocarbon resins, all other	08	38.200	Geranyl acetate	07	151.000
Fluorometholone	06	657.000	Geranyl benzoate	07	40.200
4-Fluoro-3-nitroaniline	03	913.503	Geranyl butyrate	07	153.000
4-Fluoro-3-nitrobenzotrifluoride	03	913.570	Geranyl crotonate	07	153.001
4-Fluorothiophenol, sodium salt	03	913.900	Geranyl ethyl ether	07	153.007
Fluoxetine hydrochloride	06	527.500	Geranyl formate	07	153.010
Fluoxymesterone	06	640.000	Geranyl isobutyrate	07	153.020
Fluphenazine hydrochloride	06	485.000	Geranyl isovalerate	07	153.400
Food, Drug, and Cosmetic Blue 1	04	782.000	Geranyl and methyl tiglate	07	153.500
Food, Drug, and Cosmetic Blue 2	04	783.000	Geranyl nitrile (Citralva)	07	153.560
Food, Drug, and Cosmetic Green 3	04	784.000	Geranyl propionate	07	153.600
Food, Drug, and Cosmetic Red 2	04	785.000	Geranyl tiglate	07	153.800
Food, Drug, and Cosmetic Red 3	04	786.000	Gibberellic acid	13	168.450
Food, Drug, and Cosmetic Red 4	04	787.000	Glucagon	06	693.000
Food, Drug, and Cosmetic Red 40	04	787.040	Glucoamylase	14	96.000
Food, Drug, and Cosmetic Yellow 5	04	789.005	Glucoheptonic acid, $\beta$ -isomer, sodium salt	14	65.000
Food, Drug, and Cosmetic Yellow 6	04	790.000	Glucoheptonic acid, sodium salt	14	66.000
Formaldehyde (37% HCHO by Weight)	15	791.000	Gluconic acid, potassium and sodium salts W/20% mix of	12	57.530
Formaldehyde adduct condensation	15	228.200	sodium bisulfite-formaldehyde	15	1434.800
Formaldehyde, dicyandiamide, ethylene sulfate polymers	12	780.500	Gluconic acid and salts, mixed	15	526.000
Formaldehyde polymer with carbamate esters	14	487.000	Gluconic acid, technical	15	104.650
Formaldehyde polymer with ethylenediamine and nonyl			Glucono- $\delta$ -lactone	14	111.000
phenol derivatives	14	163.000	Glucose isomerase	14	123.000
Formic acid, 90%	15	524.000	Glucose oxidase	14	124.000
Formic acid salts, all other	15	656.000	Glucose-6-phosphate dehydrogenase	14	8.000
1-Formylpiperidine	03	919.153	Glutamic acid hydrochloride	06	576.500
Fuel additives, acyclic, all other	14	177.000	Glutamyl-p-nitroaniline (liver function test)	15	792.000
Fuel additives, cyclic, all other	14	178.000	Glutaraldehyde	15	1333.000
Fumaric acid	15	525.000	Glutaraldehyde bis(sodium bisulfite)	11	85.950
Fumaric acid, lead salt	15	657.000	glutaric acid esters, all other	15	527.000
2-Furaldehyde (Furfural)	03	920.000	Glutaric anhydride	06	471.000
Furan	07	97.451	Glutethimide	12	761.705
Furfural acetone	07	97.456	Glycerin, alkoxylated maleate	12	761.710
Furfuryl acetate	03	921.000	Glycerine, ethoxylated	12	644.000
Furfuryl alcohol	12	744.600	Glycerol diacetyl tartrate monostearate	12	651.500
Furfuryl alcohol, ethoxylated	07	97.457	Glycerol dilaurate	12	651.550
Furfuryl isovalerate	07	97.459	Glycerol dimerate	12	652.000
Furfuryl octanoate	08	7.000	Glycerol dioleate	12	644.200
Furfuryl type resins	14	456.000	Glycerol ester ethoxylates	12	659.000
D-Galactose			Glycerol esters of chemically defined acids, all other	12	668.000
Galaxolide (1,3,4,6,7,8-Hexahydro-4,6,6,7,8,8-hexamethyl-cyclopenta-7-2-benzopyran)	07	97.460	Glycerol esters of mixed acids, all other	12	729.700
Gallic acid, tech.	14	189.000	Glycerol, ethoxylated	12	111.900
Gasoline additives, acyclic, all other	14	190.000	Glycerol, ethoxylated and phosphated	14	125.000
Gasoline additives, cyclic, all other	14	190.000	Glycerol kinase	12	660.500
			Glycerol mixed ester of soybean oil-trimethylolpropane		

Table 4.—Alphabetical Chemical Index

CHEMICAL NAME	SECT. NO.	ITEM NO.	CHEMICAL NAME	SECT. NO.	ITEM NO.
Glycerol monocaprylate	12	654.000	$\alpha$ -Glycidoxypropyltrimethoxysilane	15	1387.000
Glycerol mono- and diesters of mixed fatty acids	12	648.800	Glycidyl ethers, all other	15	1317.900
Glycerol mono-, di-, and triesters of hydrogenated tallow acids	12	667.000	Glycine (Aminoacetic acid), non-medical	14	10.000
Glycerol monoester of C <sub>8</sub> -C <sub>18</sub> acids	12	660.900	Glycobiarsol	06	157.000
Glycerol monoester of coconut oil acids	12	661.000	Glycolic acid (Hydroxyacetic acid)	15	528.000
Glycerol monoester of coconut oil acids, sulfated, sodium salt	12	267.000	Glycolic acid, sodium salt	15	664.000
Glycerol monoester of cottonseed oil acids	12	662.000	Glycol pelargonate	11	84.000
Glycerol monoester of hydrogenated cottonseed oil acids	12	663.000	Glycol residues	15	1435.000
Glycerol monoester of hydrogenated lard acids	12	663.500	$\alpha$ -Glyconamidopropyl dimethyl-2-hydroxyethyl ammonium chloride	12	471.500
Glycerol monoester of hydrogenated soybean oil acids	12	664.000	Glycopyrrolate	06	288.500
Glycerol monoester of hydrogenated tallow fatty acids	12	648.900	Glyoxal	15	793.000
Glycerol monoester of lard acids	12	665.000	Glyoxal-formaldehyde resins	08	7.500
Glycerol monoester of mixed fatty acids	12	665.500	Gonadorelin	06	692.800
Glycerol monoester of mixed fatty acids, acetylated	12	649.000	Grease, other than wool, sulfated, sodium salt	12	292.000
Glycerol monoester of mixed fatty acids, phosphated	12	112.000	Guaiacwood acetate	07	97.480
Glycerol monoester of mixed fatty acids, succinylated	12	649.100	Guaiene	07	97.490
Glycerol monoester of palm oil acids	12	665.800	Guaiifenesin	06	584.000
Glycerol monoester of safflower oil acids	12	666.200	Guanabenz	06	355.800
Glycerol monoester of tall oil acids	12	666.300	Halcinonide	06	659.500
Glycerol monoester of tallow acids	12	666.400	Half-phthalic acid ester of tallow alkanolamide/monoglyceride	12	318.300
Glycerol monolaurate	12	655.000	Halogenated hydrocarbons, all other	15	1281.100
Glycerol mono-oleate	12	656.000	Heliotropyl acetate	07	80.500
Glycerol mono-oleate, acetylated	12	650.000	Heptachloro-tetrahydro-endo-methanoindene (Heptachlor)	13	136.000
Glycerol mono-oleate, ethoxylated	12	650.100	2-Heptadecyl-1,4-hydroxymethyl-4-ethyl-2-oxazoline	12	345.950
Glycerol monoricinoleate	12	657.000	2-Heptadecyl-2-imidazoline	12	410.000
Glycerol monostearate	12	658.000	Heptadecylmethylbenzimidazolinesulfonic acid, sodium salt	12	26.000
Glycerol monostearate sulfoacetate, sodium salt	12	200.000	Heptaldehyde-aniline condensate	09	6.000
Glycerol sesquiester of hydrogenated tallow acids	12	667.400	n-Heptane	02	71.000
Glycerol sesquiester of tall oil acids	12	667.600	Heptanoic acid, potassium salt	12	57.550
Glycerol, synthetic only	15	1084.000	Heptanolide	07	154.600
Glycerol tricaprylate caprate	15	1110.800	2-Heptanone (Methyl amyl ketone)	15	819.000
Glycerol triester of mixed fatty acids	12	667.900	Heptanoyl chloride	15	528.600
Glycerol trilaurate	12	667.950	Heptenes, mixed	02	72.000
Glycerol trioleate	12	658.500	Heptyl acetate	15	983.800
Glyceryl p-aminobenzoate	15	86.000	n-Heptyl alcohol	15	856.000
Glyceryl diacetate (Diacetin)	15	1111.000	Herring oil, sulfated	12	298.490
Glyceryl monoricinoleate	11	108.000	Herring oil, sulfated, sodium salt	12	299.000
Glyceryl monothioglycolate	15	1113.000	Hetacillin, potassium	06	15.200
Glyceryl triacetate (Triacetin)	15	1114.000	Hexabromocyclodecane	15	87.800
Glyceryl tri(acetylrucinoleate)	11	109.000	Hexachlorocyclopentadiene	03	924.000
Glyceryl trioleate (Triolein)	11	91.000	Hexachlorodimethyl sulfone	15	1334.000
Glyceryl tripropionate	11	83.000	Hexachloroepoxyoctahydro-endo,endo-dimethanonaphthalene (Endrin)	13	139.000
Glyceryl tripropionate	07	154.300			
Glyceryl tristearate	15	1115.500			
Glycidol (2,3-Epoxy-1-propanol)	15	1317.000			

APPENDIX

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Table 4.—Alphabetical Chemical Index

CHEMICAL NAME	SECT. NO.	ITEM NO.	CHEMICAL NAME	SECT. NO.	ITEM NO.
1,4,5,6,7,7-Hexachloro-5-norbornene-2,3-dicarboxylic anhydride (Chlorendic anhydride)	03	925.100	Hexylalcohol, ethoxylated and phosphated	12	80.500
Hexadecane	15	1342.000	Hexylalcohol, phosphated, K salt solubilized	12	80.550
Hexadecanenitrile a	15	441.750	n-Hexylamine	15	284.000
1-Hexadecanethiol	15	1334.500	Hexyl caproate	07	155.710
1-Hexadecanol (Cetyl alcohol)	15	873.000	Hexyl (Isonanoyl anide) carboxylic acid, mono, triethanolamine salts	12	57.560
Hexadecanolide	07	97.550	Hexyl chloride	15	1238.100
n-Hexadeceny succinic anhydride	15	529.000	$\alpha$ -Hexylcinnamaldehyde	07	41.000
Hexadecyl alcohol, ethoxylated	12	730.000	2-Hexyl-2-cyclopenten-1-one	07	97.600
Hexadecylamine	12	421.000	2-Hexyl-1-decanol	15	875.000
tert-Hexadecyl mercaptan	09	171.100	n-Hexyl n-decyl adipate	11	63.600
N-Hexadecylmorpholine	12	347.000	Hexyl n-decyl phthalate	11	44.000
Hexadecyl stearate	11	121.310	1-Hexyl-1,2-dicarbadodecaborane	15	1368.500
Hexadecyl sulfate, sodium salt	12	230.000	Hexyl(isonanoyl anide)carboxylic acid, triethanol-, diethanolamine, mixed salts	12	57.565
Hexadecyltrimethylammonium chloride	12	495.000	N-Hexyl mercaptan	09	171.150
Hexafluoropropylene, monomer	15	1267.000	Hexyl 2-methylbutyrate	07	155.715
Hexahydro dimethyl methano-indenol	07	97.570	Hexyl nitrate	14	149.000
3-(Hexahydro-4,7-methanoindan-5-yl)-1,1-dimethylurea (Norea)	13	72.000	2-[2-(Hexyloxy)ethoxy]ethanol	15	1164.000
Hexahydro-1,3,5-triethyl-s-triazine	13	40.012	Hexyloxypropyl amine	12	328.600
Hexahydro-1,3,5-tri(2-hydroxyethyl)-s-triazine	13	40.022	Hexyl phosphate	12	99.900
Hexamethyldisilazane	15	1387.500	Hexyl phosphate, potassium salt	12	99.910
Hexamethylenediamine adipate (Nylon salt)	15	397.000	Hexyl polyphosphate, potassium salt	12	100.000
Hexamethylenediaminetetra(methylenephosphonic acid), potassium salt	14	68.000	Hexyl salicylate	07	40.900
Hexamethylenimine	03	927.870	Hexyl sulfate, potassium salt	12	231.000
Hexamethylenetetramine, tech.	15	88.000	Homomenthyl salicylate	15	89.000
Hexane	02	65.000	Hydralazine hydrochloride	06	357.000
1,6-Hexanediamine (Hexamethylenediamine)	15	283.000	Hydratropaldehyde	07	42.000
1,6-Hexanediol	15	1085.000	Hydratropaldehyde, dimethyl acetal	07	43.000
1,6-Hexanediol diacrylate	15	1117.000	1,2-Hydrazinedicarboxylic acid, bis(1-methylethyl) ester	09	165.040
Hexanoic acid [Caproic acid]	07	155.200	Hydrindantin	15	91.000
n-Hexanoic acid	15	530.000	Hydrocarbon carboxylic acid derivatives (specify)	14	205.000
2-Hexenal	07	155.300	Hydrocarbon derivatives: all other hydrocarbon derivatives	02	97.000
Hexenes, mixed	02	67.020	Hydrocarbon phosphorous acid, barium salt	14	206.000
2-Hexenol	07	155.400	Hydrocarbon phosphoryl derivatives	14	207.000
cis-3-Hexen-1-yl acetate	07	155.650	Hydrocarbons, all other	15	1349.000
cis-3-Hexenyl benzoate	07	155.652	Hydrocarbons, C <sub>4</sub> , all other	02	52.000
cis-3-Hexenyl butyrate	07	155.653	Hydrocarbons, C <sub>5</sub> , all other	02	59.000
cis-3-Hexenyl methyl carbonate	07	155.654	Hydrocarbons, C <sub>6</sub> , all other	02	68.000
cis-3-Hexenyl salicylate	07	40.500	Hydrocarbons, C <sub>7</sub> , all other	02	73.000
cis-3-Hexenyl tiglate	07	155.656	Hydrocarbons, C <sub>8</sub> , all other	02	77.000
Hexoxyacetaldehyde dimethyl acetal	07	155.700	Hydrocarbons, C <sub>9</sub> and above, all other, including mixtures	02	89.000
Hexyl acetate	15	984.000	Hydrocarbons, C <sub>4</sub> fraction	02	51.200
Hexyl acrylate	15	985.000	Hydrocarbons, C <sub>2</sub> -C <sub>3</sub> mixtures	02	43.000
n-Hexyl alcohol	15	857.000	Hydrocarbons, C <sub>4</sub> mixtures	02	49.600
N-Hexyl alcohol, ethoxylated	12	729.900			

Table 4.--Alphabetical Chemical Index

CHEMICAL NAME	SECT. NO.	ITEM NO.	CHEMICAL NAME	SECT. NO.	ITEM NO.
Hydrocarbons, C <sub>5</sub> mixtures	02	58.500	Hydroxyethane-1-diphosphonic acid	14	69.000
Hydrocarbons, C <sub>5</sub> -C <sub>6</sub> mixtures	02	67.030	4-Hydroxy-3-ethoxybenzaldehyde (Ethylvanillin)	07	44.100
Hydrocarbons, C <sub>5</sub> -C <sub>7</sub> mixtures	02	67.040	Hydroxyethyl acrylate	15	1119.000
Hydrocarbons, C <sub>5</sub> -C <sub>9</sub> mixtures	02	89.010	2,2'-[[4-(2-Hydroxyethylamino)-3-nitrophenyl]imino]diethanol	03	955.700
Hydrocarbons, C <sub>6</sub> -C <sub>7</sub> mixtures	02	72.500	3-[N-(2-Hydroxyethyl)anilino]propionitrile	03	956.000
Hydrochlorothiazide	06	722.000	Hydroxyethylcellulose	14	409.000
Hydrocinnamic acid	07	43.500	N-β-Hydroxyethyl-2,4-dihydroxybenzamide	03	958.000
Hydrocodone bitartrate	06	433.000	(2-Hydroxyethyl)dimethyl(3-stearamidopropyl)ammonium dihydrogen phosphate	12	472.000
Hydrocortisone	06	660.000	(2-Hydroxyethyl)dimethyl(3-stearamidopropyl)ammonium nitrate	12	474.000
Hydrocortisone acetate	06	661.000	N-(2-Hydroxyethyl)-1,2-diphenylethylenediamine	12	351.000
Hydrocoumarin	07	44.000	(N-Hydroxyethylethylenedinitrilo)triacetic acid, iron salt	14	72.000
Hydrogenated (tallow acids) aminoethylethanolamine condensate (amine/acid ratio=1/2)	12	575.300	(N-Hydroxyethylethylenedinitrilo)triacetic acid, magnesium salt	14	73.000
Hydrogenated castor oil, ethoxylated	12	670.000	(N-Hydroxyethylethylenedinitrilo)triacetic acid, trisodium salt	14	74.000
Hydrogenated tallow acids, (Ratio = 2/1)	12	558.000	N-(β-Hydroxyethyl)-N-ethyl-m-toluidine	03	958.302
Hydrogenated tallow acids, aminoethylethanolamide, acetate salt	12	575.280	1-(2-Hydroxyethyl)-2-heptyl-3-carboxyethyl-imidazoline, sodium salt	12	26.500
(Hydrogenated tallow alkyl)amine	12	422.000	1-Hydroxyethyl-1-(2-hydroxy-3-sodiumsulfonatopropyl)-2-capryl-2-imidazolinium hydroxide	12	26.600
(Hydrogenated tallow alkyl)amine acetate	12	394.000	1-Hydroxyethyl-1-(2-hydroxy-3-sodiumsulfonatopropyl)-2-nor-coconut oil fatty acids-2-imidazolinium hydroxide	12	26.700
(Hydrogenated tallow alkyl)amine, ethoxylated	12	329.000	1-Hydroxyethyl-1-(2-hydroxy-3-sodiumsulfonatopropyl)-2-oleyl-2-imidazolinium hydroxide	12	26.800
(Hydrogenated tallow alkyl)trimethylammonium chloride	12	498.000	1-Hydroxyethylidene-1,1-diphosphonic acid	15	531.000
Hydrogenated tallow fatty acid aminoethylethanolamine condensation products	14	488.000	Hydroxyethylidene diphosphonic acid, potassium salt	14	75.000
Hydrogenated tallow glycerides	15	1329.000	Hydroxyethylidene diphosphonic acid, sodium salt	14	76.000
Hydrogenated tallow glycerides diethylenetriamine condensate	12	587.945	Hydroxyethyl methacrylate	15	1119.200
Hydrolytic enzyme mixtures	14	113.000	p-[(2-Hydroxyethyl)methylamino]benzenediazonium chloride (p-Diazo-N-hydroxyethyl-N-methylaniline)-zinc chloride	14	359.000
Hydroquinone (Hydroquinol)	14	357.000	1-(2-Hydroxyethyl)-2-nonyl-2-imidazoline	12	348.000
Hydroquinone, di(β-hydroxyethyl) ether	15	91.250	1-(2-Hydroxyethyl)-2-nor(coconut oil alkyl)-2-imidazoline	12	349.000
Hydroquinone, tech.	03	934.000	1-(2-Hydroxyethyl)-2-nor(soya oil alkyl)-2-imidazoline	12	351.600
p-Hydroxybenzenesulfonic acid	03	944.000	1-(2-Hydroxyethyl)-2-nor(tall oil alkyl)-2-imidazoline	12	350.000
p-Hydroxybenzoic acid, benzyl ester	15	91.900	2-Hydroxyethyl n-octyl sulfide	13	233.010
p-Hydroxybenzoic acid, butyl ester	15	92.000	N-(Hydroxyethyl)piperazine	15	96.000
p-Hydroxybenzoic acid, ethyl ester	15	93.000	3-Hydroxy-2-ethyl-4-pyrone (Ethylmaltol)	07	97.900
p-Hydroxybenzoic acid, methyl ester	15	94.000	1-(2-Hydroxyethyl)-1-(sodium carboxymethyleneoxyethylene)-2-nor-coconut oil fatty acids-2-imidazolinium hydroxide	12	26.900
p-Hydroxybenzoic acid, propyl ester	15	95.000			
4-Hydroxy-2H-1,2-benzothiazine-3-carboxylic acid, methyl ester, 1,1-dioxide	03	947.000			
4-Hydroxybenzylbenzene	03	948.000			
Hydroxychloroquine sulfate	06	175.000			
2-Hydroxycineole	03	952.650			
Hydroxycitronellal methyl anthranilate	07	44.050			
Hydroxycitronellol	07	156.500			
2'-Hydroxy-5,9-dimethyl-6,7-benzomorphan	03	953.550			
7-Hydroxy-3,7-dimethyl-1-octanal (Hydroxycitronellal)	07	156.000			
7-Hydroxy-3,7-dimethyl octanal, dimethyl acetal (Hydroxycitronellal, dimethyl acetal)	07	157.000			

Table 4.--Alphabetical Chemical Index

CHEMICAL NAME	SECT. NO.	ITEM NO.	CHEMICAL NAME	SECT. NO.	ITEM NO.
1-(2-Hydroxyethyl)-2-(tall oil alkyl)imidazoline, fatty acid salt	12	351.700	Hydroxypropyl acrylate	15	1120.000
N-(2-Hydroxyethyl)-N,N',N'-tris(2-hydroxypropyl)-ethylenediamine	12	330.000	Hydroxypropylammonium acetate	12	464.120
Hydroxyethyl-2-undecyl-2,3-imidazoline	12	464.000	Hydroxypropyl guar gum	14	421.000
4-Hydroxymetanilamide	03	965.000	Hydroxypropyl methacrylate	15	1121.000
4-Hydroxy-3-methoxybenzaldehyde [Vanillin]	07	44.300	N-2-hydroxy propyl-n-methyl-N,n-bis[tallow amide ethyl] ammonium ethyl sulfate	12	474.190
4(4-Hydroxy-3-methoxyphenyl)-2-butanone (Vanillyacetone)	07	44.800	8-Hydroxy-5-quinolinesulfonic acid	06	261.000
2-[(Hydroxymethyl)amino]-2-methylpropanol	13	245.014	4-Hydroxyundecanoic acid, $\gamma$ -lactone (7-Undecalactone)	07	101.000
4-Hydroxy-2-methyl-2H-1,2-benzothiazine-3-carboxylic acid, methyl ester, 1,1-dioxide	03	969.050	Hydroxyzine hydrochloride	06	501.000
2-Hydroxymethylene-17 $\alpha$ -ethinylandrost-17 $\beta$ -ol-4-en-3-one	03	969.010	Hydroxyzine pamoate	06	502.000
2-(Hydroxymethyl)ethanol	13	245.012	Hygromycin B	06	66.000
N-(Hydroxymethyl)-formamide	15	244.950	Ibuprofen	06	401.500
Hydroxymethyl-5,5-hydantoin	15	99.500	Imidazoline from tall oil fatty acids and diethylenetriamine	14	164.000
4-Hydroxy-N1-methylmetanilamide	03	970.000	Iminodiacetic acid	15	403.000
Hydroxymethyl(methyl)dithiocarbamic acid, potassium salt	13	185.500	Imipenem	06	62.100
4(5)-Hydroxymethyl-5(4)-methylimidazole hydrochloride	03	970.502	Imipramine hydrochloride	06	528.000
4-Hydroxymethyl-4-methyl-1-phenyl-3-pyrazolidone	14	360.000	1,2,3-Indantrione monohydrate (Ninhydrin)	15	103.000
2-(Hydroxymethyl)-2-methyl-1,3-propanediol (Trimethylolmethane)	15	1086.000	Indocyanine green	06	577.000
2-(Hydroxymethyl)-2-nitro-1,3-propanediol (Tris-(hydroxymethyl)nitromethane)	15	401.000	3-Indolebutyric acid	13	168.600
4-Hydroxy-4-methyl-2-pentanone (Diacetone alcohol)	15	823.000	Indomethacin	06	402.000
4-(4-Hydroxy-4-methyl pentyl)-3-cyclohexene-10-carboxaldehyde (Lyral)	07	97.930	Insect attractants, all other	13	120.000
2-Hydroxy-2-methylphenyl propanone	15	99.600	Insulin	06	694.000
3-Hydroxy-2-methyl-4-pyrone (Maltol)	07	98.000	Intermediate light oil: coke-oven operators	01	1.800
3-Hydroxy-N-(3-N-morpholino-7-propyl)-2-naphthimide	03	972.500	Iodinated glycerol	06	586.000
7-Hydroxy-1,3-naphthalenedisulfonic acid, disodium salt	03	978.000	Iodinated (Not otherwise halogenated) hydrocarbons, all other	15	1281.000
3-Hydroxy-2-naphthoic acid (B.O.N.)	03	992.000	Iodobutane	15	1277.900
3-Hydroxy-2-naphthoic acid, aminopropylmorpholide	03	992.152	Iodochlorhydroxyquin	06	176.000
3-Hydroxy-2-naphthoic acid, ethanalamide	03	992.302	Iodoethane (Ethyl iodide), non-medical	15	1278.000
1-Hydroxynaphthoic acid, methyl ester	03	990.500	Iodoform	06	262.000
3-Hydroxy-2-naphthoic acid, methyl ester	03	993.000	Iodomethane (Methyl iodide)	15	1280.000
3-Hydroxy-2-naphthoic acid, sodium salt	03	994.802	1-Iodoperfluorohexane	15	1268.000
2-Hydroxynaphthoic ethylamide	14	358.000	3-Iodo-2-propynyl butylcarbamate	13	245.013
2-Hydroxy-1,4-naphthoquinone	03	994.903	Ionone( $\alpha$ - and $\beta$ -)	07	104.000
1-(2-Hydroxy-1-naphthylazo)-6-nitro-2-hydroxynaphthalene-4-sulfonic acid	03	997.100	$\alpha$ -Ionone	07	102.000
4-Hydroxynonanoic acid, $\gamma$ -lactone (7-Nonalactone)	07	99.000	$\beta$ -Ionone	07	103.000
$\alpha$ -D-p-Hydroxyphenylglycine methyl ester K	15	100.200	Iopanoic acid	06	568.000
p-Hydroxyphenyl-3-methylbutyric acid	03	1001.227	Iothalamate	06	570.000
Hydroxyprogesterone caproate	06	679.800	Iprnidazole	06	176.300
2-Hydroxy-3(2-propenyloxy)-1-propanesulfonic acid, sodium salt	15	666.015	Iron acetylacetonate complex	15	1371.750
			Iron t- $\alpha$ -alkylcarboxylate	15	670.000
			Iron 2-ethylhexanoate	15	636.000
			Iron naphthenate	14	303.000
			Isatoic anhydride	03	1016.700
			Isethionic acid (2-Hydroxyethanesulfonic acid)	15	532.000
			Isethionic acid, sodium salt	15	666.910

Table 4.--Alphabetical Chemical Index

CHEMICAL NAME	SECT. NO.	ITEM NO.	CHEMICAL NAME	SECT. NO.	ITEM NO.
Isoamyl alcohol, ethoxylated	12	730.100	Isodecyloxypropyliminopropionic acid, monosodium salt	12	13.900
Isoamylene	02	54.200	N-Isodecyloxypropyl trimethylene diamine	12	330.350
Isoamyl furoate	07	104.800	Isodecyl pelargonate	11	85.000
Isoamyl phenylacetate	07	45.300	Isodecyl stearate	11	121.395
Isoamyl salicylate	07	45.400	Isoflurane	06	439.001
Isoascorbic acid (Erythorbic acid)	15	533.000	Isoheptanes	02	69.000
Isoascorbic acid, sodium salt (Sodium erythorbate)	15	667.000	Isoheptyl alcohol	15	857.700
Isobornyl acetate	07	105.000	iso-Hexadecenyl succinic anhydride	15	87.900
Isobornyl methyl ether	07	105.200	Isohexane	02	66.000
Isobornyl propionate	07	105.300	Isohexenyl tetrahydrobenzaldehyde (Myrac aldehyde)	07	47.200
Isobutane (2-Methylpropane)	02	50.000	Isomenthone	07	106.000
Isobutanol, ethoxylated and sulfated, ammonium salt	12	275.200	Isonanoic acid, mono- and triethanolamine salt	12	564.150
Isobutyl acetate	15	892.000	Isonanoic acid, sodium salt	12	57.570
Isobutyl acetate	07	158.000	Isonicotinamide	03	1027.503
Isobutyl acrylate	15	987.000	Isonicotinic acid	03	1027.900
Isobutyl alcohol (Isopropylcarbinol)	15	849.000	Isonicotinonitrile	03	1029.000
Isobutylbenzene	03	1016.750	Isononanoic acid, lead salt	15	672.500
Isobutyl benzoate	07	45.600	Isononanoyl chloride	15	536.730
Isobutyl butyrate	07	158.005	Isononanoyl peroxide	15	1349.850
Isobutyl chloroformate	15	988.000	Isononyl acetate	07	158.800
Isobutylene (2-Methylpropene)	02	51.000	Isononyl alcohol	15	858.000
Isobutyl isobutyrate	15	989.000	Iso-octadecenoic acid	15	536.800
Isobutyl methacrylate	15	989.500	Iso-octadecenylsuccinic anhydride	15	537.000
Isobutyl phenylacetate	07	46.000	Iso-octadecyl alcohol	15	858.800
Isobutyl phthalate	12	250.000	Isooctanoic acid, calcium salt	15	672.600
Isobutylquinoline	07	46.400	Iso-octyl alcohol	15	859.000
Isobutyl salicylate	07	47.000	Iso-octyl hydrogen phosphate	15	1033.000
Isobutyl stearate	11	121.390	Iso-octyl mercaptoacetate	15	991.000
Isobutyltrimethoxysilane	15	1387.600	Iso-octyl-3-mercaptopropionate	15	992.000
Isobutyraldehyde	15	796.000	Iso-octyl oleate	11	92.600
Isobutyric acid	15	534.000	Iso-octylphenol, ethoxylated	12	745.000
Isobutyric anhydride	15	535.000	Iso-octylphenol, ethoxylated and sulfonated, sodium salt	12	207.100
Isobutyronitrile	15	443.000	Iso-pentaldehyde, mixed isomers	15	798.000
Isocamphyl cyclohexanols	07	105.350	Isopentane (2-Methylbutane)	02	53.000
Isocetyl stearate	15	971.800	Isopentanoic acid	15	538.200
Isocyanic acid, p-chlorophenyl ester	03	1017.050	Isopentyl acetate (Isoamyl acetate)	07	158.950
Isocyanic acid, cyclohexyl ester	03	1017.060	Isopentyl benzoate	07	47.700
Isocyanic acid derivatives, all other	03	1026.000	Isopentyl butyrate	07	159.000
Isodecyl acrylate	15	990.000	Isopentyl caproate	07	159.500
Isodecyl alcohol	15	857.500	Isopentyl caprylate	07	159.550
Isodecyl alcohol, ethoxylated and propoxylated	12	760.910	Isopentyl formate	07	160.000
Isodecyl diphenyl phosphate	11	12.500	Isopentyl isovalerate	07	161.000
Isodecyl methacrylate	15	990.700	Isopentyl propionate	07	161.500
Isodecyl neopentanoate	07	158.030	Isopentyl salicylate	07	48.000
Isodecyloxypropylamine	12	330.100	Isophthalic acid (Benzene-1,3-dicarboxylic acid)	03	1031.000
Isodecyloxypropylamine, ethoxylated	12	330.103	Isophthalonitrile	03	1034.000
3-(3-Isodecyloxy)propylaminopropyl amine	12	330.105	Isophthaloyl chloride	03	1034.100

Table 4.--Alphabetical Chemical Index

CHEMICAL NAME	SECT. NO.	ITEM NO.	CHEMICAL NAME	SECT. NO.	ITEM NO.
Isoprene (2-Methyl-1,3-butadiene)	02	54.000	Isothiocyanic acid, phenyl ester	03	1043.102
Isopropamide iodide	06	290.000	Isotridecyloxypropylamine	12	330.300
Isopropanolamine condensates, all other	12	574.000	N-Isotridecyloxypropyl trimethylene diamine	12	330.320
Isopropenylaluminum	15	1362.000	Isovalerone (Diisobutyl ketone)	15	824.000
Isopropoxy-tris(2-ethylenediamino)ethyl titanate	12	330.270	2-Isovaleryl-1,3-indandione	13	169.900
Isopropyl acetate	15	993.000	Isoxicam	06	402.300
Isopropyl alcohol	15	860.000	Itaconic acid (Methylenesuccinic acid)	15	539.000
Isopropylamine, mono	15	287.000	Ivermectin	06	133.001
2-Isopropylaminoethanol	15	411.000	Kanamycin	06	50.000
3-Isopropyl-1H-2,1,3-benzothiadiazin-4(3H)-one 2,2-dioxide	13	73.100	Ketamine hydrochloride	06	437.000
Isopropylbiphenyl	03	1035.118	Ketamine, tetrafunctional	15	414.000
Isopropyl borate	15	993.200	Ketones, all other	15	839.000
Isopropyl chloroformate	15	994.000	Lactic acid, edible, 100%	15	541.000
Isopropyl N-(3-chlorophenyl)carbamate (CIPC)	13	74.000	Lactic acid salts, all other	15	675.000
2-Isopropylcyclohexanol	07	106.200	Lactones, all other	15	104.750
Isopropyl ether	15	1319.000	Lactonitrile	15	445.000
Isopropyl ethylthiocarbamate	15	412.000	Lanolin acetate	15	104.760
4,4'-Isopropylidenebis[2,6-dibromophenol] (Tetrabromobisphenol A)	03	1036.000	Lanolin acid	15	104.763
5,5'-Isopropylidenebis(2-hydroxy-m-xylene- $\alpha,\alpha'$ -diol)	03	1037.000	Lanolin acid, isopropyl ester	15	104.765
4,4'-Isopropylidenediphenol (Bisphenol A)	03	1038.000	Lanolin alcohol acetate	15	104.770
4,4'-Isopropylidenediphenol, ethoxylated	03	1039.000	Lanolin alcohol, propoxylated	12	736.700
4,4'-Isopropylidenediphenol, propoxylated	03	1040.000	Lanolin, ethoxylated	12	671.000
Isopropyl lanolate	15	971.900	Lard oil acids	12	533.650
Isopropyl linoleate	15	972.000	Lard oil and tall oil acids	12	533.660
Isopropyl mercaptan (2-Propanethiol)	02	96.030	Lard, sulfated, sodium salt	12	293.000
Isopropyl-11-methoxy-3,7,11-trimethyldodeca-2,4-dienoate	13	231.014	Lasalocid	06	66.500
Isopropyl-11-methoxy-3,7,11-trimethyldodeca-2,4-dienoate	13	231.015	Latex type polyvinylidene chloride resins	08	50.010
p-Isopropyl- $\alpha$ -methylhydrocinnamaldehyde (Cyclamen aldehyde)	07	49.000	Lauraldehyde	07	162.000
Isopropyl myristate	11	88.000	3-Lauramido-N,N-dimethylpropylamine oxide	12	387.000
Isopropyl naphthalenesulfonic acid	12	170.000	(3-Lauramidopropyl)trimethylammonium methyl sulfate	12	475.000
Isopropyl oleate, sulfated, sodium salt	12	260.000	Lauric acid	12	570.000
Isopropyl palmitate	11	98.000	Lauric acid (Ratio = 1/1)	12	547.000
o-Isopropylphenol	03	1041.000	Lauric acid (Ratio = 2/1)	12	534.000
p-Isopropylphenol	03	1041.053	Lauric acid ester of glycerol and ethoxylated nonylphenol	12	711.500
Isopropylphenol, mixed	03	1041.100	Lauric acid - ethanolamine condensate, ethoxylated	12	578.500
Isopropyl N-phenylcarbamate (IPC)	13	75.000	Lauric acid salts, all other	15	679.000
N-Isopropyl-N'-phenyl-p-phenylenediamine	09	63.000	Lauric alkanolamidesulfosuccinate, sodium salt	12	178.000
Isopulegyl acetate	07	106.220	Lauric and myristic acid (Ratio = 1/1)	12	547.200
Isostearic acid, aminoethylethanolamide, acetate salt	12	575.340	Lauric and myristic acids	12	571.000
Isostearic acid, isopropoxy titanium salt	12	57.600	Lauric and myristic acids (Ratio = 2/1)	12	535.000
Isostearic acid, triethanolamine salt	12	29.500	Lauric and myristic acids (Ratio = 1/1)	12	564.400
Isostearic amphopropionate	12	13.100	Lauronitrile (Dodecyl nitrile)	15	446.000
Isostearyl alcohol, ethoxylated	12	730.200	Lauroyl chloride	15	543.000
Isostearyl neopentanoate	15	995.000	N-Lauroyl iminodiacetic acid	12	40.900
			2-(2-Lauroyloxyethyl)carbamoyl-1-methylpyridinium chloride	12	476.000

Table 4.--Alphabetical Chemical Index

CHEMICAL NAME	SECT: NO.	ITEM NO.	CHEMICAL NAME	SECT: NO.	ITEM NO.
Lauroyl peroxide	15	1351.000	Leuco Sulfur Red 14	04	1070.014
N-Lauroyl sarcosine	12	43.990	Leuco Sulfur Yellow 1	04	1059.000
N-Lauroyl sarcosine, ammonium salt	12	43.910	Leuco Sulfur Yellow 17	04	1064.017
N-Lauroylsarcosine, sodium salt	12	44.000	Leuco Sulfur Yellow 21	04	1064.021
Lauryl acrylate	15	995.270	Leuco Sulfur Yellow 22	04	1064.022
Lauryl alcohol, ethoxylated	12	730.500	Leuco Sulfur Brown 95	04	1104.095
Laurylamidopropyl betaine	12	13.400	Levodopa	06	835.000
Laurylamphoglycinate	12	13.500	Levothyroxine, sodium	06	694.500
Lauryl chlorides	15	1239.000	Lidocaine	06	706.000
Lauryl lactate	15	996.000	Lidocaine hydrochloride	06	706.100
Lauryl methacrylate	15	997.000	Light-oil distillates, all other	01	9.000
Lauryl methacrylate-stearyl methacrylate copolymer resins	08	19.980	Ligninsulfonic acid propoxylated, sodium salt	12	157.800
Lauryl sulfate, sodium salt	12	231.700	Lignin amine	12	357.010
Lead acetate	15	595.000	Lignin, ethoxylated	12	761.900
Lead t- $\alpha$ -alkylcarboxylate	15	670.500	Lignin, sodium salt	12	318.400
Lead-cobalt neodecanoate	15	706.000	Ligninsulfonic acid, aluminum salt	12	152.000
Lead 2-ethylhexanoate	15	637.000	Ligninsulfonic acid, ammonium salt	12	153.000
Lead linoleate	15	684.000	Ligninsulfonic acid, calcium salt	12	154.000
Lead manganese tallate	15	175.000	Ligninsulfonic acid, chromium salt	12	155.000
Lead naphthenate	14	306.000	Ligninsulfonic acid, iron salt	12	156.000
Lead neodecanoate	15	707.000	Ligninsulfonic acid, magnesium salt	12	157.000
Lead salts of menhaden fish oil, c-14 to c-22(lead fishate)	15	680.500	Ligninsulfonic acid, mixed chromium and iron salts	12	157.200
Lead stearate	15	756.000	Ligninsulfonic acid, potassium salt	12	157.700
Lead stearate, dibasic	15	757.000	Ligninsulfonic acid, sodium salt	12	158.000
Lead subacetate	15	596.000	Ligninsulfonic acid, zinc salt	12	158.500
Lead tallate	15	176.000	d-Limonene	07	50.100
Leuco quinizarin (1,4,9,10-Anthratetrol)	03	1045.000	l-Limonene	07	50.200
Leuco Sulfur Black 1	04	1107.000	Linalyl anthranilate	07	49.500
Leuco Sulfur Black 2	04	1110.000	Lincomycin (medicinal grade)	06	51.000
Leuco Sulfur Black 18	04	1115.018	Lincomycin (animal feed grade)	06	67.000
Leuco Sulfur Blue 7	04	1075.000	Lincomycin hydrochloride	06	67.500
Leuco Sulfur Blue 13	04	1081.000	Linear alcohols, sulfated, all other	12	240.000
Leuco Sulfur Brown 1, 1:1	04	1089.000	Linear saturated polyester	14	387.000
Leuco Sulfur Brown 3	04	1091.000	Linoleic acid (Ratio = 1/1)	12	547.800
Leuco Sulfur Brown 10	04	1093.000	Linoleic acid (Ratio = 2/1)	12	535.000
Leuco Sulfur Brown 31	04	1099.031	Linoleic acid dimers, alkoxylated	12	711.200
Leuco Sulfur Brown 37	04	1101.000	Linseed oil, oxygenated	15	1329.400
Leuco Sulfur Brown 52	04	1101.052	Lipase	14	114.000
Leuco Sulfur Brown 96	04	1104.996	Lithium heparin	06	527.000
Leuco Sulfur Green 2	04	1084.000	Lithium naphthenate	14	307.000
Leuco Sulfur Green 3	04	1085.000	Lithium neodecanoate	15	708.000
Leuco Sulfur Green 16	04	1087.000	Lithium stearate	15	758.000
Leuco Sulfur Green 34	04	1087.034	Lubricating oil and grease additives, acyclic, all other	14	293.000
Leuco Sulfur Green 35	04	1087.035	Lubricating oil and grease additives, cyclic, all other	14	294.000
Leuco Sulfur Green 36	04	1087.036	3,5-Lutidine	03	1048.503
			Mafenide	06	202.900
			Mafenide acetate	06	203.000



Table 4.--Alphabetical Chemical Index

CHEMICAL NAME	SECT. NO.	ITEM NO.	CHEMICAL NAME	SECT. NO.	ITEM NO.
Magnesium acetate	15	598.000	p-Mentha-6,8-dien-z-one (Carvone, Carvol)	07	107.000
Magnesium gluconate	06	764.000	1-p-Mentha-6,8-dien-2-yl acetate (Carvyl acetate)	07	107.100
Magnesium stearate	15	759.000	Menthallylidene diacetate	15	1000.000
Maleated esterified tall oil	12	318.470	p-Menthane	15	105.000
Maleated linseed oil	12	318.475	p-Menth-8-en-3-ol (Isopulegol)	07	108.300
Maleic acid	15	545.000	p-Menth-1-en-3-one (Piperitone)	07	108.400
Maleic anhydride	15	104.800	p-Menth-4-(8)-en-3-one (Pulegone)	07	108.700
Maleic anhydride, polypropylene glycol copolymer	12	711.700	1-1-p-Menthen-6-yl-1-propanone	07	108.600
Maleic esters and copolymers	15	999.000	d-Menthol	07	110.000
Malic acid	15	547.000	dl-Menthol, synthetic	07	110.100
Malonaldehyde bis(dimethyl) acetal	15	1324.000	Menthyl acetate	07	111.000
Malonanilide	03	1048.930	l-Menthyl acetate	07	111.100
Maltase	14	97.000	Menthyl butyrate	07	111.130
D-Maltose	14	459.000	8-p-Menthyl hydroperoxide	15	106.000
d-Mandelic acid	03	1048.940	Meperidine hydrochloride	06	404.000
Manganese acetate	15	599.000	Mepivacaine	06	706.400
Manganese acetylacetonate complex	15	1371.800	Meprednisone	06	662.500
Manganese t- $\alpha$ -alkylcarboxylate	15	671.000	Meprednisone acetate	06	662.600
Manganese 2-ethylhexanoate	15	639.000	Meproamate	06	504.000
Manganese gluconate	06	765.000	Mercaptoacetic acid (Thioglycolic acid)	15	549.000
Manganese naphthenate	14	309.000	Mercaptoacetic acid (Thioglycolic acid) salts, all other	15	698.000
Manganese neodecanoate	15	709.000	2-Mercaptobenzothiazole	09	30.000
Manganese tallate	15	177.000	2-Mercaptobenzothiazole, copper salt	09	30.300
Mannitol	15	1087.000	2-Mercaptobenzothiazole derivative	09	30.600
Maprotiline hydrochloride	06	529.000	2-Mercaptobenzothiazole, sodium salt	13	40.024
Meclizine hydrochloride	06	81.000	2-Mercaptobenzothiazole, zinc chloride	09	31.000
Meclofenamate, sodium	06	402.500	Mercaptobenzothiazole, zinc salt	13	40.011
Meclofenamic acid	06	402.600	2-Mercaptobenzothiazole, zinc salt	09	32.000
Medicinal chemicals, all other	06	837.000	2-Mercaptoethanol	15	1353.000
Medroxyprogesterone acetate	06	680.000	N-(Mercaptomethyl)phthalimide S-(0,0-dimethylphosphorodithioate)	13	165.024
Medrysone	06	662.000	3-Mercapto-1,2-propanediol (Thioglycerol)	15	1088.000
Mefenamic acid	06	403.000	3-Mercaptopropionic acid	15	550.000
Megestrol acetate	06	680.500	Mercaptopropionic acid, dibutyltin salt	15	699.000
Melamine	03	1050.000	Mercaptopropyltrimethoxysilane	15	1388.000
Melamine formaldehyde methanol polymer	14	483.000	Mercaptopurine	06	279.000
Melamine-formaldehyde resins	08	8.000	Mercaptosuccinic acid (Thiomalic acid)	15	551.000
Melamine formaldehyde triethanolamine mixed fatty alcohols polymer	14	484.000	2-Mercaptotololumidazole, zinc salt	09	41.475
Melamine stearyl alcohol polymer	14	490.000	Mercury fungicides cyclic, all other	13	24.000
Melengestrol acetate	06	681.000	Methacrolein (methacrylaldehyde)	15	798.500
Menadione sodium bisulfite (anhydrous)	06	826.000	Methacrylamide	15	247.000
Menadione sodium bisulfite (trihydrate)	06	826.100	Methacrylate based cationic polyelectrolytes	15	1450.600
p-Mentha-1,3-diene ( $\alpha$ -Terpinene)	07	107.600	Methacrylic acid	15	552.000
p-Mentha-1,4-diene ( $\gamma$ -Terpinene)	07	107.700	$\alpha$ -Methacryloxypropyltrimethoxysilane	15	1389.000
p-Mentha-1,8-diene (Limonene)	07	50.000	Methadone hydrochloride	06	405.000
dl-p-Mentha-1,8-diene (Limonene)	03	1052.000	Methamphetamine	06	519.800
p-Mentha-6,8-dien-z-ol (Carveol)	07	106.800	Methamphetamine hydrochloride	06	520.000

Table 4.—Alphabetical Chemical Index

CHEMICAL NAME	SECT. NO.	ITEM NO.	CHEMICAL NAME	SECT. NO.	ITEM NO.
Methane	02	37.000	3-(3-Methoxypropoxy)propanol	15	1174.000
Methanearsonic acid, disodium salt (DSMA)	13	204.000	3-[3-(3-Methoxypropoxy)propoxy]propanol	15	1175.000
Methanearsonic acid, monosodium salt (MSMA)	13	205.900	3-Methoxypropylamine	15	417.000
Methanesulfonic acid	15	553.000	Methyclothiazide	06	724.000
Methanesulfonyl chloride	15	554.000	N-Methylacetamide	15	248.000
Methanol, synthetic only	15	861.000	Methyl acetate	15	1002.000
Methenamine hippurate	06	240.000	Methyl acetoacetate	15	1003.000
Methenamine mandelate	06	241.000	4'-Methylacetophenone	07	55.000
Methicillin, sodium	06	16.000	2-Methyl-5-acetylpyridine	03	1066.950
Methimazole	06	645.000	Methyl acetylricinoleate	11	111.010
Methionine (animal feed grade)	14	13.000	Methyl acrylate, monomer	15	1004.000
Methionine, hydroxy analogue, calcium salt	14	15.000	Methylal (Dimethoxymethane)	15	1320.000
Methocarbamol	06	479.000	Methyl alcohol, alkoxylated	12	730.700
4-Methoxyacetanilide	03	1057.250	Methylaluminum sesquichloride	15	1363.000
p-Methoxybenzyl alcohol (Anisyl alcohol)	07	52.000	Methylamine, mono-	15	290.000
2-[(Methoxycarbonylamino)-(2-nitro-5-N-propylthio)phenyliminomethylamino]ethanesulfonic acid	03	1057.400	2-Methylaminoethanol (N-Methylethanolamine)	15	419.000
o-Methoxy cinnamic aldehyde crystals	07	52.102	p-Methylaminophenol sulfate (Metol)	14	362.000
2-Methoxyethanol (Ethylene glycol monomethyl ether)	15	1168.000	2-(N-Methylanilino)ethanol	03	1070.000
2-(2-Methoxyethoxy)ethanol (Diethylene glycol monomethyl ether)	15	1169.000	3-(N-Methylanilino)propionitrile	03	1071.000
2-[2-(2-Methoxyethoxy)ethoxy]ethanol (Triethylene glycol monomethyl ether)	15	1170.000	p-Methylanisole	07	56.000
2-(2-Methoxyethoxy)ethyl-2-methoxyethyl ether (Triethylene glycol dimethyl ether)	15	1171.000	Methyl anthranilate	07	57.000
2-Methoxyethyl acetate	15	1124.000	2-Methylantraquinone	03	1075.000
2-Methoxyethyl acrylate	15	1001.000	Methylaziridine	15	110.000
2-Methoxyethyl carbamate	15	416.700	Methyl benzoate	07	57.100
2-Methoxyethyl palmitate	11	99.000	3-Methylbenzo[flquinoline	03	1076.000
2-Methoxyethylpiperidine	03	1057.503	2-Methylbenzothiazole	03	1078.000
N-Methoxymethylmorpholine	03	1059.600	α-Methylbenzyl acetate (Styralyl acetate)	07	58.000
2-Methoxynaphthalene	07	53.000	N-Methylbenzylamine	03	1079.000
4-Methoxy-1-naphthol	14	361.000	o-Methylbenzyl chloride	03	1079.050
N-(4-Methoxy-3-nitrophenyl)acetamide	03	1060.100	p-Methylbenzyl chloride	03	1079.100
Methoxyphenamine hydrochloride	06	335.000	Methyl benzyl ether	03	1080.000
4-Methoxyphenol	15	109.000	N-Methylbis(coconut oil)alkylamine	12	441.000
(p-Methoxyphenyl)acetic acid	03	1063.000	N-Methylbis(hydrogenated tallow alkyl)amine	12	442.000
N[4-[1-(2-Methoxyphenylamino)carbonyl]-2-oxopropylazophenyl]-4-[1[(2-methoxyphenylamino)carbonyl]-2-oxopropylazo]benzamide]	03	1063.023	Methyl, bis-(2-hydroxyethyl) hydrogenated tallow alkylammonium chloride	12	465.120
1-p-Methoxyphenyl penten-1-one-3 (α-Methyl-anisalacetone)	07	53.400	Methyl, bis-(2-hydroxyethyl) isodecyloxypropylammonium chloride	12	465.135
Methoxypolyethylene glycol	15	1172.000	Methyl, bis-(2-hydroxyethyl) isotridecyloxypropylammonium chloride	12	465.140
1-Methoxy-2-propanol	15	1173.000	Methyl, bis-(2-hydroxyethyl) soyaalkylammonium chloride	12	465.160
2-Methoxy-4-propenylphenol (Isoeugenol)	07	54.000	N-methylbis[octyl-decylamine	12	442.100
2-Methoxy-4-propenylphenol, acetate	07	54.100	Methyl bromide (Bromomethane)	13	240.000
3-Methoxypropionitrile	15	448.200	2-Methyl-1-butanol	15	841.000
			3-Methyl-2-butenyl acetate	07	162.012
			Methyl-1-(butylcarbamoyl)-2-benzimidazolecarbamate (Benomyl)	13	24.900
			Methyl-t-butyl ether	14	184.000

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CHEMICAL NAME	SECT. NO.	ITEM NO.	CHEMICAL NAME	SECT. NO.	ITEM NO.
2-Methylbutyl isovalerate	07	162.015	2,2'-Methylenebis(6-tert-butyl-p-cresol)	09	90.000
Methyl butyl phosphate ethylenedioxy titanium salt/n,n-dimethyl amino ethyl methacrylate salt	12	100.205	2,2'-Methylenebis(6-tert-butyl-4-ethylphenol)	09	91.000
Methyl butynol	07	162.020	2,2'-Methylenebis(4-chlorophenol) (dichlorophene)	13	40.025
Methyl carbamate	15	420.000	4,4'-Methylenebis(2,6-di-tert-butylphenol)	03	1088.100
Methyl N-( $\alpha$ -carboxydihydrobenzyl)- $\beta$ -aminocrotonate, sodium salt	03	1081.200	4,4'-Methylenebis[N,N-diethylaniline]	03	1087.000
Methylcellulose	14	411.000	4,4'-Methylenebis[N,N-dimethylaniline] (Methane base)	03	1088.000
Methyl chloroacetate	15	1007.000	Methylene-bis(dimethyl)hydantoin and derivatives	14	166.000
Methyl chloroformate	15	1008.000	2,2'-Methylenebis(4-methyl-6-nonyl-p-cresol)	03	1089.100
2-(2-Methyl-4-chlorophenoxy)propionic acid, diethanolamine salt	13	118.056	4,4'-Methylene-bis-orthoethylaniline	03	1089.500
2-(2-Methyl-4-chlorophenoxy)propionic acid, iso-octyl ester	13	118.057	Methylenebis(thiocyanate)	13	195.010
1-Methyl-4-(3-chloropropyl)piperazine	03	1081.310	2,2'-Methylenebis[3,4,6-trichlorophenol] (Hexachlorophene)	15	114.000
1-Methyl-4-(3-chloropropyl)piperazine hydrochloride	03	1081.300	Methylene-bridged polyalkyl phenols	14	208.000
$\alpha$ -Methylcinnamaldehyde	07	59.000	Methylene chloride (Dichloromethane)	15	1234.000
Methyl cinnamate	07	60.000	4,4'-Methylenedianiline	03	1091.000
6-Methylcoumarin	07	60.200	1,2-Methylenedioxy-4-propylene benzene (isoSafrole)	07	60.600
Methyl crotonate	07	162.457	5,5'-Methylenedisalicylic acid	03	1092.000
Methyl cyanoacetate	15	421.000	Methyl esters of coconut oil	15	973.000
Methylcyclohexane	03	1083.000	Methyl esters of lard	15	974.500
N-Methylcyclohexylamine	03	1084.000	Methyl esters of tallow	15	975.000
1-(2-Methylcyclohexyl)-3-phenylurea (Siduron)	13	76.000	Methyl ether (Dimethyl ether)	15	1321.000
Methylcyclopentadiene	02	65.500	Methyl ethyl ketone	15	826.500
Methylcyclopentadienylmanganese tricarbonyl	14	185.000	Methyl ethyl sulfide	02	93.800
2-Methyl decanal	07	162.040	Methyl formate	15	1010.000
Methyl 3-(2,2-dichloroethenyl)-2,2-dimethyl-3-cyano-3-phenoxyphenylcyclopropanecarboxylate	13	166.035	Methyl formcel	15	1450.000
Methyl 5-(2',4'-dichlorophenoxy)-2-nitrobenzoate	13	76.050	Methylglucoside dioleate	12	712.950
Methyl 3-(2,2-dichlorovinyl)-2,2-dimethylcyclopropane carboate	03	1084.150	Methylglucoside laurate	12	713.000
N-Methyldicyclohexylamine	03	1084.300	Methylglucoside sesquistearate	12	714.300
Methyl didecylamine	12	442.800	1-Methyl-2-(8-heptadecenyl)-1-(9-octadecenyl)amido ethyl	12	476.850
Methyl dihydrogen phosphate	15	1034.000	N-(1-Methylheptyl)-N'-phenyl-p-phenylenediamine	09	64.000
5-Methyl-1,7-dihydroxy-1,3,4-triazaindolizine	14	366.000	5-Methyl-2-hexanone (Methyl isoamyl ketone)	15	827.000
Methyl N',N'-dimethyl-N-[(methylcarbamoyl)oxy]-1-thiooxamidate	13	231.010	Methyl hexyl ether	07	162.480
Methyl 2-[[[(4,6-dimethyl-2-pyrimidinyl)amino]carbonylamino]sulfonyl]benzoate	13	118.055	p-Methylhydratopaldehyde	07	60.800
2-Methyl-4,6-dinitrophenol (4,6-Dinitro-o-cresol)	03	1084.700	Methylhydroquinone	03	1094.000
4-Methyl-2,6-dinitrophenol	03	1084.703	Methyl 12-hydroxystearate	15	976.000
N-Methyldioctadecylamine	12	443.000	4,4-Methylidene-bis-1(p-sulfophenyl)3-methylpyrazolone	14	367.000
Methyl dioleyl ethoxy ammonium methyl sulfate	12	465.250	(2,4-Methyl-5-imidazolyl)methylthioethylamine dihydrochloride	03	1094.853
N-Methyldithiocarbamic acid, potassium salt	13	187.012	2,2'-(Methylimino)diethanol (Methyldiethanolamine)	15	424.000
N-Methyldithiocarbamic acid, sodium salt (Metham)	13	241.000	4-Methyl-2-imino-1,3-dithiolane hydrochloride	03	1094.880
Methyldopa	06	358.000	Methylionone( $\alpha$ - and $\beta$ -)	07	114.000
			7-Methylionone	07	114.100
			6-Methyl- $\alpha$ -ionone	07	112.000
			6-Methyl- $\beta$ -ionone	07	113.000
			Methyl isobutyl ketone	15	828.000
			Methylisobutyl ketone aminonitrile	15	448.800
			Methyl isobutyrate	07	162.500

Table 4.--Alphabetical Chemical Index

CHEMICAL NAME	SECT. NO.	ITEM NO.	CHEMICAL NAME	SECT. NO.	ITEM NO.
Methyl isocyanate	15	424.500	2-Methyl-1-pentanol	15	863.000
1-Methyl-isoheptyl-hexahydro benzaldehyde	07	61.100	4-Methyl-2-pentanol (1-Methylisobutylcarbinol)	15	864.000
Methyl iso-octadecenoate	15	977.500	4-Methyl-3-penten-2-one (Mesityl oxide)	15	829.000
Methyl isothiocyanate and 1,3-dichloropropene	13	243.012	N-(1-Methylpentyl)-N'-phenyl-p-phenylenediamine	09	64.200
Methyl isovalerate	07	162.520	Methyl pentynol	07	162.660
2-Methylactonitrile (Acetone cyanohydrin)	15	449.000	Methylphenidate hydrochloride	06	545.700
Methyl linoleate	15	977.600	Methyl phenylacetate	07	63.000
Methylmagnesium bromide	15	1376.000	2-Methyl-5-phenylbenzoxazole	03	1114.502
Methylmagnesium chloride	15	1377.000	1-Methyl-4-phenylisonipecotic acid	03	1115.500
Methyl mercaptan (Methanethiol)	02	94.000	1-Methyl-4-phenylisonipecotonitrile	03	1115.700
Methyl methacrylate-butadiene styrene (MBS) resins	08	44.041	3-Methyl-5-phenyl-1-pentanol	07	63.200
Methyl methacrylate, monomer	15	1011.000	1-Methyl-3-phenyl-5-[3-(trifluoromethyl)phenyl]-4(1H)-pyridone (Fluridone)	13	118.063
N-Methyl-methanamine with borane (1:1)	15	1368.600	4-Methylphthalic acid	03	1120.502
Methyl N-methylanthranilate	07	62.000	4-Methylphthalic anhydride	03	1120.513
Methyl-2-methyl butyrate	07	162.550	3-(2-Methylpiperidino)propyl-3,4-dichlorobenzoate (Pipron)	13	40.026
S-Methyl-N-l(methylcarbamoyl)oxylthioacetimidate (Methomyl)	13	213.400	Methyl pivaloylacetate	15	1012.800
4-Methyl-N-((4-methylphenyl)sulfonyl)benzenesulfonamide	03	1096.200	N-Methyl-N-polyoxyethylene-N,N-bis(hydrogenated tallow amidoethyl)ammonium	12	476.920
2-Methyl-2-(methylthio)propionaldehyde O-(methylcarbamoyl)oxime (aldicarb)	13	213.500	N-Methyl-N-polyoxyethylene-N,N-bis(tallow amidoethyl)	12	476.925
4-Methylmorpholine	15	117.000	Methylprednisolone	06	663.000
Methylnaphthalene	01	12.500	2-Methyl-2-propanamine with borane(1:1)	15	1368.700
Methylnaphthalenesulfonic acid, sodium salt	12	173.000	Methylpseudoionone	15	830.000
N-Methyl-p-nitroaniline	03	1102.000	1-Methyl-2-pyrrolidone, monomer	15	120.000
4-Methyl-2-nitroanisole	03	1104.000	Methyl ricinoleate	11	110.000
3-Methyl-2-nitrobenzoic acid	03	1106.020	Methyl salicylate	07	64.000
2-Methyl-2-nitro-1,3-propanediol	15	425.000	Methyl stearate	15	978.000
2-Methyl-2-nitro-1-propanol	15	426.000	1-Methyl-2-(2-stearoyloxyethyl)carbamoylpyridinium chloride	12	477.000
3-Methyl-2-[and3]nonene nitrile	07	162.750	α-Methylstyrene	03	1125.000
Methyl-2-nonenolate	07	162.600	ar-Methylstyrene (Vinyltoluene)	03	1125.100
Methyl nonen-3-olate	07	162.605	p-Methyl styrene polymers	08	45.300
Methylnonylnaphthalenesulfonic acid, sodium salt	12	174.000	α-Methyl styrene polymers	08	45.000
2-Methyl-5-norbornene-2,3-dicarboxylic anhydride	03	1108.000	Methyl sulfate (Dimethyl sulfate)	15	1013.000
1-methyl-2-nor-tallow-1-[2-tallow amidoethyl]imidazoliummethyl sulfate	12	476.880	Methyl sulfide (Dimethyl sulfide)	15	1354.000
Methyl-octyl aldehyde	07	163.100	Methyl sulfoxide (Dimethyl sulfoxide)	15	1355.000
Methyl oleate	11	94.000	N-Methyl-N-(tall oil acyl)taurine, sodium salt	12	186.000
Methyl oleate, sulfated, sodium salt	12	261.000	Methyl-1-tallowamidoethyl-2-tallowimidazolium-methyl sulfate	12	498.700
N-Methyl-N-oleoyltaurine, sodium salt	12	184.000	Methyltallowdiethylenetriamine condensate, polyethoxylated, methyl sulfate	12	465.200
Methylol methyl hexyl ketone	07	162.700	Methyltallowdiethylenetriamine condensate, polypropoxylated, methyl sulfate	12	465.210
m-(3-Methyl-5-oxo-2-pyrazolin-1-yl)benzenesulfonic acid	03	1111.000	Methyltestosterone	06	641.200
4-((3-Methyl-5-oxo-1-(4-sulfophenyl)-2-pyrazolin-4-ylidene)methylene)-3-methyl-1-(4-sulfophenyl)-2-pyrazolin-5-one	14	368.000	2-Methylthiazole	14	363.000
N-Methyl-N-palmitoyltaurine, sodium salt	12	185.000	Methylthiobenzolic acid	03	1128.500
Methyl pentachlorostearate	11	124.000			
2-Methyl-2,4-pentanediol (Hexylene glycol)	15	1089.000			

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Table 4.--Alphabetical Chemical Index

CHEMICAL NAME	SECT. NO.	ITEM NO.	CHEMICAL NAME	SECT. NO.	ITEM NO.
Methyl thiobutyrate	07	162.800	Mixed alkyl phosphate, diethanolamine salt	12	102.000
β Methyl thiopropionaldehyde	07	167.710	Mixed alkyl phosphate, potassium salt	12	102.050
Methylthiosulfonic acid, S-(2-hydroxypropyl) ester	13	205.925	Mixed alkyl phosphate, triethanolamine salt	12	102.120
Methyl tri(C9-10)ammonium chloride	12	499.900	X-(Mixed alkyl)polyethylenepolyamine	12	412.000
1-Methyl-3,5,7-triaza-1-azonia tricyclodecane chloride	13	175.300	Mixed tert-alkyl primary amines, ethoxylated	12	331.500
5-Methyl-1,2,4-triazolo[3,4-b]benzothiazole (Tricyclazole)	13	40.027	Mixed alkyl stearate	12	714.520
Methyltrimethoxysilane and polymethyltrisiloxane	15	1390.000	(Mixed alkyl)sulfobetaine	12	15.000
Methyltrioctylammonium chloride	12	499.000	Mixed aryl diimides	14	167.000
2-Methylundecanal	07	163.000	Mixed carboxylic acids	12	536.450
2-Methyl undecanal dimethylacetal	07	163.050	Mixed carboxylic acids	12	547.850
Methyl vinyl ether	15	1322.000	Mixed chain length fatty acid, synthetic	15	1438.000
Metoclopramide hydrochloride	06	81.300	Mixed(coco and soya fatty acids), reaction products with chloromethane and diethylenetriamine, ethoxylated, quaternized	12	477.220
Metronidazole	06	177.000	Mixed dialkyl hydrogen phosphates	15	1034.500
Metyrapone	06	578.000	Mixed dialkyl hydrogen phosphates, amine salts	15	1034.502
Minocycline	06	35.000	Mixed di and triethylene glycol mono ester of tall oil acid	12	714.600
Minoxidil	06	358.400	Mixed fatty acid amide with diethylene triamine/ethyl sulfate	12	477.226
Miscellaneous acyclic chemicals, all other	15	1423.000	Mixed fatty acid-ethoxylated nonyl phenol ester	12	783.500
Mixed alcohol borates	15	1437.000	Mixed fatty acids-diethylene triamine diethylsulfate condensate	12	377.200
Mixed alcohols, ethoxylated	12	762.000	Mixed fatty acids-polyalkylenepolyamine condensate	12	361.000
Mixed alkane sulfonic acid, sodium salt	12	212.000	Mixed fish oils, sulfated, ammonium salt	12	299.990
3-(Mixed alkoxy)propylamine, ethoxylated oxides	12	330.950	Mixed fish oils, sulfated, sodium salt	12	300.000
3-(3-Mixed alkoxy)propylaminopropyl amine	12	330.955	Mixed linear alcohol, ethoxylated, sulfated, mixed sodium and cocoamphocarboxy glycinate salts	12	276.700
(Mixed alkyl)amine	12	423.000	Mixed linear alcohols, alkoxyated, all other	12	741.000
(Mixed alkyl)amine, ethoxylated	12	331.000	Mixed linear alcohols, alkoxyated	12	736.950
(Mixed alkyl)amine phosphate	12	394.700	Mixed linear alcohols, alkoxyated and phosphated, potassium salt	12	87.007
(Mixed alkyl)ammonium chloride	12	499.500	Mixed linear alcohols, ethoxylated	12	737.000
Mixed t-α-alkylcarboxylic acid salts	15	671.100	Mixed linear alcohols, ethoxylated, benzyl ether	12	737.100
(Mixed alkyl)dibenzyltrimethyl-1,3-propane diammonium chloride	12	527.580	Mixed linear alcohols, ethoxylated and carbonated, sodium salt	12	318.500
(Mixed alkyl)oxypropylamine	12	331.300	Mixed linear alcohols, ethoxylated and phosphated	12	87.000
(Mixed alkyl)phenol, alkoxyated	12	745.900	Mixed linear alcohols, ethoxylated and phosphated, sodium salt	12	87.010
(Mixed alkyl)phenol alkylenediaminealkanolamine formaldehyde	12	782.950	Mixed linear alcohols, ethoxylated and propoxylated	12	738.000
(Mixed alkyl)phenol epichlorohydrin-formaldehyde, alkoxyated	12	722.100	Mixed linear alcohols, ethoxylated and sulfated, ammonium salt	12	276.000
(Mixed alkyl)phenol, ethoxylated	12	746.000	Mixed linear alcohols, ethoxylated and sulfated, diethanolamine salt	12	276.500
(Mixed alkyl)phenol, ethoxylated, butyl ether	12	747.000	Mixed linear alcohols, ethoxylated and sulfated, potassium salt	12	277.000
(Mixed alkyl)phenol, ethoxylated and sulfated, sodium salt	12	286.000			
(Mixed alkyl)phenol-formaldehyde, alkoxyated	12	722.000			
(Mixed alkyl)phenol formaldehyde, methoxylated	12	722.015			
Mixed alkyl phenol sulfate, ethoxylated, triethanolamine salt	12	244.300			
Mixed alkyl phosphate, sodium salt	12	102.100			
Mixed alkyl phosphate	12	101.000			
Mixed alkyl phosphate, alkylamine salt	12	101.500			

Table 4.--Alphabetical Chemical Index

CHEMICAL NAME	SECT. NO.	ITEM NO.	CHEMICAL NAME	SECT. NO.	ITEM NO.
Mixed linear alcohols, ethoxylated and sulfated, sodium salt	12	278.000	Mordant Yellow 20	04	842.000
Mixed linear alcohols, sulfated, ammonium salt	12	232.000	Morphine sulfate	06	405.500
Mixed linear alcohols, sulfated, diethanolamine salt	12	232.200	Morpholine	15	121.000
Mixed linear alcohols, sulfated, sodium salt	12	233.000	Morpholine residue stream	15	1440.000
Mixed linear alcohols, sulfated, triethanolamine salt	12	233.100	Morpholine salt of p-toluene sulfonic acid	15	122.000
(Mixed linear alkyl)dimethyl ammonium methyl sulfate	12	500.100	p-Morpholinyl-2,5-dibutoxybenzene diazonium chloride	14	370.000
Mixed linear alkylpoly(ethyleneoxy)ethyl chloride	12	738.100	Mowalactam	06	51.500
(Mixed linear alkyl)trimethyl ammonium bromide	12	500.500	Musk 89	07	64.300
Mixed oleic, lauric, stearic, and palmitic hexaglycerol esters	12	692.000	Mustard seed oil, sulfated, sodium salt	12	309.000
Mixed phenylstyrene, phenol, ethoxylated	12	748.100	Myrcene	15	1343.000
Mixed polyesters	14	284.000	Myrcenyl acetate	07	163.800
Mixed primary t-alkylamines	15	292.900	Myristaldehyde	07	164.000
Mixed(secondary linear alcohol)polyethylene propionic acid, sodium salt	12	45.700	Myristic acid	12	572.000
Mixed (C <sub>8</sub> -C <sub>10</sub> ) tertiaryamine	12	443.200	Myristic acid (Ratio=1/1)	12	547.900
Mixed tridecyl alcohol and 2-ethylhexanol, phosphated, potassium salt	12	87.050	Myristyl ethoxy myristate	11	88.600
Mixed vegetable fatty acids, potassium salt	12	59.000	Myristyl lactate	15	1015.000
Mixed vegetable fatty acids, sodium salt	12	58.990	Myristyl myristate	15	979.000
Mixed vegetable fatty acids, triethanolamine salt	12	59.100	Myristyl stearate	11	124.525
Mixed vegetable oils, sulfated, sodium salt	12	308.000	Nadolol	06	358.500
Mixture of N-octyl, N-decyl, N,N-dimethyl ammonium chloride and benzyl, dimethyl, (mixed alkyl) ammonium chloride	12	499.600	Nafcillin, sodium	06	17.000
Mixtures not specifically itemized, all other	15	1500.000	Naphazoline hydrochloride	06	336.000
Modified rosin (Unesterified)	08	41.000	1-Naphthaldehyde	03	1133.800
Modified rosin esters	08	40.000	Naphthalene	02	17.000
Molindone hydrochloride	06	505.000	1-Naphthaleneacetic acid (NAA)	13	168.750
Monesin	06	68.000	1-Naphthaleneacetic acid, sodium salt	13	168.900
Monoethanolamine	15	379.000	Naphthalene, crude, solidifying at less than 74° C.	01	12.000
Monohydric alcohol esters, all other	15	1070.000	Naphthalene, crude, solidifying at 76° C to less than 79° C	01	14.000
Monoisopropylamine	15	407.000	1,5-Naphthalenedisulfonic acid, 2-amino-, monosodium salt	03	1138.500
Mordant Black 9	04	887.000	Naphthalenesulfonates, all other	12	176.000
Mordant Black 11	04	888.000	2-Naphthalenesulfonic acid	03	1141.000
Mordant Brown 1	04	871.000	Naphthalenesulfonic acid, ammonium salt	12	174.200
Mordant Brown 18	04	875.000	2-Naphthalenesulfonic acid, formaldehyde condensate and salt	14	465.000
Mordant Brown 33	04	878.000	1-Naphthalenesulfonic acid, 8-(phenylamino)-monosodium salt	03	1308.500
Mordant Brown 40	04	879.000	Naphthalene sulfonic acid polymer with formaldehyde and 4,4-dihydroxy diphenyl phenol, ammonium salt	12	783.700
Mordant Brown 70	04	882.000	Naphthalene sulfonic acid, polymer with formaldehyde, sodium salt	12	722.500
Mordant Orange 1	04	848.000	1-Naphthalenesulfonic acid, sodium salt	03	1142.000
Mordant Orange 6	04	850.000	2-Naphthalenesulfonic acid, sodium salt	03	1143.000
Mordant Red 7	04	855.000	Naphthalimide	03	1148.000
Mordant Red 9	04	856.000	Naphthenate driers, mixed salts	14	310.000
Mordant Red 11	04	857.000	Naphthenic acid, acid number 150-199	02	19.000
Mordant Yellow 8	04	839.000	Naphthenic acid, acid number 200-224	02	20.000

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CHEMICAL NAME	SECT. NO.	ITEM NO.	CHEMICAL NAME	SECT. NO.	ITEM NO.
Naphthenic acid, acid number less than 150	02	18.000	Nitrilotriacetonitrile	15	293.000
1-(2-Naphthenic acid amidoethyl)-2-naphthenyl-2-imidazoline	12	354.500	Nitrilo-tris-methylene triphosphonic acid	14	82.000
Naphthenic acid, copper salt	13	26.000	Nitrilo-tris-methylene triphosphonic acid, potas	14	83.000
Naphthenic acid, potassium salt	12	59.500	Nitrilo-tris-methylene triphosphonic acid, sodium salt	14	84.000
Naphthenic acids-polyalkylene polyamine condensate	12	361.150	3'-Nitroacetanilide	03	1164.000
Naphthenic acids-tall oil fatty acids-polyalkylene polyamine condensate	12	361.200	o-Nitroaniline	03	1172.000
1-Naphthol ( $\alpha$ -Naphthol)	03	1150.000	p-Nitroaniline	03	1173.000
$\beta$ -Naphthol, ethoxylated	12	748.500	5-Nitroanthranilic acid	03	1184.000
1-Naphthol, ethoxylated and sulfated, free acid	12	286.090	1-Nitroanthraquinone	03	1185.000
Naphthol reds, all other	05	46.000	-Nitrobenzamide	03	1187.503
Naphth[1,2-d][1,2,3]oxadiazole-5-sulfonic acid	03	1157.000	Nitrobenzene	03	1190.000
1-Naphthylamine ( $\alpha$ -Naphthylamine)	03	1158.000	m-Nitrobenzenesulfonic acid, sodium salt	03	1195.000
p-(2-Naphthylamino)phenol (N-(p-Hydroxyphenyl)-2-naphthylamine)	03	1160.000	6-Nitrobenzimidazole	14	371.000
$\alpha$ -Naphthyl-dodecyl-dimethyl ammonium chloride	12	527.650	5-Nitrobenzimidazole nitrate	14	372.000
1-Naphthyl N-methylcarbamate (Carbaryl)	13	150.000	o-Nitrobenzoic acid	03	1200.503
K-1-Naphthylphthalamic acid (NPA)	13	77.900	m-Nitrobenzoic acid	03	1200.000
(NBR) type	10	12.000	p-Nitrobenzoic acid	03	1201.000
Neat's foot oil, sulfated, sodium salt	12	294.000	m-Nitrobenzoic acid, sodium salt	03	1205.000
Neodecanoic acid	15	556.000	p-Nitro benzyl alcohol	03	1208.200
Neodecanoic acid salts, all other	15	712.000	p-Nitrobenzylmalonate magnesium salt	03	1209.600
Neohexane (2,2-Dimethylbutane)	02	67.000	2-Nitro-p-cresol	03	1210.000
Neomycin (medicinal grade)	06	52.000	Nitrodiphenylamine	03	1212.000
Neomycin (animal feed grade)	06	69.000	Nitroethane	15	459.000
Neopentyl glycol adipate	11	64.500	Nitrogenous compounds, acyclic, all other	15	484.000
Neopentyl glycol dioleate	11	94.250	5-Nitroisophthalic acid	03	1215.000
Neopentyl glycol glutarate	11	85.650	Nitromethane	15	460.000
Neostigmine bromide	06	316.000	4-Nitro-N-methylphthalimide	03	1215.400
Neostigmine methylsulfate	06	317.000	Nitromide	06	182.000
Netilmicin	06	62.001	1-Nitronaphthalene	03	1216.000
Niacin (animal feed grade)	06	778.000	7(and 8)-Nitronaphth[1,2-d][1,2,3]oxadiazole-5-sulfonic acid	03	1221.000
Niacin (medicinal grade)	06	779.000	p-Nitrophenethyl alcohol	03	1224.000
Niacinamide (medicinal grade)	06	780.500	o-Nitrophenol	03	1227.000
Niacinamide hydroiodide	06	781.000	p-Nitrophenol	03	1228.000
Nickel acetate	15	601.000	p-Nitrophenol, sodium salt	03	1229.000
Nickel 2-ethylhexanoate	15	640.000	2-(o-Nitrophenylazo)-p-cresol (OH=1)	03	1231.200
Nicotinonitrile (3-Cyanopyridine)	03	1162.000	2-(o-Nitrophenylazo)-4,6-di-tert-pentylphenol (OH=1)	03	1231.300
Nifedipine	06	374.200	4-Nitro-o-phenylenediamine	03	1232.000
Nikethamide	06	547.000	1-Nitropropane	15	461.000
2-Nitro-6-pyrrolodinytoluene	03	1237.500	2-Nitropropane	15	462.000
Nitarsons	06	158.000	5-Nitrosalicylaldehyde	03	1238.000
Nitrated lard oil	15	431.000	p-Nitrosophenol	03	1240.000
Nitriles, all other	15	457.000	4-Nitrosophenol, sodium salt	03	1240.100
Nitrilotriacetic acid	14	78.000	o-Nitrotoluene	03	1244.000
Nitrilotriacetic acid, trisodium salt	14	81.000	m-Nitrotoluene	03	1243.000
			p-Nitrotoluene	03	1245.000
			Nitrotoluene mixtures	03	1246.000

Table 4.--Alphabetical Chemical Index

CHEMICAL NAME	SECT. NO.	ITEM NO.	CHEMICAL NAME	SECT. NO.	ITEM NO.
p-Nitrotoluene-o-sulfonic acid	03	1247.300	1-Octadecanol (Stearyl alcohol)	15	877.000
Nonanal	07	165.000	cis-9-Octadecen-1-ol (Oleyl alcohol)	15	878.000
n-Nonane	15	1344.000	9-Octadecenyl acetate, sulfated, sodium salt	12	267.800
1,3-Nonanediol acetate	07	165.200	9-Octadecenyl alcohol, ethoxylated	12	731.000
1,3-Nonanediol diacetate	07	165.210	9-Octadecenyl alcohol, ethoxylated and phosphated	12	84.000
Nonanoic acid (Pelargonic acid)	15	559.000	9-Octadecenylamine	12	424.000
Nonanoyl chloride	15	559.050	(9-Octadecenyl)amine, ethoxylated	12	332.000
Nonene (Tripropylene)	02	80.000	Octadecenyl succinic anhydride	15	123.100
4-Nonene-4-carboxaldehyde	07	165.400	N-(9-Octadecenyl)trimethylenediamine	12	413.000
Nonenylsuccinic anhydride	15	560.000	Octadecyl alcohol, ethoxylated	12	732.000
Nonionic surface-active agents, all other	12	787.000	9-Octadecyl alcohol, ethoxylated and phosphated	12	84.200
Non-nylon type, polyamide resins	08	27.000	Octadecylamine	12	425.000
Nonyl acetate	07	165.500	Octadecylamine acetate	12	396.000
Nonyl-dinonylphenol, mixture	03	1261.000	Octadecylamine, ethoxylated	12	333.000
Nonyldiphenylamine mixture (Mono-, di-, and tri-)	09	76.700	Octadecyl-3-(3,5-di-tert-butyl-4-hydroxyphenyl) propionate	15	124.000
Nonylenic acid	07	165.600	Octadecyl isocyanate	15	463.000
tert-Nonyl mercaptan	09	171.250	Octadecyl-3-mercaptopropionate	15	1016.000
Nonylphenol	03	1262.000	N-Octadecylsulfosuccinamic acid, disodium salt	12	179.000
Nonylphenol, barium salt	14	229.000	Octanal	07	166.000
Nonylphenol, ethoxylated	12	749.000	Octanal dimethylacetal	07	166.020
Nonylphenol, ethoxylated and phosphated	12	82.000	n-Octane	15	1348.000
nonylphenol, ethoxylated and phosphated, barium salt	12	83.000	Octanoic acid (Caprylic acid) salts, all other	15	716.000
Nonylphenol, ethoxylated and phosphated, partial sodium salt	12	288.005	Octanoic acid, triethanolamine salt	12	29.750
Nonylphenol, ethoxylated and propoxylated	12	750.000	1-Octanol	15	866.000
Nonylphenol, ethoxylated and sulfated, ammonium salt	12	287.000	2-Octanol (sec-Capryl alcohol)	15	867.000
Nonylphenol, ethoxylated and sulfated, sodium salt	12	288.000	2-Octanone (Hexyl methyl ketone)	15	831.000
Nonyl phenol, ethoxylated with mixed fatty acids	12	750.050	3-Octanone (Ethyl amyl ketone)	07	166.200
Nonyl phenol ethoxylate, oleate	12	714.650	Octanoyl chloride	15	561.000
Nonylphenol-formaldehyde, alkoxylated	12	723.000	Octenes, mixed	02	75.700
Nonyl phenol oleate, ethoxylated	12	749.500	Octenylsuccinic anhydride	15	562.000
Nonylphenyl phosphites, mixed	09	85.000	N-Octyl acetate	07	166.300
Nopol	07	114.950	tert-Octylamine	15	293.100
Nopyl acetate	07	115.000	Octyl chloride	15	1241.000
2-Nor tall oil alkyl-1-tall oil amidoethyl imidazoline	12	361.500	n-Octyl n-decyl adipate	11	65.000
Nortriptyline hydrochloride	06	531.000	Octyl decyl dimethyl ammonium chloride	12	500.700
Noscapine	06	434.500	N-Octyl, N-decyl, N,N-dimethyl ammonium chloride	12	483.200
Novobiocin, sodium	06	53.000	n-Octyl n-decyl phthalate	11	49.000
Nylon 6 (Polymer for fiber, only)	14	388.000	2-Octyldecyl-12-stearoyl stearate	11	124.540
Nylon 6/6	14	389.000	Octyldiphenylamine	09	77.000
Nylon type, polyamide resins	08	26.000	Octyldiphenylamine, alkylated	09	78.000
Nystatin (medicinal grade)	06	3.000	Octyl epoxytallates	11	79.000
Ocimene	07	165.700	Octyl formate	07	166.355
Octabromodiphenyl oxide	15	122.500	n-Octylglucamine	03	1264.050
Octachlorohexahydro-4,7-methanoindene (Chlordan)	13	143.000	Octyl isobutyrate	07	166.358
n-Octadecane	15	1346.000	2-n-Octyl-4-isothiazolin-3-one	13	25.500
1-Octadecanethiol	15	1335.200	Octyl isovalerate	07	166.360



Table 4.—Alphabetical Chemical Index

CHEMICAL NAME	SECT. NO.	ITEM NO.	CHEMICAL NAME	SECT. NO.	ITEM NO.
n-Octyl mercaptan	09	171.400	Oleic acid esters, all other	11	96.000
Octyl mercaptans	02	95.010	Oleic acid-ethanolamine condensate, ethoxylated	12	579.000
3-Octyloxy and 3-dicyloxy-propylamine	12	333.100	Oleic acid, ethoxylated	12	671.500
Octylphenol	03	1265.000	Oleic acid-ethylenediamine condensate, propoxylated and sulfated, sodium salt	12	16.000
n-Octylphenol, ethoxylated	12	752.000	Oleic acid, morpholine salt	12	30.500
Octylphenol, ethoxylated and benzylated	12	752.005	Oleic acid, potassium salt	12	60.000
Octylphenol, ethoxylated and phosphated	12	85.000	Oleic acid, sodium salt	12	61.000
Octylphenol, ethoxylated and phosphated, magnesium salt	12	86.000	Oleic acid, sulfated	12	261.600
n-Octylphenol, ethoxylated and sulfonated, sodium salt	12	208.000	Oleic acid, sulfated, disodium salt	12	261.700
tert-Octylphenol-formaldehyde, ethoxylated	12	724.000	Oleic acid, sulfated, sodium salt	12	261.800
Octylphenoxydiethoxy chloride	03	1265.118	Oleic acid, triethanolamine salt	12	31.000
Octylphenoxy polyethoxy ethyl sulfate	12	290.100	Oleoilnitrile (Octadecene nitrile)	15	450.000
Octyl phosphate	12	105.000	Oleoyl chloride	15	564.000
Octyl phosphate, alkylamine salt	12	106.000	N-(Oleoyloxyisopropyl)sulfosuccinamic acid	12	180.000
Octyl phosphate, ethoxylated	12	784.000	Oleoylpalmitamide	15	251.000
Octyl phosphate, isopropoxy titanium salt	12	106.400	N-Oleoylsarcosine, sodium salt	12	47.000
Octyl phosphate neoalkoxy titanium salt	12	106.700	Oleyl alcohol, ethoxylated	12	732.100
Octyl phosphate, potassium salt	12	107.000	Oleylamine, ethoxylated	12	333.500
Octyl polyphosphate	12	108.000	Oleyl betaine	12	16.100
Octyl pyrophosphate, ethylenedioxy titanium salt	12	110.100	Oleyl oleate	11	94.500
Octyl pyrophosphate, ethylenedioxy titanium salt/dimethylamino methacrylate salt	12	110.110	Oleyloxyethylidiamide oxypropanol sulfonic acid	12	212.200
Octyl pyrophosphate, isopropoxy titanium salt	12	110.150	N-Oleyl sarcosine	12	61.500
Octyl pyrophosphate neoalkoxy titanium salt	12	110.160	Oleyl sulfate, sodium salt	12	238.200
Octyl pyrophosphate, oxoethylenedioxy titanium salt	12	110.170	Olive oil acids, sodium salt	12	62.000
Octyl sulfate, sodium salt	12	238.000	Organo-aluminum compounds, all other	15	1367.000
Octyltin	15	1404.900	Organo-boron compounds, all other	15	1371.000
Oil-soluble petroleum sulfonate, all other	14	217.000	Organophosphorus insecticides, cyclic, all other	13	165.000
Oil-soluble petroleum sulfonate, ammonium salt	14	211.000	Organo-silicone compounds, all other	15	1399.000
Oil-soluble petroleum sulfonate, barium salt	14	212.000	Organo-tin compounds, all other	15	1407.000
Oil-soluble petroleum sulfonate, calcium salt	14	213.000	Organo-zinc compounds, all other	15	1409.000
Oil-soluble petroleum sulfonate, magnesium salt	14	214.000	Ormetoprim	06	265.500
Oil-soluble petroleum sulfonate, sodium salt	14	215.000	Orphenadrine citrate	06	479.500
Oleamide (Octadecene amide)	15	250.000	Other copolymer resins of acrylic and/or methacrylic acid esters	08	20.000
Oleamidulosuccinamic acid, disodium salt	12	179.900	Other ethylene copolymer resins	08	31.800
Oleic acid (Ratio = 1/1)	12	548.000	Other homopolymer resins of acrylic and/or methacrylic acidesters	08	20.050
Oleic acid (Ratio = 2/1)	12	538.000	Other hydrolytic enzymes	14	120.000
Oleic acid	15	563.000	7-Oxabicyclo-[2.2.1]-heptane-2,3-dicarboxylic acid, disodium salt (Endothall)	13	83.000
Oleic acid (amine/acid ratio=1/1)	12	573.010	Oxacillin, sodium	06	18.000
Oleic acid (Ratio = 1/2)	12	555.200	Oxalic acid	15	565.000
Oleic acid aminoethylethanolamine-condensate [amine/acid ratio=1/1]ethyl sulfate	12	575.410	Oxalic acid salts, all other	15	727.000
Oleic acid, ammonium salt	12	59.800	Oxalyl bis(benzylidene hydrazide)	15	125.490
Oleic acid, diethylamine salt	12	30.000	Oxamide	15	251.250
Oleic acid-diethylenetriamine condensate	12	363.000	Oxazepam	06	506.000
Oleic acid-N,N-dimethyltrimethylenediamine condensate	12	365.000			
Oleic acid, epoxidized, ammonium salt	12	59.900			

Table 4.--Alphabetical Chemical Index

CHEMICAL NAME	SECT. NO.	ITEM NO.	CHEMICAL NAME	SECT. NO.	ITEM NO.
Oxidate light ends	15	1451.000	Pectinase	14	116.000
Oxidized Fischer-Tropsch wax	15	566.000	Pelargonic acid (Ratio = 2/1)	12	541.000
Oxidized hydrocarbon mixture	14	218.000	Pelargonic acid-tetraethylenepentamine condensate	12	366.000
2-Oximino-3-pentanone	15	466.500	Penicillin V	06	26.000
3-Oxo-1,2-benzisothiazoline-2-acetic acid, methyl ester, 1,1-dioxide	03	1272.000	Penicillin G, benzathine	06	21.000
Oxtriphylline	06	745.800	Penicillin G, potassium	06	22.000
Oxyaluminum benzoate	03	1275.700	Penicillin V, potassium	06	29.000
Oxy-aluminum octanoate	15	1363.200	Penicillin G, procaine (animal feed grade)	06	74.000
p,p'-Oxybis(benzenesulfonhydrazide)	09	109.000	Penicillin G, procaine (medicinal grade)	06	23.000
Oxybutynin chloride	06	301.500	Penicillins, other than semisynthetic, all other	06	30.000
Oxycodone hydrochloride	06	406.000	Pentabromochlorocyclohexane	03	1275.300
Oxycodone terephthalate	06	406.100	Pentabromoethylbenzene	03	1275.352
4,4'-Oxydianiline	03	1275.000	Pentachlorophenol (PCP)	13	28.000
N-Oxydiethylene-2-benzothiazolesulfenamide	09	34.000	Pentachlorophenol, sodium salt	13	29.000
N-Oxydiethylenethiocarbonyl-N'-oxydiethylenesulfenamide	09	34.100	Pentaerythritol	15	1091.000
Oxygen-containing quaternary ammonium salts (Except those having amide linkages), all other	12	467.000	Pentaerythritol caprylate/caprato	15	1127.002
Oxyphencyclimine hydrochloride	06	302.000	Pentaerythritol esters	14	286.000
Oxyquinoline benzoate (benoxiquine)	06	268.000	Pentaerythritol stearate	15	1129.000
Oxyquinoline sulfate	06	270.000	Pentaerythritol stearate	12	715.100
Oxytetracycline (medicinal grade)	06	36.000	Pentaerythritol, tall oil acid ester, alkoxyolated	12	715.200
Oxytetracycline (animal feed grade)	06	72.000	Pentaerythritol tetraacrylate	15	1130.000
Paint dryers, naphthenic acid salts, all other	14	316.000	Pentaerythritol tetrakis (3-Mercaptopropionate)	15	1131.000
Palmitic and stearic acids (Ratio = 2/1)	12	540.000	Pentaerythritol tetranitrate	15	467.000
Palmitic and stearic acids (Ratio = 1/1)	12	549.000	Pentaerythritol tribenzoate	15	125.700
Palmitoyl chloride	15	567.000	Pentaerythritol tribenzoate	15	294.000
Palmityl octanoate	11	89.500	N,N,N',N',-Penta(2-hydroxyethyl)-N-(tallow alkyl)-1,3-diaminopropane diacilate	12	465.500
Palm Kernel oil acids, potassium salt	12	62.890	Pentamethylamine	03	1276.000
Palm Kernel oil acids, sodium salt	12	62.900	1,1,3,3,5-Pentamethyl-4,6-dinitroindan (Moskene)	07	64.900
Palm oil acids, sodium salt	12	63.000	1,1,3,3,5-Pentamethylindan	03	1277.000
Panthenol	06	790.000	N,N,N',N',-Pentamethyl-N-(tallow alkyl)trimethylene-bis[ammonium chloride]	12	501.000
Papain	14	102.000	n-Pentane	02	55.000
Papaverine hydrochloride	06	746.000	2,4-Pentanedione (Acetylacetone)	15	833.000
para-Cymene	07	97.405	1-Pentanol	15	843.000
n-Paraffins, other	02	85.000	3-Pentanone (Diethyl ketone)	15	835.000
n-Paraffins, C <sub>10</sub> -C <sub>14</sub>	02	84.000	Pentazocine	06	416.001
n-Paraffins, C <sub>10</sub> -C <sub>16</sub>	02	84.250	Pentazocine hydrochloride	06	416.003
n-Paraffins, C <sub>12</sub> -C <sub>18</sub>	02	84.260	1-Pentene	02	56.000
n-Paraffins, C <sub>6</sub> -C <sub>9</sub>	02	81.000	2-Pentene	02	57.000
n-Paraffins, C <sub>9</sub> -C <sub>15</sub>	02	83.000	Pentenenitrile	15	450.400
Paraformaldehyde	15	1176.500	Pentenes, mixed	02	58.000
Parahydroxyphenylglycine potassium methyl dane salt	03	1121.650	Pentobarbital	06	456.000
para-Pentylloxyphenol	03	1277.300	Pentylamine, mono-	15	296.000
para Phenoxy benzoyl chloride	03	1299.655	α-Pentylcinnamaldehyde	07	65.000
Peanut oil, sulfated, sodium salt	12	310.000	o-Pentylphenol (o-Amylphenol)	03	1279.000
Pecan oil, sulfated, sodium salt	12	309.900	p-tert-Pentylphenol	03	1279.100

Table 4.--Alphabetical Chemical Index

CHEMICAL NAME	SECT. NO.	ITEM NO.	CHEMICAL NAME	SECT. NO.	ITEM NO.
2(3-Pentyl)pyridine	03	1279.500	Phenolsulfonaphthalein, sodium salt	03	1299.000
Pepsin	14	103.000	Phenolsulfonic acid	03	1299.200
Perchloroethylene (Tetrachloroethane)	15	1243.000	1-Phenol-2-sulfonic acid, formaldehyde condensate (Phenol-formaldehyde, sulfonated)	14	467.000
Perchloromethanethiol (Perchloromethyl mercaptan)	15	1410.000	Phenolsulfonic acid, sodium salt	03	1299.802
Perfluoroalkyl polyether	15	1410.100	Phenolsulfonaphthalein	06	580.000
Permethrin acid chloride	03	1279.600	Phenol, synthetic, from chlorobenzene by vapor-phase hydrolysis, U.S.P.	03	1296.000
Peroxyacetic acid	15	568.000	Phenol, synthetic, from cumene by oxidation, U.S.P.	03	1297.000
Perphenazine	06	486.000	Phenol, synthetic, from toluene by oxidation, U.S.P.	03	1298.050
3,4,9,10-Perylene-tetracarboxylic-3,4:9,10-dianhydride	03	1280.503	Phenothiazine	06	122.000
3,4,9,10-Perylene-tetracarboxylic-3,4:9,10-diimide	03	1281.000	Phenothiazine	15	126.000
Perylo[3,4-cd:9,10-c'd']dipyran-1,3,8,10-tetrone	03	1281.400	Phenoxyacetic acid, sodium salt	03	1299.600
Pesticides and related products, acyclic, all other	13	245.000	3-Phenoxybenzaldehyde	03	1299.613
Petroleum hydrocarbon resins	08	24.000	3-Phenoxybenzaldehyde acetal	03	1299.615
Petroleum sulfonic acid, water soluble (Acid layer), sodium salt	12	213.000	3-Phenoxybenzaldehyde cyanohydrin	03	1299.617
1,10-Phenanthroline	03	1281.950	3-Phenoxybenzenemethanol	03	1299.618
Phendimetrazine tartrate	06	548.200	2-Phenoxyethanol (Ethylene glycol monophenyl ether)	15	127.000
Phenethyl acetate	07	66.000	2-(2-Phenoxyethoxy)ethanol (Diethylene glycol phenyl ether)	15	128.000
$\alpha$ -Phenethylamine	03	1282.500	2-Phenoxyethyl isobutyrate	07	74.000
2-Phenethylamine	03	1282.000	2-(Phenoxyethyl)benzoic acid	03	1299.700
Phenethyl benzoate	07	67.500	3-(Phenoxyphenyl) methyl-cis, trans-3-(2,2-dichloroethyl)-2,2-dimethyl cyclopropanecarboxylate	13	166.025
Phenethyl bromide	15	125.945	Phenoxy (R) resin (other than for coating and adhesives)	08	25.000
Phenethyl formate	07	68.000	m-Phenoxytoluene	03	1299.750
Phenethyl isobutyrate	07	69.000	Phensuximide	06	423.000
Phenethyl isovalerate	07	70.000	Phentermine	06	549.000
2-Phenethyl phenylacetate	07	71.000	Phentermine hydrochloride	06	549.500
1-Phenethyl-2-picolinium bromide	12	527.700	Phenylacetaldehyde	07	75.000
Phenethyl propionate	07	72.000	Phenylacetaldehyde, dimethyl acetal	07	76.000
Phenethyl pyridinium bromide	12	527.750	Phenylacetic acid	07	76.050
Phenethyl salicylate	07	73.000	Phenylacetic acid isopentyl ester	07	76.055
p-Phenetidine	03	1286.000	Phenylacetic acid, potassium salt	03	1305.000
Phenetole	03	1286.050	Phenyl acid phosphate	14	168.000
Phenindamine tartrate	06	102.000	Phenyl alanine	14	16.000
Phenobarbital	06	458.000	$\alpha$ -Phenylanisole	07	76.350
Phenobarbital, sodium	06	459.000	4-(Phenylazo)diphenylamine	03	1311.000
Phenol, alkylated	09	101.000	4-Phenyl-1-butene	03	1314.300
Phenol, benzylated	03	1298.103	m-Phenylenediamine	09	45.000
Phenol, ethoxylated	12	754.000	o-Phenylenediamine	03	1320.000
Phenol, ethoxylated and phosphated	12	88.000	m-Phenylenediamine	03	1319.000
Phenol, hindered	09	102.000	p-Phenylenediamine	03	1321.000
Phenolic and other tar acid resins	08	9.000	p-Phenylenediamines, substituted, other	09	65.000
Phenol, magnesium salt	14	230.000	Phenylephrine	06	339.000
Phenol, natural, from petroleum, all other	03	1292.000	d-Phenylephrine	03	1321.250
Phenol, natural, from petroleum, U.S.P.	03	1291.000	dl-Phenylephrine base	03	1321.750
Phenols, ethoxylated, all other	12	758.000			
Phenol, styrenated	03	1298.703			
Phenol, styrenated, mixtures	09	103.000			

Table 4.--Alphabetical Chemical Index

CHEMICAL NAME	SECT. NO.	ITEM NO.	CHEMICAL NAME	SECT. NO.	ITEM NO.
Phenylephrine bitartrate	06	340.000	2-Phosphonobutane-1,2,4-tricarboxylic acid, sodium salt	14	86.000
Phenylephrine hydrochloride	06	341.000	N-(Phosphonomethyl)glycine, isopropylamine salt	13	205.950
Phenyl ether (Diphenyl oxide)	03	1322.000	N-(Phosphonomethyl)glycine, sodium sesqui salt	13	231.592
d(+)-Phenylethylamine	03	1322.025	Phosphoric acid esters, all other	11	16.000
Phenylethyl anthranilate	07	77.050	Phosphoric acid esters, all other	11	105.000
Phenylethyl 2-methyl butyrate	07	77.250	Phosphoric and polyphosphoric acid esters, all other	12	113.000
Phenylethyl tiglate	07	77.200	Phosphorodithioates used as flotation reagents, all other	14	133.000
Phenyl glycidyl ether	15	131.500	Phosphorodithioates used as lubricating oil and grease additives, all other	14	244.000
dl-2-Phenylglycine (racemic)	03	1322.300	Phosphorodithioic acid salts (Dithiophosphates), all other	15	736.000
α-D-Phenylglycine methyl ester K	15	131.600	Phosphorus acid esters, all other	15	1049.000
d(-)-2-Phenylglycine potassium ethyl dane salt	03	1322.602	Photographic chemicals, all other	14	383.000
Phenylglycine, potassium salt	03	1322.702	Phthalic acid	03	1346.000
Phenylglycine, sodium salt	03	1323.000	Phthalic acid, diallyl ester	11	23.400
Phenylhydroquinone	03	1325.000	Phthalic acid, lead salt, (Dibasic)	15	135.000
2,2'-(Phenyl)imino]diethanol (N-Phenyldiethanolamine)	03	1327.000	Phthalic anhydride	03	1348.000
2,2'-(Phenyl)imino]diethanol, diacetate ester	03	1327.500	Phthalic anhydride esters, all other	11	51.000
Phenylisocyanate	03	1022.000	Phthalic anhydride type alkyd resins	08	2.000
Phenylmalonic acid	03	1329.502	Phthalimide	03	1351.000
Phenylmercuric acetate (PMA)	13	15.500	[Phthalocyaninato(2-)]copper	03	1352.000
Phenylmercuric ammonium acetate	13	16.000	Phthalocyaninebissulfonyl chloride, copper derivative	03	1352.500
Phenylmercuric carboxylate	13	1329.050	[Phthalocyaninetetramethanaminato]copper	03	1353.300
Phenylmercuric oleate	03	20.000	Phthalocyaninetetrasulfonyl chloride, copper derivative	03	1353.800
[5-(Phenylmethyl)]-3-furfuryl alcohol	15	82.900	Phthaloyl chloride (Phthalyl chloride)	03	1355.000
Phenyl-α-naphthylamine	03	1329.403	Picoline (3,4-mixture)	03	1359.000
o-Phenylphenol	03	1330.000	2-Picoline (α-Picoline)	03	1356.000
p-Phenylphenol	03	1331.000	3-Picoline (β-Picoline)	03	1357.000
p-Phenylphenol, alkoxylated	12	754.050	4-Picoline (γ-Picoline)	03	1358.000
o-Phenylphenol, sodium salt	03	1333.000	3-Picoline-N-oxide	03	1359.003
N-Phenyl-p-phenylenediamine	03	1334.000	4-Picoline-N-oxide	03	1359.004
Phenylphosphinic acid	03	1334.100	Picolinic acid	03	1360.000
Phenylphosphorous dichloride	03	1336.100	Picolinonitrile (2-Cyanopyridine)	03	1359.100
1-Phenyl-1,2-propanedione, 2-oxime	03	1338.000	2-Picolylamine	03	1360.900
Phenylpropanolamine hydrochloride	06	343.000	3-Picolylamine	03	1361.000
3-Phenylpropyl acetate	07	79.000	Picramic acid, sodium salt	15	136.000
3-Phenylpropyl cinnamate	07	79.200	Picric acid (Trinitrophenol)	03	1362.000
4-Phenylpropylpyridine	03	1339.853	Pigment Black 7	05	143.007
1-Phenyl-3-pyrazolidone	14	377.000	Pigment black toners, all other	05	144.000
Phenylstyrene, ethoxylated	12	754.080	Pigment Blue 1, (PMA)	05	99.000
5-Phenyltetrazole	09	109.200	Pigment Blue 2, (PMA)	05	102.000
1-Phenyl-2-tetrazoline-5-thione	03	1342.100	Pigment Blue 14, (PMA)	05	111.000
4-Phenylthiomorpholine-1,1-dioxide	03	1342.202	Pigment Blue 15, (α form)	05	113.010
Phenyltoloxamine citrate	06	104.000	Pigment Blue 15:1, (α form)	05	113.020
Phenyl xylyl ethane	15	134.800	Pigment Blue 15:2, (α form)	05	113.030
Phenytoln	06	423.300	Pigment Blue 15:3, (β form)	05	114.010
Phenytoln, sodium	06	423.600			
Phosgene (Carbonyl chloride)	15	1411.000			
Phosphated and polyphosphated alcohols, all other	12	111.000			

Table 4.—Alphabetical Chemical Index

CHEMICAL NAME	SECT. NO.	ITEM NO.	CHEMICAL NAME	SECT. NO.	ITEM NO.
Pigment Blue 15:4, (β form)	05	114.020	Pigment Red 38	05	52.000
Pigment Blue 19	05	116.000	Pigment Red 41	05	54.000
Pigment Blue 24	05	225.000	Pigment Red 48	05	55.000
Pigment Blue 25	05	119.000	Pigment Red 48:1, (barium)	05	55.100
Pigment Blue 61	05	120.061	Pigment Red 48:2, (calcium)	05	55.200
Pigment blue toners, all other	05	124.000	Pigment Red 48:3, (strontium)	05	55.300
Pigment Brown 1	05	136.000	Pigment Red 48:4, (manganese)	05	55.400
Pigment Brown 5	05	140.000	Pigment Red 49, (sodium)	05	56.000
Pigment brown toners, all other	05	142.000	Pigment Red 49:1, (barium)	05	57.000
Pigment Green 1, (PMA)	05	125.000	Pigment Red 49:2, (calcium)	05	58.000
Pigment Green 2, (PMA)	05	127.000	Pigment Red 52:1, (calcium)	05	61.000
Pigment Green 2, (PTA)	05	128.000	Pigment Red 52:2, (manganese)	05	62.000
Pigment Green 4, (PMA)	05	130.000	Pigment Red 53, (sodium)	05	63.000
Pigment Green 7	05	132.000	Pigment Red 53:1, (barium)	05	64.000
Pigment Green 8	05	133.000	Pigment Red 57	05	67.057
Pigment Green 10	05	134.000	Pigment Red 57:1, (calcium)	05	68.000
Pigment Green 36	05	134.260	Pigment Red 60:1	05	209.000
Pigment green toners, all other	05	135.000	Pigment Red 63	05	70.000
Pigment Orange 1	05	19.000	Pigment Red 81, (PMA)	05	74.000
Pigment Orange 2	05	20.000	Pigment Red 81, (PTA)	05	75.000
Pigment Orange 5	05	21.000	Pigment Red 83	05	211.000
Pigment Orange 13	05	23.000	Pigment Red 88	05	78.000
Pigment Orange 15	05	24.000	Pigment Red 112	05	45.810
Pigment Orange 16	05	25.000	Pigment Red 119	05	79.119
Pigment Orange 17	05	206.000	Pigment Red 122	05	79.320
Pigment Orange 34	05	25.180	Pigment Red 123	05	80.000
Pigment Orange 36	05	25.190	Pigment Red 147	05	45.847
Pigment Orange 38	05	25.250	Pigment Red 168	05	80.550
Pigment Orange 43	05	25.270	Pigment Red 170	05	45.870
Pigment Orange 46	05	26.046	Pigment Red 179	05	80.660
Pigment Orange 48	05	26.048	Pigment Red 181	05	80.680
Pigment Orange 49	05	26.049	Pigment Red 188	05	80.688
Pigment orange toners, all other	05	29.000	Pigment Red 190	05	80.770
Pigment Red 1, (dark)	05	47.000	Pigment Red 200	05	84.200
Pigment Red 1, (light)	05	48.000	Pigment Red 202	05	84.202
Pigment Red 2	05	30.000	Pigment Red 206	05	84.206
Pigment Red 3	05	49.000	Pigment Red 207	05	84.207
Pigment Red 4	05	50.000	Pigment Red 211	05	84.211
Pigment Red 5	05	31.000	Pigment Red 224	05	84.224
Pigment Red 7	05	32.000	Pigment Red 63:1, calcium	05	70.001
Pigment Red 9	05	33.000	Pigment red toners, all other	05	86.000
Pigment Red 13	05	36.000	Pigment Violet 1, (fugitive)	05	87.000
Pigment Red 17	05	39.000	Pigment Violet 1, (PMA)	05	88.000
Pigment Red 21	05	40.021	Pigment Violet 1, (PTA)	05	89.000
Pigment Red 22	05	43.000	Pigment Violet 3, (fugitive)	05	90.000
Pigment Red 23	05	44.000	Pigment Violet 3, (PMA)	05	91.000
Pigment Red 31	05	45.000	Pigment Violet 3, (PTA)	05	92.000

Table 4.—Alphabetical Chemical Index

CHEMICAL NAME	SECT. NO.	ITEM NO.	CHEMICAL NAME	SECT. NO.	ITEM NO.
Pigment Violet 3	05	89.003	Piperazine dihydrochloride	06	125.000
Pigment Violet 4, (fugitive)	05	92.004	Piperazine hydrochloride	06	127.000
Pigment Violet 5:1	05	220.000	Piperazine mixture, crude	03	1364.000
Pigment Violet 19	05	93.160	Piperidine	03	1365.000
Pigment Violet 23	05	93.200	Piperonal (Heliotropin)	07	80.000
Pigment Violet 29	05	93.229	Piperylene (1,3-Pentadiene)	02	58.600
Pigment Violet 38	05	93.350	Piroxicam	06	412.500
Pigment Violet 42	05	94.042	Pitch of tar, all other	01	30.000
Pigment violet toners, all other	05	98.000	Pitch of tar: hard (M.P. 161° F and Over)	01	28.000
Pigment Yellow 1	05	1.000	Pitch of tar: medium (M.P. 110° To 160° F)	01	27.000
Pigment Yellow 2	05	1.500	Pitch of tar: soft (M.P. 80° To 109° F.)	01	26.000
Pigment Yellow 3	05	2.000	Pivaloyl chloride	15	569.000
Pigment Yellow 12	05	8.000	2-Pivaloyl-1,3-indandione (Pindone)	13	170.000
Pigment Yellow 13	05	9.000	Plant growth regulators, acyclic, all other	13	231.590
Pigment Yellow 14	05	10.000	Polyacrylamide	14	403.000
Pigment Yellow 17	05	11.000	Polyacrylamide copolymers, all other	14	405.500
Pigment Yellow 42	05	6.372	Polyacrylamide dimethylammonium ethyl methacrylate	14	404.000
Pigment Yellow 49	05	6.380	Polyacrylate methacrylate copolymers	14	427.000
Pigment Yellow 55	05	11.380	Polyacrylate poly(hydroxypropylacrylate) copolymer	14	428.000
Pigment Yellow 60	05	6.460	Polyacrylic acid	15	570.000
Pigment Yellow 62	05	14.362	Polyacrylic acid	14	430.000
Pigment Yellow 65	05	6.465	Poly(acrylic acid, ethyl ester)	14	423.000
Pigment Yellow 73	05	6.620	Poly(acrylic acid, methyl ester/ethylene/1,1-dichlorosuccinic acid, methylene-) with ethyl acrylate	14	425.000
Pigment Yellow 74	05	6.630	Polyacrylic acid salts, all other	14	434.000
Pigment Yellow 75	05	6.640	Polyacrylic (ACM) type elastomers	10	13.000
Pigment Yellow 83	05	11.660	Polyacrylonitrile and acrylonitrile copolymers	14	391.000
Pigment Yellow 97	05	6.697	Polyacrylonitrile, hydrolyzed	14	435.000
Pigment Yellow 98	05	6.698	Polyacrylonitrile, hydrolyzed, sodium salt	13	234.000
Pigment Yellow 110	05	14.810	Polyacrylonitrile, starch hydrolyzed polymer	14	436.000
Pigment Yellow 116	05	6.714	Polyalicyclic polyamines and salts and quats	12	417.500
Pigment Yellow 124	05	11.724	Polyalkalene oxide	10	13.200
Pigment Yellow 126	05	11.726	Polyalkylene glycol oleate	12	719.050
Pigment Yellow 139	05	14.839	Polyalkylene polyamine, ethoxylated	12	333.700
Pigment Yellow 150	05	14.850	Polyamine polymethane phosphonic acid	14	87.000
Pigment Yellow 152	05	11.752	Polyamine polymethane phosphonic acid, magnesium salt	14	88.000
Pigment yellow toners, all other	05	18.000	Polyamines	14	437.000
Pinane	15	136.200	Polybasic acid type alkyd resins	08	3.000
Pinane hydroperoxide	15	136.500	Polybutadiene acrylic acid acrylonitrile terpolymer (PBAN)	10	13.300
2-Pinanol (cis and trans)	15	136.800	Polybutadiene, emulsion-polymerized	10	14.000
α-Pinene	15	137.000	Polybutadiene resins	08	10.000
β-Pinene	15	138.000	Polybutadiene, solution-polymerized	10	15.000
Pinene, sulfate	15	140.000	Polybutene	02	86.000
Pine oil, natural sulfate	15	141.195	Polybutylene terephthalate (PBT)	08	30.020
Pine oil, sulfated	12	294.500	Polybutylene type resins	08	28.000
Pine oil, synthetic	15	141.200	Polycarbonate resins	08	29.000
2-Pipecolina	03	1363.000			
Piperazine	06	123.000			

APPENDIX

Table 4.--Alphabetical Chemical Index

CHEMICAL NAME	SECT. NO.	ITEM NO.	CHEMICAL NAME	SECT. NO.	ITEM NO.
Polycarboxylic acid, alkylate	12	719.200	Polyethylene glycol sesquiesther of tallow acids	12	690.000
Polycarboxylic acid, alkylphenoxyalkoxylate	12	719.210	Polyethylene glycol sesquinooleate	12	683.000
Polychloroprene (Neoprene) (CR) type	10	17.000	Polyethylene glycol terephthalate	12	683.200
Polydextrose	14	438.000	Polyethyleneimine methyl ammonium sulfate	12	477.250
Poly(diallyldimethylammonium chloride	14	439.000	Polyethylenepolyamine polymer with 1,4-dihydroxy-2-butyne	14	171.000
Poly(dimethylimino(2-hydroxytrimethylene)chloride)	14	170.000	Polyethylene polypropylene glycol glyceryl triether		
Polyester resins, saturated, all other	08	30.050	maleate	15	1132.200
Polyester resins, unsaturated	08	12.000	Polyethylene terephthalate (PET)	08	30.040
Polyether amine, ethoxylated	12	334.400	Polyethylene terephthalate	14	390.000
Polyether and polyester polyols for urethanes	08	12.050	Polyethyl methacrylate	08	20.035
Polyethylene glycol, monodecyl ether sulfate, ammonium salt			Polyglycerol decaoleate	12	692.200
Polyethylbenzene (80 percent diethylbenzene)	14	440.000	Polyglycerol decaoleate	12	697.400
Polyethylene glycol	03	1369.000	Polyglycerol distearate	12	692.500
Polyethylene glycol dibenzoate	15	1181.000	Polyglycerol esters, all other	12	698.000
Polyethylene glycol diester of coconut oil and oleic acids	11	52.000	Polyglycerol mono-oleate	12	696.000
Polyethylene glycol diester of mixed liner acid/oleic acid	12	684.300	Polyglycerol monostearate	12	697.000
Polyethylene glycol diester of tall oil acids			Polyglycidol sulfate	12	244.500
Polyethylene glycol dimethyl ether	12	684.400	Polyglycols, ethylene glycol and glycol ether, mixed	15	1184.000
Polyethylene glycol dioleate	12	684.500	Polyhexafluoropropylene oxide	15	1268.900
Polyethylene glycol distearate	12	674.000	Polyhydric alcohol esters, all other	15	1141.000
Polyethylene glycol ester of mixed fatty acids	15	1181.200	Polyhydric alcohol esters, all other	15	1196.000
Polyethylene glycol ester of chemically defined acids, all other	12	684.000	Polyhydric alcohol, ethoxylated and phosphated	12	88.800
Polyethylene glycol esters of mixed acids, all other	12	691.000	Polyhydric alcohols, all other	15	1096.000
Polyethylene glycol hydroxyacetate	12	676.500	Polyimides and amide-imide polymers	08	34.000
Polyethylene glycol monocaprylate	12	677.500	Polyisobutylene, type elastomers	10	18.000
Polyethylene glycol mono decyl ether	15	1181.300	Polyisoprene (IR) type	10	19.000
Polyethylene glycol monoester of coconut oil acids	12	685.510	Polymaleic anhydride	14	444.000
Polyethylene glycol monoester of tall oil acids	12	685.700	Polymeric phosphites	09	85.500
Polyethylene glycol monolaurate	12	678.000	Polymerization regulators, acyclic, other	09	173.000
Polyethylene glycol, mono(nonylphenol) sulfate, ammonium salt			Polymers for fibers, all other	14	394.000
Polyethylene glycol mono-oleate	14	441.000	Polymers, water soluble, all other	14	452.000
Polyethylene glycol mono-oleate, ethoxylated	12	679.000	Polymethacrylic acid esters	15	1499.000
Polyethylene glycol monopalmitate	12	680.000	Polymethacrylic acid, sodium salt	14	445.000
Polyethylene glycol monopelargonate	12	680.200	Polymethylene polyphenylisocyanate	03	1023.000
Polyethylene glycol monoricinoleate	12	681.000	Poly(1,1'-(methylimino)bis(3-chloro-2-propanol) tetramethylethylenediamine	14	446.000
Polyethylene glycol monostearate	12	682.000	Polymethyl methacrylate (PMMA)	08	20.040
Polyethylene glycol (mixed ester) of tall oil acids	12	685.900	Polymethylvinyl ether monoethylmaleate	15	1181.600
Polyethylene glycol, propoxylated	12	762.960	Poly(mixed ethylene, propylene)glycol	12	763.000
Polyethylene glycol sesquiesther of castor oil acids	12	686.000	Polymyxin B	06	56.000
Polyethylene glycol sesquiesther of coconut oil acids	12	687.000	Polyol aluminum chelate	15	1132.190
Polyethylene glycol sesquiesther of tall oil acids	12	689.000	Poly- $\alpha$ -olefins	14	453.000
			Poly- $\alpha$ -olefins, sulfurized	14	454.000
			Polyol glycidyl ether	15	1317.700
			Polyoxyalkene silicones	15	1391.000
			Polyoxyalkylated cyclic amines	14	468.000
			Polyoxyalkylate(fatty alcohol), phosphate ester	12	112.650

Table 4.--Alphabetical Chemical Index

CHEMICAL NAME	SECT. NO.	ITEM NO.	CHEMICAL NAME	SECT. NO.	ITEM NO.
Polyoxyalkylene glycol	15	1181.800	Polyvinyl butyral resins	08	49.000
Poly(oxy-1,2 ethanediyl)acaroxy-methyl,	12	47.500	Polyvinyl chloride copolymer resins, all other	08	49.020
Poly(oxy-1,2-ethanediyl)- $\alpha$ -carboxymethyl, omega-			Polyvinyl chloride homopolymer resins	08	49.010
(tridecyloxy), potassium salt	06	457.000	Polyvinyl formal resin	08	49.050
Poly(oxy-1,2-ethanediyl)- $\alpha$ -(phenylmethyl)-omega-hydroxy-			Polyvinylidene fluoride resin	08	38.150
, C12-C15 alkyl ethers	12	754.460	Polyvinyl octadecyl carbamate	15	468.300
Poly(oxy-1,2-ethanediyl), $\alpha$ -(phenylmethyl)-omega-			Poly(vinyl-0-sulfobenzal)	14	379.000
hydroxy, ylated nonyl phenol alkyl ethers	12	754.500	Potassium acetate	15	602.000
Poly[oxyethylene(dimethylimino)ethylene(dimethylimino)			Potassium aminobenzoate	06	395.000
ethylene dichloride]	13	195.013	Potassium benzoate	15	10.800
Poly(oxypropylene)diamine	15	297.720	Potassium citrate	15	625.000
Polyoxypropylene polyoxyethylene glycol, mixed	15	1185.000	Potassium dihexyl phosphorodithioate	15	730.500
Polyphenolic phosphites, polyalkylated	09	86.000	Potassium 2-ethylhexanoate	15	641.000
Polyphenyl aromatic ester resins	08	34.500	Potassium formate	15	653.000
Poly-m-phenylene isophthalamide	14	392.000	Potassium gluconate	06	766.000
Polyphenylene oxide type resins	08	35.000	Potassium glutamate	14	9.000
Polyphenylene sulfide resins	08	35.500	Potassium glycolate	15	663.750
Poly-p-phenylene terephthalamide	14	393.000	Potassium 2-methyl-2-butanol	15	1411.400
Polypropoxybutyl ether	15	1182.000	Potassium 2-methyl-2-propanol	15	1411.600
Poly(propoxy)butyl ether, ethoxylated	15	1182.005	Potassium oxalate	15	725.000
Polypropoxy ethers, all other	15	1183.000	Potassium salicylate	06	387.000
Polypropylene glycol	15	1186.000	Potassium and sodium salts of fatty, rosin, and tall		
Polypropylene glycol dioleate	12	719.400	oil acids, all other	12	74.000
Polypropylene glycol, ethoxylated	12	764.000	Potassium sodium tartrate	15	768.000
Polypropylene glycol glycerol tri-ether	15	1186.500	Potassium warfarin	06	629.000
Polypropylene glycol glycerol triether and			Povidone - iodine	06	271.000
epichlorohydrin bisphenol epoxy resin	15	145.500	Pramoxine hydrochloride	06	710.000
Polypropylene glycol glyceryl triether(epichlorohydrin-			Prazepam	06	508.000
bisphenol a epoxy resin copolymer, ethoxylated	15	145.502	Prazosin hydrochloride	06	359.700
Polypropylene-polyethylene glycol glyceryl triether			Prednisolone	06	664.000
citrate	15	1132.195	Prednisolone acetate	06	665.000
Polypropylene polymer and copolymer resins	08	36.000	Prednisone	06	666.000
Polysulfide (T) type elastomers	10	19.500	Primaquine phosphate	06	184.000
Polysulfone resins	08	37.000	Priming and refractory oil	01	21.040
Polyterpene resins	08	38.000	Probenecid	06	740.000
Polytetrafluoroethylene (PTFE)	08	38.100	Procainamide hydrochloride	06	380.000
Polytetrafluoroethylene ethyl iodide	15	1269.000	Prochlorperazine disylate	06	487.000
Polytetramethylene glycol ether	15	1187.000	Prochlorperazine maleate	06	488.000
Poly(N,N,N',N',-tetramethylethylenediamine) with			Product from the reaction of stearyl nitrile,		
(chloromethyl)oxirane	13	195.014	candellila wax, paraformaldehyde, phosphorous		
Poly(1,1,1-trichlorobutane-2-ol)ethylene glycol			trichloride, and picoline	14	495.000
dextrose ether	15	1187.200	Progesterone	06	683.000
Poly(2,2,4-trimethyl-1,3-pentanediol) maleate	11	132.750	Promazine hydrochloride	06	489.000
Polyurethane elastomers	08	13.040	Promethazine hydrochloride	06	490.000
Polyurethane resins	08	13.080	1-Propanamine, alkoxyated	12	334.600
Polyvinyl acetate resins	08	47.000	1-Propanaminium, N-ethyl-N,N-dimethyl-3-[(1-		
Polyvinyl alcohol resins	08	48.000	oxooctadecyl)amino]-, ethyl sulfate	12	477.280



Table 4.—Alphabetical Chemical Index

CHEMICAL NAME	SECT. NO.	ITEM NO.	CHEMICAL NAME	SECT. NO.	ITEM NO.
Propane (Commercial and hd-5)	02	41.000	Propyl gallate	15	148.000
1,3-Propanediamine, alkoxylated	12	334.620	Propylhexedrine	06	344.000
Propanediol esters, all other	12	704.000	n-Propyl mercaptan (1-Propanethiol)	02	96.000
1,2-Propanediol monolaurate	12	701.000	n-Propyl oleate	11	95.000
1,2-Propanediol mono-oleate	12	702.000	Propyl oleate, sulfated, sodium salt	12	262.000
1,2-Propanediol monostearate	12	703.000	2-Propyl-3-tallow-1,3-tetrahydropyrimidine	12	443.400
3-Propanoic acid, cocoamino, sodium salt	12	31.500	2-Propyn-1-ol (Propargyl alcohol)	15	869.000
4-Propanolpyridine	03	485.500	Protease (bacterial)	14	104.000
3-Propanonitrate methylphenyl ether	12	764.200	Proteases, all other	14	108.000
Propantheline bromide	06	293.000	Protein hydrosylates	14	17.000
p-Propenylanisole (Anethole)	07	81.000	Pseudoephedrine hydrochloride	06	346.000
4-Propenyl-1,2-dimethoxybenzene (Methyl isoeugenol)	07	81.050	Pseudoephedrine sulfate	06	347.000
Propionaldehyde	15	802.000	Pseudoionone	15	836.000
Propionic acid	15	572.000	Pseudo linalyl acetate (Neobergamate)	07	166.700
Propionic acid salts, all other	15	739.000	Pyrantel pamoate	06	129.300
Propionic anhydride	15	573.000	Pyrantel tartrate	06	129.600
Propionitrile	15	450.500	8,16-Pyranthredione	03	1376.000
Propionyl chloride	15	573.050	1,3,6,8-Pyrenetetrasulfonic acid	03	1377.200
Propiophenone	03	1374.000	Pyridine hydrochloride	03	1382.000
Propoxyethanol (Ethylene glycol monopropyl ether)	15	1187.750	3-Pyridinemethanol	03	1383.000
Propoxyethoxyethanol (Diethylene glycol monopropyl ether)	15	1187.800	2° Pyridine, refined	03	1378.000
Propoxylated methylglucoside	15	147.850	Pyridine, refined all other grades	03	1379.000
Propoxylated starches	14	496.000	2-Pyridinethiol-1-oxide, sodium salt	03	1380.003
Propoxyphene hydrochloride	06	413.000	2-Pyridinethiol-1-oxide, zinc salt	03	1380.053
Propoxyphene napsylate	06	414.000	Pyridostigmine bromide	06	319.000
Propyl acetate	15	1050.000	Pyridoxine	06	800.000
Propyl alcohol (Propanol)	15	848.000	4-Pyridylacetone	03	1383.100
Propylamine, mono-	15	301.000	N-(2-Pyridyl)-4-hydroxy-2-methyl-2H-1,2-benzothiazine-3-carboxamide, 1,1-dioxide	03	1383.200
n-Propylaminoethanol	15	468.500	Pyrilamine maleate	06	105.000
p-Propylanisole (Dihydroanethole)	07	81.200	2,4(1H,3H)Pyrimidinedione	15	148.990
S-Propyl butylethylthiocarbamate (Febulate)	13	206.000	2-Pyrimidinol	03	1387.000
S-Propyl dipropylthiocarbamate (Vernolate)	13	207.000	Pyrrhione, zinc	06	271.500
Propylene	02	42.000	2-Pyrrolidinone (2-Pyrrolidone)	03	1391.000
Propylene carbonate	15	1051.000	4-N-(1-Pyrrolidyl)-m-toluenediazonium chloride	14	380.000
Propylene glycol (1,2-Propanediol)	15	1093.000	Pyrvinium pamoate	03	797.200
Propylene glycol adipate	11	65.500	Quaternary ammonium salts having amide linkages, all other	12	479.000
Propylene glycol dibenzoate	15	147.800	Quaternary ammonium salts, not containing oxygen, acyclic, all other	12	507.000
Propylene glycol dicaprylatecaprate	15	1132.400	Quaternary ammonium salts not containing oxygen, cyclic, all other	12	528.000
Propylene glycol esters of hydrogenated palm oil	12	719.500	Quinaldine	03	1393.000
Propylene glycol esters of hydrogenated soybean oil	12	719.510	Quinoline, 1 <sup>o</sup> and 2 <sup>o</sup>	03	1394.000
Propylene glycol glutarate	11	85.850	Quinoline-2,3-dicarboxylic acid	03	1395.500
Propylene glycol monoricinoleate	11	110.500	Quinoline, other grades	03	1395.000
Propylene glycol sebacate	11	115.500	8-Quinolinol	03	1397.000
Propylene oxide	15	1323.000			
Propylene oxide, polymer with polyethylene glycol adipate	15	1132.500			

Table 4.--Alphabetical Chemical Index

CHEMICAL NAME	SECT. NO.	ITEM NO.	CHEMICAL NAME	SECT. NO.	ITEM NO.
8-Quinolinol, copper salt	13	30.000	Reactive Red 29	04	926.000
8-Quinolinol, magnesium salt	13	30.200	Reactive Red 31	04	927.000
8-Quinolinol, sulfate salt	13	30.300	Reactive Red 33	04	928.000
8-Quinolinol zinc salt	03	1397.100	Reactive Red 43	04	930.043
p-Quinone	15	14.000	Reactive Red 49	04	930.049
Quinone dioxime	03	1397.500	Reactive Red 94	04	931.094
Rare earths 2-ethylhexanoate	15	642.000	Reactive Red 106	04	931.106
Rare earths naphthenate	14	312.000	Reactive Red 120	04	931.120
Rare earths neodecanoate	15	709.750	Reactive Red 141	04	931.141
Reactive Black 5	04	952.000	Reactive Red 180	04	931.180
Reactive Black 9	04	953.000	Reactive red dyes, all other	04	932.000
Reactive Blue 3	04	939.000	Reactive Violet 5	04	936.000
Reactive Blue 4	04	940.000	Reactive violet dyes, all other	04	937.000
Reactive Blue 5	04	941.000	Reactive Yellow 6	04	903.000
Reactive Blue 7	04	942.000	Reactive Yellow 7	04	904.000
Reactive Blue 13	04	942.013	Reactive Yellow 15	04	905.000
Reactive Blue 19	04	943.000	Reactive Yellow 17	04	906.000
Reactive Blue 21	04	944.000	Reactive Yellow 18	04	907.000
Reactive Blue 38	04	946.000	Reactive Yellow 22	04	907.022
Reactive Blue 71	04	946.071	Reactive Yellow 37	04	910.000
Reactive Blue 89	04	946.089	Reactive Yellow 42	04	910.042
Reactive Blue 173	04	946.173	Reactive Yellow 57	04	910.057
Reactive Blue 174	04	946.174	Reactive Yellow 86	04	910.086
Reactive Blue 199	04	946.199	Reactive Yellow 133	04	910.133
Reactive blue dyes, all other	04	947.000	Reactive Yellow 135	04	910.135
Reactive Brown 1	04	949.000	Reactive yellow dyes, all other	04	911.000
Reactive Brown 17	04	949.017	Reactive Red 35	04	928.035
Reactive Brown 18	04	949.018	Rennin	14	106.000
Reactive Green 12	04	948.012	Resorcinol	06	272.000
Reactive Green 19	04	948.019	Resorcinol monobenzoate	15	151.000
Reactive green dyes, all other	04	948.999	Resorcinol, tech,	03	1399.000
Reactive Orange 1	04	912.000	$\beta$ -Resorcylic acid, lead salt	03	1403.000
Reactive Orange 4	04	913.000	Rhodinol	07	167.000
Reactive Orange 11	04	913.011	Rhodinyl acetate	07	168.000
Reactive Orange 12	04	914.000	Riboflavin (animal feed grade)	06	801.000
Reactive Orange 13	04	915.000	Riboflavin (medicinal grade)	06	802.000
Reactive Orange 14	04	916.000	Ricebean oil, sulfated, sodium salt	12	311.000
Reactive Orange 15	04	917.000	Ricinoleic acid salts, all other	15	742.000
Reactive Orange 20	04	917.020	Rodenticides, acyclic, all other	13	233.000
Reactive Orange 78	04	917.078	Roentgenographic contrast media, all other	06	574.000
Reactive Orange 84	04	917.084	Rose oxide	07	115.500
Reactive Orange 86	04	917.086	Rosin acid salts, all other	15	160.000
Reactive orange dyes, all other	04	918.000	Rosin acids, potassium salt	12	65.000
Reactive Red 2	04	920.000	Rosin acids, sodium salt	12	66.000
Reactive Red 5	04	922.000	Rosin acids, triethanolamine salt	12	32.000
Reactive Red 11	04	924.000	Rosin alcohol, ethoxylated	12	765.000
Reactive Red 21	04	925.000	Rosin amine, ethoxylated	12	355.000

APPENDIX

Table 4.—Alphabetical Chemical Index

CHEMICAL NAME	SECT. NO.	ITEM NO.	CHEMICAL NAME	SECT. NO.	ITEM NO.
Rosin amines	14	136.000	Sodium carboxymethyl amylose	14	432.000
Rosin esters, unmodified (Ester gums)	08	39.000	Sodium carboxymethylcellulose (100%)	14	412.000
Roxarsone	06	159.000	1-(Sodium carboxymethyl)-1-(sodium carboxymethyleneoxyethylene)-2-nor-(coconut oil fatty acids)-2-imidazolium lauryl sulfate	12	27.200
Roxarsone, sodium	06	160.000	Sodium 5-[2-chloro-4-(trifluoromethyl)-phenoxy]-2-nitrobenzoate	13	118.042
Rubber modified polystyrene	08	44.020	Sodium citrate	15	626.000
Rubber-processing chemicals, cyclic, all other	09	127.000	Sodium diacetate	15	604.000
Rust preventing additives	14	172.000	Sodium di-sec-butyl/diethyl phosphorodithioate	15	731.000
Saccharin (1,2-Benzisothiazolin-3-one,-1,1-dioxide)	07	85.000	Sodium di-sec-butyl phosphorodithioate	15	732.000
Saccharin, sodium salt	07	87.000	Sodium di-2-ethylhexyl sulfosuccinate	15	742.900
Salicylaldehyde	03	1404.000	Sodium dihexyl phosphorodithioate	15	734.000
Salicylaldehyde oxime	03	1404.502	Sodium dihydrobis(2-methoxyethoxy)aluminum hydride	15	1363.900
Salicylanilide	03	1405.000	Sodium diisopropyl phosphorodithioate	15	735.000
Salicylic acid	06	557.000	Sodium ethoxide	15	1415.000
Salicylic acid magnesium salt	15	162.200	Sodium fluoroacetate	13	232.000
Salicylic acid, tech.	03	1406.000	Sodium formaldehyde bisulfite	15	743.250
Salsalate	06	389.000	Sodium formaldehyde sulfoxylate	15	743.255
Salts of organic acids, all other	15	781.000	Sodium formate, refined	15	654.000
$\alpha$ -Santalol	07	116.000	Sodium formate, technical	15	655.000
Sarcosine	14	18.000	Sodium gluconate	15	662.000
Sassafrass oil, hydrogenated	07	116.200	Sodium heparin	06	630.000
Sebacic acid	15	574.000	Sodium lactate (Malac)	15	674.000
Sebacoyl chloride	15	575.000	Sodium mercaptoacetate	15	697.000
Secobarbital, sodium	06	461.000	Sodium methoxide (Sodium methylate)	15	1418.000
Secondary and tertiary monoamines, all other	12	447.000	Sodium-N-methyl-N-oley l taurate	15	743.550
Semicarbazide hydrochloride	15	473.000	Sodium oxalate	15	726.000
Semisynthetic penicillins, all other	06	20.000	Sodium phenate or carbolate	01	22.050
Silicone fluids	15	1392.000	Sodium polyacrylate	14	433.000
Silicone greases	14	462.000	Sodium propionate	15	738.000
Silicone resins	08	14.000	Sodium salicylate	06	390.000
Silicone resins for mold release agents	15	1480.000	Sodium p-sulfophenylmethallyl ether	03	1410.100
Silicone (Q) type elastomers	10	20.000	Sodium trichlorobenzenesulfate	03	1410.500
Silver trifluoroacetate	15	742.700	Solid type polyvinylidene chloride resins	08	50.020
Sisomycin	06	56.700	Solubilized Sulfur Black 2	04	1111.000
Sitosterols	06	618.000	Solvent Black 7	04	1053.000
Sodium acetate	15	603.000	Solvent Black 13	04	1055.000
Sodium aminobenzoate	06	396.000	Solvent Black 26	04	1057.000
Sodium ammonium polyacrylate and copolymers	14	431.000	Solvent Black 47	04	1057.047
Sodium arsanilate	06	161.000	Solvent Black 48	04	1057.048
Sodium ascorbate	06	809.000	Solvent Black 49	04	1057.049
Sodium benzene phosphinate	15	162.250	Solvent Blue 3	04	1020.000
Sodium benzoate, U.S.P.	15	12.000	Solvent Blue 4	04	1021.000
Sodium benzoate, tech.	15	11.000	Solvent Blue 5	04	1022.000
Sodium n-butylxanthate	14	142.000	Solvent Blue 23	04	1028.023
Sodium sec-butylxanthate	14	143.000	Solvent Blue 35	04	1028.035
Sodium caprylate	06	137.000			
1-(Sodium carboxyethylene)-1-(sodium carboxymethyleneoxyethylene)-2-nor-(tall oil fatty acids)-2-imidazolium hydroxide	12	27.100			

Table 4.--Alphabetical Chemical Index

CHEMICAL NAME	SECT. NO.	ITEM NO.	CHEMICAL NAME	SECT. NO.	ITEM NO.
Solvent Blue 36	04	1029.000	Solvent Red 166	04	1012.000
Solvent Blue 38	04	1031.000	Solvent Red 168	04	1012.168
Solvent Blue 43	04	1032.000	Solvent Red 169	04	1012.169
Solvent Blue 56	04	1031.056	Solvent Red 172	04	1012.172
Solvent Blue 59	04	1034.000	Solvent Red 173	04	1012.173
Solvent Blue 98	04	1037.000	Solvent Red 175	04	1012.175
Solvent Blue 99	04	1037.099	Solvent Red 207	04	1012.207
Solvent Blue 100	04	1038.000	Solvent Red 208	04	1012.208
Solvent Blue 102	04	1038.102	Solvent Red 209	04	1012.209
Solvent Blue 128	04	1038.128	Solvent Red 210	04	1012.210
Solvent Blue 129	04	1038.129	Solvent Red 222	04	1012.222
Solvent blue dyes, all other	04	1039.000	Solvent red dyes, all other	04	1013.000
Solvent Brown 12	04	1045.000	Solvent Violet 8	04	1014.000
Solvent Brown 20	04	1047.000	Solvent Violet 9	04	1015.000
Solvent Brown 22	04	1048.000	Solvent Violet 13	04	1016.000
Solvent Brown 38	04	1049.000	Solvent Violet 14	04	1017.000
Solvent Brown 51	04	1049.051	Solvent violet dyes, all other	04	1019.000
Solvent Brown 52	04	1049.052	Solvent Yellow 3	04	957.000
Solvent Green 1	04	1040.000	Solvent Yellow 13	04	958.000
Solvent naphtha	01	8.000	Solvent Yellow 14	04	959.000
Solvent Orange 2	04	977.000	Solvent Yellow 16	04	959.016
Solvent Orange 3	04	978.000	Solvent Yellow 33	04	963.000
Solvent Orange 7	04	980.000	Solvent Yellow 40	04	965.000
Solvent Orange 20	04	981.000	Solvent Yellow 42	04	966.000
Solvent Orange 23	04	982.000	Solvent Yellow 43	04	967.000
Solvent Orange 25	04	984.000	Solvent Yellow 44	04	968.000
Solvent Orange 31	04	985.000	Solvent Yellow 56	04	971.000
Solvent Orange 60	04	987.060	Solvent Yellow 72	04	973.000
Solvent Orange 73	04	987.073	Solvent Yellow 94	04	974.094
Solvent Orange 74	04	987.074	Solvent Yellow 107	04	975.000
Solvent Orange 76	04	987.076	Solvent Yellow 109	04	975.109
Solvent Orange 77	04	987.077	Solvent Yellow 131	04	975.131
Solvent Orange 97	04	987.097	Solvent Yellow 135	04	975.135
Solvent orange dyes, all other	04	988.000	Solvent Yellow 143	04	975.143
Solvent Red 1	04	989.000	Solvent Yellow 160	04	975.160
Solvent Red 5	04	989.005	Solvent Yellow 161	04	975.161
Solvent Red 23	04	991.023	Solvent Yellow 163	04	975.163
Solvent Red 24	04	992.000	Solvent Yellow 166	04	975.166
Solvent Red 26	04	993.000	Solvent Yellow 167	04	975.167
Solvent Red 27	04	994.000	Solvent yellow dyes, all other	04	976.000
Solvent Red 49	04	999.000	Sorbic acid (2,4-Hexadienoic acid)	15	576.000
Solvent Red 68	04	1001.000	Sorbitol (70% by Weight)	15	1094.000
Solvent Red 74	04	1003.000	Sorbitol, ethoxylated	15	1189.000
Solvent Red 111	04	1008.000	Sorbitol, propoxylated	15	1190.000
Solvent Red 125	04	1008.125	Soya fatty acids, reaction products with chloromethane		
Solvent Red 164	04	1011.000	and diethylenetriamine, ethoxylated, quaternized	12	477.350
Solvent Red 165	04	1011.165			

APPENDIX

Table 4.--Alphabetical Chemical Index

CHEMICAL NAME	SECT. NO.	ITEM NO.	CHEMICAL NAME	SECT. NO.	ITEM NO.
Soya fatty acids, reaction products with chloromethane and diethylenetriamine, propoxylated, quaternized	12	477.360	Stearic acid-ethylenediamine condensate, monoethoxylated	12	382.000
Soya sterols, ethoxylated	12	754.700	Stearic acid-ethylenediamine condensate, monoethoxylated, ethyl sulfate	12	368.300
Soybean oil acids (Ratio=2/1)	12	541.500	Stearic acid ethylene diamine methyl ammonium sulfate	12	501.500
Soybean oil acids (Ratio=1/1)	12	549.300	Stearic acid-imino-bis(propyl amine)condensate	12	389.600
Soybean oil acids, potassium salt	12	67.000	Stearic acid mixed amine condensate	12	369.500
(Soybean oil alkyl)amine	12	427.000	Stearic acid, potassium salt	12	68.000
(Soybean oil alkyl)amine, ethoxylated	12	335.000	Stearic acid salts, all other	15	764.000
N-(Soybean oil alkyl)trimethylenediamine	12	414.000	Stearic acid, sodium salt	12	69.000
Soybean oil, ethoxylated	12	672.000	Stearic acid-tetraethylenepentamine condensate	12	370.000
Soybean oil, sulfated, sodium salt	12	312.000	Stearic acid-tetraethylenepentamine condensate, acetate salts	12	370.020
Specific gravity 0.940 and below	08	31.100	Stearic acid, N,N,N',N'-tetrakis(2-hydroxyethyl)-ethylenediamine salt	12	33.000
Specific gravity 0.940 and below	08	31.400	Stearic acid, triethanolamine salt	12	34.000
Specific gravity over 0.940	08	32.000	Stearonitrile (Octadecane nitrile)	15	451.000
Spectinomycin (animal feed grade)	06	75.000	N-Stearoyl-p-aminophenol	09	104.000
Spectinomycin (medicinal grade)	06	57.000	Stearoyl chloride	15	577.000
Spironolactone	06	740.500	Stearyl acid phosphate	15	1035.300
Stannous 2-ethylhexanoate	15	643.000	Stearyl alcohol, propoxylated and ethoxylated	12	733.320
Stannous octanoate	15	715.000	Stearylamidopropyl dimethyl myristyl acetate ammonium chloride	12	477.400
Stannous octyl phthallate	15	164.300	Stearyl amine polyphosphoric acid, ethoxylated	12	112.810
Stanozolol	06	641.600	Stearyl dimethylammoniummethosulfate quaternary	12	465.850
Stearamide (Octadecane amide)	15	253.000	Stearyl dimethyl ethyl ammonium ethyl sulfate	12	465.870
Stearamidoethyldiethylamine	12	388.900	Stearylcerucamide	15	254.000
Stearamidoethylethanolamine acetate	12	388.950	Stearyl methacrylate	15	1053.000
Stearamidoethyl-2-heptadecyl imidazoline	12	414.500	Straight polystyrene	08	44.030
Stearic acid (Ratio = 2/1)	12	542.000	Streptomycin	06	76.000
Stearic acid (Ratio = 1/1)	12	565.000	Strontium naphthenate	14	313.000
Stearic acid (Ratio = 1/2)	12	567.000	Styrenated-alkyds, or copolymer alkyds	08	3.500
Stearic acid (Ratio = 2/1)	12	562.000	Styrene (Vinylbenzene)	03	1411.000
Stearic acid (Ratio = 1/1)	12	550.000	Styrene-acrylonitrile copolymer resins (SAN)	08	43.000
Stearic acid aminoethanolamine (amine acid ratio = 1.0/1.65)	12	575.450	Styrene-allyl alcohol copolymer resins	08	44.043
Stearic acid-aminoethyl ethanolamine (amine/acid ratio=1.75/1.0)	12	575.500	Styrene-butadiene, dry type	10	3.100
Stearic acid-N-aminoethyl ethanolamine condensate	12	581.200	Styrene-butadiene latexes	08	44.060
Stearic acid, ammonium salt	12	67.990	Styrene-butadiene, latex type	10	3.500
Stearic acid diethanolamine (amine acid ratio = 1.0/11.6)	12	575.550	Styrene-butadiene type elastomers, other	10	4.500
Stearic acid, diethanolamine condensate, methyl sulfate	12	389.500	Styrene-butadiene-vinylpyridine	10	4.000
Stearic acid-diethylenetriamine condensate	12	367.000	Styrene copolymers, all other	08	44.049
Stearic acid-diethylenetriamine condensate, ethyl sulfate	12	367.500	Styrene-divinylbenzene copolymer resins	08	44.044
Stearic acid esters, all other	11	125.000	Styrene latexes, all other	08	44.080
Stearic acid, ethoxylated	12	671.700	Styrene-maleic anhydride copolymer resins	08	44.045
Stearic acid - ethylenediamine condensate	12	368.290	Styrene-methyl methacrylate copolymer resins	08	44.047
Stearic acid-ethylenediamine condensate amine/acid ratio=1/2	12	586.000	Styrene oxide	15	165.000
			Styrene type plastics materials, all other	08	45.500
			Succinaldehyde-sodium bisulfite complex	15	803.400

Table 4.--Alphabetical Chemical Index

CHEMICAL NAME	SECT. NO.	ITEM NO.	CHEMICAL NAME	SECT. NO.	ITEM NO.
Succinic acid	15	578.000	Sulfosuccinic acid esters, all other	12	197.000
Succinic anhydride	15	165.500	Sulfosuccinic acid, (coconut oil alkyl)iminoisopropanol	12	193.400
Succinylcholine chloride	06	480.000	half-ester, sodium salt	12	196.160
Succinyl peroxide	15	1419.000	Sulfosuccinic acid, mixed linear alcohols, ethoxylate	12	196.475
Sucrose acetate isobutyrate	11	126.000	ester, sodium salt	12	196.500
Sucrose benzoate	15	166.000	Sulfosuccinic acid, monolauramide ester, disodium salt	12	196.515
Sucrose octa-acetate	15	1133.000	Sulfosuccinic acid, monolauryl(polyethoxy)ester,	12	196.500
Sulfabenzamide	06	208.000	disodium salt	12	196.500
Sulfacetamide, sodium	06	212.000	Sulfosuccinic acid, monooleamidopolyethyleneglycol	12	196.515
Sulfadiazine	06	215.000	ester, disodium salt	12	196.515
Sulfadimethoxine	06	217.000	Sulfoxone, sodium	06	149.000
Sulfaguanidine	03	1412.200	Sulfur Black 11, 11:1	04	1114.000
Sulfamethazine	06	221.000	Sulfur black dyes, all other	04	1116.000
Sulfamethazine, sodium	06	222.000	Sulfur blue dyes, all other	04	1082.000
Sulfamethizole	06	223.000	Sulfur compounds, all other	14	264.000
Sulfamethoxazole	06	224.000	Sulfuric acid esters, all other	12	317.000
Sulfanitran	06	227.000	Sulfurized corn oil	15	1330.050
Sulfasalazine	06	232.000	Sulfurized fatty acid amides, esters, or ester-amides	14	173.000
Sulfated animal fats and oils, all other	12	297.000	Sulfurized lard oil	14	200.000
Sulfated cyclic ethers, all other	12	291.000	Sulfurized sperm oil substitutes	14	202.000
Sulfated fish and marine fat oils, all other	12	304.000	Sulfur Orange 1	04	1066.000
Sulfathiazole, sodium	06	234.000	Sulindac	06	414.500
Sulfisoxazole	06	235.000	Sympathomimetic (adrenergic) agents, all other	06	349.000
Sulfisoxazole, acetyl	06	201.000	Synthetic hypoglycemic agents, all other	06	691.000
5-Sulfoisophthalic acid, 1,3-dimethyl ester	03	1417.000	Synthetic sweetener material, all other	07	88.000
5-Sulfoisophthalic acid, 1,3-dimethyl ester, sodium salt	03	1417.100	Talbutal	06	462.000
5-Sulfoisophthalic acid, lithium salt	03	1417.300	Tall oil acids (Ratio = 2/1)	12	543.000
5-Sulfoisophthalic acid, sodium salt	03	1417.500	Tall oil acids	12	551.000
Sulfonamides, all other	06	237.000	Tall Oil Acids	12	74.100
Sulfonic acids, all other	12	215.000	Tall oil acids/aminoethylpiperazine condensate	12	370.900
Sulfonic acids having amide linkages, all other	12	189.000	Tall oil acids, diethanolamine salt (Condensate)	12	34.300
Sulfonic acids with ether linkages, all other	12	209.000	Tall oil acids-diethylenetriamine condensate	12	371.000
Sulfonic acid with ester linkages, all other	12	204.000	Tall oil acids-N,N-dimethylpropylenediamine condensate	12	371.200
4,4'-Sulfonyldiphenol (4,4'-Dihydroxydiphenyl sulfone)	03	1420.000	Tall oil acids, ethoxylated and propoxylated	12	672.420
4,4'-Sulfonyldiphenolnaphthalenesulfonic acid	12	174.800	Tall oil acids/ethylene/amine distillation residue,	12	371.300
4-Sulfophthalic acid	03	1421.000	condensate	12	371.300
Sulfosuccinic acid, bis(diisobutyl)ester, amidodisodium salt	12	190.000	Tall oil acids-ethylenediamine condensate (Amine acid ratio = 1/2)	12	587.510
Sulfosuccinic acid, bis(2,6-dimethyl-4-heptyl)ester, sodium salt	12	191.000	Tall oil acids-mixed polyamine condensate	12	371.800
Sulfosuccinic acid, bis(2-ethylhexyl)ester, sodium salt	12	192.000	Tall oil acids-polyalkylenepolyamine condensate	12	372.000
Sulfosuccinic acid, dihexyl ester, sodium salt	12	194.000	Tall oil acids-polyalkylene polyamine condensate, salts, with dodecylbenzene sulfonic acid and/or tall oil	12	372.010
Sulfosuccinic acid, diisodecyl ester, sodium salt	12	194.200	fatty acids	12	372.010
Sulfosuccinic acid, diisooctyl ester, sodium salt	12	194.220	Tall oil acids, potassium salt	12	70.000
Sulfosuccinic acid, dioctyl ester, sodium salt	12	194.300	Tall oil acids, sodium salt	12	71.000
Sulfosuccinic acid, dipentyl ester, sodium salt	12	195.000	Tall oil acids, sulfated, sodium salt	12	268.700
Sulfosuccinic acid, ditridecyl ester, sodium salt	12	196.000	(Tall oil alkyl)amine	12	428.000

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CHEMICAL NAME	SECT: NO.	ITEM NO.	CHEMICAL NAME	SECT: NO.	ITEM NO.
Tall oil alkyl amines	12	335.500	Terbutaline sulfate	06	347.500
3-(Tall oil amino)propyl amine	12	414.600	Terephthalic acid	03	1422.000
Tall oil, chemically modified	15	168.000	Terephthalic acid, dimethyl ester	03	1424.000
Tall oil fatty acid, diethylene triamine condensate (amine/acid ratio=1/2)	12	587.450	Terephthaloyl chloride	03	1424.500
Tall oil fatty acids (Ratio = 1/2)	12	555.300	Terephthaloyldiacetic acid, diethyl ester	03	1425.000
Tall oil fatty acids (ratio = 2.7/1)	12	555.310	Terpene hydrocarbons, monocyclic (Solvenol)	15	182.000
Tall oil fatty acids-triethanolamine condensate	12	575.600	Terpene polymers	15	182.500
Tall oil, refined, ethoxylated	12	672.500	Terphenyl (Phenylbiphenyl) (m-, o-, and p-isomers)	03	1426.000
Tall oil salts, all other (Linoleic-rosin acid salts)	15	179.000	Terpinene-ol	07	116.500
Tall oil, sulfated, ammonia salt	12	312.500	Terpinene-4-ol	03	1426.500
Tall oil, sulfated, sodium salt	12	312.700	Terpineol(α- and β-)	07	119.000
Tall oil, sulfonated, potassium salt	12	214.300	α-Terpineol	07	117.000
Tallow acids (Ratio = 2/1)	12	544.000	α-Terpinyol acetate	07	120.000
Tallow acids	12	552.000	α-Terpinyol propionate	07	121.000
Tallow acids, ethanolamine salt	12	34.400	Testosterone	06	641.800
Tallow acids, potassium salt	12	72.000	Testosterone cypionate	06	642.000
Tallow acids, sodium salt	12	73.000	Testosterone enanthate	06	642.100
Tallow acids, triethanolamine salt	12	34.500	Testosterone propionate	06	642.300
Tallow alcohol, ethoxylated	12	740.000	Tetraalkyl silicate	15	1053.700
Tallow alkyl amide, ethoxylated	12	587.970	Tetrabromobisphenol A	15	184.000
(Tallow alkyl)amine	12	429.000	1,1,2,2-Tetrabromoethane (Acetylene tetrabromide)	15	1214.000
(Tallow alkyl)amine acetate	12	399.000	Tetrabromophthalic anhydride	03	1429.000
(Tallow alkyl)amine, ethoxylated	12	336.000	Tetrabutylammonium bromide	12	501.600
(Tallow alkyl)amine, propoxylated	12	336.040	Tetra Butyl ammonium hydrogen sulfate	12	477.850
N-(Tallow alkyl)dipropylene triamine	12	415.000	Tetrabutyl titanate	15	1060.000
N-(Tallow alkyl)-3-iminodipropionic acid, disodium salt	12	18.000	cis-N-[(1,1,2,2-Tetrachloroethyl)thio]-1-cyclohexene-1,		
N-(Tallow alkyl)trimethylenediamine	12	416.000	2-dicarboximide (Captafol)	13	31.050
N-(Tallow alkyl)trimethylenediamine acetate	12	400.000	2,4,5,6-Tetrachloroisophthalonitrile	13	31.200
N-(Tallow alkyl)trimethylenediamine, ethoxylated	12	337.000	2,4,4',5'-Tetrachlorophenylsulfone	03	1435.400
N-(Tallow alkyl)trimethylenediamine oleate	12	402.000	Tetrachlorophthalic anhydride	03	1435.600
N-(Tallow alkyl)trimethylenediamine, propoxylated	12	337.020	Tetracycline	06	37.000
N-(Tallow alkyl)-N,N',N'-trimethyl-1,3-propane diamine	12	416.100	1-Tetradecanaminium,N,N,N-trimethyl-chloride	12	501.604
Tallow amide, hydrogenated	15	255.000	n-Tetradecane	15	1348.500
Tallow amine, ethoxylated, quarternary ammonium salt	12	477.700	1-Tetradecanol (Myristyl alcohol)	15	879.000
[Tallow ethyl alkyl)amine, ethoxylated, sulfate	12	336.020	n-Tetradecanoylsuccinic anhydride	15	185.500
Tallow fatty acids, etho	12	672.600	3-Tetradecylaminopropyl amine	12	416.200
Tallow nitrile	15	453.000	Tetradecyl mercaptan	09	171.200
Tallow, sulfated, sodium salt	12	295.000	Tetra-(2,2-diallyloxymethylene)-1-butoxy titanium bis-		
Tannic acid, N.F.	15	180.000	(ditridecyl) phosphite	12	784.500
Tar bases: crude bases (Dry basis)	01	10.000	Tetraethanolammonium hydroxide	12	501.620
Tar bases: semirefined or denaturing grade	01	11.000	Tetraethylammonium bromide	12	501.610
Tar distillates, all other	01	22.000	Tetraethyl ammonium chloride	12	501.612
Tar for other uses: crude	01	24.000	Tetraethylene glycol	15	1191.000
Tar for other uses: refined	01	25.000	Tetraethylene glycol diacrylate	15	1135.000
Tar, road	01	23.000	Tetraethylene glycol di(2-ethylhexanoate)	11	126.100
Tepyl acetate	07	169.000	Tetraethylene glycol diheptanoate	15	1135.700
			Tetraethylene glycol dimethacrylate	15	1136.000

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CHEMICAL NAME	SECT: NO.	ITEM NO.	CHEMICAL NAME	SECT: NO.	ITEM NO.
Tetraethylenepentamine	15	303.000	Tetramethyl octahydro acetyl naphthalene	07	88.810
Tetraethyl lead	14	186.000	Tetramethylthiuram tetrasulfide	09	48.250
O,O,O',O'-Tetraethyl S,S'-methylene bisphosphorodithioate (Ethion)	13	227.000	1,3,6,8-Tetranitro-9H-carbazole	03	1443.600
Tetraethyl orthosilicate (Tetraethyl silicate)	15	1054.000	Tetranitromethane	15	478.050
Tetraethyl silicate, condensed	15	1055.000	Tetra-octyloxy titanium (bistridecyl) phosphite	12	785.100
Tetrafluoroethylene, monomer	15	1270.000	Tetraphenyltin chloride	15	191.000
Tetrafluoromethane	15	1271.000	Tetrapropylammonium hydroxide	12	501.670
Tetraheptyl ammonium bromide	12	501.635	Tetrahydrofurfurylamine	03	1438.050
Tetrahydrobenzyl alcohol	03	1437.402	Textile chemicals, other than surface active agents, all other	14	507.000
Tetrahydro-3,5-dimethyl-4H-1,3,5-oxadiazine-4-thione	09	6.900	Thebaine	06	435.000
Tetrahydro-3,5-dimethyl-2(1H)-pyrimidinone[3-[4-(trifluoromethyl)phenyl]-1-[2-[4-(trifluoromethyl)phenyl]ethenyl]-2-propenylidene]hydrozone	13	166.028	Thenium cloylate	06	131.200
Tetrahydro-3,5-dimethyl-2H-1,3,5-thiadiazine-2-thione (DMTT)	13	12.000	Theophylline sodium glycinate	06	746.600
Tetrahydrofuran	03	1438.000	Therapeutic nutrients, all other	06	768.000
Tetrahydrofurfuryl alcohol	15	83.000	Thermoplastic resins, benzenoid, all other	08	52.000
Tetrahydrofurfuryl oleate	11	53.000	Thermosetting acrylate resins	08	20.030
Tetrahydroxyocrenol	07	169.170	Thermosetting resins, benzenoid, all other	08	18.000
1,2,3,4-Tetrahydronaphthalene (Tetralin)	15	186.000	Thermosetting resins, nonbenzenoid, all other	08	18.100
1,2,3,4-Tetrahydronaphthalene	03	1438.253	Thiabenzazole	06	132.000
Tetrahydropyrimidine from tall oil fatty acids and propylenediamine	14	174.000	1,3,4-Thiadiazole, 2,5-bis(dialkyldithio) derivatives	14	290.000
1,2,3,4-Tetrahydro-2,2,4,7-tetramethylquinoline	03	1439.780	Thiamine hydrochloride	06	804.000
Tetrahydrothiophene	15	187.000	Thiamine mononitrate	06	805.000
Tetrahydrothiophene-1,1-dioxide (Sulfolane)	15	188.000	Thiamylal, sodium	06	463.060
Tetrahydrozoline hydrochloride	06	348.000	Thiazole derivatives, cyclic, other	09	36.000
Tetra-isopropoxy titanium (bis dioctyl) phosphite	12	784.550	Thioacetic acid	15	581.000
Tetraisopropyl titanate	15	1061.000	Thiocarbanilide (Diphenylthiourea)	14	137.000
Tetrakis(2-chloroethyl)ethylene diphosphate	15	1035.500	Thiocyanic acid, methylene ester	13	207.500
Tetrakis(2-ethylhexyl)titanate	15	1062.000	2-(Thiocyanomethylthio)benzothiazole	13	40.018
N,N,N',N'-Tetrakis(2-hydroxypropyl)ethylene diamine	12	337.590	2,2'-Thiodiethanol (Thiodiglycol)	15	1193.000
N,N,N',N'-Tetrakis(2-hydroxypropyl)ethylenediamine, propoxylated and ethoxylated	12	339.000	Thiodiglycol ethoxylated	12	768.500
Tetralin, crude (Tetrahydronaphthalene)	01	21.060	Thiodiphenol	03	1452.500
Tetra methyl ammonium bromide	12	501.637	3,3'-Thiodipropionic acid	15	582.000
Tetramethylammonium chloride	12	501.638	3,3'-Thiodipropionitrile	15	455.000
Tetramethylammonium hydroxide	12	501.640	Thioguanine (hemihydrate)	06	280.000
1,2,4,5-Tetramethylbenzene (Durene)	03	1442.100	Thiolactic acid	15	583.000
N,N,N',N'-Tetramethyl-1,3-butanediamine	15	304.000	Thiopental, sodium	06	464.000
p-(1,1,3,3-Tetramethylbutyl)phenol	03	1443.000	Thiophane (Tetrahydrothiophene)	02	96.095
2,4,7,9-Tetramethyl-5-decyne-4,7-diol, ethoxylated	12	768.000	Thiophene	15	198.000
Tetramethylethylenediamine	15	305.000	2-Thiopheneacetic acid	03	1452.700
Tetra(methyl-ethyl)lead, (Tel-tml, reacted)	14	187.000	2-Thiopheneacetonitrile	03	1452.800
Tetramethyl lead	14	188.000	2-Thiopheneacetyl chloride	03	1452.900
Tetramethyl, octahydro acetophenone	07	88.800	2-Thiophenecarboxaldehyde	03	1453.000
			Thiophenol	03	1453.100
			Thioridazine hydrochloride	06	493.002
			Thiosemicarbazide	15	480.000
			Thiostrepton	06	58.000
			Thiothixene hydrochloride	06	509.000



Table 4.—Alphabetical Chemical Index

CHEMICAL NAME	SECT. NO.	ITEM NO.	CHEMICAL NAME	SECT. NO.	ITEM NO.
Thiourea-formaldehyde resins	08	15.000	m-Toluidine, ethoxylated	12	356.200
Thiourea resins	08	17.010	2-o-Toluidinoethanol	03	1478.000
Thyroglobulin	06	695.800	o-Toluidinomethanesulfonic acid	03	1480.000
Thyroid	06	696.000	p-Tolylacetaldehyde	07	89.600
Ticarcillin, disodium	06	19.500	p-Tolyl acetate	07	90.000
Ticarcillin, sodium	06	19.700	2,2'-(m-Tolylimino)diethanol	03	1487.000
Timolol maleate	06	321.500	2,2'-(m-Tolylimino)diethanol, diacetate ester	03	1487.100
Titanic acid esters, all other	15	1063.000	p-Tolyl isobutyrate	07	90.100
Titanium acetylacetonate complex	15	1407.250	p-Tolyl octanoate	07	90.400
Tobramycin	06	4.001	p-Tolylphenylacetate	07	90.600
Tocainide	06	383.001	Tolyltriazole	03	1487.700
d- $\alpha$ Tocopherol	06	815.000	Toxaphene (Chlorinated camphene)	13	145.000
dl- $\alpha$ Tocopherol	06	816.000	Toyltriazine, sodium salt	03	1487.500
d- $\alpha$ Tocopheryl acetate	06	817.000	Tretinoin (vitamin A acid)	06	770.000
dl- $\alpha$ Tocopheryl acetate (animal feed grade)	06	818.000	Trialkyl phosphite	15	1036.000
dl- $\alpha$ Tocopheryl acetate (medicinal grade)	06	819.000	Triallyl cyanurate	15	200.000
d- $\alpha$ Tocopheryl acid succinate	06	821.000	Triamcinolone	06	667.000
Tolazamide	06	689.000	Triamcinolone acetonide	06	668.000
Tolbutamide	06	690.000	Triamcinolone diacetate	06	669.000
p-Tolualdehyde	07	89.000	Triamcinolone 5-nitrosopyrimidine	03	1487.802
Toluene (Toluol) 90-100%	01	4.000	Triamterene	06	741.000
Toluene-2,3-(and 3,4)-diamine (35/65 Mixture)	03	1454.803	Triaryl phosphites	09	86.500
Toluene-2,4-diamine (4-m-Tolylenediamine)	03	1455.000	Triazolam	06	509.100
Toluene-2,4-(and 2,6)-diamine (80/20 Mixture)	03	1455.313	Tribasic lead maleate	15	689.000
Toluene-3,4-diamine	03	1455.402	N,N,N-Tribenzylamine	03	1487.900
Toluenediamine-bis-maleimide	03	1455.500	ar-Tribromoethyl benzene	03	1488.100
Toluene 2,4-diisocyanate	03	1024.000	2,4,6-Tribromophenol	03	1488.289
Toluene 2,4-and 2,6-diisocyanate (80/20 Mixture)	03	1025.600	3,4',5-Tribromosalicylanilide	03	1489.000
Toluene 2,4-and 2,6-diisocyanate (65/35 Mixture)	03	1025.000	Tri(2-butoxyethyl) phosphate	11	102.000
Toluene High purity (98-100%)	02	27.500	Tributyl acetylcitrate	11	71.100
Toluene Other	02	28.500	Tri-n-butylamine	15	266.000
Toluenesulfonamide o-, p-mixtures	11	54.000	Tributyl citrate	11	71.200
p-(p-Toluenesulfonamido)diphenylamine	09	83.000	Tributylmethylammonium chloride	12	501.750
p-Toluenesulfonic acid	03	1461.000	Tributyl phosphate	15	1039.000
p-Toluenesulfonic acid, aniline salt	03	1461.300	S,S,S-Tributyl phosphorotrithioate	13	208.000
p-toluenesulfonic acid, copper salt	03	1461.400	Tributyl phosphorotrithioate (Merphos)	13	209.000
Toluenesulfonic acid, potassium salt	12	146.000	Tributyltin benzoate	15	202.500
Toluenesulfonic acid, sodium salt	12	147.000	Tributyltin chloride	13	195.016
p-Toluenesulfonyl chloride	03	1467.000	Tributyltin fluoride	15	1406.000
p-Toluenesulfonylhydrazide	09	110.743	Tributyltin propylene glycol maleate	15	1406.200
p-Toluenesulfonyl isocyanate	03	1025.700	Tri(castor oil alkyl)phosphate	12	786.000
p-Toluenesulfonylsemicarbazide	09	109.800	Trichlormethiazide	06	726.000
m-Toluic acid	03	1469.000	S-(1,2,3-Trichloroallyl) diisopropylthiocarbamate		
p-Toluic acid, methyl ester	03	1471.202	(Triallate)	13	211.000
o-Toluidine	03	1473.000	1,2,3(and 1,2,4)-Trichlorobenzene	03	1490.000
m-Toluidine	03	1472.000	1,2,4-Trichlorobenzene	03	1491.000
p-Toluidine	03	1474.000			

Table 4.—Alphabetical Chemical Index

CHEMICAL NAME	SECT. NO.	ITEM NO.	CHEMICAL NAME	SECT. NO.	ITEM NO.
1,1,1-Trichloro-2,2-bis(p-methoxyphenyl)ethane (Methoxychlor)	13	146.000	Tridecyloxypoly(ethyleneoxy)propionic acid, potassium salt	12	18.500
3,4,4'-Trichlorocarbanilide	15	203.000	3-(3-Tridecyloxy)propylaminopropyl amine	12	339.600
1,1,1-Trichloroethane (Methyl chloroform)	15	1245.000	Tridecyl phosphate	12	110.300
1,1,2-Trichloroethane (Vinyl trichloride)	15	1246.000	Tridecyl stearate	15	980.000
Trichloroethylene	15	1247.000	Tridecyl stearate	11	124.800
Tri(2-chloroethyl) phosphate	11	102.200	Tridecyl stearate	12	720.350
Trichlorofluoromethane	15	1272.000	Tridecyl sulfate, sodium salt	12	246.000
α-(Trichloromethyl)benzyl acetate (Rosetone)	07	91.000	Tridihexethyl chloride	06	293.900
Trichloromethyl chloroformate	15	1063.800	Tri(dimethylaminomethyl)phenol	03	1499.208
Trichloromethylsilane	15	1394.000	Triethanolamine	15	381.000
3-Trichloromethyl-1,2,4-thiadiazole	03	1492.500	Triethanolamine, ethoxylated	12	340.000
N-Trichloromethylthio-4-cyclohexene-1,2-dicarboximide (Captan)	13	34.000	Triethanolamine salicylate	12	340.100
N-Trichloromethylthiophthalimide (Folpet)	13	35.000	Triethanolamine titanate	15	1062.500
Trichloronitromethane (Chloropicrin)	13	242.000	Triethyl acetyl citrate	11	71.300
Trichlorophenylsilane	03	1494.000	Triethylaluminum	15	1364.000
1,2,3-Trichloropropane	15	1248.000	Triethylamine	15	279.000
1,2,3-Trichloropropene	15	1249.000	Triethylborane	15	1368.800
Tri(2-chloropropyl) phosphate	11	102.400	Triethyl citrate	11	71.400
Trichloropropylsilane	15	1395.000	Triethylene glycol	15	1194.000
3,5,6-Trichloro-2-pyridinyloxyacetic acid	13	118.064	Triethylene glycol diacetate	15	1134.800
α,α,α-Trichlorotoluene (Benzotrichloride)	03	1495.000	Triethylene glycol diacrylate	15	1137.000
2,4,6-Trichloro-s-triazine (Cyanuric chloride)	03	1499.000	Triethylene glycol di(caprylate-caprate)	11	127.000
1,3,5-Trichloro-s-triazine-2,4,6-(1H,3H,5H)trione (Trichloroisocyanuric acid)	15	204.000	Triethylene glycol di(2-ethylbutyrate)	11	128.000
Trichlorotrifluoroethane	15	1273.000	Triethylene glycol di(2-ethylhexanoate)	11	129.000
Trichlorovinylsilane	15	1396.000	Triethylenetetramine	15	306.000
Tricresyl phosphate	11	14.000	Tri(2-ethylhexyl) trimellitate	11	54.750
Tricyclohexyltin hydroxide	13	166.031	Triethyl orthoacetate	15	1064.000
1-Tridecanol	15	880.000	Triethyl orthoformate	15	1065.000
Tridecyl alcohol, ethoxylated and phosphated, polyalkylene polyamine salt	12	90.010	Triethyl orthopropionate	15	1066.000
Tridecyl alcohol, ethoxylated	12	769.000	Triethyl phosphate	11	103.000
Tridecyl alcohol, ethoxylated and carbonated, sodium salt	12	319.000	Triethyl phosphite	15	1040.000
Tridecyl alcohol, ethoxylated and phosphated	12	90.000	Triethyltrimethylenetriamine	09	7.000
Tridecyl alcohol ethoxylated and phosphated, potassium salt	12	90.020	Trifluoperazine	06	493.001
Tridecyl alcohol, ethoxylated and sulfated, ammonium salt	12	281.000	Trifluoperazine hydrochloride	06	491.000
Tridecyl alcohol, ethoxylated and sulfated, sodium salt	12	282.000	Trifluoroacetic acid	15	584.009
Tridecyl alcohol, propoxylated and ethoxylated	12	770.000	Trifluoroacetic anhydride	15	584.010
Tridecylbenzenesulfonic acid	12	139.100	α, α, α-Trifluoro-2,6-dinitro-N,N-dipropyl-p-toluidine (Trifluralin)	13	116.000
Tridecylbenzenesulfonic acid, sodium salt	12	139.200	α, α, α-Trifluoro-2,6-dinitro-N-ethyl-N-(2-methyl-2-propenyl)-p-toluidine (Ethylfluralin)	13	116.100
Tridecyloxypoly(ethyleneoxy)acetic acid, sodium salt	12	50.000	Trifluoroethanol	15	1273.490
			Trifluoropropene	15	1273.550
			Tri-n-hexyl aluminum	15	1364.900
			Trihexyphenidyl hydrochloride	06	305.000
			Tri(hydrogenated tallow) amine	12	446.050
			Trihydrogenated tallow ammonium chloride	12	501.800

APPENDIX

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Table 4.--Alphabetical Chemical Index

CHEMICAL NAME	SECT. NO.	ITEM NO.	CHEMICAL NAME	SECT. NO.	ITEM NO.
$\alpha, \alpha', \alpha''$ -Tris(dimethylamino)mesitol	03	1525.000	Vat Brown 1, 11%	04	1187.000
Tris(2-ethylhexyl)phosphite	15	1048.000	Vat Brown 3, 11%	04	1188.000
Tris(2-hydroxyethyl)(tallow alkyl) ammonium diacilate	12	466.100	Vat Brown 11, 12%	04	1190.000
Tris(2-methoxyethoxy)vinyl silane	15	1398.600	Vat Brown 13, 17%	04	1192.000
Tris(2-methyl-1-aziridinyl)phosphine oxide	03	1526.000	Vat Brown 57, 12.8%	04	1200.000
Tristearyl citrate	15	1068.500	Vat brown dyes, all other	04	1201.000
Tri- and tetraethyle glycol monoethyl ethers, borate ester s	15	1193.800	Vat Green 1, 6%	04	1178.000
Tylosin	06	77.000	Vat Green 3, 10%	04	1180.000
Tyropoanoate, sodium	06	573.000	Vat Green 7	04	1180.007
Undecanal	07	170.000	Vat Green 9, 12-1/2%	04	1183.000
9-Undecenal	07	171.000	Vat Green 32	04	1185.000
Undecenal-10	07	171.010	Vat green dyes, all other	04	1186.000
Urea, 2-[2-aminoethyl)amino]ethanol polymer, stearate	14	502.000	Vat Orange 1, 20%	04	1129.000
Urea-formaldehyde resins	08	17.000	Vat Orange 2, 12%	04	1131.000
Urea in feed compounds (100% Basis)	14	509.000	Vat Orange 7, 11%	04	1136.000
Urea in liquid fertilizer (100% Basis)	14	510.000	Vat Orange 15, 10%	04	1139.000
Urea in plastics (100% Basis)	14	512.000	Vat orange dyes, all other	04	1141.000
Urea in solid fertilizer (100% Basis)	14	511.000	Vat Red 1, 13%	04	1142.000
Urea polymers with formaldehyde and methanol	14	503.000	Vat Red 10, 18%	04	1144.000
Urea, polymer with tetrakis[hydroxymethyl]phosphonium sulfate	14	506.000	Vat Red 13, 11%	04	1146.000
Urea, primary solution (Report on 100% urea-content basis)	14	508.000	Vat Red 15, 10%	04	1148.000
7,7'-Ureylenebis[4-hydroxy-2-naphthalenesulfonic acid] (J-Acid urea)	03	1528.000	Vat Red 29, 18%	04	1150.000
Uricase	14	128.000	Vat Red 32, 20%	04	1151.000
Valeraldehyde (Pentanal)	15	804.000	Vat red dyes, all other	04	1154.000
Valeric acid	15	585.000	Vat Violet 1, 11%	04	1155.000
Valproic acid	06	423.900	Vat Violet 13, 6-1/4%	04	1159.000
Vancomycin	06	61.000	Vat Violet 21	04	1162.000
Vasodilators, all other	06	378.000	Vat Yellow 2, 8-1/2%	04	1118.000
Vat Black 16	04	1206.016	Vat Yellow 22, 10%	04	1126.000
Vat Black 22, 19%	04	1208.000	Vat Yellow 33, 15%	04	1127.000
Vat Black 25, 12-1/2%	04	1209.000	Vat Yellow 51	04	1127.051
Vat Black 27, 12-1/2%	04	1210.000	Vegetable glycerides, hydrogenated	15	1330.400
Vat black dyes, all other	04	1214.000	Veratraldehyde (3,4-Dimethoxybenzaldehyde)	03	1529.000
Vat Blue 1, 20%	04	1164.000	Very high molecular weight (>1000) hydrocarbons	14	292.000
Vat Blue 6, 8-1/3%	04	1167.000	Vetivenol	07	124.000
Vat Blue 16, 16%	04	1171.000	Vetivenyl acetate	07	125.000
Vat Blue 18, 13%	04	1172.000	Vinblastine sulfate	06	281.000
Vat Blue 19	04	1172.019	Vincristine sulfate	06	282.000
Vat Blue 20, 14%	04	1173.000	Vinyl acetate-acrylate copolymers	08	50.080
Vat Blue 29	04	1173.029	Vinyl acetate, monomer	15	1069.000
Vat Blue 43	04	1175.000	Vinylacetonitrile	15	456.000
Vat Blue 66	04	1175.066	Vinyl bromide (Bromoethylene)	15	1215.000
Vat blue dyes, all other	04	1177.000	Vinyl chloride-acetate copolymer resins	08	50.090
			Vinyl chloride, monomer (Chloroethylene)	15	1250.000
			Vinyl crotonate	15	1069.010
			Vinylcyclohexane	03	1530.100
			Vinylcyclohexane monoxide	03	1531.503

Table 4.—Alphabetical Chemical Index

CHEMICAL NAME	SECT NO.	ITEM NO.	CHEMICAL NAME	SECT NO.	ITEM NO.
Vinyl fluoride, monomer	15	1274.000	Zinc 2-ethylhexanoate	15	644.000
Vinylidene chloride, monomer (1,1-Dichloroethylene)	15	1251.000	Zinc formaldehyde sulfoxylate	15	780.400
Vinylidene fluoride, monomer	15	1275.000	Zinc gluconate	06	767.300
2-Vinylpyridine	03	1535.000	Zinc hydrocarbon dithiophosphate	14	242.000
4-Vinylpyridine	03	1536.000	Zinc isopropyl xanthate	09	154.800
1-Vinyl-2-pyrrolidinone--other copolymers	15	216.000	Zinc laurate (Activator, physical property improver, and processing auxiliary)	09	179.000
1-Vinyl-2-pyrrolidinone-methylacrylic acid, dimethylamine ethyl ester, copolymer	15	214.000	Zinc naphthenate	14	315.000
1-Vinyl-2-pyrrolidinone, monomer	15	215.000	Zinc neodecanoate	15	710.000
1-Vinyl-2-pyrrolidinone, polymers	14	450.000	Zinc phenolsulfonate	06	560.000
Vinyl resins, all other	08	51.000	Zinc stearate	15	763.000
Vinyl toluene alkyls	08	3.800	Zinc tallate	15	178.000
Vinyltriethoxysilane	15	1398.000	Zinc undecylenate	06	140.000
Vitamin A, all other	06	776.000	Zirconium acetate	15	607.000
Vitamin A acetate (animal feed grade)	06	771.000	Zirconium t- $\alpha$ -alkylcarboxylate	15	671.975
Vitamin A acetate (medicinal grade)	06	772.000	Zirconium 2-ethylhexanoate	15	645.000
Vitamin A alcohol	06	773.000	Zirconium neodecanoate	15	711.000
Vitamin A palmitate (medicinal grade)	06	775.000	Zirconium acetylacetonate complex	15	1409.500
Vitamin A propionate	06	775.500			
Waxes and paraffinic products	09	178.800			
Wool wax alcohols, ethoxylated	12	740.500			
Xanthan gum	14	451.000			
Xanthates and sulfides	14	146.000			
o-Xylene (90-100% of o-xylene isomer)	03	1540.000			
m-Xylene (90-100% of m-xylene isomer)	03	1539.000			
p-Xylene (90-100% of p-xylene isomer)	03	1541.000			
Xylene (Xylol): 90-100%	01	6.000			
Xylene High purity (98-100%)	02	30.500			
Xylene Other	02	31.500			
2,4-Xylenesulfonic acid	03	1542.800			
2,5-Xylenesulfonic acid	03	1543.000			
Xylenesulfonic acid, ammonium salt	12	148.000			
Xylenesulfonic acid, potassium salt	12	149.000			
Xylenesulfonic acid, sodium salt	12	150.000			
2,6-Xylenol	03	1544.500			
3,5-Xylenol	03	1544.503			
Xylenol, low boiling point	03	1545.000			
Xylidine, original mixture	03	1550.000			
Zeranol	06	643.000			
Zinc acetate	15	606.000			
Zinc acetylacetonate complex	15	1408.900			
Zinc t- $\alpha$ -alkylcarboxylate	15	671.950			
Zinc/calcium/cobalt neodecanoate	15	709.800			
Zinc dialkyldithiophosphate	14	235.000			
Zinc dialkylphenol dithiophosphate	14	236.000			
Zinc dibutyl phosphorodithioate	14	239.000			
Zinc diisodecyl phosphorodithioate	14	241.000			

