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SYNTHETIC ORGANIC CHEMICALS

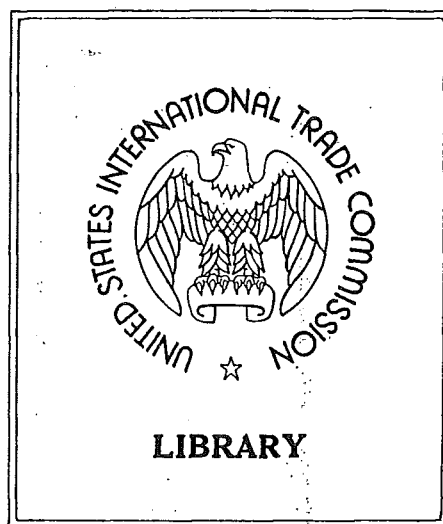
United States Production
and Sales, 1983

(Investigation No. 332-135)

USITC PUBLICATION 1588

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UNITED STATES INTERNATIONAL TRADE COMMISSION

SYNTHETIC ORGANIC CHEMICALS

**United States Production
And Sales, 1983**

**U.S. GOVERNMENT PRINTING OFFICE
WASHINGTON: 1984**

USITC PUBLICATION 1588

UNITED STATES INTERNATIONAL TRADE COMMISSION

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INTRODUCTION

This is the 67th 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 805 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.¹

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 summarizes U.S. general imports in 1982 of benzenoid intermediates and finished benzenoid products, entered under schedule 4, parts 1B and 1C, of the Tariff Schedules of the United States.

Table 3 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.

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 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, analysed, or otherwise measured. This includes byproducts and co-products that are not classifiable as waste materials;

¹18 U.S.C. § 1905 and 44 U.S.C. § 3508.

INTRODUCTION

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.

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Combined production of all synthetic organic chemicals, tar, and primary products from petroleum and natural gas in 1983 was 328,291 million pounds--an increase of 9.8 percent from the output in 1982 (table 1). Sales of these materials in 1983, which totaled 173,170 million pounds, valued at \$59,859 million, were 15.6 percent larger than in 1982 in terms of quantity and 10.3 percent larger 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.

In 1983, production of all synthetic organic chemicals, including cyclic intermediates and finished products totaled 214,928 million pounds, or 6.4 percent more than the output in 1982. Eleven sections showed a increase in production in 1983 over 1982. Rubber-processing chemicals (292 million pounds) increased by 25.8 percent; plasticizers (1,710 million pounds) increased by 21.1 percent; surface-active agents (5,068 million pounds) increased by 16.1 percent; plastics and resin materials (44,281 million pounds) increased by 15.5 percent; cyclic intermediates (43,320 million pounds) increased by 15.1 percent; miscellaneous cyclic and acyclic chemicals (93,348 million pounds) increased by 14.5 percent; flavor and perfume materials (174 million pounds) increased by 11.5 percent; dyes (244 million pounds) increased by 9.9 percent; organic pigments (78 million pounds) increased by 9.9 percent; elastomers (synthetic rubber) (4,013 million pounds) increased by 4.4 percent, and medicinal chemicals (233 million pounds) increased by 2.6 percent of the remaining sections, miscellaneous end-use chemicals and chemical products (21,149 million pounds) showed a decrease in 1983 of 35.9 percent from that in 1982, and pesticides and related products (1,017 million pounds) decreased 8.7 percent.

TABLE 1.--SYNTHETIC ORGANIC CHEMICALS AND THEIR RAW MATERIALS: U.S.
PRODUCTION AND SALES, 1982 AND 1983

CHEMICAL	PRODUCTION			SALES					
				QUANTITY			VALUE		
	1982	1983	Increase: of Decrease: (-), 1983 over 1982 ¹	1982	1983	Increase: or Decrease: (-), 1983 over 1982 ¹	1982	1983	Increase: or Decrease: (-), 1983 over 1982 ¹
	Million pounds	Million pounds	Percent	Million pounds	Million pounds	Percent	Million Dollars	Million Dollars	Percent
Grand total ² -----	299,125	328,291	9.8	149,735	173,170	15.6	54,270	59,859	10.3
Tar ³ -----	4,003	3,603	-10.0	2,093	1,884	-10.0	278	270	-2.9
Primary products from petroleum and natural gas-----	93,003	109,760	18.0	43,646	53,480	22.5	7,350	8,257	12.3
Synthetic organic chemicals, total-----	202,070	214,928	6.4	103,996	117,807	13.3	46,642	51,332	10.1
Cyclic intermediates-----	37,637	43,320	15.1	16,193	18,802	16.1	5,831	6,599	13.2
Dyes-----	222	244	9.9	214	234	9.3	685	728	6.2
Organic pigments-----	71	78	9.9	59	69	16.9	374	422	12.8
Medicinal chemicals-----	227	233	2.6	147	148	.6	1,259	1,410	11.9
Flavor and perfume materials---	156	174	11.5	113	111	-1.8	284	245	-13.8
Plastics and resin materials---	38,313	44,281	15.5	32,002	38,075	18.9	15,313	18,371	19.9
Rubber-processing chemicals---	232	292	25.8	154	203	31.8	264	312	18.1
Elastomers (synthetic rubber)--	3,842	4,013	4.4	2,514	2,688	6.9	2,024	2,196	8.4
Plasticizers-----	1,411	1,710	21.1	1,316	1,597	21.3	741	775	4.5
Surface-active agents-----	4,367	5,068	16.1	2,595	3,030	16.7	1,248	1,464	17.3
Pesticides and related products	1,113	1,017	-8.7	1,147	1,017	-11.4	4,432	4,054	-8.6
Miscellaneous end-use chemicals and chemical products-----	33,012	21,149	-35.9	12,895	12,703	-1.5	3,583	3,330	-7.1
Miscellaneous cyclic and acyclic chemicals-----	81,467	93,348	14.5	34,647	39,128	12.8	10,604	11,326	6.8

¹Percentage calculated from figures rounded to thousands.

²Because of rounding, figures may not add to the totals shown.

³The data for 1982 are not comparable with previous years data as a result of a change in accounting procedures.

SYNTHETIC ORGANIC CHEMICALS, 1983

GENERAL

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 1983 was 214,928 million pounds or 6.4 percent more than the output of 202,071 million pounds reported for 1982, and 105.3 percent more than the output of 104,711 million pounds reported in 1967 (see table 2). Sales of synthetic organic chemicals in 1983 amounted to 117,807 million pounds, valued at \$51,333 million, compared with 103,996 million pounds, valued at \$46,640 million, in 1982 and 55,177 million pounds, valued at \$10,438 million, in 1967. Production of all cyclic products (intermediates and finished products combined) in 1983 totaled 71,375 million pounds or 13.9 percent more than the 60,999 million pounds reported for 1982 and 113.2 percent more than the 33,479 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 1983 totaled 143,553 million pounds, or 3.0 percent more than the 141,072 million pounds reported for 1982 and 101.5 percent more than the 71,232 million pounds reported for 1967.

TABLE 2.--SYNTHETIC ORGANIC CHEMICALS: SUMMARY OF U.S. PRODUCTION AND SALES
OF INTERMEDIATES AND FINISHED PRODUCTS, 1967, 1982, AND 1983

CHEMICAL	(Production and sales in thousands of pounds; sales value in thousands of dollars)					
	1967 ¹	1982	1983	Increase or Decrease (-)		
				1983 OVER 1967	1983 OVER 1982	
Organic chemicals, cyclic and acyclic, grand total:						
Production-----	104,711,357	202,070,687	214,928,145	105.3	6.4	
Sales-----	55,176,823	103,996,315	117,806,657	113.5	13.3	
Sales value-----	10,438,453	46,640,028	51,333,184	391.8	10.1	
Cyclic, total: ²						
Production-----	33,479,469	60,998,643	67,362,356	101.2	10.4	
Sales-----	19,328,628	31,506,178	36,439,627	88.5	15.7	
Sales value-----	4,610,293	21,082,390	22,929,674	397.4	8.8	
Acyclic, total: ²						
Production-----	71,231,888	141,072,044	143,552,759	101.5	1.8	
Sales-----	35,848,195	72,490,137	78,678,615	119.5	8.5	
Sales value-----	5,828,160	35,357,638	26,207,931	349.7	25.9	
1. Cyclic Intermediates						
Production-----	20,793,132	37,637,336	43,320,256	108.3	15.1	
Sales-----	9,461,180	16,192,629	18,802,500	98.7	16.1	
Sales value-----	1,000,359	5,830,550	6,599,222	559.7	13.2	
2. Dyes						
Production-----	206,240	221,735	244,206	18.4	10.1	
Sales-----	198,592	214,183	233,780	17.7	9.1	
Sales value-----	332,049	684,736	728,138	119.2	6.3	
3. Organic Pigments						
Production-----	53,322	71,269	77,980	46.2	9.4	
Sales-----	42,867	58,674	69,334	61.7	18.4	
Sales value-----	108,354	374,124	422,434	289.8	12.9	
4. Medicinal Chemicals						
Cyclic:						
Production-----	110,129	163,220	174,918	58.8	7.1	
Sales-----	70,120	92,050	97,601	39.1	6.0	
Sales value-----	348,873	1,175,416	1,282,049	267.4	9.0	
Acyclic:						
Production-----	69,941	63,527	58,191	-16.8	-8.4	
Sales-----	56,804	55,201	50,339	-11.4	-8.9	
Sales value-----	35,402	83,405	128,019	261.6	53.4	

See footnotes at end of table.

TABLE 2.--SYNTHETIC ORGANIC CHEMICALS: SUMMARY OF U.S. PRODUCTION AND SALES OF INTERMEDIATES AND FINISHED PRODUCTS, 1967, 1982, AND 1983--CONTINUED

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

(Production and Sales in thousands of pounds, Sales value in thousands of dollars)					
CHEMICALS	1967 ¹	1982	1983	Increase or Decrease (-)	
				1983 OVER 1967	1983 OVER 1982
5. Flavor and Perfume Materials					
Cyclic:					
Production-----	57,978	84,710	90,693	56.4	7.0
Sales-----	47,285	65,489	67,115	41.9	2.4
Sales value-----	52,866	210,657	281,169	431.8	33.4
Acyclic:					
Production-----	53,558	71,667	83,301	55.5	16.2
Sales-----	49,311	47,313	44,051	-10.7	-6.9
Sales value-----	40,495	72,888	63,589	57.0	-12.8
6. Plastics and Resin Materials					
Cyclic:					
Production-----	5,033,497	11,110,845	13,151,401	161.2	18.3
Sales-----	4,224,121	9,280,603	11,117,910	163.2	19.7
Sales value-----	1,036,940	6,125,081	7,458,587	619.2	21.7
Acyclic:					
Production-----	8,759,452	27,202,413	31,129,411	255.3	14.4
Sales-----	7,753,242	22,721,477	26,957,125	247.6	18.6
Sales value-----	1,635,690	9,187,621	10,912,316	567.1	18.7
7. Rubber-Processing Chemicals					
Cyclic:					
Production-----	220,139	207,740	246,050	11.7	18.4
Sales-----	169,970	134,625	162,528	-4.4	20.7
Sales value-----	116,318	240,717	279,164	140.0	15.9
Acyclic:					
Production-----	43,994	24,207	46,470	5.6	91.9
Sales-----	30,878	18,888	40,495	31.1	114.3
Sales value-----	15,477	22,937	33,143	114.1	44.4
8. Elastomers (Synthetic Rubber)					
Production-----	3,822,545	3,842,178	4,013,030	5.0	4.4
Sales-----	3,262,044	2,514,349	2,688,415	-17.6	6.9
Sales value-----	874,237	2,024,068	2,195,579	151.1	8.5
9. Plasticizers					
Cyclic:					
Production-----	929,871	1,072,260	1,280,190	37.6	19.3
Sales-----	865,084	1,014,907	1,231,593	42.3	21.3
Sales value-----	167,827	509,562	518,289	208.8	1.7
Acyclic:					
Production-----	332,908	338,272	429,893	29.1	27.0
Sales-----	296,767	301,590	365,018	22.9	21.0
Sales value-----	93,142	231,287	257,068	175.9	11.1
10. Surface-Active Agents					
Cyclic: ³					
Production-----	1,418,444	1,500,000	2,198,746	(⁴)	(⁴)
Sales-----	852,238	622,950	1,672,720	(⁴)	(⁴)
Sales value-----	95,810	230,490	557,046	(⁴)	(⁴)
Acyclic:					
Production-----	2,060,851	2,867,126	2,869,646	(⁴)	(⁴)
Sales-----	897,786	1,972,060	1,357,452	(⁴)	(⁴)
Sales value-----	220,877	1,017,776	907,265	(⁴)	(⁴)

See footnotes at end of table.

SYNTHETIC ORGANIC CHEMICALS, 1983

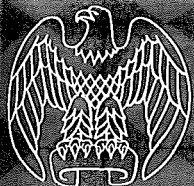
TABLE 2.--SYNTHETIC ORGANIC CHEMICALS: SUMMARY OF U.S. PRODUCTION AND SALES OF INTERMEDIATES AND FINISHED PRODUCTS, 1967, 1982, AND 1983--CONTINUED

(Production and sales in thousands of pounds; sales value in thousand of dollars)						
CHEMICAL	1967 ¹	1982	1983	Increase or Decrease (-)		
				1983 OVER 1967	1983 OVER 1982	
11. <i>Pesticides and Related Products</i>						
Cyclic:						
Production-----	823,158	765,585	710,922	-13.7	-7.2	
Sales-----	681,532	765,695	727,864	6.6	-5.0	
Sales value-----	627,742	3,294,999	3,047,703	486.0	-7.6	
Acyclic:						
Production-----	226,505	347,213	305,622	34.9	-12.0	
Sales-----	215,831	381,056	289,097	33.9	-24.2	
Sales value-----	159,301	1,136,668	1,006,225	531.6	-17.3	
12. <i>Miscellaneous End-Use Chemicals and Chemical Products⁵</i>						
Cyclic:						
Production-----	(1,535,922)	3,929,771	3,342,791	117.6	-14.9	
Sales-----	(775,540)	900,182	880,419	13.5	-2.2	
Sales value-----	(283,575)	846,835	700,102	146.9	-17.3	
Acyclic:						
Production-----	(58,159,771)	29,082,729	17,806,511	-69.4	-38.8	
Sales-----	(25,225,631)	11,995,261	11,822,941	-53.1	-1.4	
Sales value-----	(3,192,119)	2,736,354	2,629,693	-17.6	-3.9	
13. <i>Miscellaneous Cyclic and Acyclic Chemicals⁵</i>						
Cyclic:						
Production-----	...	2,082,074	2,524,203	...	21.2	
Sales-----	...	955,292	1,376,263	...	44.1	
Sales value-----	...	875,439	1,055,771	...	20.6	
Acyclic:						
Production-----	...	79,384,810	90,823,714	...	14.4	
Sales-----	...	33,691,841	37,752,097	...	12.0	
Sales value-----	...	9,728,418	10,270,613	...	5.6	

¹Standard reference base period for Federal Government general-purpose index numbers.²Does not include data for elastomer.³Includes ligninsulfonates.⁴The data for 1982 are not comparable with previous data as a result of a change in accounting procedures.⁵Items 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 1982 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-----	181	Elastomers (synthetic rubber)-----	28
Dyes-----	35	Plasticizers-----	47
Organic pigments-----	33	Surface-active agents-----	181
Medicinal chemicals-----	95	Pesticides and related products-----	85
Flavor and perfume materials-----	39	Miscellaneous end-use chemicals and chemicals products-----	169
Plastics and resins materials-----	263	Miscellaneous cyclic and acyclic Chemicals-----	282
Rubber-processing chemicals-----	24		



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USITC 84-128

UNITED STATES INTERNATIONAL TRADE COMMISSION RELEASES REPORT ON PRODUCTION AND SALES OF SYNTHETIC ORGANIC CHEMICALS FOR 1983

Today the U.S. International Trade Commission released a report indicating that the combined production of all synthetic organic chemicals, tars, and primary products from petroleum and natural gas in 1983 amounted to 328,230 million pounds, or 9.7 percent more than the output in 1982. Sales of these materials in 1983, which totaled 173,115 million pounds, valued at \$59,745 million, were 15.6 percent larger than in 1982 in terms of quantity and 10.1 percent larger in terms of value. These figures include data measured at several successive steps in the manufacturing process, and therefore, they necessarily reflect some duplication.

The report, which is 67th in an annual series, covers about 6,000 individual chemicals and chemical products and presents statistics in as great detail as is possible without revealing the operation of individual producers. The report was prepared from data supplied by approximately 805 primary manufacturers and includes a list of manufacturers of each item for which production and/or sales were reported.

Copies of the Commission's report, which is entitled Synthetic Organic Chemicals, United States Production and Sales, 1983 (USITC Publication No. 1588) may be purchased from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

STATISTICAL HIGHLIGHTS

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TAR

Coal tar is produced chiefly by the steel industry as a byproduct 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.

The quantity of coal tar produced in the United States in 1983 amounted to 284 million gallons (table 1). Production in 1983 was 10 percent less than the 316 million gallons of coal tar produced in 1982. Sales of coal tar in 1983 amounted to 234 million gallons, compared with 231 million gallons in 1982. U.S. production of water-gas and oil-gas tars was not reported to the Commission for 1982 and 1983; production of these tars in 1968 amounted to 21 million gallons, according to trade publications.

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 tables 1 and 1A.

Domestic production of industrial and specification grades of benzene reported by coke-oven operators is not publishable since to do so would disclose the operations of individual companies, however benzene production from petroleum refiners in 1983 amounted to 1,233 million gallons. In 1983, the output of toluene from petroleum refiners (data from coke-oven operators is not publishable) (including material produced for use in blending in aviation fuel) amounted to 780 million gallons. The output of xylene from petroleum refiners (data from coke-oven operators is not publishable) in 1983 (including that produced from blending in motor fuels) was 726 million gallons.

Production figures for road tar for 1983 cannot be published; however production of tar for use other than as a road tar was 127 million gallons in 1983.

SYNTHETIC ORGANIC CHEMICALS, 1983

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 1983 tar crudes were supplied by 27 companies and company divisions.

TABLE 1.--TAR AND TAR CRUDES; U.S. PRODUCTION AND SALES, 1983

[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 <i>1,000 dollars</i>	UNIT VALUE ¹
Coal tar: ² Coke-oven operators-----	1,000 gal--	283,859	234,314	167,586	\$0.72
Crude light oil: ³ Coke-oven operators	1,000 gal--	87,295	61,905	55,095	.89
Intermediate light oil: ² Coke-oven operators-----	1,000 gal--	2,335	1,079	744	.69
Light-oil distillates:					
Benzene, all grades, total ⁴ -----	1,000 gal--	(⁵)	(⁵)	(⁵)	(⁵)
Coke-oven operators-----	1,000 gal--	(⁵)	(⁵)	(⁵)	(⁵)
Petroleum refiners ⁶ -----	1,000 gal--	1,232,859	598,955	884,990	1.48
Toluene, all grades, total ⁴ -----	1,000 gal--	(⁵)	(⁵)	(⁵)	(⁵)
Coke-oven operator-----	1,000 gal--	(⁵)	(⁵)	(⁵)	(⁵)
Petroleum refiners ⁷ -----	1,000 gal--	779,873	530,500	595,795	1.12
Xylene, all grades, total ⁴ -----	1,000 gal--	(⁵)	(⁵)	(⁵)	(⁵)
Coke-oven operators-----	1,000 gal--	(⁵)	(⁵)	(⁵)	(⁵)
Petroleum refiners-----	1,000 gal--	726,072	372,966	444,892	1.19
Naphthalene, crude-----	1,000 gal--	(⁵)	(⁵)	(⁵)	(⁵)
Creosote oil (Dead oil) (100% creosote basis):					
Distillate as such (100% creosote basis)-----	1,000 gal--	39,470	24,670	23,660	.96
Creosote in coal tar solution (100% solution basis)-----	1,000 gal--	40,949	27,739	27,781	1.00
Tar, for uses other than road tar-----	1,000 gal--	127,335	129,440	94,721	.73
Pitch of tar ⁸ -----	1,000 tons-	739	753	135,200	179.55

¹Unit value per gallon, pound, or ton as specified.

²Data reported to the Energy Information Administration, U.S. Department of Energy (Quarterly Coal Report, January-March 1984). Data on U.S. production of water-gas tar and oil-gas tar are not collected by the U.S. International Trade Commission, but according to trade publications, production of these tars amounted to 21 million gallons in 1968.

³Data reported by tar distillers are not included because publication would disclose the operations of individual companies.

⁴Includes 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.

⁵Statistics cannot be published; to do so would disclose the operations of individual companies.

⁶Benzene, specification grades (1°, 2°).

⁷Sales data for Toluene produced by petroleum refiners includes only high purity (98-100%) toluene.

⁸Includes soft, medium, and hard pitch of tar, and pitch emulsion.

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 1983 report because publication would disclose the operations of individual companies.

TABLE 1A.--TAR AND TAR CRUDES: SUMMARY OF U.S. PRODUCTION OF SPECIFIED PRODUCTS, 1967, 1982, AND 1983

TAR AND TAR CRUDES	UNIT OF QUANTITY	1967 ¹	1982	1983	INCREASE, OR DECREASE (-)	
					1983 OVER 1967	1983 OVER 1982
					Percent	Percent
Coal tar ² -----	1,000 gal----	780,334	316,426	283,859	-64	-10
Benzene: ³						
Coke-oven operators-----	1,000 gal----	90,642	16,781	(⁴)	(⁴)	(⁴)
Petroleum refiners-----	1,000 gal----	878,704	1,051,874	1,232,859	40	17
Total-----	1,000 gal----	969,346	1,068,655	(⁴)	(⁴)	(⁴)
Toluene: ³						
Coke-oven operators-----	1,000 gal----	19,357	1,413	(⁴)	(⁴)	(⁴)
Petroleum refiners-----	1,000 gal----	⁵ 624,454	714,072	779,873	25	9
Total-----	1,000 gal----	643,811	715,485	(⁴)	(⁴)	(⁴)
Xylene: ³						
Coke-oven operators-----	1,000 gal----	5,488	254	(⁴)	(⁴)	(⁴)
Petroleum refiners-----	1,000 gal----	⁵ 449,349	657,710	726,072	62	10
Total-----		454,837	657,964	(⁴)	(⁴)	(⁴)
Naphthalene:						
Crude ⁶ -----	1,000 gal----	520,991	232,857	(⁴)	(⁴)	(⁴)
Petroleum naphthalenes, all grades-----	1,000 gal----	376,679	126,465	(⁴)	(⁴)	(⁴)
Total-----	1,000 gal----	897,670	359,322	(⁴)	(⁴)	(⁴)
Creosote oil (Dead oil): ⁷						
Distillate as such (100% creo- sote basis)-----	1,000 gal----	108,832	36,309	39,470	-64	9
Creosote in coal tar solution (100% solution basis)-----	1,000 gal----	27,420	44,334	40,949	49	-8
Creosote content of coal tar solution (100% creosote basis)-----	1,000 gal----	17,402	(⁴)	(⁴)	(⁴)	(⁴)
Total-----	1,000 gal----	153,654	(⁴)	(⁴)	(⁴)	(⁴)

¹Standard reference base period for Federal Government general-purpose index number.²Includes only data for coal tar reported to the Energy Information Administration, U.S. Department of Energy.³Data reported by tar distillers are not included because publication would disclose the operations of individual companies.⁴Statistics cannot be published; to do so would disclose the operations of individual companies.⁵Includes data for material produced for use in blending motor fuels. Statistics are not comparable with monthly figures which include some o-xylene.⁶Naphthalene solidifying at less than 79°C. Figures include production by tar distillers and coke-oven operators and represent combined data for the commercial grades of naphthalene. Because of conversion between grades, the figures may include some duplication. Statistics on naphthalene refined from domestic crudes are reported in the section on "Cyclic Intermediates."⁷Includes data for creosote oil produced by tar distillers and coke-oven operators and used only in wood preservatives.

TABLE 2.--TAR AND TAR CRUDES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1983

[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)
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LIGHT OIL, LIGHT OIL DISTILLATES, AND TAR BASES:	:
CRUDE LIGHT OIL:	:
*Crude light oil- - - - -	: ABP, ALS, BTS, CHA, EKO, IGC, ILI, INL, JLS, NTS, SGO, USS.
*Intermediate light oil: coke-oven operators- - - - -	: EKO, X.
PYRIDINE, TAR BASES:	:
BENZENE (BENZOL):	:
Tar bases: crude bases (Dry basis) - - - - -	: INL, KPT, NTS.
Benzene (Benzol) 90-100% - - - - -	: ARM, BTS, CLF, USS.
TOLUENE (TOLUOL):	:
Tar bases: semirefined or denaturing grade - - - - -	: USS.
Toluene (Toluol) 90-100% - - - - -	: ARM, BTS, USS.
XYLENE (XYLOL):	:
Xylene (Xylol): 90-100%- - - - -	: ARM, USS.
SOLVENT NAPHTHA:	:
Solvent naphtha- - - - -	: CLF, IGC, USS.
ALL OTHER:	:
Light-oil distillates, all other - - - - -	: ARM, BTS, JLS, USS.
OTHER TAR DISTILLATES:	:
NAPHTHALENE, CRUDE:	:
Methylnaphthalene- - - - -	: KPT.
Naphthalene, crude, solidifying at less than 74° C. - - - - -	: BTS, IGC.
Naphthalene, crude, solidifying at 74° C to less than 76° C - - - - -	: KPT.
Naphthalene, crude, solidifying at 76° C to less than 79° C - - - - -	: ACS, ARM, USS.
CRUDE TAR ACID OILS:	:
Crude tar acid oils having a tar acid content of: all other- - - - -	: BTS.
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, WTC.

TABLE 2.--TAR AND TAR CRUDES FOR WHICH U.S. PRODUCTION AD/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1983,--CONTINUED

TAR AND TAR CRUDES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
OTHER TAR DISTILLATES--Continued	
CREOSOTE OIL (DEAD OIL)--Continued	
*Creosote oil (Dead oil): distillate as such (100 Percent creosote basis)- - - - -	ACS, COP, KPT, RIL, WTC.
ALL OTHER DISTILLATE PRODUCTS:	
Carbon Black oil - - - - -	ACS, KPT.
Creosote tar acid oil- - - - -	ACS, ARM, KPT.
Crude coal tar solvent - - - - -	ILI.
Priming and refractory oil - - - - -	BTS, KPT.
Sodium phenate or carbolate- - - - -	MTS.
Tetralin, crude (Tetrahydronaphthalene)- - - - -	KPT.
Tar distillates, all other - - - - -	GIV, KPT.
TAR AND TAR PITCHES:	
TAR, ROAD:	
Tar, road- - - - -	ACS, RIL.
*TAR FOR OTHER USES:	
Tar for other uses: crude- - - - -	ABP, ALS, ARM, BTS, CHA, HUS, IGC, JLS, RSC, SGO, X.
Tar for other uses: refined- - - - -	ACS, CLF, RIL.
*PITCH OF TAR:	
Pitch of tar: hard (M.P. 161° F and Over)- - - - -	ARM, KPT, RIL, USS, WTC.
Pitch of tar: medium (M.P. 110° To 160° F) - - - - -	ACS, COP, KPT, RIL.
Pitch of tar: soft (M.P. 80° To 109° F.) - - - - -	ACS, KPT.
ALL OTHER:	
Anthracene, redefined- - - - -	ACS.
Pitch emulsion - - - - -	JEN.

TABLE 3.--TAR AND TAR CRUDES: DIRECTORY OF MANUFACTURERS, 1983

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 1983 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.	JLS	Jones & Laughlin Steel Corp.
ACS	Allied Corp., Allied Chemicals Co.	KPT	Koppers Co., Inc.
ALS	Armco, Inc.	NEV	Neville Chemical Co.
BTS	Bethlehem Steel Corp.	NTS	National Steel Corp., Great Lakes Plant
CHH	Chattanooga Coke & Chemical Co., Inc.	RIL	Reilly Tar & Chemical Corp.
CLF	CF&I Steel Corp., Pueblo Plant	RSC	Republic Steel Corp.
COP	Coopers Creek Chemical Corp.	SGO	Shenango, Inc.
EKO	Empire Coke Co.	USS	U.S. Steel Corp.: Clairton Plant Gary Works Geneva Plant USS Chemicals Div.
GIV	Givaudan Corp.	WTC	Witco Chemical Corp.
HUS	Husky Industries, Inc.		
IGC	Indiana Gas & Chemical Corp.		
ILI	Interlake, Inc.		
INL	Inland Steel Co.		
JEN	Jennison-Wright Corp.		

Note.--Complete names, telephone numbers, and addresses of the above reporting companies are listed in table 1 of the appendix. The above codes identify those of the 27 reporting companies and company divisions for which permission to publish was not restricted.

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

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STATISTICAL HIGHLIGHTS

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Primary products that are derived from petroleum and natural gas¹ 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 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 output of primary products derived from petroleum and natural gas as a group amounted to 109,670 million pounds in 1983. Production in 1982 was 93,052 million pounds. The output of aromatic and naphthenic products from petroleum amounted to 23,727 million pounds in 1983, compared with 20,891 million pounds in 1982. Sales amounted to \$2,284 million in 1983 and \$2,194 million in 1982. In 1983, production of benzene was 9,025 million pounds; production of toluene was 5,623 million pounds; and production of mixed xylenes were 5,518 million pounds (table 1).

Production of all aliphatic hydrocarbons and derivatives from petroleum and natural gas was 85,944 million pounds in 1983, compared with 72,161 million pounds in 1982. Sales of these products were valued at \$5,974 million in 1983, compared with \$5,156 million in 1982. Production of ethylene was 28,680 million pounds in 1983. The output of 1,3-butadiene in 1983 was 2,353 million pounds. Production of propylene in 1983 was 13,959 million pounds (table 1).

Data for 1983 primary products from petroleum and natural gas for chemical conversion were supplied by 72 companies or company divisions.

¹Statistics on chemical 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 17

TABLE 1.--PRIMARY PRODUCTS FROM PETROLEUM AND NATURAL GAS FOR CHEMICAL
CONVERSION: U.S. PRODUCTION AND SALES, 1983

[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 ¹
	1,000 pounds	1,000 pounds	1,000 dollars	Per pound
Grand total-----	109,670,369	53,480,012	8,257,252	\$0.15
AROMATICS AND NAPHTHENES ²				
Total-----	23,726,555	14,383,160	2,283,710	.16
Benzene, all grades-----	9,024,529	...	...	...
High purity (98-100%)-----	8,435,395	4,384,350	884,990	.20
Other (90-97.9%)-----	589,134	...	...	...
Toluene, all grades, total-----	5,622,887	...	...	...
High purity (98-100%)-----	4,392,795	3,824,902	595,795	.16
Other (90-97.9%) ^{3 4} -----	1,230,092	...	...	...
Xylenes, mixed, total-----	5,518,150	2,834,542	444,892	.16
High purity (98-100%)-----	3,995,475	2,206,483	341,869	.15
Other (90-97.9%) ⁴ -----	1,522,675	628,059	103,023	.16
All other aromatics and naphthenes ⁵ -----	3,560,989	3,339,366	358,033	.11
ALIPHATIC HYDROCARBONS				
Total-----	85,943,814	39,096,852	5,973,542	.15
C ₂ Hydrocarbons, total-----	35,120,924	10,916,579	1,885,658	.17
Acetylene ⁶ (For chemical use only)-----	206,041	92,112	43,670	.47
Ethane-----	6,235,041	2,041,324	195,710	.10
Ethylene-----	28,679,842	8,783,143	1,646,278	.19
C ₃ Hydrocarbons, total-----	22,436,461	12,555,581	1,692,636	.13
Propane-----	8,477,915	7,188,650	838,082	.12
Propylene ⁷ -----	13,958,546	5,366,931	854,554	.16
C ₄ Hydrocarbons, total-----	10,218,946	6,691,414	1,266,319	.19
Butadiene and butylene fractions-----	1,410,427	1,103,071	213,301	.19
1,3-Butadiene, grade for rubber (elastomers)-----	2,353,372	2,152,915	644,799	.30
n-Butane-----	1,819,652	1,296,875	140,902	.11
1-Butene-----	265,210	148,671	33,575	.23
1-Butene and 2-Butene ⁸ -----	784,004	138,368	19,722	.14
Isobutane-----	1,009,622	400,321	57,920	.14
Isobutylene-----	759,756	293,265	81,674	.28
All other ⁹ -----	1,816,903	1,157,928	74,426	.06
C ₅ Hydrocarbons, total-----	1,216,598	712,666	112,640	.16
Isoprene (2-Methyl-1,3-butadiene)-----	131,205	122,539	28,208	.23
n-Pentane-----	59,170	...	...	...
Pentenenes, mixed-----	259,350	...	...	...
All other ^{10 11} -----	766,873	590,127	84,432	.14
All other aliphatic hydrocarbons, derivatives and mixtures, total-----	16,950,885	8,220,612	1,016,289	.12
Alpha olefins, C ₆ -C ₁₀ -----	471,690	327,374	103,916	.32

See footnotes at end of table.

TABLE 1.--PRIMARY PRODUCTS FROM PETROLEUM AND NATURAL GAS FOR CHEMICAL CONVERSION: U.S. PRODUCTION AND SALES, 1983--CONTINUED

PRIMARY PRODUCTS FROM PETROLEUM AND NATURAL GAS FOR CHEMICAL CONVERSION	PRODUCTION	SALES		
		QUANTITY	VALUE	UNIT VALUE ¹
ALIPHATIC HYDROCARBONS--Continued				
All other aliphatic hydrocarbons, derivatives and mixtures--Continued	1,000 pounds	1,000 pounds	1,000 dollars	Per pound
Alpha olefins, C ₁₁ and higher-----	623,536	318,604	99,498	\$0.31
Dodecene (Tetrapropylene)-----	189,224	106,455	21,455	.20
n-Heptane-----	102,706	97,991	20,730	.21
Heptenes, mixed-----	99,905	76,725	14,561	.19
Hexane-----	489,138	388,200	80,181	.21
Nonene (Tripropylene)-----	434,878	286,649	54,456	.19
n-Paraffins ¹² -----	2,068,483	1,527,293	275,475	.18
Polybutene-----	204,714	147,957	48,589	.33
All other ¹³ -----	12,266,611	4,943,364	297,428	.06

¹Calculated from rounded figures.

²The 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 and 1B of the report on "Tar and Tar Crudes."

³Includes toluene, solvent grade, 90 percent.

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

⁵Includes data for alkyl aromatics, crude cresylic acid, refined cresylic acid, naphthalene, naphthenic acid, polyethylbenzene, distillates, solvents and miscellaneous cyclic hydrocarbons. Includes sales data only for benzene (other grades), and toluene (other grades).

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

⁷Includes data for refinery propylene.

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

⁹Includes data for mixed C₄ streams, mixed butenes, 2-butene, and mixed butylenes.

¹⁰Includes data for amylenes, dibutanized aromatic concentrate, mixtures of C₅ hydrocarbons, isopentane, 1-pentene, and piperylene.

¹¹Includes sales data only for n-pentane and mixed pentenes.

¹²Includes data for the following chain lengths: C₆-C₉, C₉-C₁₅; C₁₀-C₁₄; C₁₀-C₁₆; and others.

¹³Includes production and/or sales data for methane, methyl acetylene propadiene, methylcyclopentadiene, n-octane, di-isobutylene, eicosane, mixtures of C₂ and C₃, C₅-C₇, C₅-C₉, C₆ and C₇ 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, 1983

[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]

PRIMARY PRODUCTS FROM PETROLEUM AND NATURAL GAS FOR CHEMICAL CONVERSION	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
AROMATICS AND NAPHTHENES	
ALKYL AROMATICS:	
Cyclosols-	CXI, SHC.
*BENZENE TOTAL:	
*Benzene High purity (98-100%)	AMO, APR, ASH, ATR, CCP, CGO, CO, CRP, CSD, DOW, EKX, ENJ, GOC, GRS, HES, MOC, PLC, PPR, QH, SHC, SKO, SM, SOC, SOG, SUN, SWR, TID, TOC, TX, UCC, UOC, VEL.
*Benzene Other	AMO, CGO, CSP, KHI, KLM, MON.
Cresylic acid (Less than 75 percent distilling over 215° C)	FER, KHI.
Cyclopentane	PLC.
Naphthalene	CO, TID.
NAPHTHENIC ACID:	
Naphthenic acid, acid number 150-199	CPS, HEC, SUN.
Naphthenic acid, acid number 200-224	FER.
Naphthenic acid, acid number less than 150	ATR, FER, HEC, SHC, SUN.
*TOLUENE TOTAL:	
*Toluene High purity (98-100%)	APR, ASH, ATR, CCP, CO, CSD, EKX, ELP, ENJ, GRS, HES, HST, KHI, MOC, MON, PLC, PPR, QH, SHC, SKO, SM, SOG, SUN, SWR, TID, TOC, UCC, UOC.
*Toluene Other	CSP, ELP, GOC, PPR, PPX, SHC.
*XYLENES, MIXED, TOTAL:	
*Xylene High purity (98-100%)	AMO, APR, ASH, CCP, CSD, EKX, ENJ, GRS, HES, MOC, PPR, QH, SHC, SOG, SUN, SWR, UCC, UOC.
*Xylene Other	AMO, CO, CSP, GOC, PLC, SOC, TOC.
*ALL OTHER AROMATICS AND NAPHTHENES:	
Aromatics, C9	CO, KHI, MOC.
Carbon black feedstock	ENJ.
All other products from petroleum and natural gas, cyclic	AMO, ASH, BAS, BFG, CO, EKX, ENJ, KHI, NWP, QH, SHC, SOG, SWR, USI.
ALIPHATIC HYDROCARBONS	
C/1 HYDROCARBONS:	
Methane-	SHO, TX.

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, 1983--CONTINUED

PRIMARY PRODUCTS FROM PETROLEUM AND NATURAL GAS FOR CHEMICAL CONVERSION	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ALIPHATIC HYDROCARBONS--Con.	
*C/2 HYDROCARBONS:	
*Acetylene (For chemical use only) - - - - -	BAS, BOR, RH, UCC.
*Ethane - - - - -	ACU, AMO, CO, ENJ, EPC, OMC, PGP, PLC, SHO, USI.
*Ethylene - - - - -	ACU, AMO, ATR, BAS, BFG, CO, CPX, CRP, DOW, DUP, EKX, ELP, ENJ, GOC, MCB, NWP, OMC, PLC, SHC, SM, SNO, TX, UCC, USI, USS.
C/3 HYDROCARBONS:	
Hydrocarbons, C2-C3, mixtures - - - - -	CLK, CO, TU.
Hydrocarbons, C3, mixtures - - - - -	KHI.
*Propane (Commercial and hd-5) - - - - -	AMO, ASH, CCP, CGO, CSD, CSP, ENJ, EPC, GRS, KHI, MOC, OMC, PGP, PLC, SHO, SM, SOG, SUN, TCR, TUS, UOC, USI.
*Propylene - - - - -	ACU, AMO, ASH, ATR, BAS, BFG, CCP, CGO, CLK, CO, CPX, CRP, CSD, DOW, DUP, EKX, ELP, ENJ, GOC, GRS, MCB, MOC, NWP, PLC, SHC, SIO, SKO, SM, SOC, SOG, SUN, TCR, TX, UCC, USS.
*C/4 HYDROCARBONS:	
*Butadiene and butylene fractions - - - - -	ACU, BAS, CO, CPX, CRP, DOW, EKX, ELP, GOC, NWP, PLC, TUS, UCC.
*1,3-Butadiene, grade for rubber (Elastomers) - - - - -	AMO, ATR, CO, DOW, ELP, ENJ, PTT, SHC, SM, TUS.
*n-Butane - - - - -	AMO, ASH, CSD, CSP, ELP, EPC, GOC, KHI, OMC, PLC, SHO, SM, SUN, TUS, USI.
Butanes, mixed - - - - -	ENJ, QH.
*1-Butene - - - - -	ENJ, GOC, PTT, SHC, TNA.
2-Butene - - - - -	PLC.
*1-Butene and 2-butene, mixed - - - - -	ATR, DUP, ENJ, SHC, SM, SOG, TNA.
Hydrocarbons, C4, fraction - - - - -	CO, KHI, TX, USS.
Hydrocarbons, C4, mixtures - - - - -	MCB.
*Isobutane (2-Methylpropane) - - - - -	AMO, CSP, ELP, ENJ, EPC, GOC, KHI, OMC, PLC, SHO, SUN, TUS, USI.
*Isobutylene (2-Methylpropene) - - - - -	AMO, ATR, ENJ, GOC, PLC, PTT, SHC, TUS.
Hydrocarbons, C4, all other - - - - -	BFG, CO, CSP, PPR, SHC.
*C/5 HYDROCARBONS:	
Amylenes - - - - -	SHC.
Dibutanized aromatic concentrate - - - - -	ELP.
Hydrocarbons, C5, mixtures - - - - -	ATR.
Isopentane (2-Methylbutane) - - - - -	PLC, SHO.
*Isoprene (2-Methyl-1,3-butadiene) - - - - -	ATR, CO, DOW, ENJ, GOC.
*n-Pentane - - - - -	APR, ASH, GOC, PLC.
1-Pentene - - - - -	PLC, SHC, SOC.
*Pentenenes, mixed - - - - -	DOW, ENJ, QH, SHC, SHO, TUS, USS.
Piperylene (1,3-Pentadiene) - - - - -	CO, CXI, DOW.
Hydrocarbons, C5, all other - - - - -	KHI, TX, UCC.

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, 1983--CONTINUED

PRIMARY PRODUCTS FROM PETROLEUM AND NATURAL GAS FOR CHEMICAL CONVERSION	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ALIPHATIC HYDROCARBONS--Con.	
*ALL OTHER ALIPHATIC HYDROCARBONS, DERIVATIVES, AND MIXTURES, TOTAL:	
C/6 HYDROCARBONS:	
Di-isopropane (2,3-Dimethylbutane)	PLC.
*Hexane	APR, ASH, ENJ, HMY, PLC, SHO, SKO, SOG, UOC.
Hexenes, mixed	ENJ.
Hydrocarbons, C5-C6, mixtures	PLC.
Hydrocarbons, C5-C7, mixtures	ENJ, GOC.
Isohexane	PLC.
Methylcyclopentadiene	ENJ.
Neohexane (2,2-Dimethylbutane)	PLC.
Hydrocarbons, C6, all other	SM, TUS.
C/7 HYDROCARBONS:	
*n-Heptane	EKX, ENJ, PLC, UOC.
*Heptenes, mixed	AIP, ENJ, SOG, TID.
Isoheptanes	PLC.
Hydrocarbons, C7, all other	SKO.
C/8 HYDROCARBONS:	
Di-isobutylene (Di-isobutene)	EKT, PTT.
n-Octane	SOG.
Octenes, mixed	ENJ, PTT, TID.
2,2,4-Trimethylpentane (Iso-octane)	PLC.
Hydrocarbons, C8, all other	AIP.
C/9 AND ABOVE HYDROCARBONS (EXCEPT ALPHA OLEFINS):	
*Dodecene	ATR, CSP, ENJ, SOC, SUN, UOC.
Eicosane	HMY.
*Nonene (Tripropylene)	AIP, ATR, CSP, ENJ, TID, UOC.
ALPHA OLEFINS:	
*Alpha olefins, C6-C10	GOC, SHC, SOC, TNA.
*Alpha olefins, C11 and higher	FER, GOC, SHC, SOC, TNA.
*N-PARAFFINS - CARBON CHAIN LENGTH:	
n-Paraffins, C6-C9	CPX, SOG, UCC, UOC.
n-Paraffins, C9-C15	SHC, SOG.
n-Paraffins, C10-C14	ENJ, FER, SHC, SOG, UOC.
n-Paraffins, C10-C16	CO.
n-Paraffins, C12-C18	CO.
n-Paraffins, C15-C17	ENJ.
n-Paraffins, other	SOG, UOC.
Hydrocarbons, C5-C9, mixtures	CRP, PPR, SKO.
*Polybutene	AMO, CSD, SOC.

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, 1983--CONTINUED

PRIMARY PRODUCTS FOR PETROLEUM AND NATURAL GAS FOR CHEMICAL CONVERSION	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ALIPHATIC HYDROCARBONS--Con.	
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, PLC.
Ethylthioethanol - - - - -	HAP, PLC.
n-Hexyl mercaptan (1-Hexanethiol)- - - - -	PAS.
Isopropyl mercaptan (2-Propanethiol) - - - - -	HAP, PAS, PLC.
Methyl ethyl sulfide - - - - -	HAP.
Methyl mercaptan (Methanethiol)- - - - -	PAS.
tert-Octyl mercaptan (2,4,4-Trimethyl-2- pentanethiol)- - - - -	PAS.
Octyl mercaptans - - - - -	PAS.
n-Propyl mercaptan (1-Propanethiol)- - - - -	PAS, PLC.
Thiophane (Tetrahydrothiophene) - - - - -	HAP.
Hydrocarbon derivatives: all other hydrocarbon derivatives- - - - -	PAS, PLC, TX.
Hydrocarbons, C9 and above, all other, including mixtures - - - - -	GOC, NES, PLC, SHC, SKO, SOC, TNA.

TABLE 3.--PRIMARY PRODUCTS FROM PETROLEUM AND NATURAL GAS FOR CHEMICAL CONVERSION:
DIRECTORY OF MANUFACTURERS, 1983

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 1983 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.	MOC	Marathon Petroleum Co., Texas Refining Div.
AIP	Air Products & Chemicals, Inc.	MON	Monsanto Co.
AMO	Standard Oil Co. (Indiana)		
APR	Atlas Processing Co.	NES	Ruetger-Nease Chemical Co.
ASH	Ashland Oil, Inc., Ashland Petroleum Co.	NWP	Northern Petrochemical Co.
ATR	Atlantic Richfield Co., Arco Chemical Co.		
		OMC	Olin Corp.
BAS	BASF Wyandotte Corp.		
BFG	B. F. Goodrich Co., B. F. Goodrich Chemical Group	PAS	Pennwalt Corp.
		PGP	PGP Pioneer Gas Products Co.
BOR	Borden, Inc., Borden Chemical Div.	PLC	Phillips Petroleum Co.
		PPR	Phillips Puerto Rico Core, Inc.
CCP	Crown Central Petroleum Corp.	PPX	Phillips Paraxylene, Inc.
CGO	Citgo Petroleum Corp.	PTT	Petro-Tex Chemical Corp.
CLK	Clark Oil & Refining Corp.		
CO	Conoco, Inc.	QH	Quintana Petrochemical Co.
CPS	CPS Chemical Co., Inc.	RH	Rohm & Haas Co.
CPX	Chemplex Co.		
CRP	Corpus Christi Petrochemical Co.	SHC	Shell Oil Co., Shell Chemical Co. Div.
CSD	Coasden Oil & Chemical Corp.	SHO	Shell Oil Co.
CSP	Coastal Corp., Coastal States Petroleum Co.	SIO	Standard Oil Co. (Ohio)
CXI	Chemical Exchange Industries, Inc.	SKO	Getty Refining & Marketing Co.
		SM	Mobil Oil Corp.:
DOW	Dow Chemical Co.		Gas Liquids Dept.
DUP	E. I. duPont de Nemours & Co., Inc.		Mobil Chemical Co., Petrochemicals Div.
		SNO	SunOlin Chemical Co.
	Eastman Kodak Co.:	SOC	Standard Oil Co. of California, Chevron
EKT	Tennessee Eastman Co. Div.		Chemical Co.
EKK	Texas Eastman Co. Div.	SOG	Charter International Oil Co.
ELP	El Paso Products Co.	SUN	Sun Company, Inc.
ENJ	Exxon Chemical Americas	SWR	Southwestern Refining Co.
EPC	Enterprise Products Co.		
		TCR	Texas City Refining, Inc.
FER	Ferro Corp., Productol Chemical Div.	TID	Getty Refining & Marketing Co., Delaware
			Refinery
GOC	Gulf Oil Corp., Gulf Oil Products	TNA	Ethyl Corp.
GRS	Champlin Petroleum Co.	TOC	Tenneco Oil Co.
		TU	Tenn-USS Chemicals Co.
HAP	Helmerich & Payne, Inc., National Gas	TUS	Texaco Butadiene Co.
	Odorizing Div.	TX	Texaco, Inc.
HEC	Hewchem		
HES	Amerada Hess Corp. (Hess Oil Virgin Islands Corp.)	UCC	Union Carbide Corp.
		UOC	Union Oil Co. of California
HMV	Humphrey Chemical Co.	USI	National Distillers & Chemicals Corp., U.S.
HST	American Hoeshst Corp., Petrochemical Div.		Industrial Chemicals Co.
		USS	U.S. Steel Corp., USS Chemicals Div.
KHI	Koch Refining Co.		
KLM	Kalama Chemical, Inc.	VEL	Velsicol Chemical Corp.
MCB	Borg-Warner Corp., Borg-Warner Chemicals		

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

STATISTICAL HIGHLIGHTS

Edmund Cappuccilli
202-523-0490

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 1983, 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.

Total production of cyclic intermediates in 1983 amounted to 43,320 million pounds, an increase of 15 percent from the 37,637 million pounds produced in 1982. Sales of cyclic intermediates in 1983 were 18,803 million pounds, valued at \$6,599 million, compared with 16,193 million pounds, valued at \$5,831 million, in 1982.

Intermediates which were produced in excess of 2 billion pounds in 1983 were ethylbenzene (7,876 million pounds), styrene (6,802 million pounds), p-xylene (4,114 million pounds), cumene (3,345 million pounds), dimethyl terephthalate (3,340 million pounds), and phenol (2,638 million pounds). Other large-volume intermediates produced in 1983 were cyclohexane (1,656 million pounds), isocyanates (1,225 million pounds), nitrobenzene (841 million pounds), phthalic anhydride (838 million pounds), o-xylene (781 million pounds), cyclohexanone (748 million pounds), aniline (663 million pounds), bisphenol A (643 million pounds), alkylbenzenes (545 million pounds), chlorobenzenes (233 million pounds), toluene-2,4-diamine (202 million pounds), and nonylphenol (161 million pounds). The chemicals noted above accounted for 87 percent of the total output of the intermediates in 1983.

TABLE 1.--CYCLIC INTERMEDIATES: U.S. PRODUCTION AND SALES, 1983

[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		
		QUANTITY	VALUE	UNIT VALUE ¹
	1,000 pounds	1,000 pounds	1,000 dollars	Per pound
Grand total-----	43,320,256	18,802,500	6,599,222	\$0.35
Acetoacetanilide-----	10,763	9,491	9,891	1.04
o-Acetoacetanisidide-----	739	756	1,828	2.42
o-Acetoacetotoluidide-----	1,670	1,708	2,356	1.38
Alkylbenzenes ² -----	545,093	527,569	202,009	.38
4-Amino-5-methoxy-2-methylbenzenesulfonic acid (5-Methyl-o-anisidinesulfonic acid)-----	1,369	...	...	...
p-[(p-Aminophenyl)azo]benzenesulfonic acid-----	346	...	...	...
Aniline (Aniline oil)-----	663,282	471,077	119,170	.25
Anilinomethanesulfonic acid and salt-----	353	...	...	...
2-Benzothiazolethiol, sodium salt-----	19,732	...	...	...
Biphenyl-----	54,346	13,468	5,694	.42
2-Bromo-4,6-dinitroaniline-----	1,584	...	...	...
Butylphenols, mixed-----	3,951	4,022	2,850	.71
Chlorobenzene, mono-----	232,534	...	...	...
α-Chlorotoluene (benzyl chloride)-----	...	14,988	8,052	.54
Cresols and cresylic acid, total ³ -----	126,605	116,131	69,922	.60
(m, p)-Cresol-----	25,012	21,191	12,073	.57
o-Cresol-----	42,756	48,966	26,079	.53
All other ⁴ -----	58,837	45,974	31,770	.69
Cumene-----	3,345,143	1,914,095	411,914	.22
Cyclohexane-----	1,656,205	1,081,967	329,486	.30
Cyclohexanone-----	748,265	36,448	16,735	.46
o-Dichlorobenzene-----	43,791	...	...	...
p-Dichlorobenzene-----	75,704	52,416	18,924	.36
Dicyclopentadiene (including cyclopentadiene)-----	65,276	53,502	13,151	.25
p-Dodecylphenol-----	18,065	12,116	5,423	.45
Ethylbenzene-----	7,875,531	302,717	67,159	.22
2-(N-Ethyl-N,β-cyanoethyl)-4-acetaminoanisole-----	363	...	...	...
Isocyanic acid derivatives, total-----	1,225,238	1,038,380	780,529	.75
Diphenylmethane-4,4'-diisocyanate (MDI)-----	...	70,094	72,210	1.03
Polymethylene polyphenylisocyanate-----	484,086	415,409	289,443	.70
Toluene-2,4- and 2,6-diisocyanate (80/20 mixture)-----	638,610	539,057	401,270	.74
Other isocyanic acid derivatives-----	102,542	13,820	17,606	1.27
4,4'-Isopropylidenediphenol (Bisphenol A)-----	643,349	234,648	112,514	.48
α-Methylstyrene-----	47,537	49,186	15,392	.31
Nitrobenzene-----	840,720	...	...	...
Nonylphenol-----	161,218	63,974	24,926	.39
Phenol, total ³ -----	2,637,658	1,351,464	355,149	.26
From cumene-----	2,053,906	1,170,779	305,988	.26
All other-----	583,752	180,685	49,161	.27
Phthalic anhydride-----	838,305	509,308	128,830	.25
Piperidine-----	606	...	...	...
Propiophenone-----	1,081	737	1,277	1.73
Salicylic acid, tech-----	33,655	...	...	...

TABLE 1.--CYCLIC INTERMEDIATES: U.S. PRODUCTION AND SALES, 1983--CONTINUED

CYCLIC INTERMEDIATES	PRODUCTION	SALES		
		QUANTITY	VALUE	UNIT VALUE ¹
	1,000 pounds	1,000 pounds	1,000 dollars	per pound
Styrene-----	6,801,835	3,184,024	867,741	\$0.27
Terephthalic acid, dimethyl ester ⁵ -----	5,625,692			
Tetrahydrofuran-----	115,849	51,008	46,824	.92
Toluene-2,4-diamine (4-m-Tolylenediamine)-----	202,241			
2,2'-(m-Tolylimino)diethanol-----	137			
o-Xylene-----	781,166	602,890	111,110	.18
p-Xylene-----	4,113,897	2,751,173	687,350	.25
All other cyclic intermediates-----	3,759,362	4,353,237	2,183,016	.50

¹Calculated from unrounded figures.

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

³Does 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.

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

⁵The figure for terephthalic acid, dimethyl ester (DMT) includes both the acid itself and the dimethyl ester without double counting. The acid production figures 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, 1983

[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.
p-Acetanilide - - - - -	SDC.
Acetic acid, phenyl ester- - - - -	BKM, TKL.
*Acetoacetanilide - - - - -	BRD, EKT, HST.
*o-Acetoacetanilide - - - - -	BRD, EKT, HST.
*o-Acetoacetotoluidide- - - - -	BRD, EKT, HST.
p-Acetoacetotoluidide- - - - -	HST.
2',4'-Acetoacetoxylidide - - - - -	EKT, HST.
Acetoacet-m-xylylidiide - - - - -	BRD.
1'-Acetonaphthone- - - - -	GIV.
Acetophenone, tech. - - - - -	CLK, SKO.
p-Acetotoluidide - - - - -	EK.
α-Acetylamino-p-toluenesulfonamine - - - - -	SDW.
p-Acetylbenzenesulfonamide - - - - -	LIL.
p-Acetylbenzenesulfonic acid, sodium salt- - - - -	LIL.
2-Acetylpyridine - - - - -	RIL.
*ALKYLBENZENES:	
Alkylbenzene straight-chain (Except dodecyl and tridecyl)- - - - -	MON, WTC.
DODECYLBENZENE (INCLUDING TRIDECYLBENZENE):	
Dodecylbenzene, straight-chain - - - - -	CO, MON, WTC.
Dodecylbenzene, other- - - - -	CO, SFS, SOC, WTC.
Alkylbenzene all other (Except dodecyl, tridecyl and straight-chain) - - - - -	PLC.
Alkylphenols, mixed- - - - -	FER, SW.
Alkylpyridines, mixed- - - - -	RIL, X.
3'-Aminoacetanilide- - - - -	CGY.
4'-Aminoacetanilide (Acetyl-p-phenylenediamine)- - - - -	CGY, HST.
3'-Amino-p-acetanilide - - - - -	HST.
5-Amino-2-(p-aminoanilino)benzenesulfonic acid - - - - -	CGY.
2-(p-Aminoanilino)-5-nitrobenzenesulfonic acid - - - - -	CGY.
3-Amino-p-anisylidide- - - - -	PCW.
1-Aminoanthraquinone and salt- - - - -	CGY.
6-Amino-3,4'-azodibenzenesulfonic acid (C.I. Acid Yellow 9)- - - - -	CGY.

TABLE 2.--CYCLIC INTERMEDIATES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

CYCLIC INTERMEDIATES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
p-Aminobenzamide - - - - -	NSC.
7-(p-Aminobenzamido)-4-hydroxy-2-naphthalenesulfonic acid - - - - -	ATL.
3'-Aminobenzanilide - - - - -	HST, SOL.
o-Aminobenzenesulfonic acid - - - - -	CGY.
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.
1-Amino-2-bromo-4-hydroxyanthraquinone - - - - -	VPC.
7-Aminocephalosporanic acid - - - - -	BRS.
2-Amino-1-chloroanthraquinone - - - - -	VPC.
2-Amino-5-chloro-2-fluorobenzophenone - - - - -	OMC.
1-Amino-2-chloro-4-hydroxyanthraquinone - - - - -	CGY.
6-Amino-5-chloro-m-toluenesulfonic acid [SO ³ H=1] (2B Acid) - - - - -	BAS, DUP.
4-Amino-N,N-di(β-hydroxyethyl)aniline sulfate - - - - -	WAY.
2-Amino-4,5-dimethoxybenzoic acid, methyl ester - - - - -	PFZ.
5-Amino-2,3-dimethylbenzenesulfethanolamide - - - - -	CGY.
3-Amino-9-ethylcarbazole - - - - -	SDC.
4-Amino-N-ethyl-N-(β-methylsulfonamidoethyl)-m-toluidinephosphate - - - - -	WAY.
N-Aminohexamethyleneimine - - - - -	X.
4-Amino-3-hydroxy-1-naphthalenesulfonic acid - - - - -	CGY.
2-Amino-5-hydroxy-7-naphthalenesulfonic acid, benzene sulfonate - - - - -	CGY.
6-Amino-4-hydroxy-2-naphthalenesulfonic acid, sodium salt - - - - -	CGY.
7-Amino-4-hydroxy-2-naphthalenesulfonic acid, sodium salt - - - - -	CGY.
3-Amino-2-hydroxy-5-nitroacetanilide - - - - -	CGY.
2-(2-Amino-5-hydroxy-7-sulfo-1-naphthylazo)-5-nitrobenzoic acid - - - - -	CGY.
2-Amino-N-isopropyl-1-phenol-4-sulfonamide - - - - -	CGY.
3-Amino-2-mercaptobenzoic acid - - - - -	SDW.
3-Amino-4-methoxyacetanilide - - - - -	CGY.
2-Amino-5-methoxybenzenesulfonic acid - - - - -	CGY.
*4-Amino-5-methoxy-2-methylbenzenesulfonic acid (5-methyl-o-anisidinesulfonic acid) - - - - -	SW, VPC, X.
m-l(4-Amino-3-methoxyphenyl)azobenzenesulfonic acid	CGY, VPC.

TABLE 2.--CYCLIC INTERMEDIATES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

CYCLIC INTERMEDIATES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
3-Amino-4-methylbenzamide	HST.
2-Amino-4-methylbenzothiazole	MRT.
2-Amino-4'-methyldiphenylsulfone-4-sulfonic acid	CGY.
2,2'-[[4-(Aminomethyl)-3-nitrophenyl]iminoldiethanol	SOL.
2-Amino-2-methylpropyl 8-bromotheophyllinate	CHT.
2-Amino-3-methylpyridine	RIL.
2-Amino-5-methylpyridine	NEP, RIL.
2-Amino-6-methylpyridine	RIL.
2-Amino-4-(methylsulfonyl)phenol	CGY.
3-Amino-1,5-naphthalenedisulfonic acid (C Acid)	CGY.
7-Amino-1,3-naphthalenedisulfonic acid (Amino G acid)	CGY.
2-Amino-1,5-naphthalenedisulfonic acid, sodium salt	X.
6-Amino-2-naphthalenesulfonic acid (Broenner's acid)	CGY.
7-Amino-1,3,5-naphthalenetrisulfonic acid	CGY.
5(and 8)-Amino-2-naphthol	BUC.
8-Amino-2-naphthol	BUC, CGY.
2-(4-Amino-2-nitroanilino)ethanol	SOL.
2-Amino-5-nitrobenzenesulfonic acid [SO ₃ H=1]	CGY.
2-Amino-6-nitrobenzothiazole	SAL.
2-Amino-4-nitrophenol	SOL, VPC.
4-Amino-4'-nitro-2,2'-stilbenedisulfonic acid	ATL, CGY.
2-Amino-5-nitrothiazole	PCW.
2-Amino-4-nitrotoluene hydrochloride	PCW.
6-Aminopenicillanic acid	BRS, PFZ, WYT.
p-Aminophenol	MAL, SCN.
*p-[(p-Aminophenyl)azo]benzenesulfonic acid	ACY, CGY, VPC.
2-(4-Aminophenylazo)-4-methylphenol	VPC.
7-[(4-Aminophenyl)azo]-1,3-naphthalenedisulfonic acid	CGY.
5-[(p-Aminophenyl)azo]salicylic acid	CGY.
2-(p-Aminophenyl)-6-methyl-7-benzothiazolesulfonic acid and salt	CGY.
3-Aminophenylphosphonic acid	ICI.
p-Aminopropionanilide	CGY.
2-Aminopyridine	RIL.
4-Aminopyridine	RIL.
2-Aminothiazole nitrate	PCW.
4-Amino-m-toluenesulfonic acid [SO ₃ H=1]	DUP.
6-Amino-m-toluenesulfonic acid [SO ₃ H=1]	CYN, DUP.
m-[(4-Amino-3-tolyl)azo]benzenesulfonic acid	CGY.
7-[(4-Amino-o-tolyl)azo]-1,3-naphthalenedisulfonic acid	CGY.
*Aniline (Aniline oil)	ACY, DUP, FST, ICI, MAL, MOB, RUC, USS.

TABLE 2.--CYCLIC INTERMEDIATES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

CYCLIC INTERMEDIATES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
2-Anilinoethanol - - - - -	TCH.
7-Anilino-4-hydroxy-2-naphthalenesulfonic acid - - - - -	CGY.
*Anilinomethanesulfonic acid and salt - - - - -	ACY, ATL, CGY, VPC.
8-Anilino-1-naphthalenesulfonic acid (Phenyl Peri acid)- - - - -	WTC.
o-Anisidinomethanesulfonic acid- - - - -	CGY, VPC.
Anisole, tech. - - - - -	CHF, TCC.
Anthra[1,9]pyrazol-6(2H)-one (Pyrazoleanthrone)- - - - -	CGY, SW.
N,N'-(1,5-Anthraquinonylene)dianthranilic acid - - - - -	CGY.
Benzaldehyde, tech. - - - - -	KLM.
Benzamidine hydrochloride- - - - -	EK.
7-Benzamido-4-hydroxy-2-naphthalenesulfonic acid - - - - -	CGY.
7H-Benz[de]anthracen-7-one (Benzanthrone)- - - - -	CGY.
Benzenesulfinic acid, sodium salt- - - - -	EK.
Benzenesulfonic acid - - - - -	UPF.
Benzenesulfonyl chloride - - - - -	UPF.
1,2,4-Benzenetricarboxylic acid, 1,2-dianhydride (Trimellitic anhydride - - - - -	AMO.
Benzhydrol (Diphenylmethanol)- - - - -	PD.
Benzil - - - - -	LEM.
Benzimidazole- - - - -	EK.
Benzoic acid, methyl ester - - - - -	HCF.
Benzoic acid, tech.- - - - -	KLM, PFZ, VEL.
Benzoin- - - - -	SFS.
Benzoin isobutyl ether - - - - -	SFS.
Benzonitrile - - - - -	SFS.
Benzophenone - - - - -	UPJ.
Benzophenone hydrazone - - - - -	OMC, PD.
p-Benzoquinone - - - - -	EKT.
*2-Benzothiazolethiol, sodium salt- - - - -	BFG, BKM, GYR, USR.
1H-Benzotriazole - - - - -	SW.
2-Benzoxazolethiol - - - - -	EK.
Benzoyl chloride - - - - -	HK, KLM, VEL.
2-Benzoyl pyridine - - - - -	GNW.
N-Benzylacetamide- - - - -	SDW.
Benzylamine- - - - -	HXL.
2-(Benzylamino)ethanol - - - - -	HXL.
Benzyl ether (Dibenzyl ether)- - - - -	OPC.
3-(Benzylethylamino)acetanilide- - - - -	EKT.
4(N-Benzyl-N-ethyl)aminobenzaldehyde - - - - -	VPC.
p-(Benzyloxy)phenol- - - - -	FKE.

TABLE 2.--CYCLIC INTERMEDIATES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

CYCLIC INTERMEDIATES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
1-Benzyl-4-phenylisonipecotic acid, ethyl ester	: SDW.
1-Benzyl-4-phenylisonipecotonitrile	: SDW.
2-Benzylpyridine	: RIL.
Benzyltriethylammonium chloride	: HXL.
Benzyltrimethylammonium hydroxide	: HXL.
[3,3'-Bianthra[1,9-cd]pyrazole]-6,6'-(2H,2'H)-dione (Pyrazoleanthrone Yellow)	: CGY.
[4,4'-Bi-7H-benz[de]anthracene]-7,7'-dione	: CGY.
*Biphenyl	: DOW, GOC, KHI, MON, TCC.
M,N-Bis-(2-acetoxyethyl)-aniline	: VPC.
Bis(p-aminocyclohexyl)methane	: CGY, DUP.
1,5-Bis[1-anthraquinonylamino]anthraquinone	: CGY.
1,4-Bis[1-anthraquinonylamino]anthraquinone and 1,4- bis[5-Chloro-1-anthraquinonylamino]anthraquinone (Mixed)	: CGY.
2,6-Bis(p-azidobenzylidene)-4-methylcyclohexanone	: X.
Bis(chlorosulfonyl)phthalocyaninedisulfonic acid, copper derivative	: CGY.
4,4'-Bis(dimethylamino)benzhydrol (Michler's hydrol)	: X.
Bis(6-dimethylaminoethyl)phenylacetonitrile	: WYT.
1,5-Bis[2,4-dinitrophenoxy]-4,8-dinitroanthraquinone	: VPC.
3'-[Bis(2-hydroxyethyl)amino]benzanilide, diacetate ester	: TCH.
Bis(N-2-hydroxyethyl)piperazine	: GAF.
4,4'-Bis[(p-hydroxyphenyl)azo]-2,2'-stilbenedisulfonic acid (C.I. Direct Yellow 4)	: VPC.
1,2-Bis(tribromophenoxy)ethane	: GTL.
p-Bromoaniline	: EK.
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	: X.
α-Bromo-p-nitrotoluene (p-Nitrobenzyl bromide)	: SDW.
Bromopheniramine base	: HEX.
2-Bromopyridine	: DAZ.
5-Bromopyrimidine	: LIL, SFS.
α-Bromotoluene	: WCC.

TABLE 2.--CYCLIC INTERMEDIATES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

CYCLIC INTERMEDIATES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)

p-Butylaniline - - - - -	: TNA.
3-(N-Butylanilino)propionitrile - - - - -	: TCH.
p-tert-Butylbenzaldehyde - - - - -	: GIV.
p-tert-Butylbenzoic acid - - - - -	: SHC.
2-tert-Butyl-p-cresol - - - - -	: FER.
6-tert-Butyl-m-cresol - - - - -	: KPT.
2'-tert-Butyl-4',6'-dimethylacetophenone - - - - -	: GIV.
tert-Butylhydroquinone - - - - -	: X.
t-Butyl-(4-hydroxybenzyl)benzene - - - - -	: TNA.
2-[(1-Butyl-2-methylindol-3-yl)carbonylbenzoic acid - - - - -	: X.
o-sec-Butylphenol - - - - -	: SCN, TNA.
o-tert-Butylphenol - - - - -	: TNA.
p-sec-Butylphenol - - - - -	: SCN.
p-tert-Butylphenol - - - - -	: SCN.
*Butylphenols, mixed - - - - -	: FER, SCN, X.
4-tert-Butylpiperidine - - - - -	: RIL.
p-tert-Butyltoluene - - - - -	: GIV, SHC.
5-tert-Butyl-1,2,3-trimethylbenzene - - - - -	: GIV.
5-tert-Butyl-m-xylene - - - - -	: GIV.
6-tert-Butyl-2,4-xylene - - - - -	: FER.
3-Carboxy-1-methylpyrrole-2-acetic acid - - - - -	: X.
Cephalosporin D - - - - -	: BRS.
2'-Chloroacetoacetanilide - - - - -	: EKT, HST.
4'-Chloroacetophenone - - - - -	: LIL.
o-Chloroaniline - - - - -	: DUP.
m-Chloroaniline - - - - -	: DUP.
p-Chloroaniline - - - - -	: DUP, MON.
3-(o-Chloroanilino)propionitrile - - - - -	: TCH.
1-Chloroanthraquinone - - - - -	: CGY.
2-Chloroanthraquinone - - - - -	: ACY.
o-Chlorobenzamide - - - - -	: PD.
Chloro-7H-benz[de]anthracen-7-one (Chlorobenzanthrone) - - - - -	: CGY.
*Chlorobenzene, mono - - - - -	: MON, MTO, PPG, SCC.
p-Chlorobenzenesulfinic acid - - - - -	: CGY.
p-Chlorobenzenesulfonic acid - - - - -	: SFA, UPF.
p-Chlorobenzenethiol - - - - -	: SFA.
0-Chlorobenzonitrile - - - - -	: PD.
p-Chlorobenzophenone - - - - -	: PD.
4-Chloro-2-benzothiazolemine - - - - -	: SDC.
o-Chlorobenzoyl chloride - - - - -	: PD.
2-Chloro-N,N-ddisopropylethylamine hydrochloride - - - - -	: SOL.

TABLE 2.--CYCLIC INTERMEDIATES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

CYCLIC INTERMEDIATES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
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-dimethoxyaniline- - - - -	PCW.
5-Chloro-2,4-dimethoxyaniline- - - - -	ALL.
2-Chloro-1,4-dimethoxybenzene- - - - -	PCW.
4-Chloro-2,5-dimethoxynitrobenzene - - - - -	PCW.
2-Chloro-10-[3-(dimethylamino)propyl]phenothiazine - - - - -	SK.
1-Chloro-2,4-dinitrobenzene (Dinitrochlorobenzene) - - - - -	SDC.
2-Chloro-1,3-dinitro-5-(trifluoromethyl)benzene- - - - -	SOL.
3-Chlorodiphenylamine- - - - -	SK.
N-(2-Chloroethyl)-N-ethylaniline - - - - -	TCH.
2-Chloroethylphenyl sulfone- - - - -	PAH.
4-Chloro-N-isopropyl-3-nitrobenzenesulfonamide - - - - -	CGY.
1-Chloro-2-methylanthraquinone - - - - -	CGY.
4-Chloro-N-methyl-3-nitrobenzenesulfonamide- - - - -	CGY.
2-[(Chloromethyl)thiol]benzothiazole - - - - -	BKM.
4-Chloro-3-nitrobenzamide- - - - -	PCW.
1-Chloro-2-nitrobenzene (Chloro-o-nitrobenzene)- - - - -	DUP, MON.
1-Chloro-4-nitrobenzene (Chloro-p-nitrobenzene)- - - - -	DUP, MON.
2-Chloro-5-nitrobenzenesulfinic acid - - - - -	CGY.
4-Chloro-3-nitrobenzenesulfonamide - - - - -	CGY.
4-Chloro-3-nitrobenzenesulfonanilide - - - - -	CGY.
2-Chloro-5-nitrobenzenesulfonic acid - - - - -	CGY.
4-Chloro-3-nitrobenzenesulfonic acid - - - - -	CGY.
4-Chloro-3-nitrobenzenesulfonyl chloride - - - - -	SDC.
2-Chloro-4-nitrobenzoic acid - - - - -	SAL.
2-Chloro-5-nitrobenzoic acid - - - - -	CGY.
2-Chloro-4-nitrobenzoic acid, potassium salt - - - - -	SAL.
2-Chloro-5-nitrophenylmethyl sulfone - - - - -	CGY.
4-Chloro-3-nitrophenylmethyl sulfone - - - - -	CGY.
o-Chloro-4-nitrotoluene- - - - -	EK.
2-Chloro-4-nitrotoluene- - - - -	DUP, PCW.
o-Chlorophenol - - - - -	MON.
m-Chlorophenol - - - - -	HEX.
p-Chlorophenol - - - - -	MON.
2-Chlorophenothiazine- - - - -	SK.
4-Chloro- α -phenyl-o-cresol - - - - -	MON.
o-Chlorophenylcyclopentyl ketone - - - - -	PD.
(m-Chlorophenyl)diethanolamine - - - - -	HST.

TABLE 2.--CYCLIC INTERMEDIATES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

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CYCLIC INTERMEDIATES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
4-Chloro-o-phenylenediamine- - - - -	FMT.
4,4'-[(2-Chlorophenyl)methylene]bis[N,N-dimethyl]- aniline- - - - -	X.
1-(m-Chlorophenyl)-3-methyl-2-pyrazolin-5-one- - - - -	CGY.
p-Chlorophenyl methyl sulfone- - - - -	CGY.
4-Chlorophthalic acid- - - - -	SW.
m-Chloropropiophenone- - - - -	HEX.
3-Chloropropyl-2,5-xylyl ether- - - - -	PD.
2-Chloropyridine- - - - -	NES, OMC.
2-[[4-[(7-Chloro-4-quinolyl)-amino]pentyl]ethylamino]- ethanol- - - - -	SDW.
4-Chlororesorcinol- - - - -	PCW.
o-Chlorotoluene- - - - -	HK.
*o-Chlorotoluene (Benzyl chloride)- - - - -	MON, SFS, VEL.
3-Chloro-p-toluidine [NH ₂ =1]- - - - -	DUP.
2-Chloro-5(trichloromethane)pyridine- - - - -	GTL.
4-Chloro-α,α,α-trifluoro-3-nitrotoluene- - - - -	SOL.
p-Chloro-α,α,α-trifluorotoluene- - - - -	HK.
4-Chloro-3,5-xylene- - - - -	FER.
Cinnamic acid- - - - -	KF.
Copper, [2,2',2'',2''']-[z9H,31H- phthalacyanine]pentylpentakis(methylene)pentakis[1H- isoindole-1,3(2H)-dionato]]- - - - -	X.
*CRESOLS:	
m-Cresol- - - - -	KPT, MER.
*o-CRESOL:	
o-Cresol, from petroleum- - - - -	CO, DA, FER, GE, MER, PIT, SW.
p-Cresol- - - - -	MER, SW.
CRESOLS, MIXED:	
*(M,P)-CRESOL:	
(m,p)-Cresol, from coal tar- - - - -	KPT.
(m,p)-Cresol, from petroleum- - - - -	DA, FER, MER, NPC.
(O,M,P)-CRESOL:	
(o,m,p)-Cresol, from coal tar- - - - -	KPT.
*CRESYLIC ACID, REFINED:	
Cresylic acid, refined from petroleum- - - - -	CO, DA, FER, MER, PIT.
*Cumene (Isopropyl benzene)- - - - -	ASH, CLK, GOC, GP, GRS, KHI, MON, SHC, SKO, TX.
2-[p-(Cyanoacetamido)phenyl]-6-methyl-7- benzothiazolesulfonic acid- - - - -	VPC.
4-(Cyanoacetyl)morpholine- - - - -	DUP.
N-Cyanoethyl N-acetoxyethyl- - - - -	TCH.

TABLE 2.--CYCLIC INTERMEDIATES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

CYCLIC INTERMEDIATES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
N-[3-[(2-Cyanoethyl)ethylamino]phenyl]acetamide - - - -	SDC.
N-Cyano-s-methyl-N-2(4-methyl-5-imidazolyl)- methylthioethylisothiourea - - - - -	SK.
2,5-Cyclohexadiene-1,4-dione, dioxime - - - - -	SDC.
*Cyclohexane - - - - -	DUP, GOC, GRS, PLC, PPR, SHC, SUN, TX, UOC.
1,2-Cyclohexanedicarboxylic acid anhydride - - - - -	BCC.
Cyclohexanol - - - - -	AFP, DBC, DUP.
*Cyclohexanone - - - - -	AFP, CNP, DBC, DUP, UCC.
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.
Cyclohexylamine - - - - -	VGC.
N-Cyclohexyltaurine, sodium salt - - - - -	GAF.
cyclooctadiene - - - - -	DUP.
Cyclopentene - - - - -	ALD.
2-(N-Cyclopropylmethyl-N-phthalimidoacetyl)-amino-5- chlorobenzophenone - - - - -	PD.
p-Cymene - - - - -	HPC.
N-Cyanoethyl N-hydroxy-m-toluidine - - - - -	TCH.
Diacenaphtho[1,2-j:1',2'-l]fluoranthene (Decacyclene) - - - -	SDC.
3,5-Diacetamido-2,4,6-triiodobenzoic acid - - - - -	SDW.
1,4-Diaminoanthraquinone - - - - -	CGY.
1,5-Diaminoanthraquinone - - - - -	SDC.
1,4-Diaminoanthraquinone-2,3-dicarboximide - - - - -	CGY.
2,4-Diaminobenzenesulfonic acid [SO ₃ H=1] - - - - -	CGY.
1,3-Diaminocyclohexane - - - - -	DUP, MIL.
1,4-Diamino-2,3-dihydroanthraquinone - - - - -	CGY.
4,8(and 4,5)-Diamino-9,10-dihydro-1,5(and 1,8)- dihydroxy-9,10-dioxo-2,6(and 2,7)- anthracenedisulfonic acid - - - - -	CGY.
1,4-Diamino-9,10-dihydro-9,10-dioxo-2,3- anthracenedicarboximide - - - - -	VPC.
1,5-Diamino-4,8-dihydroxyanthraquinone - - - - -	VPC.
4,4'-Diaminodiphenyl sulfone - - - - -	CGY.
2,6-Diaminopyridine - - - - -	RIL.
4,4'-Diamino-2,2'-stilbenedisulfonic acid - - - - -	CGY, SDH.
3,5-Diamino-2,4,6-triiodobenzoic acid - - - - -	SDW.
2,5-Dianilinoterephthalic acid - - - - -	VPC.

TABLE 2.--CYCLIC INTERMEDIATES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER,
1983--CONTINUED

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SYNTHETIC ORGANIC CHEMICALS, 1983

CYCLIC INTERMEDIATES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
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.
6,11-Dibenzamido-16H-dinaphthol[2,3- α ,2',3'-i]carbazole- - - - -	
5,10,15,17-tetrone - - - - -	VPC.
1,5-Dibenzoylnaphthalene - - - - -	CGY.
3,9-Dibromo-7H-benz[de]anthracen-7-one - - - - -	CGY.
m-Dibromobenzene - - - - -	DAZ.
p-Dibromobenzene - - - - -	DAZ.
(1,2-Dibromoethyl)benzene - - - - -	DAZ.
2,6-Dibromo-4-nitroaniline - - - - -	HST.
2,6-Dibromo-4-nitrophenol- - - - -	SDC.
2,6-Dibromophenol- - - - -	EK.
3,5-Dibromo-3'-trifluoromethylsalicylanilide (Fluorophene)- - - - -	PCW.
p-Dibutoxybenzene (DBB)- - - - -	ALL.
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-tert-butylphenol- - - - -	TNA.
3,4-Dichloroaniline- - - - -	DUP, MON.
1,5-Dichloroanthraquinone- - - - -	CGY.
1,8-Dichloroanthraquinone- - - - -	CGY.
o(and p)-Dichlorobenzene - - - - -	MTO.
*o-Dichlorobenzene- - - - -	MON, PPG, SCC, SOI.
m-Dichlorobenzene- - - - -	MON.
*p-Dichlorobenzene- - - - -	DOW, MON, PPG, SCC, SOI.
3,3'-Dichlorobenzidine base and salts- - - - -	CWN, LAK.
4,4'-Dichlorobenzil- - - - -	MTO.
Dichlorobenzyl chloride- - - - -	SFS.
Dichlorodiphenylsilane - - - - -	DCC.
4,4'-Dichlorodiphenyl sulfone- - - - -	CGY.
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 - - - - -	DOW, MON.

TABLE 2.--CYCLIC INTERMEDIATES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

CYCLIC INTERMEDIATES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
2,6-Dichloropyridine - - - - -	OMC.
2,5-Dichlorosulfanilic acid [SO ₃ H=1] - - - - -	VPC.
2,5-Dichloro-4-sulfobenzenediazonium sulfate - - - - -	CGY.
p,α-Dichlorotoluene - - - - -	HK.
2,6-Dichloro-m-toluidine - - - - -	HST.
Dicyclohexylamine - - - - -	ABB, VGC.
Dicyclohexylamine, nitrate salt - - - - -	OMC.
Dicyclopentadiene (includes Cyclopentadiene) - - - - -	CO, CXI, DOW, ENJ, VEL.
Didodecylbenzene - - - - -	CO.
α,α-Diethoxyacetophenone - - - - -	CWN.
2,5-diethoxy-4-morpholinonitrobenzene - - - - -	ALL.
3-Diethylaminoacetanilide - - - - -	CGY.
p-(Diethylamino)benzaldehyde - - - - -	ATL, MCK, VPC.
3'-[2-(Diethylamino)ethyl]-4'-hydroxyacetanilide - - - - -	PD.
2[4-Diethylamino-2-hydroxybenzylbenzoic acid] - - - - -	X.
7-Diethylamino-4-methylcoumarin, crude - - - - -	PCW.
m-(Diethylamino)phenol (N,N-Diethyl-3-aminophenol) - - - - -	CGY.
3-[(4'-N,N-Diethylamino)phenylazo]-1H-1,2,4-triazole - - - - -	CGY.
N,N-Diethylaniline - - - - -	DUP.
2,6-Diethylaniline - - - - -	TNA.
N,N-Diethyl-m-anisidine - - - - -	BCC.
Diethylbenzene - - - - -	DOW.
N,N-Diethylcyclohexylamine - - - - -	ABB.
N,N-Diethyl-3-ethoxyaniline - - - - -	X.
N,N-Diethyl-m-toluidine - - - - -	DUP, FST.
N,N-Diethyl-p-toluidine - - - - -	RSA.
3-(2',4',-Difluorophenyl)-2-hydroxybenzoic acid, sodium salt - - - - -	HXL.
6,11-Dihydrodibenz(b,e)oxepin-11-one - - - - -	SK.
2,3-Dihydro-2,2-dimethyl-7-benzofuranol - - - - -	FMN.
9,10-Dihydro-9,10-dioxo-1,5-anthracenedisulfonic acid - - - - -	CGY.
9,10-Dihydro-9,10-dioxo-1,8-anthracenedisulfonic acid, potassium salt - - - - -	CGY.
9,10-Dihydro-9,10-dioxo-1,5(and 1,8)-anthracenedisulfonic acid and salt - - - - -	CGY.
9,10-Dihydro-9,10-dioxo-1-anthracenesulfonic acid and salt - - - - -	CGY.
9,10-Dihydro-9,10-dioxo-2-anthracenesulfonic acid and salt - - - - -	VPC.
2,3-Dihydro-2-[6-methyl-7-sulfo-2-benzothiazolyl]-2-quinolinyl-1,3-dioxo-1H-indene-5-carboxylic acid - - - - -	VPC.

TABLE 2.--CYCLIC INTERMEDIATES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

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CYCLIC INTERMEDIATES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
Dihydrophenylglycine dane salt - - - - -	: SK.
1,2-Dihydro-2,2,4,7-tetramethylquinoline - - - - -	: EKT.
1,2-Dihydrotriamcinolone - - - - -	: X.
1,4-Dihydroxyanthraquinone - - - - -	: CGY, EKT.
1,5(and 1,8)-Dihydroxyanthraquinone- - - - -	: CGY.
1,8-Dihydroxyanthraquinone - - - - -	: CGY.
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 - - - - -	: CGY, VPC.
1,8-Dihydroxy-4,5-dinitroanthraquinone - - - - -	: EKT, VPC.
N,N-Di(β-hydroxyethyl)-m-chloroaniline - - - - -	: MIL.
3,5-Dihydroxy-N-(2-hydroxyethyl)benzamide- - - - -	: PCW.
4,5-Dihydroxy-2,7-naphthalenedisulfonic acid (Chromotropic acid)- - - - -	: CGY.
3-[(2,4-Dihydroxyphenyl)azo]-4-hydroxybenzenesulfonic acid, sodium salt-copper complex - - - - -	: ATL.
7-[(2,5-Dihydroxy-7-sulfo-1-naphthalenyl)azo]-8-hydroxy-1,3,5-naphthalenetrisulfonic acid cuperate - - - - -	: CGY.
16,17-Dihydroxyviolanthrone (Dihydroxydibenzanthrone)	: CGY.
Diisopropylbenzene - - - - -	: GP, MON.
2,5-Dimethoxyaniline - - - - -	: ALL, EKT.
1,5(and 1,8)-Dimethoxyanthraquinone- - - - -	: CGY.
2,5-Dimethoxybenzaldehyde- - - - -	: CWN.
m-Dimethoxybenzene - - - - -	: ACY.
2,5-dimethoxy-4-chloranilide - - - - -	: HST.
2,5-Dimethoxy-4'-nitrostilbene - - - - -	: EKT.
3,4-Dimethoxytoluene - - - - -	: HEX.
p-(Dimethylamino)benzaldehyde- - - - -	: ATL, CGY, EK, SDH.
m-(Dimethylamino)benzoic acid- - - - -	: SDH.
2-[4-(Dimethylamino)benzoyl]benzoic acid - - - - -	: EK, X.
m-Dimethylaminophenol- - - - -	: ACY.
11-[3(Dimethylamino)propyl]-6H-hydroxydibenz(b,e)oxepin	: PFZ, SK.
N,N-Dimethylaniline- - - - -	: BCC, DUP.
3,3'-Dimethylbenzidine hydrochloride - - - - -	: EK.
N,N-Dimethylbenzylamine- - - - -	: ARS, HXL, RH, SW.
Dimethyl-1,4-cyclohexanedicarboxylate- - - - -	: EKT.
N,N-Dimethylcyclohexylamine- - - - -	: ABB.
5,5-Dimethylhydantoin- - - - -	: GLY.
2,5-Dimethyl-4(2)-morpholinylmethylphenol, hydrochloride- - - - -	: CGY, PCW.

SYNTHETIC ORGANIC CHEMICALS, 1983

TABLE 2.--CYCLIC INTERMEDIATES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

CYCLIC INTERMEDIATES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
N,N-Dimethyl-p-toluidine - - - - -	FST, RSA.
2,4-Dinitroaniline - - - - -	HST, SDC.
1,5(and 1,8)-Dinitroanthraquinone - - - - -	SDC.
m-Dinitrobenzene - - - - -	DUP.
3,5-Dinitrobenzoic acid - - - - -	SAL.
10,10'-Dinitro[3,3'-bi-7h-benz[de]lanthracene]-7,7'- dione - - - - -	RH.
4,4'-Dinitrodiphenyl ether - - - - -	DUP.
1-(3,5-Dinitro-2-hydroxyphenylazo)-2-hydroxynaphthalene	CGY.
2,6-Dinitro-4-isopropylphenol - - - - -	SDC.
2,4-Dinitrophenol, tech. - - - - -	SDC, VPC.
2, 4-Dinitrophenoxyethanol - - - - -	HML.
3,5-Dinitrosalicylic acid - - - - -	SAL.
p-Dinitrosobenzene - - - - -	LC.
4,4'-Dinitrostilbene-2,2'-disulfonic acid - - - - -	CGY.
4,4'-Dinitrostilbene-2,2'-disulfonic acid, sodium salt	X.
2,4-Dinitrotoluene - - - - -	DUP, OMC, RUC.
2,4(and 2,6)-Dinitrotoluene - - - - -	DUP, MOB, X.
3,5-Dinitro-p-toluenesulfonic acid - - - - -	TX.
Dinonylhydroxybenzenesulfonic acid - - - - -	X.
Dinonylphenol - - - - -	GAF.
Di-para-benzoquinone dioxime - - - - -	LC.
2,4-Di-tert-pentylphenol - - - - -	FER, PAS.
2-(2,4-Di-tert-pentylphenoxy)butyric acid - - - - -	EK.
1,5-Diphenoxyanthraquinone - - - - -	VPC.
1,8-Diphenoxyanthraquinone - - - - -	CGY.
Diphenylacetoneitrile, tech. - - - - -	SOL.
Diphenylamine - - - - -	RUC, USR, USS.
1,3-Di-4-piperidylpropane - - - - -	RIL.
1,4-Di-p-toluidinoanthraquinone - - - - -	CGY.
1,5-diureidonaphthalene - - - - -	SOI.
Divinylbenzene - - - - -	DOW, HST.
Dodecylaniline - - - - -	MON.
*p-Dodecylphenol - - - - -	GAF, MCB, MON, SOC.
Doxepin base - - - - -	SK.
2-Ethanolpiperidine - - - - -	RIL.
2-Ethanolpyridine - - - - -	RIL.
2,2'-((1,2-Ethenediyl)bis(5[[4-chloro-6-(phenylamino)-1, 3,5-triazin-2-yl]amino]benzenesulfonic acid, disodium salt - - - - -	X.

TABLE 2.--CYCLIC INTERMEDIATES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER,
1983--CONTINUED

CYCLIC INTERMEDIATES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
4(5)-Ethoxycarbonyl-5(4)-methylimidazole - - - - -	: SK.
1-Ethoxy-3-methylbenzene - - - - -	: X.
4-Ethoxy-2-methyl-N-phenylaniline- - - - -	: X.
2-Ethoxy-1-naphthoic acid- - - - -	: WYT.
2-Ethoxy-1-naphthoyl chloride- - - - -	: WYT.
4-Ethoxy-o-phenylenediamine- - - - -	: CGY.
Ethyl-alpha-cyano-beta-methyl cinnamate- - - - -	: PD.
3'-(Ethylamino)acetanilide - - - - -	: EKT.
N-Ethyl-N-(beta-aminoethyl)-m-toluidine - - - - -	: X.
o-Ethylaniline - - - - -	: TNA.
N-Ethylaniline, refined- - - - -	: BCC, DUP.
2-(N-Ethylanilino)ethanol- - - - -	: TCH.
3-(N-Ethylanilino)propionitrile- - - - -	: TCH.
alpha-(N-Ethylanilino)-m-toluenesulfonic acid- - - - -	: SDH.
*Ethylbenzene - - - - -	: AMO, ATR, CO, CSD, DOW, ELP, GOC, HST, KHI, KPT, MCB, MON.
Ethylbenzyl chloride - - - - -	: KPT, SFS.
d(-)Ethyl-3-(alpha-carboxybenzyl)amino crotonate, potassium salt - - - - -	: KF.
*2-(N-Ethyl-N,beta-cyanoethyl)-4-acetaminoanisole- - - - -	: CGY, SDC, TCH.
N-Ethylcyclohexylamine (Herbicide intermediate)- - - - -	: ABB.
N-Ethyl-N-(2,3-dihydroxypropyl)-m-toluidine- - - - -	: EKT.
Ethylene-bis-tetrabromophthalimide - - - - -	: TNA.
16,17-Ethylenedioxyuiolanthrone- - - - -	: CGY.
N-Ethylmaleimide - - - - -	: REG.
2-[N-Ethyl-p-[(6-methoxy-2-benzothiazoyl)azolanylino]- ethanol- - - - -	: CGY.
d1-13B-Ethyl-3-methoxy-8,14-secogona-1,3,5(10),9(11)- tetraene-14,17-dione - - - - -	: WYT.
1-Ethyl-3-methylhydantoin - - - - -	: GLY.
6-Ethyl-2-methylaniline- - - - -	: TNA.
6-Ethyl-2-methylformanilide- - - - -	: WYT.
1-Ethyl-2-methylindole - - - - -	: X.
N-ethyl-N-(beta-methyl sulfonamide ethyl)- - - - -	: X.
9-Ethyl-3-nitrocarbazole - - - - -	: SDC.
N-Ethyl-N-phenylbenzylamine- - - - -	: SDH.
3-Ethylpyridine- - - - -	: RIL.
N-Ethylpyrrolidone - - - - -	: GAF.
N-Ethyl-N-(3'-sulfobenzyl)aniline- - - - -	: VPC.
Ethyl toluene- - - - -	: DOW, HST.
N-Ethyl-m-toluidine- - - - -	: DUP, FST.

TABLE 2.--CYCLIC INTERMEDIATES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

CYCLIC INTERMEDIATES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
3-(N-Ethyl-m-toluidino)propionitrile	TCH.
p-Fluoroaniline	OMC.
o-Fluorobenzoyl chloride	OMC.
4-Fluoro-3-nitroaniline	OMC.
p-Fluoronitrobenzene	OMC.
o-Formylbenzenesulfonic acid, sodium salt	X.
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.
Hexahydro-1-methyl-4-phenyl-1H-azepine-4-carbonitrile	WYT.
Hexamethyleneimine	CXI, DUP.
Hydroquinonesulfonic acid, potassium salt	NES.
Hydroquinone, tech.	EKT, GYR.
p-Hydroxybenzaldehyde	DOW.
p-Hydroxybenzenesulfonic acid	FER, UPF.
4-Hydroxycoumarin	SDW.
N-6-Hydroxyethyl-2,4-dihydroxybenzamide	PCW.
N-Hydroxyethylpyrrolidone	GAF.
4-Hydroxymetanilamide	CGY.
4-Hydroxymetanilanilide	CGY.
4-Hydroxymetanilic acid	CGY.
3-Hydroxy-2-methylcinchoninic acid	CGY.
4-Hydroxy-N'-methylmetanilamide	CGY.
4(5)-Hydroxymethyl-5(4)-methylimidazole hydrochloride	SK.
3-Hydroxy-N-(3-N-morpholino-7-propyl)-2-naphthimide	PCW.
7-Hydroxy-1,3-naphthalenedisulfonic acid	CGY.
3-Hydroxy-2,7-naphthalenedisulfonic acid, disodium salt	CGY.
7-Hydroxy-1,3-naphthalenedisulfonic acid, disodium salt	SDH.
6-Hydroxy-2-naphthalenesulfonic acid, sodium salt	ACY, CGY.
8-Hydroxy-1-naphthalenesulfonic acid, 7-sultone	CGY.
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.
N-(7-Hydroxy-1-naphthyl)acetamide	CGY.

TABLE 2.--CYCLIC INTERMEDIATES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER,
1983--CONTINUED

CYCLIC INTERMEDIATES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
1-(2-Hydroxy-1-naphthylazo)-6-nitro-2-hydroxynaphthalene-4-sulfonic acid	CGY.
2-Hydroxy-4-n-octoxybenzophenone	CCW.
p-Hydroxyphenyl-3-methylbutyric acid	HEX.
11 α -Hydroxyprogesterone	UPJ.
3-Hydroxy-5'-quinophthalonecarboxylic acid	CGY.
2-Imidazolidinone	TKL.
2-Indolecarboxylic acid	ARA.
Indole-2,4-dione	CGY.
10-(p-Iodophenyl)undecanoic acid, ethyl ester	X.
Isatoic anhydride	SW.
Isobutylbenzene	PLC, TNA.
*ISOCYANIC ACID DERIVATIVES:	
Bitolylene diisocyanate (TODI)	CWN.
*Diphenylmethane-4,4'-diisocyanate (MDI)	BAS, MOB, RUC, UPJ.
Isocyanic acid, p-chlorophenyl ester	MOB.
Isocyanic acid, cyclohexyl ester	MOB.
Isonicotinamide	RIL.
Isonicotinic acid	RIL.
Phenylisocyanate	MOB.
*Polymethylene polyphenylisocyanate	BAS, MOB, RUC, UPJ, WTC.
Toluene 2,4-diisocyanate	DUP, MOB.
*Toluene 2,4-and 2,6-diisocyanate (80/20 Mixture)	BAS, DOW, MOB, OMC, RUC.
Toluene 2,4-and 2,6-diisocyanate (65/35 Mixture)	MOB.
p-Toluenesulfonyl isocyanate	CWN.
Isocyanic acid derivatives, all other	OMC, UCC.
Isonicotinic acid, methyl ester	RIL.
Isonicotinonitrile	RIL.
2-Isonitrosoacetanilide	CGY.
Isophthalic acid (Benzene-1,3-dicarboxylic acid)	AMO.
Isophthalonitrile	SW.
Isophthaloyl chloride	DUP, TLC.
N-Isopropylaniline	USR.
Isopropylbiphenyl	TCC.
5,5'-Isopropylidenebis(2-hydroxy-m-xylene- α,α' -diol)	ARK, TKL.
*4,4'-Isopropylidenediphenol (Bisphenol A)	DOW, GE, SHC, USS.
4,4'-Isopropylidenediphenol, ethoxylated	ICI.
4,4'-Isopropylidenediphenol, propoxylated	ICI.
o-Isopropylphenol	FER, TNA.
Isopropylphenol, mixed	FMC.
Isothiocyanic acid, phenyl ester	EK.

TABLE 2.--CYCLIC INTERMEDIATES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

CYCLIC INTERMEDIATES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
Leuco quinzarin (1,4,9,10-Anthratetrol) - - - - -	CGY.
3,5-Lutidine - - - - -	RIL.
Malonanilide - - - - -	PCW.
d-Mandelic acid - - - - -	HXL.
Mandelonitrile - - - - -	KF.
Melamine - - - - -	ACY, MLC.
dl-p-Mentha-1,8-diene (Limonene) - - - - -	ARZ, GIV, NCI.
Metanilic acid (m-Aminobenzenesulfonic acid) - - - - -	CGY.
4-Methoxyacetanilide - - - - -	CGY.
2-Methoxyethylpiperidine - - - - -	RIL.
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.
4-Methylacetophenone - - - - -	UPJ.
2-Methyl-5-acetylpyridine - - - - -	RIL.
1-(Methylamino)anthraquinone - - - - -	CGY.
2-(N-Methylanilino)ethanol - - - - -	TCH.
3-(N-Methylanilino)propionitrile - - - - -	MIL, TCH.
m-Methylanisole - - - - -	GIV.
2-Methylantraquinone - - - - -	ACY.
3-Methylbenzo[f]quinoline - - - - -	ACY.
2-Methylbenzothiazole - - - - -	FMT.
4-Methylbenzothiazolone, hydrazone - - - - -	LIL.
o-Methylbenzoyl chloride - - - - -	HEX, TLC.
N-Methylbenzylamine - - - - -	HXL.
Methyl benzyl ether - - - - -	GRS.
N-Methyl-N-butylnicotinium methosulfate - - - - -	HXL.
Methyl N-(α -carboxydihydrobenzyl)- β -aminocrotonate, sodium salt - - - - -	TRD.
1-Methyl-4-(3-chloropropyl)piperazine hydrochloride - - - - -	SK.
Methylcyclohexane - - - - -	PLC.
N-Methylcyclohexylamine - - - - -	ABB.
2-Methylcyclohexylamine - - - - -	ABB.
Methyl 3-(2,2-dichlorovinyl)-2,2-dimethylcyclopropane carboate - - - - -	FMN.
N-Methyldicyclohexylamine - - - - -	ABB.
2-Methyl-4,6-dinitrophenol (4,6-Dinitro-o-cresol) - - - - -	CPS.
4-Methyl-2,6-dinitrophenol - - - - -	SDC, SW.
4,4'-Methylenebis[N,N-diethylaniline]- - - - -	ACY.

TABLE 2.--CYCLIC INTERMEDIATES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

CYCLIC INTERMEDIATES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
4,4'-Methylenebis[N,N-dimethylaniline] (Methane base)	: ACY, SDH.
4,4'-Methylenedianiline-	: DUP, OMC, RUC, USR.
1,2-Methylenedioxybenzene-	: CRZ.
1,2-Methylenedioxy-4-nitrobenzene-	: PD.
5,5'-Methylenedisalicylic acid -	: KLM.
Methylhydroquinone -	: EKT.
(2,4-Methyl-5-imidazolyl)methylthioethylamine dihydrochloride-	: SK.
4-Methyl-2-imino-1,3-dithiolane hydrochloride-	: LAK.
N-Methyl-p-nitroaniline-	: ACY.
4-Methyl-2-nitroanisole-	: SW.
2-Methyl-5-norbornene-2,3-dicarboxylic anhydride -	: BCC.
p-(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.
3-Methylpiperidine -	: RIL.
* α -Methylstyrene-	: CLK, CXI, GP, SKO, USS.
ar-Methylstyrene (Vinyltoluene)-	: DOW, HST.
2-(Methylsulfonyl)-4-nitroaniline-	: CGY.
1-Naphthaldehyde -	: GNW.
1-Naphthalenesulfonic acid -	: CGY.
2-Naphthalenesulfonic acid -	: ACY, SDC.
1-Naphthalenesulfonic acid, 5-(4-hydroxyphenyl) -	: SDC.
1-Naphthalenesulfonic acid, 8-(phenylamino)-monosodium salt -	: SDC.
1-Naphthalenesulfonic acid, sodium salt-	: CGY.
2-Naphthalenesulfonic acid, sodium salt-	: GNW.
1,4,5,8-Naphthalenetetracarboxylic acid-	: CGY, HST.
Naphthalimide-	: SDC, VPC.
1-Naphthol (α -Naphthol)-	: UCC.
2-Naphthol-6-sulfonamide, p-toluenesulfonate -	: SOL, TCH.
2-Naphthol, tech. (β -Naphthol) -	: ACY.
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.
3'-Nitroacetanilide-	: EKT.

TABLE 2.--CYCLIC INTERMEDIATES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

CYCLIC INTERMEDIATES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
4'-Nitroacetanilide - - - - -	: CGY.
o-Nitroaniline - - - - -	: DUP, MON.
p-Nitroaniline - - - - -	: DUP, MON.
5-Nitroanthranilic acid - - - - -	: CGY.
1-Nitroanthraquinone - - - - -	: CGY.
p-Nitrobenzamide hydrochloride - - - - -	: PD.
Nitrobenzene - - - - -	: DUP, FST, MOB, RUC.
m-Nitrobenzenesulfonic acid - - - - -	: CGY.
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.
2-Nitro-p-cresol - - - - -	: SW.
Nitrodiphenylamine - - - - -	: ACY, MON.
5-Nitroisophthalic acid - - - - -	: LAK, SAL.
3-Nitro-4-methoxyacetanilide - - - - -	: CGY.
4-Nitro-N-methylphthalimide - - - - -	: LAK.
5-Nitromonomethylisophthalate - - - - -	: SAL.
1-Nitronaphthalene - - - - -	: DUP.
3-Nitro-1,5-naphthalenedisulfonic acid - - - - -	: CGY.
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.
2-Nitro-5-propylthioaniline - - - - -	: PAH.
5-Nitrosalicylaldehyde - - - - -	: EK.
4-Nitroso-N-ethyl-N(β-methylsulfonamide ethyl)-m-toluidine - - - - -	: X.
p-Nitrosophenol - - - - -	: LC, SDC, VPC.
4-Nitrosophenol, sodium salt - - - - -	: SDC.
4-Nitro-4'-(5-sulfo-2H-naphtho[1,2-d]triazol-2-yl)-2,2'-stilbenedisulfonic acid - - - - -	: CGY.
o-Nitrotoluene - - - - -	: DUP, FST.
m-Nitrotoluene - - - - -	: DUP, FST.
p-Nitrotoluene - - - - -	: DUP, FST.

TABLE 2.--CYCLIC INTERMEDIATES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

CYCLIC INTERMEDIATES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
Nitrotoluene mixtures	FST.
p-Nitrotoluene-o-sulfonic acid	CGY, SDH.
5-Nitro-o-toluidine [NH ₂ =1]	PCW.
Nonyl-dinonylphenol, mixture	USR.
*Nonylphenol	GAF, KLM, MCB, MON, RH, SCN, TX.
Norborene-2,3-dicarboxylic acid, monomethyl ester	BJL.
Octylphenol	RH, SCN.
Octylphenoxydiethoxy chloride	RH.
1-[(7-Oxo-7H-benz[de]anthracene-3-yl)amino]- anthraquinone	CGY.
1,1'-[(7-Oxo-7H-benz[de]anthracen-3,9-ylene)-diimino]- dianthraquinone	CGY.
5-Oxo-1-phenyl-2-pyrazoline-3-carboxylic acid, ethyl ester	VPC.
4,4'-Oxydianiline	DUP.
para-Pentylloxyphenol	EK.
Pentabromochlorocyclohexane	DOW.
Pentabromoethylbenzene	TNA.
1,1,3,3,5-Pentamethylindan	GIV, PLC.
o-Pentylphenol (o-Amylphenol)	PAS, X.
p-tert-Pentylphenol	PAS.
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.
Phenethylmalonic acid, diethyl ester	PAH.
p-Phenetidine	MON.
*PHENOL:	
NATURAL:	
FROM PETROLEUM:	
Phenol, natural, from petroleum, U.S.P.	MER.
Phenol, natural, from petroleum, all other	DA, FER, NPC.
SYNTHETIC:	
Phenol, benzylated	MIL.
Phenol, styrenated	MIL.
Phenol, synthetic, from chlorobenzene by vapor- phase hydrolysis, U.S.P.	DOW, SKO.
*Phenol, synthetic, from cumene by oxidation, U.S.P.	AFP, CLK, GE, GP, MON, SHC, USS.
Phenol, synthetic, from toluene by oxidation, U.S.P.	KLM.

TABLE 2.--CYCLIC INTERMEDIATES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

CYCLIC INTERMEDIATES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
Phenolsulfonaphthalein, sodium salt-	EK.
Phenolsulfonic acid, sodium salt-	SAL.
Phenoxyacetic acid, sodium salt-	NCC.
3-Phenoxybenzaldehyde-	GTL, TNA.
3-Phenoxybenzenemethanol-	TNA.
2-(Phenoxyethyl)benzoic acid-	SOL.
Phenylacetic acid, ethyl ester, tech.-	OPC.
Phenylacetic acid, methyl ester-	OPC.
Phenylacetic acid, potassium salt-	OPC, SFS.
Phenylacetic acid, sodium salt-	OPC.
2-(N-phenylamino)-9-acridanone-	X.
2,2'-[(Phenyl)amino]diethanol, diacetic ester-	CGY.
4-(Phenylazo)diphenylamine-	EK.
Phenyl-1,2,3-butanetrione-2-oxime-	EK.
o-Phenylenediamine-	CGY, DUP, SW.
m-Phenylenediamine-	DUP.
p-Phenylenediamine-	DUP, NES, SDC.
d-Phenylephrine-	SDW.
Phenyl ether (Diphenyl oxide)-	DOW, MON.
d(+)-Phenylethylamine-	HXL.
dl-2-Phenylglycine (racemic)-	KF.
d(-)-2-Phenylglycine-	KF.
Phenylglycine, potassium salt-	BCC.
Phenylglycine, sodium salt-	BCC, LIL.
2,2'-[(Phenyl)imino]diethanol (N-Phenyldiethanolamine)-	EKT, MIL, TCH.
2,2'-[(Phenyl)imino]diethanol, diacetate ester-	TCH.
Phenylmercuric carboxylate-	COS.
Phenyl- α -naphthylamine-	UCC, USR.
o-Phenylphenol-	DOW.
p-Phenylphenol-	DOW.
o-Phenylphenol, sodium salt-	DOW.
N-Phenyl-p-phenylenediamine-	USR.
Phenylphosphinic acid-	FER.
Phenylphosphorous dichloride-	FER, SFS.
1-Phenyl-1,2-propanedione, 2-oxime-	ORT.
4-Phenylpropylpyridine-	NEP.
1-Phenyl-2-tetrazoline-5-thione-	EK.
4-Phenylthiomorpholine-1,1-dioxide-	EKT.
Phenylundecanoic acid-	EK.
Phthalic acid-	EK.

TABLE 2.--CYCLIC INTERMEDIATES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

CYCLIC INTERMEDIATES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
*Phthalic anhydride - - - - -	ACY, DBC, ENJ, KPT, MON, SOC, STP, TU, USS.
Phthalimide- - - - -	SW.
[Phthalocyaninato(2-)]copper - - - - -	DUP, PHC.
[Phthalocyaninetetramethanaminato]copper - - - - -	X.
Phthalocyaninetetrasulfonyl chloride, copper derivative - - - - -	VPC.
Phthaloyl chloride (Phthalyl chloride) - - - - -	TLC.
PICOLINES:	
Picoline (3,4-mixture)- - - - -	RIL.
2-Picoline (α-Picoline)- - - - -	RIL.
3-Picoline (β-Picoline)- - - - -	NEP, RIL.
4-Picoline (γ-Picoline)- - - - -	RIL.
Picolinic acid - - - - -	NEP.
Picolinonitrile (2-Cyanopyridine)- - - - -	KPT, NEP.
3-Picolylamine - - - - -	RIL.
Picric acid (Trinitrophenol)- - - - -	SDC.
*Piperidine - - - - -	ABB, RIL, TX.
Polyethylbenzene (80 percent diethylbenzene)- - - - -	ELP.
*Propiophenone- - - - -	HEX, ORT, UCC.
8,16-Pyranthrene-dione- - - - -	PCW.
1,3,6,8-Pyrenetetrasulfonic acid - - - - -	X.
PYRIDINE, REFINED:	
2° Pyridine, refined - - - - -	KPT, NEP.
Pyridine, refined all other grades - - - - -	RIL.
Pyridine hydrochloride - - - - -	RSA.
3-Pyridinemethanol - - - - -	RIL.
2 Pyridinethiol-1-oxide, sodium salt - - - - -	OMC.
2 Pyridinethiol-1-oxide, zinc salt - - - - -	OMC.
2-Pyrimidinol- - - - -	CGY.
2-Pyrrolidinone (2-Pyrrolidone)- - - - -	GAF.
Quinaldine - - - - -	ACY.
QUINOLINE:	
Quinoline, 1° and 2° - - - - -	KPT.
Quinoline, other grades- - - - -	KPT.
8-Quinolinol - - - - -	SOL.
Quinone dioxime- - - - -	LC.
Resorcinol, mono-beta-hydroxyethyl ether- - - - -	BJL.
Resorcinol, tech,- - - - -	KPT.
β-Resorcylic acid, lead salt - - - - -	KPT.
Salicylaldehyde- - - - -	DOW, RDA.
Salicylaldehyde oxime- - - - -	EK.
Salicylanilide - - - - -	PCW.

TABLE 2.--CYCLIC INTERMEDIATES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

CYCLIC INTERMEDIATES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
*Salicylic acid, tech.	DOW, KLM, MON, SDH.
*Styrene (Vinylbenzene)	AMO, ATR, CSD, DOW, ELP, GOC, HST, MCB, MON, SHC, USS.
Sulfaethoxypyridazine	ACY.
Sulfaguanidine	SAL.
Sulfanilic acid (p-Aminobenzenesulfonic acid) and salt	ACY, EK.
5-Sulfoisophthalic acid, 1,3-dimethyl ester, sodium salt	DUP.
5-Sulfoisophthalic acid, sodium salt	PCW.
4,4'-Sulfonyldiphenol (4,4'-Dihydroxydiphenyl sulfone)	CRZ.
4-Sulfophthalic acid	CWN.
Terephthalic acid	AMO, HCF.
*Terephthalic acid, dimethyl ester	DUP, EKT, HCF.
Terephthaloyl chloride	DUP, TLC.
Terphenyl (Phenylbiphenyl) (m-, o-, and p-isomers)	MON.
Tetrabromophthalic anhydride	GTL, TNA.
1,2,4,5-Tetrachloro-3-nitrobenzene	SDH.
Tetrachlorophthalic anhydride	MON.
2,3,5,6-Tetrachloropyridine	DOW.
*Tetrahydrofuran	BAS, DUP, GAF, QKO.
1,2,3,4-Tetrahydronaphthalene	UCC.
1,2,3,4-Tetrahydro-2,2,4,7-tetramethylquinoline	EKT.
1,4,5,8-Tetrahydroxyanthraquinone, leuco derivative	CGY.
1,2,4,5-Tetramethylbenzene (Durene)	KHI.
p-(1,1,3,3-Tetramethylbutyl)phenol	GAF.
1,3,6,8-Tetranitro-9H-carbazole	SDC.
Tetrazolethiol	MRT.
Thiodiphenol	CRZ.
2-Thiopheneacetyl chloride	SFS.
2-Thiophenecarboxaldehyde	TNA.
Thiophenol	SFA.
s-Thymol	GIV.
Toluene-2,3-(and 3,4)-diamine (35/65 Mixture)	OMC.
*Toluene-2,4-diamine (4-m-Tolylenediamine)	OMC, RUC, UCC, X.
Toluene-2,4-(and 2,6)-diamine (80/20 Mixture)	OMC.
Toluene-3,4-diamine	X.
p-Toluenesulfinic acid	CGY.
p-Toluenesulfinic acid, sodium salt	NES.
p-Toluenesulfonic acid	NES, SW, UPF.
p-Toluenesulfonic acid, aniline salt	NES.
p-toluenesulfonic acid, copper salt	NES.
p-Toluenesulfonic acid monohydrate	UPF.

TABLE 2.--CYCLIC INTERMEDIATES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

CYCLIC INTERMEDIATES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
p-Toluenesulfonyl chloride	MON.
o-Toluic acid	WTC.
m-Toluic acid	WTC.
p-Toluic acid, methyl ester	HCF.
o-Toluidine	DUP, FST.
m-Toluidine	DUP, FST.
p-Toluidine	DUP, FST.
Toluidines, mixed	DUP, FST.
o-Toluidinomethanesulfonic acid	CGY.
m-Toluidinomethanesulfonic acid	ATL.
1-p-Tolyldodecane	RH.
*2,2'-(m-Tolylimino)diethanol	MIL, SDC, TCH.
Tolyltriazole	SW, WAY.
Tolyltriazine, sodium salt	DIX.
2,4,6-Triamino-5-nitrosopyrimidine	SK.
N,N,N-Tribenzylamine	HXL.
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.
1,1,1-Trichloro-2,2-diphenylethane	CWN.
α,α,α -Trichloro-o-fluorotoluide	OMC.
1,2,4-Trichloro-5-nitrobenzene	PCW.
Trichlorophenylsilane	DCC.
α,α,α -Trichlorotoluene (Benzotrichloride)	HK, VEL.
2,3,6-Trichlorotoluene	OMC.
2,4,6-Trichloro-s-triazine (Cyanuric chloride)	DGC, NIL.
Tri(dimethylaminomethyl)phenol	BMC, PEL.
α,α,α -Trifluoro-m-toluidine	OMC.
2,4,3'-Trihydroxydiphenyl	PCW.
Trimellitic trichloride	TLC.
Trimesic acid	AMB.
1,2,4-Trimethylbenzene (Pseudocumene)	KHI.
1,3,5-Trimethylbenzene (Mesitylene)	KHI.
2,3,3-Trimethyl-3H-indole	VPC.
1,3,3-Trimethyl- δ^2 , α -indolineacetaldehyde	VPC.
1,3,3-Trimethyl-2-methyleneindoline	CGY, VPC, X.
2,3,6-Trimethylphenol	PIT.
Triphenylmethane	EK.
Triphenylphosphine	X.

TABLE 2.--CYCLIC INTERMEDIATES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

CYCLIC INTERMEDIATES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
Triphenylsulfonium chloride- - - - -	SOL.
Triphenylsulfonium hexafluorophosphate - - - - -	SOL.
α,α',α'' -Tris(dimethylamino)mesitol- - - - -	RH.
Tris(2-methyl-1-aziridinyl)phosphine oxide - - - - -	ARS.
7,7'-Ureylenebis[4-hydroxy-2-naphthalenesulfonic acid] (J-Acid urea) - - - - -	CGY.
Vinylcyclohexane - - - - -	DUP.
Vinylcyclohexene monoxide- - - - -	UCC.
2-Vinylpyridine- - - - -	RIL.
4-Vinylpyridine- - - - -	RIL.
*o-Xylene (90-100% of o-xylene isomer)- - - - -	ATR, CO, ENJ, KHI, PPR, PPX, SHC, 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.
2,4-Xylenesulfonic acid- - - - -	UPF.
2,5-Xylenesulfonic acid- - - - -	NES.
2,6-Xylenol- - - - -	PIT.
3,5-Xylenol- - - - -	FER.
Xylenol crystals - - - - -	GE.
XYLIDINES:	
2,4-Xylidine (m-4-Xylidine)- - - - -	DUP.
2,6-Xylidine - - - - -	DUP, TNA.
Xylidine, original mixture - - - - -	DUP.
Cyclic intermediates, all other- - - - -	ACY, ALD, ANG, ARA, CGY, FER, HCF, HEX, HK, HST, HXL, LC, LIL, MCK, MIL, NES, NOD, OMC, PAH, PAH, PCW, PD, PFZ, RIL, RSA, SDC, SDW, SOL, STC, SW, TCH, TNA, UCC, UPF, UPJ, UPJ, VPC, WTC, X, X, X, X, X, X, X.

TABLE 3.--CYCLIC INTERMEDIATES: DIRECTORY OF MANUFACTURERS, 1983

ALPHABETICAL DIRECTORY BY CODE

[Names of manufacturers that reported production and/or sales of cyclic intermediates to the U.S. International Trade Commission for 1983 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	FMC	FMC Corp.:
ACY	American Cyanamid Co.		Industrial Chemical Group
AFP	Allied Corp., Fibers & Plastics Co. Div.	FMN	Agricultural Chemical Group
AIC	Chemsampco, Inc., DBR, Albany	FMT	Fairmount Chemical Co., Inc.
	International Corp., Chemical Div.	FST	First Chemical Corp.
ALD	Aldrich Chemical Co., Inc.		
ALL	Alliance Chemical Corp.	GAF	GAF Corp.
AMB	American Bio-Synthetics Corp.	GE	General Electric Co.
AMO	Standard Oil Co. (Indiana)	GIV	Givaudan Corp.
ANG	Angus Chemical Co.	GLY	Glyco, Inc.
ARA	Syntex Chemicals, Inc.	GNW	Greenwood Chemical Co.
ARK	Armstrong World Industries, Inc.	GOC	Gulf Oil Corp., Gulf Oil Products Co.
ARS	Arsynco, Inc.	GP	Georgia-Pacific Corp.:
ARZ	Arizona Chemical Co.		Houston Div.
ASH	Ashland Oil, Inc., Ashland Petroleum Co.		Plaquemine Div.
ATL	Atlantic Industries, Inc.	GRS	Champlin Petroleum Co.
ATR	Atlantic Richfield Co., Arco Chemical Co.	GTL	Great Lakes Chemical Corp.
		GYR	Goodyear Tire & Rubber Co.
BAS	BASF Wyandotte Corp.		
BCC	Buffalo Color Corp.	HCF	Hercofina
BFG	B.F. Goodrich Co., B.F. Goodrich Chemical	HEX	Hexagon Laboratories, Inc.
	Group	HK	Occidental Chemical Corp.
BJL	Burdick & Jackson Laboratories, Inc.	HML	Hummel Chemical Co.
BKM	Buckman Laboratories, Inc.	HPC	Hercules, Inc.
BMC	Brin-Mont Chemicals, Inc.	HST	American Hoechst Corp.:
BRD	Lonza, Inc.		Petrochemicals Div.
BRS	Bristol-Myers Co.		Specialty Products Div.
BUG	Synalloy Corp., Blackman-Uhler Chemical Div.	HXL	Hexcel Corp., Hexcel Chemical Products
CCW	Carstab Corp.	ICI	ICI Americas, Inc., Chemicals Specialties Co.
CGY	Ciba-Geigy Corp.		
CHF	Kincaid Enterprises, Inc.	KF	Kay-Fries, Inc., Chemical Div., Dynamit Nobel
CHT	Chattem, Inc.		of America, Inc.
CLK	Clark Oil & Refining Corp.	KHI	Koch Refining Co.
CNP	Nipro, Inc.	KLM	Kalama Chemical, Inc.
CO	Conoco, Inc.	KPT	Koppers Co., Inc.
COS	Cosan Chemical Corp.		
CPS	CPS Chemical Co., Inc.	LAK	Bofors Nobel, Inc.
CRZ	Crown Zellenbach Corp., Chemical Products	LC	Lord Corp., Chemical Products Group
	Div.	LEM	Napp Chemicals, Inc.
CSD	Cosden Oil & Chemical Co.	LIL	Eli Lilly & Co.
CWN	Upjohn Co., Fine Chemical Div.		
CXI	Chemical Exchange Industries, Inc.	MAL	Mallinckrodt, Inc.
CYH	Cychem, Inc.	MCB	Borg-Warner Corp., Borg-Warner Chemicals
		MCK	MacKenzie Chemical Works, Inc.
DA	Diamond Shamrock Corp., Diamond Shamrock	MER	Merichem Co.
	Agricultural Chemicals, Inc., Cresylic	MIL	Milliken & Co., Milliken Chemical Co.
	Plant	MLC	Melamine Chemicals, Inc.
DAZ	Diaz Chemical Corp.	MOB	Mobay Chemical Co., Pittsburgh Div.
DCC	Dow Corning Corp.	MON	Monsanto Co.
DGC	Degussa Corp.	MRT	Morton-Thiokol, Inc., Morton Chemical
DIX	Dixie Chemical Co., Inc.		Co. Div.
DKA	Denka Chemical Corp.	MTO	Montrose Chemical Corp. of California
DOW	Dow Chemical Co.		
DUP	E. I. duPont de Nemours & Co., Inc.	NCC	Niacet, Inc.
		NCI	Union Camp Corp., Terpene & Aromatics Div.
EK	Eastman Kodak Co.:	NEP	Nepera, Inc.
EKT	Tennessee Eastman Co. Div.	NES	Ruetgers-Nease Chemical Co.
ELP	El Paso Products Co.	NIL	Nilok Chemical, Inc.
ENJ	Exxon Chemical Americas	NOD	Nuodex, Inc.
		NPC	Northwest Petrochemical Corp. Div. of Stimson
FER	Ferro Corp.:		Lumber Co.
	Grant Chemical Div.	NSC	National Starch & Chemical Corp.
	Ottawa Chemical Div.		
	Productol Chemical Div.	OMC	Olin Corp.
FKE	Frank Enterprises, Inc.	OPC	Orbis Products Corp.

TABLE 3.--CYCLIC INTERMEDIATES: DIRECTORY OF MANUFACTURERS, 1983--CONTINUED

CODE	NAME OF COMPANY	CODE	NAME OF COMPANY
ORT	Roehr Chemicals, Inc.	SOI	Specialty Organics, Inc.
PAH	Parish Chemical Co.	SOL	Southland Corp., Fine Chemical Div.
PAS	Pennwalt Corp.	STC	American Hoechst Corp., Sou-Tex Works
PCW	Pfister Chemical, Inc.	STP	Stepan Chemical Co.
PD	Parke-Davis & Co.	STX	St. Croix Petrochemical Corp.
PEL	Pelron Corp.	SUN	Sun Company, Inc.
PFZ	Pfizer, Inc. and Pfizer Pharmaceuticals, Inc.	SW	Sherwin-Williams Co.
PHC	Phthalchem, Inc.		
PIT	Pitt-Consol Chemical Co.	TCC	Sybron Chemical, Inc.
PLC	Phillips Petroleum Co.	TKL	Morton-Thiokol, Inc., Morton Chemical Co. Div.
PPG	PPG Industries, Inc.	TEN	Tennessee Chemical Co.
PPR	Phillips Puerto Rico Core, Inc.	TLC	Twin Lake Chemical, Inc.
PPX	Phillips Paraxylene, Inc.	TNA	Ethyl Corp.
		TOC	Tenneco Oil Co.
QKO	Quaker Oats Co.	TRD	Squibb Manufacturing, Inc.
		TU	Tenn-USS Chemicals Co.
RDA	Rhone-Poulenc, Inc.	TX	Texaco, Inc.
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.
RUC	Rubicon, Inc.	UPJ	Upjohn Co. & Polymer Chemical Div.
		USM	Crown Metro, Inc.
SAL	Salsbury Laboratories, Inc.	USR	Uniroyal, Inc., Uniroyal Chemical Div.
SCC	Standard Chlorine of Delaware, Inc.	USS	U.S. Steel Corp., USS Chemicals Div.
SCN	Schenectady Chemicals, Inc.		
SDC	Sodyeco, Inc.	VEL	Velsicol Chemical Corp.
	Sterling Drug, Inc.:		
SDH	Hilton Davis Chemical Co. Div.	VGC	Virginia Chemicals, Inc.
SDW	Sterling Organics Div.	VNC	Vanderbilt Chemical Corp.
	Stauffer Chemical Co.:	VPC	Mobay Chemical Corp., Dye & Pigment & Div.
SFA	Agricultural Div.		
SFS	Specialty & Intermediates Div.	WAY	Philip A. Hunt Chemical Corp., Organic Chemical Div.
SHC	Shell Oil Co., Shell Chemical Co. Div.	WCC	White Chemical Corp.
SK	SmithKline Beckman Corp., SmithKline Chemicals Div.	WTC	Witco Chemical Corp.
SKO	Getty Refining & Marketing Co.	WYK	Wyckoff Chemical Co., Inc.
SOC	Standard Oil Co. of California, Chevron Chemical Co.	WYT	Wyeth Laboratories, Inc., Wyeth Laboratories Div. of American Home Products Corp.

Note.--Complete names, telephone numbers, and addresses of the above reporting companies are listed in table 1 of the appendix. The above codes identify those of the 182 reporting companies and company divisions for which permission to publish was not restricted.

STATISTICAL HIGHLIGHTS

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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 the dyeing of 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. Dyes are sold as pastes, powders, lumps, and solutions concentrations vary from 6 percent to 100 percent. The concentration, form, and purity of dye are determined largely by the use for which it is intended

Total domestic production of dyes in 1983 amounted to 244 million pounds, or 9.9 percent more than the 222 million pounds produced in 1982 (table 1). Sales of dyes in 1983 amounted to 234 million pounds, valued at \$728 million, compared with 214 million pounds, valued at \$685 million, in 1982. In terms of quantity, sales of dyes in 1983 were 9.4 percent more than in 1982 and in terms of value, 6.4 percent more. The average unit value of sales of all dyes in 1983 was \$3.11 per pound, compared with \$3.20 per pound in 1982.

Production of two classes of dyes decreased in 1983, while the remaining eight major classes registered slight to moderate increase in their production. Direct dyes decreased by 15.6 percent from 32.7 million pounds in 1982 to 27.7 million pounds in 1983, solvent dyes decreased by 3.8 percent to 8.8 million pounds in 1983 from 9.1 million pounds in 1982.

TABLE 1.--Dyes: U.S. PRODUCTION AND SALES, 1983

[Listed below are all dyes for which any reported data on production or sales may be published. 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 VALUE ¹
	1,000 pounds	1,000 pounds	1,000 dollars	Per pound
Grand total-----	244,206	233,780	728,138	\$3.11
ACID DYES				
Total-----	24,788	22,596	101,828	4.51
Acid yellow dyes, total-----	4,482	4,111	11,587	2.82
Acid Yellow 17-----	100	84	426	5.08
Acid Yellow 23-----	70	74	341	4.62
Acid Yellow 49-----	388	324	920	2.84
Acid Yellow 151-----	1,324	1,213	2,240	1.85
All other-----	2,600	2,416	7,660	3.16
Acid orange dyes, total-----	5,705	5,459	13,476	2.47
Acid Orange 7-----	151	126	338	2.68
Acid Orange 10-----	149	124	487	3.94
Acid Orange 24-----	234	237	644	2.72
Acid Orange 156-----	2,995	2,976	7,626	2.56
All other-----	2,176	1,996	4,381	2.19
Acid red dyes, total-----	4,724	4,352	26,585	6.11
Acid Red 1-----	217	245	678	2.77
Acid Red 88-----	44	54	269	4.92
Acid Red 137-----	106	101	688	6.79
Acid Red 299-----	90	70	351	5.01
All other-----	4,267	3,882	24,599	6.34
Acid violet dyes-----	163	156	990	6.34
Acid blue dyes, total-----	6,342	5,121	33,775	6.59
Acid Blue 25-----	283	308	2,066	6.71
Acid Blue 40-----	552	487	1,939	3.98
Acid Blue 145-----	17	16	211	13.45
Acid Blue 324-----	1,772	1,098	1,129	5.58
All other-----	3,718	3,212	28,430	8.85
Acid green dyes-----	286	275	2,349	8.53
Acid brown dyes-----	738	746	3,439	4.61
Acid black dyes, total-----	2,348	2,376	9,627	4.05
Acid Black 1-----	292	262	957	3.65
Acid Black 52-----	509	553	1,850	3.35
Acid Black 172-----	177	178	1,178	6.62
All other-----	1,370	1,383	5,642	4.08
BASIC DYES (CLASSICAL AND MODIFIED)				
Total-----	13,203	11,821	61,863	5.23
Basic yellow dyes-----	3,165	2,674	9,502	3.55
Basic orange dyes, total-----	1,051	957	4,118	4.30
Basic Orange 2-----	308	337	908	2.69
All other-----	743	620	3,210	5.17

See footnotes at end of table.

TABLE 1.--DYES: U.S. PRODUCTION AND SALES, 1983--CONTINUED

DYES	PRODUCTION ^a	SALES		
		QUANTITY	VALUE	UNIT VALUE ¹
	1,000 pounds	1,000 pounds	1,000 dollars	Per pound
BASIC DYES (CLASSICAL AND MODIFIED)--Continued				
Basic red dyes, total-----	2,152	1,742	8,218	\$4.72
Basic Red 12-----	241	171	1,034	6.03
Basic Red 15-----	529	374	1,171	3.13
Basic Red 49-----	71	87	350	4.04
All other-----	1,311	1,110	5,663	5.10
Basic violet dyes, total-----	3,598	3,298	10,767	3.26
Basic Violet 1-----	1,915	1,884	4,273	2.27
Basic Violet 3-----	1,097	959	3,613	3.77
All other-----	586	455	2,881	6.33
Basic blue dyes-----	2,245	2,203	17,662	8.02
All other basic dyes-----	992	947	11,596	12.24
DIRECT DYES				
Total-----	27,651	25,105	70,893	2.82
Direct yellow dyes, total-----	10,268	9,344	22,155	2.37
Direct Yellow 4-----	616	597	2,000	3.69
Direct Yellow 127-----	809	662	1,843	2.78
All other-----	8,843	8,085	18,312	2.26
Direct orange dyes, total-----	1,580	1,286	3,567	2.77
Direct Orange 34-----	34	16	72	4.39
All other-----	1,546	1,270	3,495	2.75
Direct red dyes, total-----	3,649	3,057	12,828	4.20
Direct Red 23-----	56	40	181	4.56
Direct Red 24-----	80	90	592	6.57
Direct Red 72-----	198	208	969	4.66
Direct Red 80-----	361	290	1,637	5.64
Direct Red 81-----	367	354	1,372	3.87
Direct Red 83-----	148	104	457	4.41
All other-----	2,439	1,971	7,620	3.87
Direct violet and green dyes-----	380	303	1,531	1.61
Direct blue dyes, total-----	6,205	5,727	19,342	3.38
Direct Blue 75-----	142	151	921	6.08
Direct Blue 80-----	235	202	781	3.86
Direct Blue 86-----	382	443	1,937	4.37
Direct Blue 98-----	236	230	812	3.53
Direct Blue 218-----	268	284	1,282	4.52
All other-----	4,942	4,417	13,609	3.08
Direct brown dyes-----	298	219	1,175	5.38
Direct black dyes, total-----	5,271	5,169	10,295	1.99
Direct Black 22-----	1,708	1,685	2,525	1.50
Direct Black 80-----	381	336	986	2.93
All other-----	3,182	3,148	6,784	2.16

See footnotes at end of tables.

TABLE 1.--DYES: U.S. PRODUCTION AND SALES, 1983--CONTINUED

DYES	PRODUCTION	SALES		
		QUANTITY	VALUE	UNIT VALUE ¹
	1,000 pounds	1,000 pounds	1,000 dollars	Per pound
DISPERSE DYES				
Total-----	34,049	31,278	128,995	\$4.12
Disperse yellow dyes-----	3,287	3,171	13,894	4.38
Disperse orange dyes, total-----	5,195	4,624	12,600	2.72
Disperse Orange 25 and 25:1-----	528	390	984	2.53
Disperse Orange 30-----	2,319	2,028	4,019	1.98
Disperse Orange 37-----	293	227	554	2.44
Disperse Orange 44 and 44:1-----	393	443	1,723	3.89
All other-----	1,662	1,536	5,320	3.46
Disperse red dyes, total-----	7,061	6,469	32,691	5.05
Disperse Red 1-----	199	201	718	3.57
Disperse Red 17-----	137	112	382	3.41
Disperse Red 177-----	780	693	2,769	3.99
Disperse Red 179-----	217	173	819	4.72
All other-----	5,728	5,290	28,003	5.29
Disperse violet dyes-----	537	438	2,557	5.84
Disperse blue dyes, total-----	15,895	14,373	57,234	3.98
Disperse Blue 60-----	217	216	1,937	8.96
Disperse Blue 79-----	8,301	7,388	17,820	2.41
All other-----	7,377	6,769	37,477	5.54
Disperse black, brown, and green dyes, total-----	2,074	2,203	10,019	4.55
Disperse Brown 1-----	820	781	2,341	3.00
All other-----	1,254	1,422	7,678	5.40
FIBER-REACTIVE DYES				
Total-----	7,736	7,153	52,780	7.38
FLUORESCENT BRIGHTENING AGENTS				
Total-----	56,658	55,598	67,978	1.22
FOOD, DRUG, AND COSMETIC COLORS				
Total-----	6,513	6,422	62,909	9.80
<i>Food, Drug, and Cosmetic Dyes</i>				
Total-----	6,107	6,071	56,771	9.35
FD&C Blue No. 1-----	288	284	4,100	14.45
FD&C Red No. 3-----	531	510	7,202	14.13
FD&C Yellow No. 5-----	1,671	1,668	8,596	5.15
FD&C Yellow No. 6-----	1,333	1,425	5,655	4.95
All other drug and cosmetic	2,284	2,184	31,218	14.29

See footnotes at end of table.

TABLE 1.--Dyes: U.S. PRODUCTION AND SALES, 1983--CONTINUED

	PRODUCTION	SALES		
		QUANTITY	VALUE	UNIT VALUE ¹
	1,000 pounds	1,000 pounds	1,000 dollars	Per pound
FOOD, DRUG, AND COSMETIC COLORS--Continued				
<i>Drug and Cosmetic and External Drug and Cosmetic Dyes</i>				
Total-----	406	351	6,138	\$17.49
D&C Red No. 7-----	135	109	982	9.02
D&C Yellow No. 10-----	77	69	1,968	28.45
All other drug and cosmetic and external drug and cosmetic dyes-----	194	173	3,188	18.43
MORDANT DYES				
Total-----	424	428	1,933	4.52
SOLVENT DYES				
Total-----	8,776	11,671	26,383	2.26
Solvent yellow dyes-----	1,203	982	5,555	5.66
Solvent orange dyes-----	529	519	2,302	4.43
Solvent blue dyes-----	2,614	2,242	3,782	1.64
All other solvent dyes-----	4,430	7,928	14,744	1.89
VAT DYES				
Total-----	47,637	45,754	113,129	2.47
Vat red dyes-----	424	424	6,257	14.75
Vat blue dyes-----	40,896	38,886	73,047	1.88
Vat green dyes-----	1,674	1,691	5,503	3.25
All other vat dyes-----	4,643	4,753	28,322	11.92
All other dyes ² -----	16,771	15,954	39,447	2.47

¹Calculated from unrounded figures.

²The 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, 1983

[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, FAB, LVR, MRX, WJ.
Acid Yellow 34	FAB.
Acid Yellow 36	VPC.
Acid Yellow 40	CGY, CK.
*Acid Yellow 49	CK, S, VPC.
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 128	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 199	ICI.
Acid Yellow 200	CK.
Acid Yellow 216	VPC.
Acid Yellow 219	CGY, CK, S.
Acid Yellow 239	DGO.
Acid yellow dyes, all other	ATL, CK, VPC.
*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 51	CGY.
Acid Orange 60	CGY, CK, VPC.

TABLE 2.--DYES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

DYES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACID DYES--CONTINUED	
*ACID ORANGE DYES--Continued	
Acid Orange 64 - - - - -	: ATL.
Acid Orange 69 - - - - -	: ATL, FAB.
Acid Orange 74 - - - - -	: CGY.
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, FAB.
Acid Red 14 - - - - -	: ATL, BAS.
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 99 - - - - -	: FAB.
Acid Red 114 - - - - -	: CGY, CK, VPC.
Acid Red 115 - - - - -	: FAB.
Acid Red 119 - - - - -	: CK.
*Acid Red 137 - - - - -	: BAS, CGY, CK, VPC.
Acid Red 151 - - - - -	: ATL, CGY, CK.
Acid Red 167 - - - - -	: ATL, CGY.
Acid Red 182 - - - - -	: VPC.
Acid Red 194 - - - - -	: CGY.
Acid Red 201 - - - - -	: ATL.
Acid Red 211 - - - - -	: CGY.
Acid Red 213 - - - - -	: CGY.
Acid Red 226 - - - - -	: BAS.
Acid Red 257 - - - - -	: CGY.
Acid Red 266 - - - - -	: ATL, CK, ICI, VPC.
Acid Red 278 - - - - -	: VPC.
Acid Red 296 - - - - -	: BAS.
*Acid Red 299 - - - - -	: ATL, CK, VPC.
Acid Red 337 - - - - -	: CK, S, VPC.
Acid Red 361 - - - - -	: CGY, CK.

TABLE 2.--DYES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

DYES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACID DYES--CONTINUED	
*ACID RED DYES--Continued	
Acid Red 364	: CK.
Acid Red 384	: CK.
Acid Red 392	: VPC.
Acid Red 396	: ICI.
Acid Red 410	: ATL.
Acid red dyes, all other	: ATL, CGY, CK, EKT.
*ACID VIOLET DYES:	
Acid Violet 3-	: ATL, FAB.
Acid Violet 7-	: ATL, FAB.
Acid Violet 12	: ATL, FAB.
Acid Violet 17	: SDH.
*Acid Violet 43	: CK.
Acid Violet 49	: SDH.
*ACID BLUE DYES:	
Acid Blue 9-	: BAS, SDH, WJ.
Acid Blue 15	: BAS.
*Acid Blue 25	: ATL, CGY, CK, ICI, VPC.
Acid Blue 27	: ATL.
*Acid Blue 40	: CK, S, VPC.
Acid Blue 45	: BAS, CGY.
Acid Blue 80	: CGY.
Acid Blue 92	: FAB.
Acid Blue 104	: ATL, BAS.
Acid Blue 113	: CK.
Acid Blue 122	: ATL.
*Acid Blue 145	: ATL, CK, VPC.
Acid Blue 158, 158:1, and 158:2	: CGY.
Acid Blue 277	: ATL, CGY.
Acid Blue 283	: S.
Acid Blue 288	: S.
Acid Blue 298	: CK.
*Acid Blue 324	: CK, S, VPC.
Acid Blue 330	: ATL.
Acid Blue 336	: ICI.
Acid blue dyes, all other	: BAS, CGY, CK, X.
*ACID GREEN DYES:	
Acid Green 1	: LVR.
Acid Green 3	: WJ.
Acid Green 20	: ATL, FAB.
Acid Green 25	: ATL, CGY, CK.
Acid Green 35	: CGY, FAB.
Acid Green 70	: CGY.

TABLE 2.--DYES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

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DYES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACID DYES--CONTINUED	
*ACID GREEN DYES--Continued	
Acid green dyes, all other - - - - -	: CK.
*ACID BROWN DYES:	
Acid Brown 14- - - - -	: ATL, CGY, CK, S.
Acid Brown 17- - - - -	: ATL.
Acid Brown 19- - - - -	: CK.
Acid Brown 24- - - - -	: FAB.
Acid Brown 45- - - - -	: CGY.
Acid Brown 50- - - - -	: BAS.
Acid Brown 96- - - - -	: FAB.
Acid Brown 97- - - - -	: FAB.
Acid Brown 98- - - - -	: CGY, CK.
Acid Brown 147- - - - -	: CK.
Acid Brown 160- - - - -	: BAS.
Acid Brown 161- - - - -	: BAS.
Acid Brown 165- - - - -	: BAS.
Acid Brown 227- - - - -	: BAS.
Acid Brown 239- - - - -	: CK.
Acid Brown 264- - - - -	: BAS.
Acid brown dyes, all other - - - - -	: BAS, CK.
*ACID BLACK DYES:	
*Acid Black 1 - - - - -	: ATL, BAS, CGY, CK.
Acid Black 2 - - - - -	: ACY, ATL.
*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 - - - - -	: CK, VPC.
AZOIC DYES AND COMPONENTS	
AZOIC COMPOSITIONS:	
AZOIC YELLOW COMPOSITIONS:	
Azoic Yellow 1 - - - - -	: BUC.
AZOIC ORANGE COMPOSITIONS:	
Azoic Orange 3 - - - - -	: BUC.
Azoic orange compositions, all other - - - - -	: BUC.
AZOIC RED COMPOSITIONS:	
Azoic Red 1- - - - -	: BUC.
Azoic Red 2- - - - -	: BUC.
Azoic Red 6- - - - -	: BUC.

SYNTHETIC ORGANIC CHEMICALS, 1983

TABLE 2.--DYES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

DYES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
AZOIC DYES AND COMPONENTS--CONTINUED	
AZOIC RED COMPOSITIONS--Continued	
Azoic red compositions, all other- - - - -	: ALL, BUC.
AZOIC VIOLET COMPOSITIONS:	
Azoic Violet 1 - - - - -	: BUC.
Azoic violet compositions, all other - - - - -	: BUC.
AZOIC BLUE COMPOSITIONS:	
Azoic Blue 3 - - - - -	: BUC.
AZOIC BROWN COMPOSITIONS:	
Azoic Brown 7- - - - -	: BUC.
Azoic Brown 9- - - - -	: BUC.
Azoic brown compositions, all other- - - - -	: BUC.
AZOIC BLACK COMPOSITIONS:	
Azoic Black 4- - - - -	: BUC.
Azoic black compositions, all other- - - - -	: BUC.
AZOIC DIAZO COMPONENTS, BASES:	
Azoic Diazo Component 4, base- - - - -	: ALL.
Azoic Diazo Component 13, base - - - - -	: ALL, BUC.
Azoic Diazo Component 14, base - - - - -	: ALL.
Azoic Diazo Component 32, base - - - - -	: ALL.
Azoic Diazo Component 34, base - - - - -	: ALL.
AZOIC DIAZO COMPONENTS, SALTS:	
Azoic Diazo Component 1, salt- - - - -	: ALL, BUC.
Azoic Diazo Component 3, salt- - - - -	: ALL, BUC.
Azoic Diazo Component 5, salt- - - - -	: ALL, BUC.
Azoic Diazo Component 8, salt- - - - -	: ALL, BUC.
Azoic Diazo Component 9, salt- - - - -	: ALL, BUC.
Azoic Diazo Component 10, salt - - - - -	: ALL, BUC.
Azoic Diazo Component 11, salt - - - - -	: ALL.
Azoic Diazo Component 12, salt - - - - -	: ALL, BUC.
Azoic Diazo Component 13, salt - - - - -	: ALL, BUC.
Azoic Diazo Component 14, salt - - - - -	: ALL.
Azoic Diazo Component 20, salt - - - - -	: ATL.
Azoic Diazo Component 32, salt - - - - -	: ALL, ATL.
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, BUC.
Azoic diazo components, salt, all other- - - - -	: ALL.
AZOIC COUPLING COMPONENTS:	
Azoic Coupling Component 3 - - - - -	: PCW.
Azoic Coupling Component 7 - - - - -	: PCW.
Azoic Coupling Component 12- - - - -	: PCW.

TABLE 2.--DYES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

DYES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
AZOIC DYES AND COMPONENTS--CONTINUED	
AZOIC COUPLING COMPONENTS--Continued	
Azoic Coupling Component 14- - - - -	PCW.
Azoic Coupling Component 20- - - - -	PCW.
Azoic Coupling Component 21- - - - -	PCW.
Azoic Coupling Component 29- - - - -	PCW.
Azoic Coupling Component 34- - - - -	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 25- - - - -	BAS.
Basic Yellow 29- - - - -	BAS, VPC.
Basic Yellow 37- - - - -	ACY.
Basic Yellow 49- - - - -	BAS.
Basic Yellow 53- - - - -	CK.
Basic Yellow 54- - - - -	BAS.
Basic Yellow 58- - - - -	VPC.
Basic Yellow 65- - - - -	BAS.
Basic Yellow 78- - - - -	ACY.
Basic Yellow 79- - - - -	BAS, CK.
Basic Yellow 81- - - - -	BAS.
Basic Yellow 83- - - - -	CK.
Basic Yellow 96- - - - -	BAS.
Basic yellow dyes, all other - - - - -	BAS, VPC, X.
Basic yellow dyes, all other, modified - - - - -	CGY, CK.
*BASIC ORANGE DYES:	
Basic Orange 1 - - - - -	BAS, CK, PSC.
*Basic Orange 2 - - - - -	ATL, BAS, CGY, CK, PSC.
Basic Orange 21- - - - -	ATL, VPC.
Basic orange dyes, all other - - - - -	VPC, X.
*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 - - - - -	ATL, VPC.
Basic Red 22 - - - - -	CGY.
Basic Red 23 - - - - -	VPC.
Basic Red 29 - - - - -	BAS.

TABLE 2.--DYES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

DYES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
BASIC DYES (CLASSICAL AND MODIFIED)--CONTINUED	
*BASIC RED DYES--Continued	
Basic Red 46	CGY.
*Basic Red 49	BAS, CGY, CK, VPC.
Basic Red 51	BAS.
Basic Red 54	BAS.
Basic Red 73	CK.
Basic Red 104	CK.
Basic red dyes, all other	X.
Basic red dyes, all other, modified	CK.
*BASIC VIOLET DYES:	
*Basic Violet 1	ACY, BAS, BCC, DSC.
*Basic Violet 3	ACY, BAS, CK, DSC.
Basic Violet 4	DSC.
Basic Violet 10	ACY, BAS.
Basic Violet 16	BAS, VPC.
Basic Violet 35	BAS.
*BASIC BLUE DYES:	
Basic Blue 1	SDH, VPC.
Basic Blue 2	DSC.
Basic Blue 3	BAS, VPC.
Basic Blue 6	BAS.
Basic Blue 7	DSC, SDH.
Basic Blue 21	CK.
Basic Blue 26	DSC.
Basic Blue 41	BAS, CGY, VPC.
Basic Blue 54	BAS.
Basic Blue 60	BAS.
Basic Blue 69	VPC.
Basic Blue 77	CK.
Basic Blue 94 and 94:1	CK.
Basic Blue 140	VPC.
Basic blue dyes, all other	VPC, X.
Basic blue dyes, all other, modified	CK.
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	CGY, PSC.
Basic Brown 94:1	CK.
Basic brown dyes, all other	BAS.

TABLE 2.--DYES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

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SYNTHETIC ORGANIC CHEMICALS, 1983

DYES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
BASIC DYES (CLASSICAL AND MODIFIED)--CONTINUED	
BASIC BLACK DYES:	
Basic black dyes, all other-	CK, VPC, X.
Basic black dyes, all other, modified-	BAS.
DIRECT DYES	
*DIRECT YELLOW DYES:	
*Direct Yellow 4-	ATL, BAS, CGY, CK, VPC.
Direct Yellow 5-	ACY, BAS.
Direct Yellow 6-	BAS, VPC.
Direct Yellow 11-	BAS, VPC.
Direct Yellow 12-	ATL, CK.
Direct Yellow 28-	ATL, CK.
Direct Yellow 34-	CK, S.
Direct Yellow 39-	CK.
Direct Yellow 44-	CGY, CK.
Direct Yellow 51-	FAB.
Direct Yellow 84-	BAS.
Direct Yellow 103-	ATL.
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 131-	VPC.
Direct Yellow 132-	S.
Direct Yellow 137-	VPC.
Direct Yellow 147-	BAS, VPC.
Direct Yellow 148-	S.
Direct Yellow 150-	S.
Direct yellow dyes, all other-	ATL, BAS, CK.
*DIRECT ORANGE DYES:	
Direct Orange 6-	ATL.
Direct Orange 15-	BAS, CGY, VPC.
Direct Orange 26-	CK.
*Direct Orange 34-	ATL, CK, FAB.
Direct Orange 39-	CK, FAB.
Direct Orange 61-	CK.
Direct Orange 72-	CK, FAB.
Direct Orange 80-	ATL.
Direct Orange 102-	ATL, BAS, FAB, VPC.
Direct Orange 105-	CK.
Direct Orange 118-	CGY, S.
Direct orange dyes, all other-	BAS, CK.

TABLE 2.--DYES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

DYES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)

DIRECT DYES--CONTINUED	

*DIRECT RED DYES:	
Direct Red 1	FAB.
Direct Red 2	ATL, FAB.
Direct Red 4	CGY.
Direct Red 9	CK.
Direct Red 16	ATL, CGY, CK.
*Direct Red 23	ATL, BAS, CK.
*Direct Red 24	ATL, CGY, CK, FAB.
Direct Red 26	ATL.
Direct Red 31	ATL.
Direct Red 39	ATL, CK.
*Direct Red 72	ATL, BAS, CGY, CK.
Direct Red 73	ATL.
*Direct Red 80	ATL, CGY, CK.
*Direct Red 81	ATL, CGY, CK, FAB, LVR, VPC.
*Direct Red 83	ATL, CGY, CK, FAB.
Direct red 89	CK.
Direct Red 117	CGY.
Direct Red 149	ATL.
Direct Red 153	ATL.
Direct Red 236	BAS, VPC.
Direct Red 238	VPC.
Direct Red 239	CGY, S.
Direct Red 254	BAS, VPC.
Direct red dyes, all other	ACY, ATL, BAS, CK.
*DIRECT VIOLET DYES:	
Direct Violet 9	CGY.
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 15	ATL, S, 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 80	ATL, CGY, CK, FAB.
*Direct Blue 86	ATL, BAS, CGY, CK, VPC.
Direct Blue 91	CGY.

TABLE 2.--DYES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

DYES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
DIRECT DYES--CONTINUED	
*DIRECT BLUE DYES--Continued	
*Direct Blue 98 - - - - -	: ATL, CK, FAB.
Direct Blue 100- - - - -	: CK, FAB.
Direct Blue 108- - - - -	: ATL.
Direct Blue 120, 120:1, 120:2, and 120:3 - - - - -	: CK, FAB.
Direct Blue 160- - - - -	: CGY, CK.
Direct Blue 189- - - - -	: CGY.
Direct Blue 191- - - - -	: CK.
Direct Blue 199- - - - -	: BAS, VPC.
*Direct Blue 218- - - - -	: CGY, CK, FAB, S, VPC.
Direct Blue 262- - - - -	: S.
Direct Blue 267- - - - -	: S.
Direct Blue 269- - - - -	: VPC.
Direct Blue 279- - - - -	: VPC.
Direct Blue 280- - - - -	: ATL.
Direct Blue 283- - - - -	: ATL.
Direct Blue 285- - - - -	: ATL.
Direct Blue 286- - - - -	: ATL.
Direct blue dyes, all other- - - - -	: ATL, BAS, CK, FAB, VPC.
DIRECT GREEN DYES:	
Direct Green 1 - - - - -	: FAB.
Direct Green 6 - - - - -	: FAB.
Direct Green 26- - - - -	: CK.
Direct Green 92- - - - -	: ATL.
Direct green dyes, all other - - - - -	: CK, FAB.
*DIRECT BROWN DYES:	
Direct Brown 2 - - - - -	: FAB.
Direct Brown 31- - - - -	: FAB.
Direct Brown 44- - - - -	: FAB.
Direct Brown 74- - - - -	: FAB.
Direct Brown 95- - - - -	: CK.
Direct Brown 154- - - - -	: FAB.
Direct Brown 228- - - - -	: ATL.
Direct Brown 230- - - - -	: ATL.
Direct Brown 231- - - - -	: ATL.
Direct Brown 232- - - - -	: ATL.
Direct Brown 238- - - - -	: ATL.
Direct brown dyes, all other - - - - -	: CK, FAB.
*DIRECT BLACK DYES:	
Direct Black 4 - - - - -	: FAB.
Direct Black 19- - - - -	: CGY.
*Direct Black 22- - - - -	: ATL, CGY, CK, VPC.
Direct Black 78- - - - -	: FAB.

TABLE 2.--DYES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

DYES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
DIRECT DYES--CONTINUED	
*DIRECT BLACK DYES--Continued	
*Direct Black 80- - - - -	: ATL, CK, FAB.
Direct Black 165 - - - - -	: ATL.
Direct Black 170 - - - - -	: ATL.
Direct black dyes, all other - - - - -	: ATL, 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 56 - - - - -	: ATL.
Disperse Yellow 64 - - - - -	: BAS, CGY.
Disperse Yellow 67 - - - - -	: CGY.
Disperse Yellow 77 - - - - -	: VPC.
Disperse Yellow 86 - - - - -	: EKT.
Disperse Yellow 88 - - - - -	: EKT.
Disperse Yellow 93 - - - - -	: VPC.
Disperse Yellow 99 - - - - -	: EKT.
Disperse Yellow 108- - - - -	: CK, EKT.
Disperse Yellow 114- - - - -	: HST.
Disperse Yellow 125- - - - -	: SDC.
Disperse Yellow 126- - - - -	: ICI.
Disperse Yellow 198- - - - -	: BAS.
Disperse Yellow 200- - - - -	: EKT.
Disperse Yellow 210- - - - -	: S.
Disperse Yellow 219- - - - -	: SDC.
Disperse yellow dyes, all other- - - - -	: BAS, CK, EKT, HST, ICI.
*DISPERSE ORANGE DYES:	
Disperse Orange 3- - - - -	: ATL, 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 - - - - -	: BUC, CGY, S, VPC.
*Disperse Orange 37 - - - - -	: ATL, CK, EKT.
Disperse Orange 41 - - - - -	: CGY, S.
*Disperse Orange 44 and 44:1- - - - -	: CGY, CK, S, SDC.
Disperse Orange 55 - - - - -	: BAS.
Disperse Orange 57 - - - - -	: EKT.
Disperse Orange 73 - - - - -	: BAS.
Disperse Orange 79 - - - - -	: CGY.

TABLE 2.--DYES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

DYES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
DISPERSE DYES--CONTINUED	
*DISPERSE ORANGE DYES--Continued	
Disperse Orange 88	: SDC.
Disperse Orange 89	: CK.
Disperse Orange 94	: SDC.
Disperse Orange 129	: SDC.
Disperse Orange 136	: EKT.
Disperse Orange 138	: EKT.
Disperse Orange 145	: EKT.
Disperse orange dyes, all other	: CK.
*DISPERSE RED DYES:	
*Disperse Red 1	: ATL, CGY, CK, EKT.
Disperse Red 5	: ATL, CGY, CK.
Disperse Red 13	: ATL, BAS.
Disperse Red 15	: CGY.
*Disperse Red 17	: ATL, CGY, CK.
Disperse Red 30	: CGY, EKT.
Disperse Red 35	: EKT.
Disperse Red 50	: CGY, CK.
Disperse Red 54	: CK.
Disperse Red 55	: BAS, CGY, CK, VPC.
Disperse Red 60	: BAS, CGY, VPC.
Disperse Red 65	: CK, EKT.
Disperse Red 73	: CK, FAB, ICI, S.
Disperse Red 74	: S.
Disperse Red 82	: CGY, VPC.
Disperse Red 88	: EKT.
Disperse Red 90	: VPC.
Disperse Red 91	: BAS.
Disperse Red 108	: VPC.
Disperse Red 117	: EKT.
Disperse Red 118	: BAS.
Disperse Red 128	: CGY.
Disperse Red 133	: VPC.
Disperse Red 135	: CGY, CK.
Disperse Red 136	: EKT.
Disperse Red 137	: EKT.
Disperse Red 152	: BAS.
Disperse Red 153	: FAB, SDC.
Disperse Red 159	: VPC.
Disperse Red 167 and 167:1	: BAS, CGY, CK, S.
*Disperse Red 177	: BUC, CK, ICI, S, SDC, VPC.
*Disperse Red 179	: BAS, CGY, S.
Disperse Red 184	: HST.

TABLE 2.--DYES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

DYES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
DISPERSE DYES--CONTINUED	
*DISPERSE RED DYES--Continued	
Disperse Red 194	: CK.
Disperse Red 195	: SDC.
Disperse Red 263	: BAS.
Disperse Red 273	: SDC.
Disperse Red 274	: SDC.
Disperse Red 278	: ICI.
Disperse Red 305	: EKT.
Disperse Red 307	: EKT.
Disperse Red 309	: EKT.
Disperse Red 311	: ICI.
Disperse Red 313	: SDC.
Disperse Red 316	: SDC.
Disperse Red 319	: CK.
Disperse Red 325	: CGY, CK.
Disperse Red 333	: SDC.
Disperse Red 338	: EKT.
Disperse Red 339	: EKT.
Disperse Red 340	: EKT.
Disperse Red 341	: EKT.
Disperse Red 345	: CK.
Disperse Red 719	: CK.
Disperse red dyes, all other	: BAS, BUC, CK, EKT, VPC.
*DISPERSE VIOLET DYES:	
Disperse Violet 1	: CK.
Disperse Violet 17	: VPC.
Disperse Violet 28	: CGY, CK.
Disperse Violet 33	: ICI, SDC.
Disperse Violet 36	: SDC.
Disperse Violet 40	: VPC.
Disperse Violet 48	: HST.
Disperse Violet 60	: SDC.
Disperse Violet 81	: SDC.
Disperse Violet 91	: CK.
*DISPERSE BLUE DYES:	
Disperse Blue 3	: CGY, CK, EKT, FAB.
Disperse Blue 7	: CGY.
Disperse Blue 19	: CGY.
Disperse Blue 26	: VPC.
Disperse Blue 27	: EKT.
Disperse Blue 55	: CGY.
Disperse Blue 56	: CK, VPC.
*Disperse Blue 60	: BAS, CGY, VPC.

TABLE 2.--DYES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

DYES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
DISPERSE DYES--CONTINUED	
*DISPERSE BLUE DYES--Continued	
Disperse Blue 62	EKT.
Disperse Blue 64	CGY, EKT.
Disperse Blue 72	BAS.
Disperse Blue 73	S.
Disperse Blue 77	EKT.
*Disperse Blue 79	ATL, BAS, BUC, CGY, EKT, HST, ICI, S, VPC.
Disperse Blue 81	VPC.
Disperse Blue 87	BAS.
Disperse Blue 94	BAS.
Disperse Blue 95	HST.
Disperse Blue 102	CK, EKT.
Disperse Blue 112	EKT.
Disperse Blue 118	EKT.
Disperse Blue 122	ICI.
Disperse Blue 148	BAS.
Disperse Blue 165	CGY, HST, VPC.
Disperse Blue 177	SDC.
Disperse Blue 183	S.
Disperse Blue 200	ICI.
Disperse Blue 281	CGY, SDC.
Disperse Blue 284	ICI.
Disperse Blue 291	SDC.
Disperse Blue 333	HST.
Disperse Blue 337	EKT.
Disperse Blue 338	EKT.
Disperse blue dyes, all other	BUC, CK, EKT, HST, ICI, VPC.
*DISPERSE GREEN DYES:	
Disperse Green 9	ICI.
Disperse green dyes, all other	CK.
*DISPERSE BROWN DYES:	
*Disperse Brown 1	ATL, BUC, CGY, CK, HST, ICI, SDC.
Disperse Brown 2	SDC.
Disperse Brown 10	SDC.
Disperse Brown 18	SDC.
Disperse Brown 22	EKT.
Disperse brown dyes, all other	CK, EKT, ICI.
*DISPERSE BLACK DYES:	
Disperse Black 9	ATL, CGY, EKT.
Disperse Black 33	CGY.
Disperse black dyes, all other	BAS, CK, VPC.

TABLE 2.--DYES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

DYES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
FIBER-REACTIVE DYES	
REACTIVE YELLOW DYES:	
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 81	CGY.
Reactive Yellow 86	ICI.
Reactive Yellow 133-	ICI.
Reactive Yellow 135-	ICI.
Reactive yellow dyes, all other-	HST, ICI.
REACTIVE ORANGE DYES:	
Reactive Orange 1-	FAB, ICI.
Reactive Orange 4-	ICI.
Reactive Orange 12	ICI.
Reactive Orange 13	ICI.
Reactive Orange 14	ICI.
Reactive Orange 16	HST.
Reactive Orange 20	CK.
Reactive Orange 70	CGY.
Reactive Orange 78	HST.
Reactive Orange 84	ICI.
Reactive Orange 86	ICI.
Reactive orange dyes, all other-	HST.
REACTIVE RED DYES:	
Reactive Red 2	CK, ICI.
Reactive Red 11-	CK, ICI.
Reactive Red 29-	ICI.
Reactive Red 31-	ICI.
Reactive Red 33-	ICI.
Reactive Red 43-	CK.
Reactive Red 49-	HST.
Reactive Red 94-	HST.
Reactive Red 105	HST.
Reactive Red 106	HST.
Reactive Red 108	HST.
Reactive Red 120	CGY, CK, ICI.
Reactive Red 123	VPC.
Reactive Red 141	ICI.
Reactive Red 180	HST.
Reactive red dyes, all other	CK, ICI, VPC.

TABLE 2.--DYES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

DYES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
FIBER-REACTIVE DYES--CONTINUED	
REACTIVE VIOLET DYES:	
Reactive Violet 5- - - - -	HST.
Reactive violet dyes, all other- - - - -	HST.
REACTIVE BLUE DYES:	
Reactive Blue 3- - - - -	ICI.
Reactive Blue 4- - - - -	ICI.
Reactive Blue 5- - - - -	ICI.
Reactive Blue 7- - - - -	CGY.
Reactive Blue 13- - - - -	ICI.
Reactive Blue 19- - - - -	HST.
Reactive Blue 21- - - - -	HST.
Reactive Blue 29- - - - -	VPC.
Reactive Blue 38- - - - -	HST.
Reactive Blue 71- - - - -	ICI.
Reactive Blue 89- - - - -	HST, ICI.
Reactive Blue 137- - - - -	CGY.
Reactive Blue 173- - - - -	ICI.
Reactive Blue 174- - - - -	ICI.
Reactive Blue 199- - - - -	ICI.
Reactive blue dyes, all other- - - - -	CK, HST, ICI, VPC.
REACTIVE GREEN DYES:	
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- - - - -	HST.
Reactive Black 9- - - - -	ICI.
Reactive black dyes, all other- - - - -	HST.
FLUORESCENT BRIGHTENERS	
Fluorescent Brightener 22- - - - -	CGY.
Fluorescent Brightener 24- - - - -	CGY.
Fluorescent Brightener 28- - - - -	CGY, SDH.
Fluorescent Brightener 49- - - - -	CGY, S.
Fluorescent Brightener 52- - - - -	S.
Fluorescent Brightener 59- - - - -	CGY.
Fluorescent Brightener 61- - - - -	ACY, CCW.
Fluorescent Brightener 71- - - - -	CGY.
Fluorescent Brightener 102- - - - -	CGY.

TABLE 2.--DYES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

DYES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
FLUORESCENT BRIGHTENERS--CONTINUED	
Fluorescent Brightener 126 - - - - -	: SDH.
Fluorescent Brightener 128 - - - - -	: SDH.
Fluorescent Brightener 134 - - - - -	: CGY.
Fluorescent Brightener 159 - - - - -	: VPC.
Fluorescent Brightener 191 - - - - -	: VPC.
Fluorescent Brightener 200 - - - - -	: VPC.
Fluorescent brighteners, all other - - - - -	: ACY, BAS, CGY, CK, S, VPC, X.
FOOD, DRUG, AND COSMETIC COLORS	
*FOOD, DRUG, AND COSMETIC DYES:	
*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, WJ.
*Food, Drug, and Cosmetic Yellow 5- - - - -	: CK, KON, MRX, STG, WJ.
*Food, Drug, and Cosmetic Yellow 6- - - - -	: CK, KON, STG, WJ.
*DRUG AND COSMETIC DYES:	
Drug and Cosmetic Green 5- - - - -	: 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.
Drug and Cosmetic Orange 17- - - - -	: SNA.
Drug and Cosmetic Red 3- - - - -	: KON.
Drug and Cosmetic Red 6- - - - -	: KON, MRX, SDH, SNA.
*Drug and Cosmetic Red 7- - - - -	: KON, MRX, SDH, SNA.
Drug and Cosmetic Red 8- - - - -	: KON, SNA.
Drug and Cosmetic Red 9- - - - -	: KON, MRX, SNA.
Drug and Cosmetic Red 17 - - - - -	: KON.
Drug and Cosmetic Red 19 - - - - -	: KON, SNA.
Drug and Cosmetic Red 21 - - - - -	: SNA.
Drug and Cosmetic Red 22 - - - - -	: SDH.
Drug and Cosmetic Red 27 - - - - -	: SDH.
Drug and Cosmetic Red 28 - - - - -	: SDH.
Drug and Cosmetic Red 30 - - - - -	: KON.
Drug and Cosmetic Red 33 - - - - -	: CK, KON.
Drug and Cosmetic Red 34 - - - - -	: KON, SNA.
Drug and Cosmetic Red 36 - - - - -	: KON, SDH, SNA.
Drug and Cosmetic Yellow 5 - - - - -	: KON.
Drug and Cosmetic Yellow 6 - - - - -	: KON.

TABLE 2.--DYES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

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DYES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
FOOD, DRUG, AND COSMETIC COLORS--CONTINUED	
*DRUG AND COSMETIC DYES--Continued	
Drug and Cosmetic Yellow 8 - - - - -	KON, SDH.
*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 1 - - - - -	FAB.
Mordant Yellow 8 - - - - -	FAB.
Mordant Yellow 20- - - - -	FAB.
MORDANT ORANGE DYES:	
Mordant Orange 1 - - - - -	FAB.
Mordant Orange 6 - - - - -	ATL, FAB.
Mordant Orange 8 - - - - -	FAB.
Mordant orange dyes, all other - - - - -	FAB.
MORDANT RED DYES:	
Mordant Red 7- - - - -	ATL.
Mordant Red 9- - - - -	MRX.
Mordant Red 11 - - - - -	SDH, VPC.
MORDANT BROWN DYES:	
Mordant Brown 1- - - - -	ATL, FAB.
Mordant Brown 18 - - - - -	FAB.
Mordant Brown 33 - - - - -	ATL, FAB.
Mordant Brown 70 - - - - -	FAB.
MORDANT BLACK DYES:	
Mordant Black 9- - - - -	ATL.
Mordant Black 11 - - - - -	CGY.
Mordant Black 17 - - - - -	FAB.
SOLVENT DYES	
*SOLVENT YELLOW DYES:	
Solvent Yellow 3 - - - - -	PSC.
Solvent Yellow 13- - - - -	BAS.
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.
Solvent Yellow 44- - - - -	DGO.
Solvent Yellow 56- - - - -	PSC.
Solvent Yellow 72- - - - -	PSC.

TABLE 2.--DYES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

DYES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
SOLVENT DYES--CONTINUED	
*SOLVENT YELLOW DYES--Continued	
Solvent Yellow 88-	CK.
Solvent Yellow 94-	SDH.
Solvent Yellow 107-	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 dyes, all other	CIC, MIL.
*SOLVENT ORANGE DYES:	
Solvent Orange 2-	PSC.
Solvent Orange 3-	ATL, PSC.
Solvent Orange 7-	ATL, PSC.
Solvent Orange 20-	BAS.
Solvent Orange 23-	ATL, CK.
Solvent Orange 25-	MRT.
Solvent Orange 31-	PSC.
Solvent Orange 59-	CK.
Solvent Orange 60-	CIC.
Solvent Orange 73-	MRT.
Solvent Orange 74-	MRT.
Solvent Orange 76-	MRT.
Solvent Orange 77-	MRT.
Solvent orange dyes, all other	MRT, PSC.
SOLVENT RED DYES:	
Solvent Red 1-	PSC.
Solvent Red 18-	VPC.
Solvent Red 23-	PSC.
Solvent Red 24-	ATL, PSC.
Solvent Red 26-	PSC.
Solvent Red 27-	PSC.
Solvent Red 30-	PSC.
Solvent Red 42-	SDH.
Solvent Red 49-	ACY.
Solvent Red 68-	ATL, CK, MRT.
Solvent Red 74-	ATL.
Solvent Red 80-	PSC.
Solvent Red 125-	CK.
Solvent Red 164-	MRT.
Solvent Red 165-	MRT.
Solvent Red 166-	MRT.

TABLE 2.--DYES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

DYES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
SOLVENT DYES--CONTINUED	
SOLVENT RED DYES--Continued	
Solvent Red 168-	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 dyes, all other-	MIL.
SOLVENT VIOLET DYES:	
Solvent Violet 8-	DSC.
Solvent Violet 9-	DSC.
Solvent Violet 13-	CK, MRT.
*SOLVENT BLUE DYES:	
Solvent Blue 3-	SW.
Solvent Blue 4-	DSC.
Solvent Blue 5-	DSC.
Solvent Blue 35-	MRT.
Solvent Blue 36-	MRT.
Solvent Blue 38-	SDH, TNI.
Solvent Blue 56-	VPC.
Solvent Blue 58-	MRT.
Solvent Blue 59-	VPC.
Solvent Blue 60-	ATL.
Solvent Blue 98-	MRT.
Solvent Blue 99-	MRT.
Solvent Blue 100-	MRT.
Solvent Blue 101-	MRT.
Solvent Blue 102-	MRT.
Solvent Blue 128-	MRT.
Solvent Blue 129-	MRT.
Solvent blue dyes, all other-	BAS, CK, MIL.
SOLVENT GREEN DYES:	
Solvent Green 1-	DSC.
Solvent Green 3-	CGY.
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.

TABLE 2.--DYES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

DYES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
SOLVENT DYES--CONTINUED	
SOLVENT BLACK DYES:	
Solvent Black 7- - - - -	ACY, OCC, PSC.
Solvent Black 13 - - - - -	ACY, ATL.
Solvent Black 26 - - - - -	ATL, FAB.
Solvent Black 46 - - - - -	MRT.
Solvent Black 48 - - - - -	MRT.
Solvent Black 49 - - - - -	MRT.
Solvent black dyes, all other- - - - -	PSC.
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:	
Leuco Sulfur Orange 1- - - - -	SDC.
SULFUR RED DYES:	
Leuco Sulfur Red 10- - - - -	SDC.
Leuco Sulfur Red 14- - - - -	SDC.
Sulfur Red 10- - - - -	SDC.
SULFUR BLUE DYES:	
Leuco Sulfur Blue 7- - - - -	SDC.
Leuco Sulfur Blue 13 - - - - -	SDC.
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.
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 96- - - - -	SDC.
Leuco Sulfur Brown 95- - - - -	SDC.
Sulfur Brown 96- - - - -	SDC.
Sulfur brown dyes, all other - - - - -	SDC.
SULFUR BLACK DYES:	
Leuco Sulfur Black 1 - - - - -	SDC.

TABLE 2.--DYES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

DYES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
SULFUR DYES--CONTINUED	
SULFUR BLACK DYES--Continued	
Leuco Sulfur Black 2 - - - - -	SDC.
Leuco Sulfur Black 11, 11:1- - - - -	SDC.
Leuco Sulfur Black 18- - - - -	SDC.
Solubilized Sulfur Black 1 - - - - -	SDC.
Sulfur Black 1 - - - - -	SDC.
Sulfur Black 2 - - - - -	SDC.
Sulfur Black 11, 11:1- - - - -	SDC.
VAT DYES	
VAT YELLOW DYES:	
Vat Yellow 2, 8-1/2% - - - - -	CGY, VPC.
Vat Yellow 22, 10% - - - - -	VPC.
Vat Yellow 33, 15% - - - - -	CGY.
Vat Yellow 51- - - - -	SDC.
VAT ORANGE DYES:	
Vat Orange 1, 20%- - - - -	CGY, VPC.
Vat Orange 2, 12%- - - - -	BAS, CGY.
Vat Orange 7, 11%- - - - -	HST.
Vat Orange 9, 12%- - - - -	CGY.
Vat Orange 15, 10% - - - - -	VPC.
*VAT RED DYES:	
Vat Red 1, 13% - - - - -	HST.
Vat Red 10, 18%- - - - -	BAS.
Vat Red 13, 11%- - - - -	CGY.
Vat Red 14, 10%- - - - -	HST.
Vat Red 15, 10%- - - - -	CGY, HST.
Vat Red 29, 18%- - - - -	SDC.
Vat Red 32, 20%- - - - -	BAS, VPC.
VAT VIOLET DYES:	
Vat Violet 1, 11%- - - - -	CGY, VPC.
Vat Violet 3, 15%- - - - -	HST.
Vat Violet 13, 6-1/4%- - - - -	BAS, CGY.
Vat Violet 21- - - - -	VPC.
*VAT BLUE DYES:	
Vat Blue 1, 20%- - - - -	BAS, BCC.
Vat Blue 6, 8-1/3% - - - - -	BAS, CGY.
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 74- - - - -	SDC.

TABLE 2.--DYES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

DYES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
VAT DYES--CONTINUED	
*VAT GREEN DYES:	
Vat Green 1, 6% - - - - -	: CGY.
Vat Green 3, 10% - - - - -	: BAS, CGY.
Vat Green 7- - - - -	: SDC.
Vat Green 9, 12-1/2% - - - - -	: CGY.
Vat Green 32 - - - - -	: VPC.
Vat green dyes, all other- - - - -	: CK, HST.
VAT BROWN DYES:	
Vat Brown 1, 11% - - - - -	: CGY, VPC.
Vat Brown 3, 11% - - - - -	: CGY, VPC.
Vat Brown 11, 12% - - - - -	: CGY.
Vat Brown 13, 17% - - - - -	: CGY.
Vat Brown 57, 12.8% - - - - -	: CGY, HST.
Vat brown dyes, all other- - - - -	: VPC.
VAT BLACK DYES:	
Vat Black 16 - - - - -	: CGY.
Vat Black 22, 19% - - - - -	: CGY.
Vat Black 25, 12-1/2% - - - - -	: BAS, CGY.
Vat black dyes, all other- - - - -	: SDC.
MISCELLANEOUS DYES	
All other dyes - - - - -	: MIL.

TABLE 3.--DYES: DIRECTORY OF MANUFACTURERS, 1983

ALPHABETICAL DIRECTORY BY CODE

[Names of manufacturers that reported production and/or sales of dyes to the U.S. International Trade Commission for 1983 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 Corp.	MIL	Milliken & Co., Milliken Chemical Co.
ATL	Atlantic Industries, Inc.	MRT	Morton-Thiokol, Inc., Morton Chemical Div.
BAS	BASF Wyandotte Corp.	MRX	Max Marx Color & Chemical Co.
BCC	Buffalo Color Corp.	OCC	Orient Chemical Corp.
BUG	Synalloy Corp., Blackman Uhler Chemical Div.	PCW	Pfister Chemical, Inc.
CCW	Carstab Corp.	PSC	Passaic Color & Chemical Co.
CGY	Ciba-Geigy Corp.	S	Sandoz, Inc., Colors & Chemicals Div.
CIC	Color Chem International Corp.	SDC	Sodyeco, Inc.
CK	Crompton & Knowles Corp., Dyes & Chemical Div.	SDH	Sterling Drug, Inc., Hilton Davis Chemical Co. Div.
DGO	Day-Glo Color Corp.	SNA	Sun Chemical Corp., Pigment Div.
DSC	Dye Specialties, Inc.	STG	McCormick & Co., Inc., McCormick/Stange Flavor Div.
EKT	Eastman Kodak Co., Tennessee Eastman Co. Div.	SW	Sherwin-Williams Co.
FAB	Fabricolor Manufacturing Corp.	TMS	Sterling Drug, Inc., Hilton Davis Chemical Co.
HST	American Hoechst Corp., Specialty Products Div.	TNI	Gillette Co., Chemical Div.
ICI	ICI Americas, Inc., Chemical Specialties Co.	VPC	Mobay Chemical Corp., Dye & Pigment Div.
KON	H. Kohnstamm & Co., Inc.	WJ	Warner-Jennison Co.

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

STATISTICAL HIGHLIGHTS

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Organic pigments are toners and lakes¹ derived in whole or in part from benzenoid chemicals and colors.

Statistics on production and sales of all organic pigments in 1983 are given in table 1.² 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 1983 was 78 million pounds-- 9 percent more than the 71 million pounds produced in 1982. Total sales of organic pigments in 1983 amounted to 69 million pounds, valued at \$422 million, compared with 59 million pounds, valued at \$374 million, in 1982. In terms of quantity, sales of organic pigments in 1983 were 18 percent higher than in 1982; in terms of value, sales in 1983 were 13 percent higher than in 1982.

Production of toners in 1983 amounted to 77 million pounds-- 9 percent more than the 71 million pounds reported in 1982. Sales in 1983 were 69 million pounds, valued at \$420 million, compared with 58 million pounds valued at \$372 million, in 1982. Sales in 1983 were 19 percent higher than those in 1982 in terms of quantity, and 13 percent higher in terms of value. The individual toners listed in the report which were produced in the largest quantities in 1983 were Pigment Yellow 12, 13 million pounds; Pigment Blue 15.3, beta form, 9 million pounds; Pigment Red 49:1 barium toner, 4.2 million pounds; Pigment Red 57.1 calcium toner, 7.8 million pounds; Pigment Red 53:1, barium toner, 4.8 million pounds; and Pigment Yellow 14, 3.7 million pounds.

Production of lakes totaled 692,000 pounds in 1983 13--percent higher than the 613,000 pounds reported for 1982. Sales of lakes in 1983 amounted to 502,000 pounds, valued at \$2.7 million. In terms of quantity, sales of lakes in 1983 were 4 percent higher than the 1982; in terms of value, sales in 1983 were 10 percent higher than in 1982.

¹ 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.

² See also table 2 which lists these products and identifies the manufacturers by codes. The codes are listed in table 3.

V -- ORGANIC PIGMENTS

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TABLE 1.--ORGANIC PIGMENTS: U.S. PRODUCTION AND SALES, 1983

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

ORGANIC PIGMENTS	PRODUCTION	SALES		
		QUANTITY	VALUE ¹	UNIT VALUE ²
	1,000 pounds dry basis ³	1,000 pounds dry basis ³	1,000 dollars	Per pound
Grand Total-----	77,980	69,334	422,434	\$6.09
TONERS.				
Total-----	77,288	68,832	419,700	6.10
Yellow toners, total-----	22,221	17,517	90,527	5.17
Acetoacetarylide yellows:				
Pigment Yellow 1, C.I. 11 680-----	215	218	1,215	5.58
Pigment Yellow 3, C.I. 11 710-----	173	156	759	4.87
Pigment Yellow 65, C.I. 11 740-----	226	153	1,022	6.67
Pigment Yellow 73, C.I. 11 738-----	465	482	2,244	4.66
Pigment Yellow 74, C.I. 11 741-----	1,032	970	7,703	7.94
Diarylide yellows:				
Pigment Yellow 12, C.I. 21 090-----	13,327	9,092	41,043	4.51
Pigment Yellow 13, C.I. 21 100-----	462	353	2,093	5.93
Pigment Yellow 14, C.I. 21 095-----	3,713	3,316	14,387	4.32
Pigment Yellow 17, C.I. 21 105-----	670	633	3,931	6.21
Pigment Yellow 83, C.I. 21 108-----	948	1,019	9,440	9.26
All other-----	990	1,125	6,690	5.94
Orange toners, total-----	2,291	2,386	14,987	6.28
Pigment Orange 5, C.I. 21 075-----	896	848	3,805	4.49
Pigment Orange 13, C.I. 21 110-----	112	139	1,139	8.21
Pigment Orange 16, C.I. 21 160-----	610	589	3,519	5.97
Pigment Orange 34, C.I. 21 115-----	40	43	313	7.25
All other-----	633	767	6,211	8.10
Red toners, total-----	26,511	25,114	147,248	5.86
Naphthol reds, total-----	1,647	1,621	12,973	8.01
Pigment Red 2, C.I. 12 310-----	107	100	488	4.86
Pigment Red 5, C.I. 12 490-----	46	42	513	12.32
Pigment Red 17, C.I. 12 390-----	42	19	189	10.12
Pigment Red 23, C.I. 12 355-----	80	125	1,623	13.01
All other naphthol reds-----	1,372	1,335	10,160	7.61
Pigment Red 3, C.I. 12 120-----	942	928	5,033	5.42
Pigment Red 4, C.I. 12 085-----	82	96	485	5.02
Pigment Red 38, C.I. 12 120-----	128	143	1,565	10.94
Pigment Red 48:1, barium toner, C.I. 15 865-----	654	591	3,702	6.27
Pigment Red 48:2, calcium toner, C.I. 15 865-----	1,451	1,357	8,640	6.37
Pigment Red 48:4, manganese toner, C.I. 15 865-----	206	149	1,176	7.88
Pigment Red 49:1, barium toner, C.I. 15 630-----	4,241	5,865	22,699	3.87
Pigment Red 49:2, calcium toner, C.I. 15 630-----	765	805	3,869	4.81
Pigment Red 52:1, calcium toner, C.I. 15 860-----	1,104	1,056	6,121	5.80
Pigment Red 52:2, manganese toner, C.I. 15 860-----	318	310	1,707	5.50
Pigment Red 53:1, barium toner, C.I. 15 585-----	4,751	4,048	16,185	4.00
Pigment Red 57:1, calcium toner, C.I. 15 850-----	7,770	6,167	26,848	4.35
Pigment Red 81, PMA, C.I. 45 160-----	451	430	6,175	14.36
All other-----	2,001	1,548	30,070	19.43

See footnotes at end of table.

TABLE 1.--ORGANIC PIGMENTS: U.S. PRODUCTION AND SALES, 1983--CONTINUED

ORGANIC PIGMENTS	PRODUCTION	SALES		
		QUANTITY	VALUE ¹	UNIT VALUE ²
	1,000 pounds dry basis ³	1,000 pounds dry basis ³	1,000 dollars	Per pound
TONERS--Continued				
Violet toners, total-----	2,518	2,488	45,892	\$18.45
Pigment Violet 1, PTA, C.I. 45 170-----	40	36	572	15.75
Pigment Violet 3, PMA, C.I. 42 535-----	418	411	4,731	11.50
Pigment Violet 3, PTA, C.I. 42 535-----	20	19	290	15.50
Pigment Violet 19, C.I. 46 500-----	1,279	1,326	29,509	
Pigment Violet 23, C.I. 46 500-----	254	237	6,452	27.23
All other-----	507	459	4,338	9.45
Blue toners, total-----	20,996	18,781	102,058	5.43
Pigment Blue 15, alpha form, C.I. 74 160-----	1,434	1,265	6,493	5.13
Pigment Blue 15:1, alpha form, C.I. 74 160-----	976	838	8,256	9.85
Pigment Blue 15:2, alpha form, C.I. 74 160-----	812	756	8,261	10.92
Pigment Blue 15:3, beta form, C.I. 74 160-----	8,990	7,529	37,453	4.97
All other-----	8,784	8,393	41,595	4.96
Green toners, total-----	2,201	2,008	17,311	8.62
Pigment Green 7, C.I. 74 260-----	1,995	1,834	14,861	8.10
All other-----	206	174	2,450	14.08
Brown and Black toners,-----	550	538	1,677	3.12
LAKES				
TOTAL-----	692	502	2,734	5.44
Pigment Red 60:1, C.I. 16 105-----	318	286	1,600	5.60
Pigment Red 83, C.I. 58 000-----	33	31	316	10.18
Pigment Violet 5:1, C.I. 58 055-----	58	60	510	8.51
All other lakes-----	283	125	308	2.46

¹The 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 costs of processing or packaging in commercial forms other than the dry full-strength or dry form.

²Calculated from unrounded figures.

³Quantities 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, 1983

[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, CGY, GLX, HSH, HST, KCW, KON, MRX, SNA, VPC.
Pigment Yellow 42- - - - -	VPC.
Pigment Yellow 60- - - - -	HSH.
*Pigment Yellow 65- - - - -	DUP, HSH, SNA, VPC.
*Pigment Yellow 73- - - - -	HSH, HST, SNA, VPC.
*Pigment Yellow 74- - - - -	BAS, CGY, DUP, HSH, HST, SDH, SNA, VPC.
Pigment Yellow 75- - - - -	CGY, HST.
Pigment Yellow 97- - - - -	HST.
Pigment Yellow 98- - - - -	HST.
Pigment Yellow 116 - - - - -	VPC.
Acetoacetarylide yellows, all others - - - - -	CGY, HST, KCW, VPC.
DIARYLIDE YELLOWS:	
*Pigment Yellow 12- - - - -	AMS, APO, BAS, BOR, GLX, HSH, HST, ICC, IDC, IND, POP, ROM, SDH, SNA, VPC.
*Pigment Yellow 13- - - - -	AMS, APO, BAS, CGY, GLX, HST, ICC, 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, IDC, IND, ROM, SDH, SNA, VPC.
Pigment Yellow 55- - - - -	CGY, GLX.
*Pigment Yellow 83- - - - -	BAS, GLX, HST, ICC, IND, ROM, SNA, VPC.
Pigment Yellow 124 - - - - -	GLX.
Pigment Yellow 126 - - - - -	HST.
Pigment Yellow 127 - - - - -	HST.
Pigment Yellow 152 - - - - -	HST.
Diarylide yellows, other - - - - -	GLX, ROM.
YELLOW PIGMENTS, OTHER:	
(Basic Yellow 2), fugitive - - - - -	MRX.
Pigment Yellow 62- - - - -	CGY.
Pigment Yellow 93- - - - -	CGY.

TABLE 2.--ORGANIC PIGMENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER,
1983--CONTINUED

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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 - - - - -	: VPC.
*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 - - - - -	: IND, ROM, VPC.
Pigment Orange 36 - - - - -	: HST.
Pigment Orange 38 - - - - -	: HST.
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 - - - - -	: CGY, GLX, HSH, HST, KCW.
*Pigment Red 5 - - - - -	: CGY, GLX, HSH, ROM.
Pigment Red 7 - - - - -	: GLX, HST.
Pigment Red 9 - - - - -	: HST, MRX.
Pigment Red 13 - - - - -	: KCW.
*Pigment Red 17 - - - - -	: BNS, CGY, IND, ROM, SNA, UHL.
Pigment Red 21 - - - - -	: BNS.
Pigment Red 22 - - - - -	: CGY, DUP, SNA.
*Pigment Red 23 - - - - -	: CGY, DUP, GLX, HSH, IND, KCW, SDH, SNA, UHL.
Pigment Red 31 - - - - -	: GLX, ROM, SDH.
Pigment Red 52 - - - - -	: VPC.
Pigment Red 112 - - - - -	: CGY, HST, VPC.
Pigment Red 119 - - - - -	: VPC.
Pigment Red 146 - - - - -	: HST.
Pigment Red 147 - - - - -	: HSH.
Pigment Red 170 - - - - -	: GLX, HST.
Pigment Red 500 - - - - -	: VPC.
Naphthol reds, all other - - - - -	: BUC, GLX, HST, IND, KCW, ROM, SNA, VPC, X, X.
RED PIGMENTS, OTHER:	
Pigment Red 1, (light) - - - - -	: HSH.
*Pigment Red 3 - - - - -	: BAS, CGY, CIK, HSH, KCW, MRX, SDH, SNA, UHL.

SYNTHETIC ORGANIC CHEMICALS, 1983

TABLE 2.--ORGANIC PIGMENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER,
1983--CONTINUED

ORGANIC PIGMENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
TONERS--CONTINUED	
*RED TONERS--CONTINUED	
RED PIGMENTS, OTHER--CONTINUED	
*Pigment Red 4- - - - -	: ALE, CGY, HSH, KCW, KON, MRX, SDH, UHL.
Pigment Red 6- - - - -	: DUP, KCW.
*Pigment Red 38 - - - - -	: HSH, HST, SNA, VPC.
Pigment Red 41 - - - - -	: VPC.
Pigment Red 48 - - - - -	: CGY, DUP.
*Pigment Red 48:1, (barium) - - - - -	: AMS, BAS, BOR, CIK, DUP, HSH, MGR, MRX, SNA, UHL.
*Pigment Red 48:2, (calcium)- - - - -	: AMS, BAS, CIK, DUP, HSH, MGR, MRX, SDH, SNA, UHL, VPC.
Pigment Red 48:3, (strontium)- - - - -	: CGY, HSH.
*Pigment Red 48:4, (manganese)- - - - -	: CGY, DUP, 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, BOR, CIK, IDC, MGR, SDH, SNA.
*Pigment Red 52:1, (calcium)- - - - -	: BAS, CGY, MGR, SNA, UHL.
*Pigment Red 52:2, (manganese)- - - - -	: BAS, CGY, HSH, UHL.
Pigment Red 53, (sodium) - - - - -	: ICC.
*Pigment Red 53:1, (barium) - - - - -	: 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, DUP, HSH, ICC, IDC, KON, MGR, SDH, SNA, UHL.
Pigment Red 63 - - - - -	: HSH, SNA.
*Pigment Red 81, (PMA)- - - - -	: LVR, MGR, MRX, SNA, UHL, VPC.
Pigment Red 81, (PTA)- - - - -	: MGR, MRX, UHL.
Pigment Red 88 - - - - -	: VPC.
Pigment Red 90 - - - - -	: SDH.
Pigment Red 122- - - - -	: SNA.
Pigment Red 123- - - - -	: VPC.
Pigment Red 166- - - - -	: CGY.
Pigment Red 168- - - - -	: VPC.
Pigment Red 179- - - - -	: VPC.
Pigment Red 181- - - - -	: HST.
Pigment Red 188- - - - -	: HST.
Pigment Red 200- - - - -	: BAS, SNA.
Pigment Red 202- - - - -	: DUP, SNA.
Pigment Red 206- - - - -	: DUP.
Pigment Red 207- - - - -	: DUP.
Pigment Red 211- - - - -	: VPC.
Pigment Red 224- - - - -	: VPC.
Pigment Red 245- - - - -	: IND.
Pigment red toners, all other- - - - -	: CGY, DUP, HST.

TABLE 2.--ORGANIC PIGMENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER,
1983--CONTINUED

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ORGANIC PIGMENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
TONERS--CONTINUED	
*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, KOM, MGR, MRX, SDH, UHL.
*Pigment Violet 3, (PTA) - - - - -	: MGR, MRX, UHL.
Pigment Violet 3 - - - - -	: VPC.
Pigment Violet 4, (fugitive) - - - - -	: KCW.
*Pigment Violet 19 - - - - -	: DUP, SNA, VPC.
*Pigment Violet 23 - - - - -	: HST, ROM, SNA, VPC.
Pigment Violet 29 - - - - -	: VPC.
Pigment Violet 39, (fugitive) - - - - -	: X.
Pigment Violet 39, (PMA) - - - - -	: X.
Pigment Violet 42 - - - - -	: DUP.
Pigment violet toners, all other - - - - -	: BUC, VPC.
*BLUE TONERS:	
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, DUP, HSH, SDH, SNA, USM, VPC.
*Pigment Blue 15:1, (α form) - - - - -	: BAS, CGY, DUP, SDH, SNA, VPC.
*Pigment Blue 15:2, (α form) - - - - -	: BAS, CGY, DUP, SDH, SNA, VPC.
*Pigment Blue 15:3, (β form) - - - - -	: AMS, APO, BAS, BOR, BUC, CGY, CIK, CUS, DUP, IDC, IPP, : MGR, POP, ROM, SDH, SNA, VPC.
Pigment Blue 15:4, (β form) - - - - -	: BAS, CGY, DUP, SNA.
Pigment Blue 19 - - - - -	: SW.
Pigment Blue 25 - - - - -	: GLX.
Pigment Blue 61 - - - - -	: BAS.
Pigment blue toners, all other - - - - -	: VPC.
*GREEN TONERS:	
Pigment Green 1, (PMA) - - - - -	: LVR, MRX, UHL.
Pigment Green 2, (PMA) - - - - -	: MRX.
Pigment Green 2, (PTA) - - - - -	: UHL.
Pigment Green 4, (fugitive) - - - - -	: UHL.
Pigment Green 4, (PMA) - - - - -	: UHL.
Pigment Green 4, (PTA) - - - - -	: UHL.
*Pigment Green 7 - - - - -	: ALG, CIK, DUP, POP, SDH, SNA, VPC.
Pigment Green 8 - - - - -	: CGY, KCW.
Pigment Green 10 - - - - -	: DUP.

SYNTHETIC ORGANIC CHEMICALS, 1983

TABLE 2.--ORGANIC PIGMENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER,
1983--CONTINUED

ORGANIC PIGMENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
TONERS--CONTINUED	
*GREEN TONERS--CONTINUED	
Pigment Green 36 - - - - -	HST, SNA, VPC.
Pigment green toners, all other- - - - -	VPC, X.
*BROWN TONERS:	
Pigment Brown 2- - - - -	UHL.
Pigment Brown 3, (fugitive)- - - - -	KON.
Pigment Brown 3, (PMA) - - - - -	KON.
Pigment Brown 5- - - - -	GLX, ICC, VPC.
Pigment Brown 22 - - - - -	VPC.
Pigment brown toners, all other- - - - -	SDH, VPC.
*BLACK TONERS:	
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:	
(Acid Red 26)- - - - -	KCW.
(Basic Red 1)- - - - -	BNS.
*Pigment Red 60:1 - - - - -	HSH, KON, MRX, SDH, SNA.
*Pigment Red 83 - - - - -	CGY, HSH, MRX, UHL.
VIOLET LAKES:	
(Basic Violet 1) - - - - -	BNS.
(Basic Violet 4) - - - - -	BNS.
(Basic Violet 10)- - - - -	BNS.
*Pigment Violet 5:1 - - - - -	HSH, KON, MRX, UHL, VPC.
BLUE LAKES:	
Pigment Blue 24- - - - -	SDH.

V -- ORGANIC PIGMENTS

SYNTHETIC ORGANIC CHEMICALS, 1983

TABLE 3.—ORGANIC PIGMENTS: DIRECTORY OF MANUFACTURERS, 1983

ALPHABETICAL DIRECTORY BY CODE

[Names of manufacturers that reported production and/or sales of organic pigments to the U.S. International Trade Commission for 1983 are listed below in the order of their identification codes as used in table 2]

CODE	NAME OF COMPANY	CODE	NAME OF COMPANY
ALE	Alex Chemical Co.	IND	Indol Color Co., Inc.
ALG	Allegheny Chemical Corp.	IPP	International Pigment Processing Corp.
AMS	Ridgway Color Co.		
APD	Apollo Colors, Inc.	KCW	Keystone Color Works, Inc.
		KON	H. Kohnstamm & Co., Inc.
BAS	BASF Wyandotte Corp.		
BNS	Binney and Smith, Inc.	LVR	C. Lever Co., Inc.
BOR	Borden, Inc., Graphics Div., Specialty Products	MGR	Magruder Color Co., Inc.
BUC	Synalloy Corp., Blackman Uhler Chemical Div.	MRX	Max Marx Color & Chemical Co.
CGY	Ciba-Geigy Corp.	POP	Pope Chemical Corp.
CIK	Flint Ink Corp., Cal/Ink Div.		
CUS	Customs Pigments Corp.	ROM	Roma Chemical, Inc.
DUP	E. I. duPont de Nemours & Co., Inc.	SDH	Sterling Drug, Inc., Hilton Davis Chemical Co. Div.
GLX	Galaxie Chemical Corp.	SNA	Sun Chemical Corp., Pigment Div.
		SW	Sherwin-Williams Co.
HSH	Harshaw/Filtrol Partnership		
HST	American Hoechst Corp., Specialty Products Div.	TMS	Sterling Drug, Inc., Hilton Davis Chemical Co.
ICC	Immont Corp. Div. of United Technologies Corp.	UHL	Paul Uhlich & Co., Inc.
		USM	Crown Metro, Inc.
IDC	Industrial Color, Inc.		
		VPC	Mobay Chemical Corp., Dye & Pigment Div.

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

STATISTICAL HIGHLIGHTS

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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.

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.¹ 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 1983 amounted to 233.1 million pounds. Total sales of bulk medicinal chemicals in 1983 amounted to 147.9 million pounds, valued at \$1,410.1 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 1983 was as follows: Antibiotics, 31.9 million pounds, 1.9 percent less than in 1982;

¹Complementary 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.

anti-infective agents other than antibiotics, 22.9 million pounds, 6.7 percent less than in 1982; central nervous system depressants and stimulants, 64.6 million pounds, 18.8 percent more than in 1982; gastrointestinal agents and therapeutic nutrients, 58.2 million pounds, 6.5 percent less than in 1982; and vitamins, 39.0 million pounds, 5.3 percent less than in 1982.

Production of some of the more important individual products in the table was as follows: Choline chloride, 52.8 million pounds, 8.4 percent less than in 1982; aspirin, 30.7 million pounds, 31.3 percent more; penicillins (except semisynthetic), 6.1 million pounds, 18.3 percent less; vitamin E, 8.7 million pounds, 11.4 percent more; and tetracyclines, 7.2 million pounds, 0.1 percent less.

TABLE 1.--MEDICINAL CHEMICALS: U.S. PRODUCTION AND SALES, 1983

[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	PRODUCTION ¹	SALES		
		QUANTITY	VALUE	UNIT VALUE ²
	1,000 pounds	1,000 pounds	1,000 dollars	Per pound
Grand total-----	233,109	147,940	1,410,068	\$9.53
Acyclic-----	58,191	50,339	128,019	2.54
Benzenoid ³ -----	126,538	72,468	703,024	9.70
Cyclic nonbenzenoid ⁴ -----	48,380	25,133	579,025	23.04
Antibiotics, total-----	31,886	11,970	468,761	39.16
Cephalosporins-----	1,441	...	...	...
Penicillins, semisynthetic, total-----	1,866	298	16,626	55.79
Amoxicillin-----	789	...	...	...
Ampicillin-----	576	...	...	...
Cloxacillin, sodium-----	46	...	...	...
Dicloxacillin, sodium-----	43	...	...	...
Oxacillin, sodium-----	42	...	...	...
All other (semisynthetic) ⁵ -----	370	298	16,626	55.79
Penicillins (except semisynthetic), for all uses-----	6,067	1,528	23,344	15.28
Penicillin V, for medicinal uses-----	...	283	5,886	20.80
All other-----	6,067	1,245	17,458	14.02
Tetracyclines, for all uses-----	7,203	3,041	84,205	27.69
Other antibiotics, total-----	15,309	7,103	344,586	48.51
For medicinal use ⁶ -----	3,900	2,456	283,103	115.35
Amphotericin B-----	199	184	18,182	99.06
All other-----	3,701	2,272	264,921	116.60
For nonmedicinal uses-----	11,409	4,647	61,483	13.23
Antihistamines, total-----	229	143	5,512	38.55
Antinauseants-----	61	40	1,443	36.08
All other-----	168	103	4,069	39.50
Anti-infective agents (except antibiotics), total-----	22,890	8,957	47,543	5.31
Anthelmintics-----	7,000	3,168	4,887	1.54
Antifungal agents-----	680	665	2,351	3.54
Antiprotozoan agents, total-----	9,552	1,774	11,230	6.33
Sulfonamides ⁷ -----	2,758	1,077	13,153	12.21
Sulfamethazine-----	531	...	...	...
All other-----	2,227	1,077	13,153	12.21
Urinary antiseptics-----	100	...	...	...
Other anti-infective agents ⁸ -----	2,800	2,273	15,922	7.00
Autonomic drugs, total-----	1,151	735	17,840	24.27
Sympathomimetic (adrenergic) agents, total-----	1,118	727	15,650	21.53
Phenylpropanolamine hydrochloride-----	405	...	...	...
All other-----	713	727	15,650	21.53
Other autonomic drugs-----	33	8	2,190	312.86
Central depressants and stimulants, total-----	64,558	44,129	282,537	6.40
Analgesics, antipyretics, and nonhormonal anti-inflammatory agents, total-----	57,864	40,142	125,397	3.12
Aspirin-----	30,748	...	...	...
All other ⁹ -----	27,116	40,142	125,397	3.12
Anticonvulsants, hypnotics, and sedatives-----	1,580	336	11,446	34.07
Antidepressants-----	128	14	1,476	105.43
Antitussives, total-----	256	248	40,123	161.79
Codeine-----	...	91	25,738	282.84
All other-----	256	157	14,385	91.62

TABLE 1.--MEDICINAL CHEMICALS: U.S. PRODUCTION AND SALES, 1983--CONTINUED

MEDICINAL CHEMICALS	PRODUCTION ¹	SALES		
		QUANTITY	VALUE	UNIT ¹ VALUE ²
	1,000 pounds	1,000 pounds	1,000 dollars	per pound
Central depressants and stimulants--Continued				
Tranquilizers-----	191	14	8,478	\$605.57
Phenothiazine derivatives-----	44	...	...	...
All other-----	147	14	8,478	605.77
Other central depressants and stimulants ¹⁰ -----	4,539	3,375	95,617	28.33
Dermatological agents-----	5,401	4,931	5,909	1.20
Expectorants and mucolytic agents-----	1,579	1,427	10,782	7.56
Gastrointestinal agents and therapeutic nutrients, total ¹¹ -----	58,213	47,892	37,123	.78
Choline chloride, all grades-----	52,806	45,105	26,081	.58
All other-----	5,407	2,787	11,042	3.96
Hormones and synthetic substitutes-----	1,201	...	...	...
Local anesthetics, total-----	122	130	2,223	17.10
Lidocaine-----	19	...	...	...
All other-----	103	130	2,223	17.10
Renal-acting and edema-reducing agents-----	1,202	181	9,027	49.87
Smooth muscle relaxants ¹² -----	78	...	...	...
Vitamins, total-----	38,952	26,166	259,218	9.91
Vitamin E-----	8,726	6,588	111,208	16.88
All other vitamins ¹³ -----	30,226	19,578	148,010	7.56
Miscellaneous medicinal chemicals ¹⁴ -----	5,647	1,279	263,593	206.09

¹The 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.

²Calculated from rounded figures.

³Benzenoid, 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.

⁴Includes antibiotics of unknown structure.

⁵Includes sales quantity and value of amoxicillin; ampicillin; cloxacillin, sodium; dicloxacillin, sodium; and oxacillin, sodium.

⁶Includes production and sales of antifungal and antitubercular antibiotics; and sales quantity and value of cephalosporins.

⁷Does not include production of sulfaguanidine used as an intermediate in the production of anti-infective sulfonamides.

⁸Includes sales quantity and value of urinary antiseptics.

⁹Includes sales quantity and value of aspirin.

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

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

¹²Includes theophylline derivatives.

¹³Includes production and sales of vitamin A, vitamin B, vitamin C, vitamin D, and vitamin K.

¹⁴Includes production and sales of antineoplastic agents, cardiovascular agents, diagnostic agents, hematological agents, and unclassified medicinal chemicals. Also includes sales quantity and value of hormones and synthetic substitutes, and smooth muscle relaxants.

TABLE 2.--MEDICINAL CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1983

[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)

*ANTIBIOTICS:	
*CEPHALOSPORINS:	
Cefaclor - - - - -	: LIL.
Cefamandole - - - - -	: LIL.
Cefazolin, sodium - - - - -	: LIL, SK.
Cefoxitin - - - - -	: MRK.
Cephalexin - - - - -	: LIL.
Cephaloridine - - - - -	: LIL.
Cephalthin, sodium - - - - -	: LIL.
Cephapirin - - - - -	: BRS.
Cephapirin, sodium - - - - -	: BRS.
Cephradine - - - - -	: SK, TRD.
*PENICILLINS, SEMISYNTHETIC:	
*AMOXICILLIN:	
Amoxicillin (trihydrate) - - - - -	: BEE, BOC, BRS.
Amoxicillin (anhydrous) - - - - -	: WYT.
*AMPICILLIN:	
Ampicillin (anhydrous) - - - - -	: BRS, WYT.
Ampicillin (trihydrate) - - - - -	: BEE, BOC, BRS.
OTHER SEMISYNTHETIC PENICILLINS:	
Ampicillin, sodium - - - - -	: BEE, BRS, WYT.
Carbenicillin, disodium - - - - -	: BEE, PFZ.
Carbenicillin indanyl, sodium - - - - -	: PFZ.
Cloxacillin, benzathine - - - - -	: BEE, BRS.
* Cloxacillin, sodium - - - - -	: BEE, BOC, BRS.
Cyclacillin - - - - -	: WYT.
* Dicloxacillin, sodium - - - - -	: BEE, BOC, BRS, WYT.
Metacillin, potassium - - - - -	: BRS.
Methicillin, sodium - - - - -	: BRS.
Nafticillin, sodium - - - - -	: BEE, BRS, WYT.
* Oxacillin, sodium - - - - -	: BEE, BOC, BRS.
Piperacillin - - - - -	: BRS.
Ticarcillin, disodium - - - - -	: BEE.
* PENICILLINS (EXCEPT SEMISYNTHETIC):	
FOR MEDICINAL USE:	
* Penicillin V - - - - -	: BRS, PFZ, WYT.

TABLE 2.--MEDICINAL CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

MEDICINAL CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
*ANTIBIOTICS--CONTINUED	
*PENICILLINS (EXCEPT SEMISYNTHETIC)--CONTINUED	
FOR MEDICINAL USE--CONTINUED	
* Penicillin G, benzathine - - - - -	: BRS, WYT.
Penicillin G, potassium - - - - -	: PFZ, WYT.
Penicillin V, potassium - - - - -	: BRS, LIL.
Penicillin G, procaine (medicinal grade) - - - - -	: PFZ, WYT.
FOR NONMEDICINAL USES:	
Penicillin G, procaine (animal feed grade) - - - - -	: MRK, PFZ.
*TETRACYCLINES:	
FOR MEDICINAL USE:	
Chlortetracycline (medicinal grade) - - - - -	: ACY.
Demeclocycline - - - - -	: ACY.
Doxycycline - - - - -	: PFZ.
Methacycline - - - - -	: PFZ.
Minocycline - - - - -	: ACY.
Tetracycline - - - - -	: ACY.
FOR NONMEDICINAL USES:	
Chlortetracycline (animal feed grade) - - - - -	: ACY, RLS.
Oxytetracycline (animal feed grade) - - - - -	: PFZ.
*OTHER ANTIBIOTICS:	
*FOR MEDICINAL USE:	
ANTIFUNGAL ANTIBIOTICS:	
*Amphotericin B - - - - -	: CLP, OMS, PEN, TRD.
Nystatin (medicinal grade) - - - - -	: ACY, OMS, TRD.
Tobramycin - - - - -	: LIL.
ANTITUBERCULAR ANTIBIOTICS:	
Dihydrostreptomycin - - - - -	: PFZ.
Streptomycin (medicinal grade) - - - - -	: PFZ.
OTHER ANTIBIOTICS FOR MEDICINAL USE:	
Amikacin sulfate - - - - -	: BRS.
Bacitracin (medicinal grade) - - - - -	: IMC.
Chloramphenicol - - - - -	: PD.
Clindamycin - - - - -	: UPJ.
Erythromycin - - - - -	: ABB, UPJ.
Erythromycin estolate - - - - -	: LIL.
Erythromycin stearate - - - - -	: UPJ.
Gentamycin - - - - -	: SCH.
Kanamycin - - - - -	: BRS.
Lincomycin (medicinal grade) - - - - -	: UPJ.
Moxalactam - - - - -	: LIL.
Neomycin (medicinal grade) - - - - -	: UPJ.
Netilmicin - - - - -	: SCH.
Novobiocin, sodium - - - - -	: MRK, UPJ.

TABLE 2.--MEDICINAL CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1983--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	
Polymyxin B- - - - -	PFZ.
Sisomycin- - - - -	SCH.
Spectinomycin (medicinal grade)- - - - -	ABB, UPJ.
Thiostrepton - - - - -	OMS.
Vancomycin - - - - -	LIL.
*FOR NONMEDICINAL USES:	
Bacitracin (animal feed grade) - - - - -	IMC.
Cycloheximide- - - - -	UPJ.
Hygromycin B - - - - -	LIL, X.
Lasalocid- - - - -	HOF.
Lincomycin (animal feed grade) - - - - -	UPJ.
Monesin- - - - -	LIL.
Neomycin (animal feed grade) - - - - -	PFZ, UPJ.
Streptomycin - - - - -	LIL, PFZ.
Tylosin- - - - -	LIL.
*ANTIHIISTAMINES:	
*ANTINAUSEANTS:	
Cyclizine hydrochloride- - - - -	BUR.
Dimenhydrinate - - - - -	GAN.
Meclizine hydrochloride- - - - -	PFZ.
Metoclopramide hydrochloride - - - - -	LLI.
Trimethobenzamide hydrochloride- - - - -	GAN, HOF.
OTHER ANTIHIISTAMINES:	
Azatadine maleate- - - - -	SCH.
Bromodiphenhydramine hydrochloride - - - - -	PD.
Brompheniramine maleate- - - - -	HEX, LLI.
Chlorpheniramine maleate - - - - -	HEX.
Cyproheptadine hydrochloride - - - - -	GAN, MRK.
Dexbrompheniramine maleate - - - - -	SCH.
Dimethindene maleate - - - - -	CGY.
Diphenhydramine- - - - -	WYK.
Diphenhydramine citrate- - - - -	WYK.
Diphenhydramine hydrochloride- - - - -	PD, WYK.
Doxylamine succinate - - - - -	BKC, HOF.
Phenindamine tartrate - - - - -	HOF.
Phenyltoloxamine citrate - - - - -	BRS, GAN, PD.
Pyrilamine maleate - - - - -	HEX.
Tripeleannamine - - - - -	CGY.
Tripeleannamine citrate - - - - -	CGY.
Tripeleannamine hydrochloride - - - - -	BUR, CGY.

TABLE 2.--MEDICINAL CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

MEDICINAL CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
*ANTI-INFECTIVE AGENTS (EXCEPT ANTIBIOTICS):	
*ANTHELMINTICS:	
Dichlorvos - - - - -	SHC.
Diethylcarbamazine citrate - - - - -	SK.
Ivermectin - - - - -	MRK.
Phenothiazine - - - - -	WAG(E).
Piperazine - - - - -	TX, UCC.
Piperazine dihydrochloride - - - - -	FLM, TX.
Piperazine hexahydrate - - - - -	TX.
Piperazine hydrochloride - - - - -	FLM, WHL.
Piperazine phosphate - - - - -	TX.
Pyrantel pamoate - - - - -	PFZ.
Pyrantel tartrate - - - - -	PFZ.
Thiabendazole - - - - -	MRK.
* ANTIPROTOZOAN AGENTS:	
ARSENIC AND BISMUTH COMPOUNDS:	
Arsanilic acid - - - - -	FLM, WHL.
Bismuth subsalicylate - - - - -	NOR.
Carbarsone - - - - -	WHL.
Nitarsone - - - - -	SAL.
Roxarsone - - - - -	SAL.
Roxarsone, sodium - - - - -	SAL.
OTHER ANTIPROTOZOAN AGENTS:	
Aklomide - - - - -	SAL.
Amodiaquine hydrochloride - - - - -	PD.
Amprolium - - - - -	MRK.
Dinitolmide - - - - -	SAL.
Ethopabate - - - - -	MRK.
Furazolidone - - - - -	NOR.
Hydroxychloroquine sulfate - - - - -	SDW.
Iodochlorhydroxyquin - - - - -	CGY.
Ipronidazole - - - - -	HOF.
Metronidazole - - - - -	SRL.
Nitromide - - - - -	SAL.
*SULFONAMIDES:	
Mafenide acetate - - - - -	SDW.
Sulfabenzamide - - - - -	ACY.
Sulfacetamide - - - - -	SCH.
Sulfachlorpyridazine - - - - -	ACY.
Sulfacytine - - - - -	PD.
Sulfadiazine - - - - -	ACY.
Sulfadiazine, silver - - - - -	LEM.

TABLE 2.--MEDICINAL CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

MEDICINAL CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
*ANTI-INFECTIVE AGENTS (EXCEPT ANTIBIOTICS)--CONTINUED	
*SULFONAMIDES--CONTINUED	
Sulfadimethoxine - - - - -	HOF.
*Sulfamethazine - - - - -	ACY, RLS, SAL.
Sulfamethazine, sodium - - - - -	SAL.
Sulfamethizole - - - - -	ACY.
Sulfamethoxazole - - - - -	HOF.
Sulfanilamide - - - - -	CLP.
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 - - - - -	NOD.
ANTILEPROTIC AND ANTITUBERCULAR AGENTS:	
Aminosalicyclic acid - - - - -	HXL.
Sulfoxone, sodium - - - - -	ABB.
MERCURY COMPOUNDS:	
Merbromin - - - - -	HYN.
GENERAL ANTISEPTICS AND ANTIBACTERIAL AGENTS:	
Bromchlorenone - - - - -	MHI.
Carbadox - - - - -	PFZ.
Cetylpyridinium chloride - - - - -	HEX, HXL.
Chlorhexidine gluconate - - - - -	WHL.
Chlorobutanol - - - - -	SFS.
m-Cresyl acetate - - - - -	ADC.
8-Hydroxy-5-quinolinesulfonic acid - - - - -	MRK.
Iodoform - - - - -	DPW, PEN.
Nalidixic acid - - - - -	SDH.
Norfloxacin - - - - -	MRK.
Ormetoprim - - - - -	HOF.
Povidone - iodine - - - - -	GAF.
Pyrrithione, zinc - - - - -	NES.
Resorcinol - - - - -	KPT, LEM.

TABLE 2.--MEDICINAL CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

MEDICINAL CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
*ANTI-INFECTIVE AGENTS (EXCEPT ANTIBIOTICS)--CONTINUED	
*OTHER ANTI-INFECTIVE AGENTS--CONTINUED	
GENERAL ANTISEPTICS AND ANTIBACTERIAL AGENTS--CONTINUED	
Trimethoprim - - - - -	BUR, HOF.
Anti-infective agents, all other - - - - -	LIL.
*AUTONOMIC DRUGS:	
*SYMPATHOMIMETIC AGENTS:	
Dobutamine hydrochloride - - - - -	LIL.
Isoproterenol sulfate - - - - -	ABB.
Mephentermine - - - - -	ARA.
Mephentermine sulfate - - - - -	ARA.
Metaraminol bitartrate - - - - -	MRK.
Methoxyphenamine hydrochloride - - - - -	HXL.
Naphazoline hydrochloride - - - - -	CGY.
Phenylephrine - - - - -	SDW.
Phenylephrine bitartrate - - - - -	GAN.
Phenylephrine hydrochloride - - - - -	GAN, SDW.
* Phenylpropanolamine hydrochloride - - - - -	ARS, GAN, MEP, ORT, PD.
Propylhexedrine - - - - -	PD, SK.
Pseudoephedrine hydrochloride - - - - -	BUR, GAN.
Pseudoephedrine sulfate - - - - -	GAN.
Terbutaline sulfate - - - - -	CGY.
Tetrahydrozoline hydrochloride - - - - -	PFZ.
*OTHER AUTONOMIC DRUGS:	
PARASYMPATHOLYTIC QUATERNARY AMMONIUM COMPOUNDS (EXCEPT TROPANE DERIVATIVES):	
Diphepanil methylsulfate - - - - -	SCH.
Glycopyrrolate - - - - -	LLI.
Isopropamide iodide - - - - -	SK.
Propantheline bromide - - - - -	SRL.
Tridihexethyl chloride - - - - -	ACY.
PARASYMPATHOLYTIC TERTIARY AMINES (EXCEPT TROPANE DERIVATIVES):	
Oxybutynin chloride - - - - -	PD.
Tertiary amines (except tropane derivatives), all other - - - - -	ACY.
PARASYMPATHOLYTIC TROPANE DERIVATIVES:	
Anisotropine methylbromide - - - - -	ARA.
Benztropine mesylate - - - - -	ARA.
PARASYMPATHOMIMETIC AGENTS:	
Bethanechol chloride - - - - -	GAN.
Neostigmine bromide - - - - -	HOF.
Neostigmine methylsulfate - - - - -	HOF.
Pyridostigmine bromide - - - - -	HOF.

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TABLE 2.--MEDICINAL CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

MEDICINAL CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
*CENTRAL DEPRESSANTS AND STIMULANTS--CONTINUED	
*ANTICONVULSANTS, HYPNOTICS, AND SEDATIVES--CONTINUED.	
ANTICONVULSANTS (EXCEPT BARBITURATES)--CONTINUED	
Ethotoin - - - - -	ABB.
Methsuximide - - - - -	PD.
Phenytoin- - - - -	PD.
Phenytoin, sodium- - - - -	PD.
Valproate, calcium - - - - -	PD.
Valproic acid- - - - -	ABB.
BARBITURATES:	
Amobarbital- - - - -	GAN.
Amobarbital, sodium- - - - -	GAN.
Barbital, sodium - - - - -	GAN.
Butabarbital - - - - -	GAN.
Butabarbital, sodium - - - - -	ABB, GAN.
Butalbital - - - - -	GAN.
Hexobarbital - - - - -	GAN.
Mephobarbital- - - - -	GAN.
Metharbital- - - - -	ABB.
Pentobarbital- - - - -	GAN.
Pentobarbital, sodium- - - - -	ABB, GAN.
Phenobarbital- - - - -	GAN.
Phenobarbital, sodium- - - - -	GAN.
Secobarbital - - - - -	GAN.
Secobarbital, sodium - - - - -	GAN.
Talbutal - - - - -	GAN.
Thiamylal, sodium- - - - -	ABB, PD.
Thiopental, sodium - - - - -	ABB.
HYPNOTICS AND SEDATIVES (EXCEPT BARBITURATES):	
Alprazolam - - - - -	UPJ.
Carbromal- - - - -	PD.
Ethchlorvynol - - - - -	ABB.
Glutethimide - - - - -	CGY, GAN.
Methypylon- - - - -	HOF.
*ANTIDEPRESSANTS:	
Amitriptyline- - - - -	MRK.
Amitriptyline hydrochloride- - - - -	GAN, MRK, PD.
Desipramine hydrochloride- - - - -	PFZ.
Doxepin hydrochloride- - - - -	PFZ, SK.
Imipramine hydrochloride - - - - -	CGY.
Maprotiline hydrochloride- - - - -	CGY.
Nortriptyline hydrochloride- - - - -	LIL.
*ANTIITUSSIVES:	
Benzonatate- - - - -	CGY.

TABLE 2.--MEDICINAL CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

MEDICINAL CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
*CENTRAL DEPRESSANTS AND STIMULANTS--CONTINUED	
*ANTI-TUSSIVES--CONTINUED	
Caramiphen edisylate - - - - -	SK.
Carbetapentane citrate - - - - -	PFZ.
*Codeine - - - - -	MAL, MRK, PEN.
Dextromethorphan hydrobromide - - - - -	AMD, HOF.
Ethylmorphine hydrochloride - - - - -	MRK.
Hydrocodone bitartrate - - - - -	MAL.
Noscapine - - - - -	MAL, MRK, PEN.
Thebaine - - - - -	MAL, PEN.
*TRANQUILIZERS:	
*PHENOTHIAZINE DERIVATIVES:	
Chlorpromazine hydrochloride - - - - -	SK.
Fluphenazine hydrochloride - - - - -	TRD.
Perphenazine - - - - -	SCH.
Prochlorperazine edisylate - - - - -	SK.
Prochlorperazine maleate - - - - -	SK.
Promazine hydrochloride - - - - -	WYT.
Promethazine hydrochloride - - - - -	WYT.
Trifluoperazine - - - - -	SK.
Trifluoperazine hydrochloride - - - - -	SK.
OTHER TRANQUILIZERS:	
Buclicline hydrochloride - - - - -	PFZ.
Chlormezanone - - - - -	SDW.
Chlorprothixene - - - - -	HOF.
Clorazepate dipotassium - - - - -	ABB.
Haloperidol - - - - -	SRL.
Hydroxyzine hydrochloride - - - - -	GAN, PFZ.
Hydroxyzine pamoate - - - - -	LEM, PFZ.
Lorazepam - - - - -	WYT.
Molindone hydrochloride - - - - -	PD.
Oxazepam - - - - -	WYT.
Prazepam - - - - -	NEP.
Temazepam - - - - -	WYT.
Thiothixene hydrochloride - - - - -	PFZ.
Triazolam - - - - -	UPJ.
*OTHER CENTRAL DEPRESSANTS AND STIMULANTS:	
AMPHETAMINES:	
Amphetamine - - - - -	ARN.
Amphetamine sulfate - - - - -	ARN.
Dextroamphetamine - - - - -	ARN.
Dextroamphetamine sulfate - - - - -	ARN, SK.
Methamphetamine - - - - -	ARN.

TABLE 2.--MEDICINAL CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

MEDICINAL CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
*CENTRAL DEPRESSANTS AND STIMULANTS--CONTINUED	
*OTHER CENTRAL DEPRESSANTS AND STIMULANTS--CONTINUED	
AMPHETAMINES--CONTINUED	
Methamphetamine hydrochloride - - - - -	ARM.
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.
Deanol acetamidobenzoate - - - - -	RIK.
Diethylpropion hydrochloride - - - - -	BKC.
Doxapram hydrochloride - - - - -	LLI.
Methylphenidate hydrochloride - - - - -	CGY.
Nikethamide - - - - -	CGY.
Phendimetrazine tartrate - - - - -	GAN.
Phentermine - - - - -	GAN, HEX.
SKELETAL MUSCLE RELAXANTS:	
Chlorphenesin carbamate - - - - -	UPJ.
Methocarbamol - - - - -	LLI.
Orphenadrine citrate - - - - -	RIK.
Succinylcholine chloride - - - - -	ABB, BUR.
Tubocurarine - - - - -	ABB.
*DERMATOLOGICAL AGENTS:	
Allantoin - - - - -	HFT.
Aluminum phenolsulfonate - - - - -	SAL.
Ammonium phenolsulfonate - - - - -	SAL.
Salicylic acid - - - - -	DOW, KLM, MON.
Zinc phenolsulfonate - - - - -	MAL, SAL.
*EXPECTORANTS AND MUCOLYTIC AGENTS:	
Ethylenediamine dihydriodide - - - - -	AVJ, DPW, WAG(E), WHL.
Guaifenesin - - - - -	LLI, NOR.
Iodinated glycerol - - - - -	X.
Potassium guaiacolsulfonate - - - - -	KLM.
*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:	

TABLE 2.--MEDICINAL CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

MEDICINAL CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
*GASTROINTESTINAL AGENTS AND THERAPEUTIC NUTRIENTS--CONTINUED	
GASTROINTESTINAL AGENTS --CONTINUED	
OTHER GASTROINTESTINAL AGENTS--CONTINUED	
Betaine hydrochloride	HFT.
Calcium polycarbophil	LLI.
Choline bicarbonate	HFT, IMC.
Choline bitartrate	HFT.
Choline citrate	HFT.
Choline dihydrogen citrate	HFT.
Choline salts, all other	RSA.
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.
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	SRL, UPJ.
Stanozolol	SD.
Testosterone	UPJ.
Testosterone cypionate	UPJ.
Testosterone enanthate	UPJ.
Testosterone propionate	UPJ.
Zeranol	IMC.
CORTICOSTEROIDS:	
Betamethasone	SCH, UPJ.
Betamethasone dipropionate	SCH.
Betamethasone sodium phosphate	SCH.

TABLE 2.--MEDICINAL CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

MEDICINAL CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
*HORMONES AND SYNTHETIC SUBSTITUTES--CONTINUED	
CORTICOSTEROIDS--CONTINUED	
Betamethasone valerate	SCH.
Cortisone acetate	UPJ.
Dexamethasone	MRK, SCH.
Dexamethasone sodium phosphate	MRK, UPJ.
Diflorasone diacetate	UPJ.
Fludrocortisone acetate	UPJ.
Fluorometholone	UPJ.
Fluprednisolone	UPJ.
Halcinonide	TRD.
Hydrocortisone	UPJ.
Hydrocortisone acetate	UPJ.
Medrysone	UPJ.
Methylprednisolone	ABB, UPJ.
Prednisolone	UPJ.
Prednisolone acetate	UPJ.
Prednisone	UPJ.
Triamcinolone	TRD, X.
Triamcinolone acetonide	TRD, X.
Triamcinolone diacetate	X.
Corticosteroids, all other	UPJ.
ESTROGENS AND PROGESTOGENS:	
ESTROGENS:	
Dienestrol	X.
Estradiol cypionate	UPJ.
Estrogens, conjugated	ORG.
Estrogens, esterified	ORG.
Estrone	SRL.
Estrogens, all other	ORG.
PROGESTOGENS:	
Dinoprostone	UPJ.
Ethisterone	SRL.
Hydroxyprogesterone caproate	UPJ.
Medroxyprogesterone acetate	SRL, UPJ.
Megestrol acetate	UPJ.
Melengestrol acetate	UPJ.
Norgestrel	WYT.
Progesterone	UPJ.
SYNTHETIC HYPOGLYCEMIC AGENTS:	
Acetohexamide	LIL.
Chlorpropamide	PFZ.
Tolazamide	UPJ.

TABLE 2.--MEDICINAL CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

MEDICINAL CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
*HORMONES AND SYNTHETIC SUBSTITUTES--CONTINUED	
SYNTHETIC HYPOGLYCEMIC AGENTS--CONTINUED	
Tolbutamide-	UPJ.
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.
*LOCAL ANESTHETICS:	
Benzocaine-	WYK.
Butamben-	ABB, WYK.
Chloroprocaine hydrochloride-	ARA.
Cocaine-	MRK.
Dibucaine-	CGY.
Dibucaine hydrochloride-	CGY.
*Lidocaine-	LEM, SDW, WYK.
Lidocaine hydrochloride-	LEM, SDW, WYK.
Mepivacaine-	WYK.
Mepivacaine hydrochloride-	LEM.
Oxethazaine-	WYT.
Pramoxine hydrochloride-	ABB.
Prilocaine hydrochloride-	WYK.
Procaine hydrochloride-	WYK.
*RENAL-ACTING AND EDEMA-REDUCING AGENTS:	
BENZOTHIADIAZINE DERIVATIVES:	
Benzthiazide-	PFZ.
Chlorothiazide-	MRK.
Cyclothiazide-	CGY.
Hydrochlorothiazide-	ABB, CGY, MRK.
Methyclothiazide-	ABB.
Polythiazide-	PFZ.
Trichlormethiazide-	SCH.
OTHER RENAL-ACTING AND EDEMA-REDUCING AGENTS:	
Acetazolamide-	ACY.
Amiloride hydrochloride-	MRK.

TABLE 2.--MEDICINAL CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

MEDICINAL CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
*RENAL-ACTING AND EDEMA-REDUCING AGENTS--CONTINUED	
OTHER RENAL-ACTING AND EDEMA-REDUCING AGENTS--	
CONTINUED	
Dichlorphenamide - - - - -	MRK.
Probenecid - - - - -	MRK, SAL.
Spirocholactone - - - - -	SRL.
Sulfinpyrazone - - - - -	CGY.
Triamterene - - - - -	SK.
*SMOOTH MUSCLE RELAXANTS:	
Aminophylline - - - - -	MAL.
Cinnamedrine hydrochloride - - - - -	SDW.
Flavoxate hydrochloride - - - - -	SK.
Oxtriphylline - - - - -	NEP, PD.
Theophylline sodium glycinate - - - - -	CHT.
*VITAMINS:	
VITAMIN A:	
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 (animal feed grade) - - - - -	HOF.
Vitamin A palmitate (medicinal grade) - - - - -	HOF.
Vitamin A propionate - - - - -	HOF.
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.
Niacinamide hydroiodide - - - - -	DPW.
PANTOTHENIC ACID DERIVATIVES:	
d-Calcium pantothenate (medicinal grade) - - - - -	DAT.
dl-Calcium pantothenate (animal feed grade) - - - - -	DAT.
dl-Calcium pantothenate - calcium chloride complex - - - - -	HFT.
Dexpanthenol - - - - -	HOF.
Panthenol - - - - -	HOF.
OTHER B-COMPLEX VITAMINS:	
Biotin - - - - -	HOF.
Cyanocobalamin (animal feed grade) - - - - -	MRK.
Cyanocobalamin (medicinal grade) - - - - -	MRK.
Cyanocobalamin (U.S.P. crystalline) - - - - -	MRK.
Pyridoxine - - - - -	HOF.

TABLE 2.--MEDICINAL CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

MEDICINAL CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
*VITAMINS--CONTINUED	
VITAMIN B-COMPLEX--CONTINUED	
OTHER B-COMPLEX VITAMINS--CONTINUED	
Riboflavin (animal feed grade) - - - - -	MRK.
Riboflavin (medicinal grade) - - - - -	MRK.
Riboflavin-5-phosphate, sodium - - - - -	HOF.
Thiamine hydrochloride - - - - -	HOF.
Thiamine mononitrate - - - - -	HOF.
VITAMIN C:	
Ascorbic acid- - - - -	HOF, PFZ.
Sodium ascorbate - - - - -	HOF, PFZ.
VITAMIN D:	
Cholecalciferol (vitamin D ₃) - - - - -	VTM.
Ergocalciferol (vitamin D ₂) - - - - -	VTM.
*VITAMIN E:	
DL-ALPHA TOCOPHERYL ACETATE (ALL GRADES):	
dl- α Tocopheryl acetate (animal feed grade)- - - - -	BAS, HOF.
dl- α Tocopheryl acetate (medicinal grade)- - - - -	BAS, EKT, HOF.
OTHER VITAMIN E:	
d- α Tocopherol - - - - -	EKT, SCP.
dl- α Tocopherol- - - - -	HOF.
d- α Tocopheryl acetate - - - - -	EKT, SCP.
d- α 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.
Mercaptopurine - - - - -	BUR.
Methotrexate - - - - -	BRS.
Streptozocin - - - - -	UPJ.
Thioguanine (hemihydrate)- - - - -	BUR, LIL.
Vincristine sulfate- - - - -	LIL.
CARDIOVASCULAR AGENTS:	
ANTIHYPERTENSIVE AGENTS:	
Captopril- - - - -	TRD.
Diazoxide- - - - -	SCH.
Guanethidine sulfate - - - - -	CGY.
Hydralazine hydrochloride- - - - -	CGY.
Methyldopa - - - - -	MRK.
Metoprolol tartrate- - - - -	CGY.

TABLE 2.--MEDICINAL CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

MEDICINAL CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
* MISCELLANEOUS MEDICINAL CHEMICALS--CONTINUED	
CARDIOVASCULAR AGENTS--CONTINUED	
ANTIHYPERTENSIVE AGENTS--CONTINUED	
Minoxidil - - - - -	UPJ.
Nadolol - - - - -	TRD.
Prazosin hydrochloride - - - - -	PFZ.
Rauwolfia serpentina - - - - -	PEN.
BIOFLAVONOIDS:	
Hesperidin - - - - -	SKG.
Lemon bioflavonoid complex - - - - -	SKG.
Naringin - - - - -	SKG.
Orange-lemon flavonate - - - - -	SKG.
VASODILATORS:	
Amyl nitrite - - - - -	BUR, FKE.
Flecainide acetate - - - - -	RIK.
Nifedipine - - - - -	PFZ.
Oxprenolol hydrochloride - - - - -	CGY.
OTHER CARDIOVASCULAR AGENTS:	
Digoxin - - - - -	BUR.
Disopyramide phosphate - - - - -	GAM, SRL.
Procainamide hydrochloride - - - - -	PD, WYK.
Tocainide - - - - -	MRK.
DIAGNOSTIC AGENTS:	
ROENTGENOGRAPHIC CONTRAST MEDIA:	
Diatrizoate, meglumine - - - - -	SDW.
Diatrizoate, sodium - - - - -	SDW.
Iopanoic acid - - - - -	SDW.
Iothalamate, meglumine - - - - -	MAL.
Meglumine - - - - -	SDW.
Tyropanoate, sodium - - - - -	SDW.
OTHER DIAGNOSTIC AGENTS:	
Albumin - - - - -	SPR.
Glutamyl-p-nitroaniline (liver function test) - - -	REG.
Phenolsulfonphthalein - - - - -	HYN.
HEMATOLOGICAL AGENTS:	
ANTICOAGULANTS:	
Ammonium heparin - - - - -	ABB, RIK, SPR.
Anisindione - - - - -	SCH.
Benzalkonium heparin - - - - -	RIK.
Lithium heparin - - - - -	RIK, SPR.
Potassium warfarin - - - - -	X.
Sodium heparin - - - - -	ABB, RIK, SPR.
Warfarin - - - - -	SDW.
Zinc heparin - - - - -	RIK.

TABLE 2.--MEDICINAL CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

MEDICINAL CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
*MISCELLANEOUS MEDICINAL CHEMICALS--CONTINUED	
HEMATOLOGICAL AGENTS--CONTINUED	
OTHER HEMATOLOGICAL AGENTS:	
Cellulose, oxidized	EKT.
Dextran	PHR.
UNCLASSIFIED MEDICINAL CHEMICALS:	
Allopurinol	BUR.
Carbidopa	MRK.
Etidronate, disodium	NOR.
Levodopa	MON, MRK.

TABLE 3.--MEDICINAL CHEMICALS: DIRECTORY OF MANUFACTURERS, 1983

ALPHABETICAL DIRECTORY BY CODE

[Names of manufacturers that reported production and/or sales of medicinal chemicals to the U.S. International Trade Commission for 1983 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.	MRK	Merck & Co., Inc.
ADC	Anderson Development Co.		
AJY	Ajay Chemicals, Inc.	NEP	Nepera, Inc.
AMD	Cyclo Chemical Corp.	NES	Ruetgers-Nease Chemical Co.
ARA	Syntex Chemicals, Inc.	NOD	Nuodex, Inc.
ARN	Arenol Chemical Corp.	NOR	Norwich Eaton Pharmaceutical, Inc.
ARP	Armour Pharmaceutical Co.	NUT	Nutrius, Inc.
ARS	Arsynco, Inc.		
		OH	Ohio Medical Anesthetics
BAS	BASF Wyandotte Corp.	OMS	E.R. Squibb & Sons, Inc.
BAX	Baxter Travenol Laboratories, Inc.	ORG	Organics/LaGrange, Inc.
BEE	Beecham, Inc., Beecham Laboratories Div.	ORT	Roehr Chemicals, Inc.
BIB	Beckman Instruments, Inc., Spinco Div.		
BKC	J.T. Baker Chemical Co.	PD	Parke-Davis & Co.
BOC	Biocraft Laboratories, Inc.	PEN	CPC International, Inc., Penick Corp.
BRS	Bristol-Myers Co.	PFN	Pfanstiehl Laboratories, Inc.
BUR	Burroughs-Wellcome Co.	PFZ	Pfizer, Inc. and Pfizer Pharmaceuticals, Inc.
		PHR	Pharmachem Corp.
CGY	Ciba-Geigy Corp.		
CHO	Cholineco, Inc.	REG	Regis Chemical Co.
CHT	Chattam Corp.	RIK	Riker Laboratories, Inc. Sub. of 3M Co.
CLP	Cell Products, Inc.	RIL	Reilly Tar & Chemical Corp.
CPR	Certified Processing Corp.	RLS	Rachelle Laboratories, Inc.
		RSA	R.S.A. Corp.
DAT	Daitom, Inc.		
DOW	Dow Chemical Co.	SAL	Salsbury Laboratories, Inc.
DPW	Deepwater, Inc.	SCH	Schering Plough Corp.
DUP	E.I. duPont de Nemours & Co., Inc.	SCP	Henkel Corp.
		SD	Sterling Drug, Inc.
EK	Eastman Kodak Co.	SD	Sterling Pharmaceuticals, Inc.
EKT	Tennessee Eastman Co. Div.	SDH	Hilton Davis Chemical Co. Div.
		SDW	Sterling Organics Div.
FKE	Frank Enterprises, Inc.	SFS	Stauffer Chemical Co., Specialty & Intermediates Div.
FLM	Fleming Laboratories, Inc.	SHC	Shell Oil Co., Shell Chemical Co. Div.
		SK	SmithKline Beckman Corp., SmithKline Chemicals Div.
GAF	GAF Corp.	SKG	Sunkist Growers, Inc.
GAN	Gane's Chemicals, Inc.	SPR	Scientific Protein Laboratories, Inc.
GNF	General Foods Manufacturing Corp., Maxwell House Coffee Div.	SRL	G.D. Searle & Co.
HET	Heterochemical Corp.	TMH	Thompson-Hayward Chemical Co.
HEX	Hexagon Laboratories, Inc.	TRD	Squibb Manufacturing, Inc.
HFT	Syntex Agribusiness, Inc.	TX	Texaco, Inc.
HOF	Hoffmann-LaRoche, Inc.		
HXL	Hexcel Corp., Hexcel Chemical Products	UCC	Union Carbide Corp.
HYN	Hynson, Westcott & Dunning, Inc.	UPJ	Upjohn Co.
IMC	International Minerals & Chemical Corp.	VTM	Vitamins, Inc.
KLM	Kalama Chemical, Inc.	WAG	West Agro-Chemical, Inc.
KPT	Koppers Co., Inc.	WHL	Whitmoyer Laboratories, Inc.
		WTL	Pennwalt Corp., Lucidol Div.
LEM	Napp Chemicals, Inc.	WYK	Wyckott Chemical Co., Inc.
LIL	Eli Lilly & Co., U.S. and Puerto Rico	WYT	Wyeth Laboratories, Inc., Wyeth Laboratories Div. of American Home Products Corp.
LLI	Lee Laboratories, Inc.		
MAL	Mallinckrodt, Inc.		
MHI	Morton-Thiokol, Inc., Ventron Div.		

Note.--Complete names, telephone numbers, and addresses of the above reporting companies are listed in table 1 of the appendix. The above codes identify those of the 95 reporting companies and company divisions for which permission to publish was not restricted.

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 1983 amounted to 174.0 million pounds. Sales of these materials in 1983 amounted to 111.2 million pounds, valued at \$344.7 million, compared with 112.8 million pounds, valued at \$283.5 million, in 1982. These totals do not include benzyl alcohol, which, before 1973, was included in flavor and perfume materials but is now shown in the miscellaneous cyclic section of this series. U.S. production of flavor and perfume materials in 1983 increased by 11.3 percent from the level in 1982 while the quantity of sales declined by 1.5 percent.

Production of cyclic flavor and perfume materials in 1983 amounted to 90.7 million pounds; sales amounted to 67.1 million pounds, valued at \$281.2 million. Individual publishable chemicals in the cyclic group produced in the greatest volume in 1983 were anethole and eugenol.

U.S. output of acyclic flavor and perfume materials in 1983 amounted to 83.3 million pounds; sales of these materials amounted 44.1 million pounds, valued at \$63.6 million. Monosodium glutamate was by far the most important of the acyclic chemicals in 1983, although the data are not publishable. Other important acyclic compounds included are linalyl alcohol and geraniol.

TABLE 1.--FLAVOR AND PERFUME MATERIALS: U.S. PRODUCTION AND SALES, 1983

[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 ¹
	1,000 pounds	1,000 pounds	1,000 dollars	Per pound
Grand total-----	173,994	111,166	344,758	\$3.10
CYCLIC				
Total-----	90,693	67,115	281,169	4.19
<i>Benzenoid and Naphthalenoid</i>				
Total-----	75,121	55,977	234,287	4.19
4-Allyl-2-methoxyphenol (Eugenol)-----	272	193	729	3.77
Isobutyl phenylacetate-----	31	31	97	3.15
Phenethyl isobutyrate-----	11	8	46	5.91
2-Phenethyl phenylacetate-----	16	10	65	6.54
2-Phenoxyethyl isobutyrate-----	142	128	273	2.14
Phenylacetaldehyde, dimethyl acetal-----	122	122	604	4.94
p-Propenylanisole (Anethole)-----	2,873	3,332	6,047	1.81
All other benzenoid and naphthalenoid materials-----	71,654	52,153	226,426	4.34
<i>Terpenoid, Heterocyclic, and Alicyclic</i>				
Total-----	15,572	11,138	46,882	4.21
Guaicwood acetate-----	14	10	75	7.16
Ionones-----	85	121	1,076	8.90
Methylionones-----	420	652	5,584	8.57
Vetivenyl acetate-----	29	12	588	47.54
All other terpenoid, heterocyclic, and alicyclic materials-----	15,024	10,343	39,559	3.82
ACYCLIC				
Total-----	83,301	44,051	63,589	1.44
Butyl undecylenate-----	7	...	...	...
Citronellyl acetate-----	62	43	196	4.51
Citronellyl formate-----	13	14	103	7.31
Citronellyl isobutyrate-----	5	5	51	10.93
3,7-Dimethyl-cis-2,6-octadien-1-ol acetate (Neryl acetate)-----	18	18	90	4.92
3,7-Dimethyl-trans-2,6-octadienal (Citral A, Geranial)-----	150	...	...	...
3,7-Dimethyl-6-octen-1-ol (Citronellol)-----	1,609	1,514	5,755	3.80
Ethyl heptanoate-----	7	7	30	4.43
Ethyl hexanoate (Ethyl caproate)-----	18	9	40	4.30
Geranyl acetate-----	171	145	636	4.38
Geranyl formate-----	...	12	95	8.10
Isopentyl butyrate-----	92	77	151	1.97
Isopentyl isovalerate-----	20	19	82	4.43
N-Octyl acetate-----	4	5	27	5.04
Rhodinol-----	6	...	...	...
All other acyclic materials-----	81,119	42,183	56,333	1.34

¹Calculated from the unrounded figures.

TABLE 2.--FLAVOR AND PERFUME MATERIALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1983

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:	
Acetaldehyde, diphenethyl acetal (Phenylethyl acetal)	GIV.
2'-Acetonaphthone (β -Methyl naphthyl ketone)	GIV.
1-Acetoxy-2-sec-butyl-1-ethnyleyclohexane	GIV.
p-Allylanisole	SCM, X.
Allyl anthranilate	RT.
4-Allyl-1,2-dimethoxybenzene (4-Allylveratrole)	CI.
*4-Allyl-2-methoxyphenol (Eugenol)	BDS, CI, ELN, GIV, IFF, UNG.
4-Allyl-2-methoxyphenol acetate (Eugenol acetate)	CI, IFF.
α -Amyl cinnamic aldehyde	IFF.
p-Anisaldehyde	GIV, OPC.
Anisole (Methoxybenzene) (Methyl phenyl ether)	OPC.
Anisyl acetate	ELN, GIV.
Anisyl butyrate	RT.
Aurantiol	BDS.
Benzaldehyde glyceryl acetal	GIV.
Benzophenone	CWN, PD.
Benzyl acetate	GIV, MON.
Benzyl benzoate	MON, PFZ.
Benzyl butyrate	ELN.
Benzyl formate	ELN.
Benzyl isobutyrate	ELN.
Benzyl isopentyl ether	GIV.
Benzyl isovalerate	ELN, FB.
Benzyl laurate	GIV.
Benzyl phenylacetate	ELN, GIV.
Benzyl propionate	ELN.
Benzyl salicylate	GIV, MON.
4-tert-Butyl-2',6'-dimethyl-3',5'-dinitroacetophenone (Musk ketone)	GIV.
p-tert-Butyl- α -methylhydrocinnamalehyde	GIV, RDA.
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, LAK.

TABLE 2.--FLAVOR AND PERFUME MATERIALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

FLAVOR AND PERFUME MATERIALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
CYCLIC--CONTINUED	
BENZENOID AND NAPHTHALENOID--CONTINUED	
Carvacrol-	GIV.
Cineole [eucalyptol]-	NCI.
Cinnamaldehyde-	CI.
Cinnamic aldehyde dimethyl acetal-	FB.
Cinnamyl acetate-	ELN, GIV.
Cinnamyl butyrate-	FB.
Cinnamyl cinnamate-	FB, FEL.
Cinnamyl nitrile-	IFF.
Cinnamyl propionate-	ELN.
Cinnamyl tiglate-	FB.
Coumarin-	RDA.
Cuminylnl acetate-	IFF.
Cuminylnl alcohol-	IFF.
trans-Decahydro- β -naphthol-	IFF.
2-4-Dibromo-6-nitro-m-cresyl methyl ether-	GIV.
Dihydrocoumarin-	ARS.
1,2-Dimethoxy-4-propenylbenzene (4-Propenylveratrole)-	FB.
3,7-Dimethyl-2,6-octadienyl phenylacetate (Geranyl phenylacetate)-	GIV, SBC.
α,α -Dimethylphenethyl acetate-	IFF.
α,α -Dimethylphenethyl alcohol-	IFF.
Dimethyl phenylethyl carbinol-	IFF.
Diphenylmethane (Benzylbenzene)-	PD.
p-Ethoxybenzaldehyde-	GIV.
2-Ethoxynaphthalene-	GIV.
Ethyl anthranilate-	FB.
Ethyl benzoate-	ELN.
Ethyl cinnamate-	ELN.
Ethyl- α,β -epoxy- β -methylhydrocinnamate-	ELN.
2-Ethyl hexyl salicylate-	FEL, MON.
Ethyl phenylacetate-	ELN, GIV, OPC.
Ethyl phenylglycidate-	GIV.
Ethyl salicylate-	FB.
Geranyl benzoate-	GIV.
Hexyl benzoate-	SBC.
α -Hexylcinnamaldehyde-	CI, IFF.
Hexyl salicylate-	IFF.
Hydratropaldehyde-	CI, GIV.
Hydratropaldehyde, dimethyl acetal-	GIV.
Hydrocinnamic acid-	ELN.

TABLE 2.--FLAVOR AND PERFUME MATERIALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

FLAVOR AND PERFUME MATERIALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
CYCLIC--CONTINUED	
BENZENOID AND NAPHTHALENOID--CONTINUED	
Hydrocoumarin-	GIV.
Hydroxycitronellal methyl anthranilate	FB, GIV, IFF.
4-Hydroxy-3-ethoxybenzaldehyde (Ethylvanillin)	RDA.
4-Hydroxy-3-methoxybenzaldehyde [Vanillin]	MON.
4-(4-Hydroxy-3-methoxyphenyl)-2-butanone (Vanillylacetone)	GIV.
Isoamyl phenylacetate	ELN.
Isoamyl salicylate	IFF.
Isobutyl benzoate	ELN, SBC.
p-Isobutyl- α -methylhydrocinnamaldehyde (Rhodial)	RDA.
*Isobutyl phenylacetate	ELN, FB, OPC.
Isobutylquinoline	IFF.
Isobutyl salicylate	FB.
Isopentyl benzoate	GIV.
Isopentyl salicylate	FB, MON.
p-Isopropyl- α -methylhydrocinnamaldehyde (Cyclamen aldehyde)	RDA.
p-Isopropyl- α -methylhydrocinnamyl alcohol	GIV.
l-Limonene	SCM.
Linalyl anthranilate	BDS, FMT.
p-Mentha-1,8-diene (Limonene)	IFF, SKG.
Menthyl anthranilate	PFW, UNG.
p-Methoxybenzyl alcohol (Anisyl alcohol)	ELN, GIV, OPC.
o-Methoxy cinnamic aldehyde crystals	CI.
2-Methoxynaphthalene	GIV.
1-p-Methoxyphenyl penten-1-one-3 (α -Methyl- anisalacetone)	GIV.
2-Methoxy-4-propenylphenol (Isoeugenol)	CI, IFF.
2-Methoxy-4-propenylphenol, acetate	ELN.
p-Methylanisole	GIV.
Methyl anthranilate	FB, SW.
Methyl benzoate	KLM, SBC.
α -Methylbenzyl acetate (Styralyl acetate)	CI.
α -Methylcinnamaldehyde	CI, FB.
Methyl cinnamate	FB.
6-Methylcoumarin	GIV.
p-Methyl ethyl phenyl glycidate	PFW.
p-Methylhydratropaldehyde	GIV.
1-Methyl-isohexyl-hexahydro benzaldehyde	GIV.
Methyl phenylacetate	ELN, OPC.
Methyl salicylate	KLM, MON.

TABLE 2.--FLAVOR AND PERFUME MATERIALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

FLAVOR AND PERFUME MATERIALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
CYCLIC--CONTINUED	
BENZENOID AND NAPHTHALENOID--CONTINUED	
Musk 89-	IFF.
1,1,3,3,5-Pentamethyl-4,6-dinitroindan (Moskene)	GIV.
α -Pentylcinnamaldehyde	CI, FB.
Phenethyl acetate	BDS, FB, IFF.
Phenethyl alcohol	IFF, OPC.
Phenethyl benzoate	IFF.
Phenethyl formate	ELN, IFF.
*Phenethyl isobutyrate	ELN, GIV, IFF.
Phenethyl isovalerate	ELN, FB.
*2-Phenethyl phenylacetate	BDS, CI, ELN, FB, GIV, IFF.
Phenethyl propionate	ELN.
*2-Phenoxyethyl isobutyrate	ELN, FB, IFF, OPC.
Phenylacetaldehyde	GIV.
*Phenylacetaldehyde, dimethyl acetal	CI, ELN, GIV.
Phenylacetic acid	GIV.
Phenylacetic acid isopentyl ester	GIV.
α -Phenylanisole	GIV.
4-Phenyl-3-buten-2-one	FB.
Phenylethyl anthranilate	RT.
Phenylethyl tiglate	FB.
3-Phenyl-1-propanol (Hydrocinnamic alcohol)	FB.
3-Phenylpropyl acetate	ELN, GIV.
3-Phenylpropyl cinnamate	FB.
Piperonal (Heliotropin)	AMB.
*p-Propenylanisole (Anethole)	ARZ, FB, HPC, NCI, SCM.
4-Propenyl-1,2-dimethoxybenzene (Methyl isoeugenol)	CI.
p-Propylanisol (Dihydroanethole)	FB, GIV.
SWEETNERS, SYNTHETIC:	
Cyclohexanesulfamic acid, calcium salt (Calcium cyclamate)	ABB.
Cyclohexanesulfamic acid, sodium salt (Sodium cyclamate)	ABB.
Saccharin (1,2-Benzisothiazolin-3-one,-1,1-dioxide)	SW.
Saccharin, calcium salt	ABB.
Saccharin, sodium salt	SW.
Synthetic sweetener material, all other	SFR.
p-Tolualdehyde	FB, GIV.
p-Tolylacetaldehyde	GIV.
p-Tolyl acetate	ELN.

TABLE 2.--FLAVOR AND PERFUME MATERIALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

FLAVOR AND PERFUME MATERIALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
CYCLIC--CONTINUED	
BENZENOID AND NAPHTHALENOID--CONTINUED	
p-Tolyl isobutyrate - - - - -	GIV.
p-Tolylphenylacetate - - - - -	GIV.
Triethanolamine salicylate - - - - -	RSA.
Trimethylcyclohexyl salicylate - - - - -	ARS.
All other benzenoid or naphthalenoid chemicals - - - - -	IFF.
TERPENOID, HETEROCYCLIC, AND ALICYCLIC:	
Acetyl-n-butyryl (2,3-Hexanedione) - - - - -	FB.
Acetyl cedrene (Vertoflex) - - - - -	BDS.
Acetyl isovaleryl (5-Methyl-2,3-hexanedione) - - - - -	FB.
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 coevr - - - - -	IFF.
p-tert-Butylcyclohexyl acetate (Verbeniax) - - - - -	CI, IFF.
2-tert-Butyl cyclohexanol - - - - -	IFF.
p-tert-Butylcyclohexanone - - - - -	IFF.
2-sec-Butylcyclohexanone - - - - -	GIV.
o-tert-Butylcyclohexyl acetate - - - - -	IFF.
Cadinene - - - - -	FB.
l-Carvone - - - - -	SCM.
ß-Caryophyllene - - - - -	BDS, GIV, SCM.
Caryophyllene oxide - - - - -	GIV.
α-Cedrene epoxide (Andrane)- - - - -	BDS, IFF.
Cedrenol - - - - -	ELN, IFF.
Cedrol - - - - -	ELN.
Cedryl acetate - - - - -	BDS, ELN, IFF.
Cedryl formate - - - - -	IFF.
Cyclohexadecen-7-olide - - - - -	IFF.
Cyclohexyl acetate - - - - -	RT.
Cyclohexyl butyrate - - - - -	RT.
2-Cyclohexylcyclohexanone - - - - -	GIV, IFF.
Cyclohexyl isovalerate - - - - -	RT.
Dihydro-iso-jasmone - - - - -	FB.
Dihydronordicyclopentadienyl acetate (Cyclacet) - - - - -	CI, GIV, IFF.
Dihydronordicyclopentadienyl propionate (Cyclaprop) (Verdyl propionate extra)- - - - -	BDS, CI.
Dihydro terpineol - - - - -	IFF, SCM.
Dihydroterpinyl acetate - - - - -	IFF, NCI, SCM.
Furfural acetone - - - - -	RT.

TABLE 2.--FLAVOR AND PERFUME MATERIALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

FLAVOR AND PERFUME MATERIALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
CYCLIC--CONTINUED	
TERPENOID, HETEROCYCLIC, AND ALICYCLIC--CONTINUED	
Furfuryl acetate	RT.
Galaxolide (1,3,4,6,7,8-Hexahydro-4,6,6,7,8,8-hexamethyl-cyclopenta-7-2-benzopyran)	IFF.
*Guaiacwood acetate	ELN, FB, GIV, UNG.
Guaiene	FB.
Hexadecanolide	IFF.
3-Hydroxy-2-ethyl-4-pyrone (Ethylmaltol)	PFZ.
4-(4-Hydroxy-4-methyl pentyl)-3-cyclohexene-10-carboxaldehyde (Lyrall)	IFF.
3-Hydroxy-2-methyl-4-pyrone (Maltol)	PFZ.
4-Hydroxynonanonic acid, 7-lactone (7-Monalactone)	ELN.
4-Hydroxyundecanoic acid, 7-lactone (7-Undecalactone)	ELN.
Ionone(α - and β -)	BDS, GIV, NCI.
α -Ionone	BDS, GIV, HOF, IFF.
β -Ionone	BDS, HOF.
Isoamyl furoate	RT.
Isobornyl acetate	NCI, RDA, SCM.
Isobornyl methyl ether	SCM.
Isobornyl propionate	ELN.
Isocamphyl cyclohexanols	GIV.
Isojasmone	FB.
d-iso-Menthol	SCM.
Isomenthone	GIV.
2-Isopropylcyclohexanol	GIV.
Isopulegyl acetate	GIV.
Jasmal	IFF.
p-Mentha-1,3-diene (α -Terpinene)	SCM.
p-Mentha-1,4-diene (7-Terpinene)	SCM.
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	SCM.
dl-Menthol, synthetic	GIV, HAR, NCI, SCM.
l-Menthol, synthetic	HAR, SCM.
Menthone	SCM.
Menthyl acetate	FB, GIV.
l-Menthyl acetate	SCM.
Menthyl butyrate	RT.

TABLE 2.--FLAVOR AND PERFUME MATERIALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

FLAVOR AND PERFUME MATERIALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
CYCLIC--CONTINUED	
TERPENOID, HETEROCYCLIC, AND ALICYCLIC--CONTINUED	
p-Mentma-6,8-dien-2-ol (Carveol)	FB.
p-Mentma-6,8-dien-2-one (Carvone) (Carvol)	FB.
d-Methyl acetate	SCM.
Methyl furoate	RT.
Methylionone(α - and β -)	GIV, IFF, NCI.
7-Methylionone	BDS, GIV, NCI.
6-Methyl- α -ionone	BDS, GIV.
Nopol	NCI.
Nopyl acetate	FEL, NCI, SCM.
3-Pentyl tetrahydro-4-pyridine	IFF.
Rose oxide	FB.
α -Santalol	GIV, IFF.
α -Santalyl acetate	GIV.
Sassafrass oil, hydrogenated	GIV.
α -Terpineol	HPC, NCI, SCM.
α -Terpinyl acetate	IFF, NCI, SCM.
α -Terpinyl propionate	ELN.
3,3,5-Trimethyl cyclohexanol (m-Homenthol)	ARS, OPC.
1-(2,6,6-Trimethyl-2-cyclohexen-1-yl)-1,6-heptadien-3-one (Allyl- α -ionone)	IFF.
Vetivenol	GIV.
*Vetivenyl acetate	BDS, ELN, FB, GIV, IFF.
All other terpenoid, heterocyclic, or alicyclic flavor and perfume chemicals	IFF.
ACYCLIC	
Allyl disulfide	IFF.
Allyl heptanoate	ELN, FB.
Allyl hexanoate	ELN, FB.
Allyl isothiocyanate (Synthetic mustard oil)	OPC.
Allyl isovalerate	RT.
Allyl mercaptan	RT.
Allyl octanoate (Allyl caprylate)	RT.
Allyl sulfide	RT.
Ammonium isovalerate	RSA.
3-Bromo-propyl-amine hydrobromide	PFW.
Butter acids	RT.
Butter esters	RT.
Butyl butyryl lactate	ARS, ELN, RT.
*Butyl undecylenate	FB, GIV, IFF.
Citral dimethyl acetal	CI, FB, IFF.
Citronellic acid	PFW.

TABLE 2.--FLAVOR AND PERFUME MATERIALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

FLAVOR AND PERFUME MATERIALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
*Citronellyl acetate - - - - -	: ELN, GIV, IFF, NCI.
Citronellyl butyrate - - - - -	: GIV.
*Citronellyl formate - - - - -	: BDS, ELN, GIV.
*Citronellyl isobutyrate - - - - -	: ELN, GIV, IFF.
Citronellyl nitrile - - - - -	: CI.
Citronellyl propionate - - - - -	: IFF.
Crude acetate mixture (Linalyl, neryl, gerany acetates, main components) - - - - -	: X.
Decanal (Capraldehyde) - - - - -	: CI, GIV.
*Decyl acetate - - - - -	: GIV, RT.
Diethyl acetal - - - - -	: FB.
Diethyl sebacate - - - - -	: ELN.
Diethyl succinate - - - - -	: ELN, NCI.
Dihexyl fumarate - - - - -	: FB.
d-Dihydrocarveol - - - - -	: SCM.
Dihydrocarvone - - - - -	: SCM.
Dihydrolinalool - - - - -	: SCM.
Dihydro myrcenol - - - - -	: IFF.
Dihyrotterpinyl acetate - - - - -	: SCM.
2,6 Dimethyl-5-hepten-1-al - - - - -	: GIV.
Dimethyl hexanediol - - - - -	: X.
2,5-Dimethyl-3-hexyne-2,5-diol - - - - -	: X.
3,7-Dimethyl-2,3,6-nonadienenitrile - - - - -	: GIV.
*3,7-Dimethyl-trans-2,6-octadienal (Citral A geranial) - - - - -	: BDS, FB, FEL, GIV.
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, FB, 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) - - - - -	: CI, ELN, FB, GIV, IFF, NCI.
3,7-Dimethyl-1,6-octadien-3-ol, acetate (Linalyl acetate) - - - - -	: ELN, FB, GIV, NCI, SCM.
3,7-Dimethyl-1,6-octadien-3-yl isobutyrate (Linalyl isobutyrate) - - - - -	: ELN, GIV.
3,7-Dimethyl-1,6-octadien-3-yl propionate (Linalyl propionate) - - - - -	: ELN, FB, GIV.
Dimethyloctanal - - - - -	: GIV, SCM.
3,7-Dimethyloctanol-1 [Tetrahydrogeraniol] - - - - -	: GIV, NCI, SCM.
3,7-Dimethyl-3-octanol - - - - -	: GIV, SCM.

TABLE 2.--FLAVOR AND PERFUME MATERIALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

FLAVOR AND PERFUME MATERIALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
Dimethyloctanyl acetate- - - - -	: IFF.
3,7-Dimethyl-6-octen-1-al (Citronellal)- - - - -	: FB, 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.
Dimyrcetol - - - - -	: IFF.
Ethyl butyrate - - - - -	: FB, NW.
Ethyl caprate- - - - -	: ELN, FB.
Ethyl crotonate- - - - -	: RT.
Ethyl formate- - - - -	: FB, RT.
*Ethyl heptanoate - - - - -	: ELN, FB, FEL, RT.
*Ethyl hexanoate- - - - -	: ELN, FB, NW, RT.
Ethyl isobutyrate- - - - -	: FB.
Ethyl isovalerate- - - - -	: ELN, FB.
Ethyl laurate- - - - -	: ELN, FB.
Ethyl-2-methyl butyrate- - - - -	: PFW, SCM.
Ethyl-2 methyl pentanoate- - - - -	: PFW.
Ethyl myristate- - - - -	: ELN.
Ethyl nonanoate- - - - -	: ELN, FB.
Ethyl octanoate- - - - -	: ELN, FB.
Ethyl oxyhydrate - - - - -	: RT.
Ethyl propionate - - - - -	: FB, NW.
Ethyl valerate - - - - -	: ELN.
Geranic acid - - - - -	: FB.
*Geranyl acetate- - - - -	: BDS, CI, ELN, FEL, GIV, IFF, NCI, PFW.
Geranyl butyrate - - - - -	: ELN, 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.
Glutamic acid, monosodium salt (Monosodium glutamate) - - - - -	: SFF.
Glyceryl tripropionate - - - - -	: PFW.
Heptanolide- - - - -	: FB.
Hexadecyl octanoate- - - - -	: SBC.
N-hexanal- - - - -	: SCM.
Hexanoic acid [Caproic acid] - - - - -	: SCM.
2-Hexenal- - - - -	: FB, GIV.

TABLE 2.--FLAVOR AND PERFUME MATERIALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

FLAVOR AND PERFUME MATERIALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
2-Hexenol - - - - -	FB.
cis-3-Hexen-1-yl acetate - - - - -	BDS, GIV.
cis-3-Hexenyl benzoate - - - - -	BDS.
cis-3-Hexenyl butyrate - - - - -	SCM.
c15-3-Hexenyl salicylate - - - - -	BDS.
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) - - - - -	GIV, IFF, OPC, SCM.
7-Hydroxy-3,7-dimethyl octanal, dimethyl acetal (Hydroxycitronellal, dimethyl acetal)- - - - -	GIV.
Hydroxy-2-propanone (Acetol) - - - - -	FB.
Isoamyl caproate - - - - -	FB.
Isoamyl caprylate - - - - -	FB.
Isoamyl propionate - - - - -	FB.
Isobutyl acetate - - - - -	FB.
Isobutyl butyrate - - - - -	FB.
Isodecyl neopentanoate - - - - -	SBC.
Isodihydro lavandulol - - - - -	FB.
Isodihydro lavandulylacetate - - - - -	FB.
Isodihydro lavandulylaldehyde - - - - -	FB.
Isopentyl acetate (Isoamyl acetate)- - - - -	ALD, ELN, FB, NW, PFW.
*Isopentyl butyrate - - - - -	FB, GIV, NW, PFW.
Isopentyl formate - - - - -	ELN, FB, RT.
*Isopentyl isovalerate - - - - -	ELN, FB, PFW.
Lauraldehyde - - - - -	FB, GIV.
Methoxy citronellal - - - - -	SCM.
3-Methyl butyl butyrate - - - - -	FB.
2-Methylbutyl isovalerate - - - - -	SCM.
Methyl butynol - - - - -	X.
3-Methyl butyraldehyde - - - - -	FB, UCC.
Methyl crotonate - - - - -	FB, RT.
3-Methyl-5-heptanone oxime - - - - -	GIV.
Methyl hexyl ether - - - - -	SCM.
Methyl isobutyrate - - - - -	PFW.
Methyl isovalerate - - - - -	FB.
Methyl-2-methyl butyrate - - - - -	SCM.
3-Methyl-2-[and3]nonene nitrile - - - - -	GIV.

TABLE 2.--FLAVOR AND PERFUME MATERIALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

FLAVOR AND PERFUME MATERIALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
Methyl nonen-3-oate-	X.
Methyl-octyl aldehyde-	CI.
Methylol methyl hexyl ketone	GIV.
Methyl pentynol-	X.
Methyl propionate-	FB.
8 Methyl thiopropionaldehyde	RT.
2-Methylundecanal-	CI, GIV.
2-Methyl undecanal dimethylacetal-	CI.
Myrcenyl acetate	IFF.
Myristaldehyde	GIV.
Nonanal-	CI, GIV.
1,3-Nonanediol acetate	ELN, GIV.
1,3-Nonanediol diacetate	SBC.
Nonyl acetate-	GIV, IFF.
Nonylenic acid	PFW.
Ocimene-	IFF.
Octanal-	CI, GIV.
Octanal dimethylacetal	CI.
3-Octanol-	SCM.
3-Octanone (Ethyl amyl ketone)	GIV.
*N-Octyl acetate-	ELN, FB, GIV, SCM.
Octyl formate-	FB.
Pseudo linalyl acetate (Neobergamate)-	IFF.
*Rhodinol	FB, FEL, GIV, IFF.
Rhodinyll acetate	IFF.
Stearyl octanoate-	SBC.
Tepyl acetate-	ELN.
Tetrahydro allo-ocimene-	IFF.
Undecanal-	CI, GIV, IFF.
9-Undecenal-	GIV.
All other acyclic flavor and perfume materials	IFF.

TABLE 3.--FLAVOR AND PERFUME MATERIALS: DIRECTORY OF MANUFACTURERS, 1983

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 1983 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	LAK	Bofors Nobel, Inc.
ALD	Aldrich Chemical Co., Inc.	MON	Monsanto Co.
AMB	American Bio-Synthetics Corp.	NCI	Union Carbide Corp., Terpene and Aromatics Div.
ARS	Arsynco, Inc.	NW	Northwestern Chemical Co.
ARZ	Arizona Chemical Co.	OPC	Orbis Products Corp.
BDS	Biddle Sawyer Corp.	PD	Parke-Davis & Co.
CI	Chem-Fleur, Inc.	PFW	Hercules, Inc., PFW Div.
CWN	Upjohn Co., Fine Chemical Div.	PFZ	Pfizer, Inc.
ELN	Elan Chemical Co.	RDA	Rhone-Poulenc, Inc.
FB	Fritzsch Dodge & Alcott, Inc.	RSA	R.S.A. Corp.
FEL	Felton International, Inc.	RT	Ritter International
FMT	Fairmount Chemical Co., Inc.	SBC	Scher Chemicals, Inc.
GIV	Givaudan Corp.	SCM	SCM Corp., Organic Chemicals Div.
HAR	Haarmann & Reimer Corp.	SFF	Stauffer Chemical Co., Food Ingredients Div.
HOF	Hoffmann-LaRoche, Inc.	SFR	Searle Food Resources, Inc.
HPC	Hercules, Inc.	SKG	Sunkist Growers, Inc.
IFF	International Flavors & Fragrances, Inc.	SW	Sherwin-Williams Co.
KLM	Kalama Chemical, Inc.	UCC	Union Carbide Corp.
		UNG	Ungerer & Co.

Note.--Complete names, telephone numbers, and addresses of the above reporting companies are listed in table 1 of the appendix. The above codes identify those of the 39 reporting companies and company divisions for which permission to publish was not restricted.

STATISTICAL HIGHLIGHTS

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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 1983 are given in table 1. U.S. production of plastics and resin materials in 1983 totaled 44,281 million pounds, or 15.6 percent more than the 38,313 million pounds produced in 1982. Sales in 1983 totaled 38,075 million pounds, valued at \$18,371 million, compared with 32,002 million pounds, valued at \$15,313 million, in 1982.

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 7,215 million pounds in 1983, compared with 6,141 million pounds in 1982. Production of the most important products in 1983 included phenolic (1,460 million pounds), amino (or urea and melamine) resins (1,552 million pounds), polyester resins, unsaturated (1,180 million pounds), and alkyd resins (719 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 37,065 million pounds in 1983 (or 83.7 percent of the total plastics and resin materials output for 1983), compared with 32,172 million pounds in 1982. Production of the most important products in 1983 included polyethylene (14,045 million pounds), polypropylene (4,457 million pounds), vinyl resins (7,743 million pounds), and styrene type materials (6,254 million pounds).

TABLE 1.--PLASTICS AND RESIN MATERIALS: U.S. PRODUCTION AND SALES, 1983

[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 ¹
	1,000 pounds dry basis ²	1,000 pounds dry basis ²	1,000 dollars	Per pound
Grand total-----	44,280,812	38,075,035	18,370,903	\$0.48
THERMOSETTING RESINS				
Total-----	7,215,458	6,045,083	3,534,729	.58
Alkyd resins, total-----	719,047	427,236	266,857	.62
Alkyd-acrylate copolymer resins-----	2,649	...	...	...
Phthalic anhydride type-----	601,616	366,441	217,954	.59
Polybasic acid type-----	46,705	25,792	21,734	.84
Styrenated-alkyds or copolymer alkyds-----	11,847	5,108	4,592	.90
Vinyl toluene alkyds-----	27,620	25,261	16,928	.67
Other copolymer alkyds-----	28,610	4,634	5,649	1.22
Dicyandiamide resins-----	1,398	1,359	1,780	1.31
Epoxy resins: ^{3 4}				
Unmodified-----	342,538	305,846	377,458	1.23
Advanced-----	(202,307)	(131,176)	(177,547)	(1.35)
Furfuryl type resins-----	17,942	17,525	14,075	.80
Glyoxal-formaldehyde resins-----	15,093	9,269	10,864	1.17
Melamine-formaldehyde resins (an amino resin)-----	202,911	165,039	139,096	.84
Phenolic and other tar acid resins-----	1,459,605	1,333,022	577,129	.43
Polyester resins, unsaturated ⁵ -----	1,180,163	1,102,498	717,132	.65
Polyether and polyester polyols for urethanes ⁶ -----	1,452,341	1,168,749	706,186	.60
Polyurethane elastomers and plastics products, total-----	338,361	235,360	356,636	1.52
Elastomers ⁷ -----	154,420	120,853	234,433	1.94
Plastics-----	183,941	114,507	122,203	1.07
Silicone resins-----	16,346	8,757	44,663	5.10
Urea-formaldehyde resins (an amino resin)-----	1,349,331	1,165,009	231,973	.20
Other thermosetting resins ⁸ -----	120,382	105,414	90,880	.86
THERMOPLASTIC RESINS				
Total-----	37,065,354	32,029,952	14,836,174	.46
Acrylic resins, total ⁹ -----	1,364,905	940,881	950,445	1.01
Butyl acrylate-ethyl acrylate copolymers resins-----	111,335	21,688	18,047	.83
Polymethyl methacrylate-----	434,141	332,743	342,450	1.03
Thermosetting acrylics-----	117,387	22,946	31,316	1.36
Other acrylics-----	702,042	563,504	558,632	.99
Engineering plastics ¹⁰ -----	680,629	474,672	759,832	1.60
Petroleum hydrocarbons resins-----	256,893	226,887	112,847	.50
Polyamide resins, total-----	347,798	304,046	467,743	1.54
Nylon type ^{10 11} -----	288,404	248,128	409,228	1.65
Non-nylon type-----	59,394	55,918	58,515	1.05

See footnotes at end of table.

TABLE 1.--PLASTICS AND RESIN MATERIALS: U.S. PRODUCTION AND SALES, 1983--CONTINUED

PLASTIC AND RESIN MATERIALS	PRODUCTION	SALES		
		QUANTITY	VALUE	UNIT VALUE ¹
	1,000 pounds dry basis ²	1,000 pounds dry basis ²	1,000 dollars	Per pound
THERMOPLASTIC RESINS--Continued				
Polyester resins, saturated, total ^{9 12}	1,051,117	689,474	408,543	\$0.59
Polyethylene terephthalate (PET)	895,142	587,348	319,084	.54
Polybutylene terephthalate (PBT) and other polyesters, saturated	155,975	102,126	89,459	.88
Polyethylene resins, total	14,045,300	12,515,556	4,432,593	.35
Ethylene-vinyl acetate copolymer resins	155,013	112,849	51,516	.46
Specific gravity 0.940 and below	8,296,651	6,982,274	2,581,895	.37
Specific gravity over 0.940	5,593,636	5,420,433	1,799,182	.33
Polypropylene resins	4,456,919	3,793,682	1,304,202	.34
Polyterpene resins	35,539	36,314	25,942	.71
Rosin modifications, total	388,037	358,136	181,688	.51
Modified rosins (unesterified)	224,457	196,028	71,231	.36
Modified rosin esters	124,628	121,786	83,129	.68
Rosin esters, unmodified (Ester gums)	38,952	40,322	27,328	.68
Styrene plastics materials, total	6,254,031	5,639,759	3,110,416	.55
Acrylonitrile-butadiene-styrene terpolymer (ABS) resins	1,053,841	1,017,249	822,882	.81
Expandable polystyrene beads	632,121	659,354	344,400	.52
Rubber modified polystyrene	1,222,931	1,394,479	542,550	.39
Straight polystyrene	1,917,867	1,359,252	532,494	.39
Styrene-acrylonitrile copolymers resins (SAN)	370,604	213,969	142,587	.67
Styrene-butadiene latexes	573,624	554,305	352,881	.64
All other styrene latexes	74,905	69,183	37,766	.55
All other styrene plastics materials ¹³	408,138	371,968	334,856	.90
Vinyl resins, total ¹⁴	7,742,660	6,789,482	2,636,927	.39
Polyvinyl acetate ¹⁵	643,736	481,324	293,507	.61
Polyvinyl alcohol ¹⁶	180,827	148,199	123,845	.84
Polyvinyl chloride and copolymers	6,256,089	5,638,642	1,834,015	.33
Polyvinylidene chloride resins	100,718	78,681	66,050	.84
Vinyl acetate-acrylate copolymers	286,417	257,405	102,737	.40
Other vinyl and vinylidene resins ¹⁷	274,873	185,231	216,773	1.17
All other thermoplastic resins ¹⁸	441,526	261,063	444,996	1.70

¹Calculated from unrounded figures.²Dry 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.³Includes 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.⁴Data shown for advanced epoxy resins are that part of the unmodified epoxy resins which is further processed; therefore, the totals in parentheses are not included in the grand total.⁵Polyester 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.⁶In 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.⁷The 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.⁸Includes acetone-formaldehyde resins, polybutadiene resins, thiourea resins, and certain other thermosetting resins.⁹Does not include production or sales for fiber use.

Footnotes--Continued

¹⁰Engineering 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.

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

¹²Statistics 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.

¹³Includes data for α -methyl styrene polymers, p-methyl styrene polymers, methyl methacrylate-butadiene-styrene (MBS) resins, styrene-allyl alcohol copolymer resins, styrene-divinyl-benzene copolymer resins, styrene-maleic anhydride copolymers resins, styrene-methyl methacrylate copolymers resins, vinylpyrrolidinone-styrene copolymers, and other styrene type plastics material.

¹⁴Data are on the basis of dry resin content, excluding the weight of plasticizers, extenders, fillers, coloring agents, stabilizers, or impact modifiers, unless otherwise noted.

¹⁵Data 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.

¹⁶Production and sales do not include polyvinyl alcohol used as a reactive intermediates for polyvinyl butyral or other vinyl resins.

¹⁷Includes polyvinyl butyral and polyvinyl formal.

¹⁸Includes cellulose plastics, coumarone-indene resins, fluorocarbon 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, 1983

[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, GP.
*ALKYD RESINS:	:
*Acrylate-alkyd copolymer resins- - - - -	: FRE, GRV, KMC, MNP, OBC, SCM.
Alkyl phenol- - - - -	: X.
*Phthalic anhydride type alkyd resins - - - - -	: ACO, ASH, AZS, BAK, BAL, BEN, BFF, BLC, BRU, CCC, CEL, : CGL, CJO, CPV, DEG, DRC, DRR, DSO, DUP, ENP, EW, : FJI, FMO, FOC, FRE, GAI, GE, GRV, HAN, ICF, IOV, : JOB, JSC, KMC, KMP, LIC, MCC, MID, MNP, NCP, OBC, : PER, PPG, PRT, QCP, RCI, REL, SCM, SCN, SDH, SKT, : SM, SRY, STT, SW(E), USS, X, X.
*Polybasic acid type alkyd resins - - - - -	: ACY, BEN, CEL, CJO, CPV, DEG, DSO, EW, FJI, FOC, FRE, : GE, GRV, HAN, ICF, IOV, MCC, PPG, RCI, REL, SCM, : SCM, SKT, STT, SW.
*Styrenated-alkyds, or copolymer alkyds - - - - -	: ACY, CJO, CPV, DRC, DSO, EW, FRE, GE, GRV, HAN, MCC, : MNP, MRT, REL, RUO, SCM, SKT, SM, STT, SW(E).
*Vinyl toluene alkyds - - - - -	: BLC, CGL, CPV, FJI, FRE, GE, MCC, MNP, OBC, PPG, PRT, : REL, SCM, SM, STT, SW(E).
*Alkyd copolymers, all other - - - - -	: CGL, DEG, ENP, GE, LIC, MCC, OBC, PPG, SW(E).
AMINO RESINS:	:
*Dicyandiamide resins - - - - -	: APX, ECC, JSC, S, SNW, STC, VPC.
*Melamine-formaldehyde resins - - - - -	: ACY, AUX, BOR, CBD, CEL, CGL, CPV, DGO, DRC, FMO, GAI, : GP, GRV, HAN, JSC, LIC, MID, MNP, MON, NVM, OCF, : PKP, PLS, PMC, PPG, PPL, PST, RCI, REL, SM, SNW, : STC, SYT, WPG, WRD.
Thiourea resins- - - - -	: CMP.
*Urea-formaldehyde resins - - - - -	: ACY, APX, AUX, BOR, CBD, CBM, CCC, CEL, CGL, CMP, CPV, : DAN, DSO, GAF, GP, GRV, JSC, MMM, MON, PKI, PKP, : PMC, PPG, PPL, PST, RBI, RCI, REL, SAC, SM, SNW, : SOR, VAL, VPC, X.
Amino resins, all other - - - - -	: BAK.
*EPOXY RESINS:	:
*Epoxy, resins advanced- - - - -	: ASH, BEN, CEL, CGL, CGY, CJO, CNI, ENP, EW, FMO, GAI, : GE, GRV, ICF, MCC, MID, MMM, MRT, OCF, PPG, RCI, : SCM, SCN, SM, STT, SW(E).
*Epoxy, resins unmodified- - - - -	: ADC, AZS, CEL, CGY, CMP, DA, DOW, DSO, FRE, ICF, JOB,

TABLE 2.--PLASTICS AND RESIN MATERIALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1983-- CONTINUED

PLASTICS AND RESIN MATERIALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
THERMOSETTING RESINS--CONTINUED	
*EPOXY RESINS--CONTINUED	
*Furfuryl type resins - - - - -	PPG, PRT, RCI, SHC, SM, UCC, X.
*Glyoxal-formaldehyde resins - - - - -	ACR, CEI, CLU, DRR, HVG, NCP, UNO, WRD.
*Phenolic and other tar acid resins - - - - -	AUX, CMP, RTC, SNW, SYT, USM, WPG.
	ABS, ACR, ASH, BAK, BLC, BME, BOR, BSC, CBD, CBM, CEI,
	CLK, CLU, DA, DRR, DSO, EW, GE, GP, GRG, HER, HKD,
	HPC, HVG, ICF, INL, IRI, KPT, MCA, MID, MMM, MON,
	NCI, NCJ, NCP, NVM, OBC, OCF, PAI, PKI, PLS, PPG,
	PPL, PSL, PYZ, RAB, RCI, SIM, SKT, SPL, STC, SW,
	UCC, USR, VPC, VSV, WCA, WRD, X.
Polybutadiene resins - - - - -	ATR, CCS, CNI, CRS, LC, SCM.
*POLYESTER RESINS, UNSATURATED, AND ALLYL RESINS:	
Allyl resins - - - - -	DRC, FMC, GE, MCC, PPG.
Diallyl isophthalate - - - - -	FMC, GE.
Polyester resins, unsaturated - - - - -	ACY, ADC, AFP, APH, ASH, AZS, CGL, CJO, CPV, DOW, DSO,
	ENP, EW, FJI, FRE, GE, GRG, GRV, ICI, IPC, KPT, MCC,
	MRT, OBC, OCF, PKP, PPG, RCI, SCM, SCN, SDH, SHC,
	SIC, SLC, SM, SW(E), USS.
*Polyether and polyester polyols for urethanes - - - - -	ARK, BAS, BPT, CEI, CHC, CJO, CPV, CXI, DOW, FRE, ICI,
	JOB, MCC, MID, MMM, MOB, MRT, OCF, OMC, PPG, PPL,
	RCI, RUO, SKT, TX, UCC, UNO, UPJ, WLN, WM, WTC.
*POLYURETHANE ELASTOMER AND PLASTIC PRODUCTS:	
*Polyurethane elastomers - - - - -	ACY, ADC, ARO, BFG, BMC, BPT, CAS, CNI, CWN, DA, DCC,
	DNS, DUP, EEP, EPI, FRE, GRD, HXL, ICF, IMP, MMM,
	MOB, MON, MRT, PLN, PPG, PRC, PYI, RUO, SBG, SLC,
	TKL, UPJ, USR, WTC.
Polyurethane resins - - - - -	ACO, CGL, DSO, DUP, ENP, EW, FRE, GE, HVC, INP, LC,
	MCC, MID, MOB, OMC, PEL, PRI, PVI, QUN, RBI, RCI,
	SCM, SCN, SW(E), UPJ, USM, WTC.
*Silicone resins - - - - -	ARA, CJO, DCC, FRE, JOB, LIC, MCC, MID, OBC, PEL, RCI,
	SCM, SM, SPD.
Thermosetting resins, nonbenzenoid, all other - - - - -	BAK, S.
Thiourea-formaldehyde resins - - - - -	APX.
*Thermosetting resins, benzenoid, all other - - - - -	ACY, BAK, BAS, DEG, EMP, MCC, REL, SCM, SM, VAL, WPG.
THERMOPLASTIC RESINS	
*ACRYLIC RESINS:	
COPOLYMER RESINS OF ACRYLIC AND/OR METHACRYLIC ACID	
RESINS:	
*Butyl acrylate ethyl acrylate copolymer resins	DSO, QUN, RH, SNW, SYT, UOC, VAL.
Butyl methacrylate-ethyl methylacrylate copolymer	
resins - - - - -	UOC, WTC.
Ethyl acrylate - - - - -	DSO, RPC.

TABLE 2.--PLASTICS AND RESIN MATERIALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED,
IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

PLASTICS AND RESIN MATERIALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
THERMOPLASTIC RESINS--CONTINUED	
ACRYLIC RESINS --CONTINUED	
COPOLYMER RESINS OF ACRYLIC AND/OR METHACRYLIC ACID RESINS --CONTINUED	
2-Ethylhexyl acrylate-methy acrylate copolymer resins	SYT, UOC.
Lauryl methacrylate-stearyl methacrylate copolymer resins	TX.
*Other copolymer resins of acrylic and/or methacrylic acid esters-	ACO, AZS, BPT, DRB, DRC, DSO, FLH, FMO, GAF, ICF, JNS, JSC, MID, NSC, PPG, PRT, PYI, REL, RH, SCP, SM, STT, UCC, VAL, WTC.
HOMOPOLYMER RESINS OF ACRYLIC AND/OR METHACRYLIC ACID RESINS:	
*Other homopolymer resins of acrylic and/or methacrylic acidesters	CPV, CYR, DA, DUP, GLC, GRV, PPG, PVI, RH, SAR, SW(E), UOC.
*Polymethyl methacrylate (PMMA)	CTP, CYR, DUP, ICF, IOC, JOB, MRT, PKL, PPG, PTC, PVI, RH, SAR, SNW, USS, WTC.
Polyethyl methacrylate	TX.
*Thermosetting acrylate resins-	ACY, CEL, CHP, CPV, DA, DSO, DUP, EFH, FMO, FRE, GAI, GRV, HAN, ICF, LIC, MID, OBC, PPG, SCM, SYT, VAL.
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, CTP, DUP, MCC, MNP, PPG, RAS, WPG.
Polycarbonate resins	DOW, ENP, GE, ICF, MOB, PPG.
Polyimides and amide-imide polymers-	AMO, DUP, EW, GE, PDI.
Polyphenylene oxide type resins-	GE.
Polyphenylene sulfide resins	PLC.
Polysulfone resins	UCC.
FLUOROCARBON RESINS:	
Polytetrafluoroethylene (PTFE)	DUP, ICI.
Polyvinylidene fluoride resin-	PAS.
Fluorocarbon resins,all other-	DUP.
*Petroleum hydrocarbon resins	BLC, CFX, CXI, EKX, ENJ, GYR, HPC, ICF, LII, MCC, NEV, RCI, X.
Phenoxy (R) resin (other than for coating and adhesives)	UCC.

TABLE 2.--PLASTICS AND RESIN MATERIALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED,
IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

PLASTICS AND RESIN MATERIALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
THERMOPLASTIC RESINS--CONTINUED	
POLYAMIDE RESINS:	
*Non-nylon type, polyamide resins - - - - -	COO, EFH, EMR, HYC, LII, MCC, MON, NCI, OBC, PAC, S, SCP, SM, SNW, USM.
*Nylon type, polyamide resins - - - - -	AFP, AGI, BCM, CEL, CTR, DGO, DUP, FRF, HST, MON, RSN, SCP, SKP, USM.
Polybutylene type resins - - - - -	ENJ, SHC.
*POLYESTER RESINS, SATURATED:	
*Polybutylene terephthalate (PBT) - - - - -	GAF, GE, USM.
*Polyethylene terephthalate (PET) - - - - -	COO, DUP, EK, EKT, GE, GYR, HST, ICI, MMM, MRT, SNW, USM.
*Polyester resins, saturated, all other - - - - -	CPV, DUP, EKT, FMO, GAI, HYC, ICI, LII, MNP, SCM.
*POLYETHYLENE AND COPOLYMERS RESINS:	
*Ethylene-vinyl acetate (EVA) copolymer resins - - - - -	CPX, DOW, ENJ, NSC.
Other ethylene copolymer resins - - - - -	EKT, SNW.
Specific gravity 0.940 and below - - - - -	AFP, CPX, DOW, DUP, EKX, ELP, ENJ, GOC, HIM, NWP, SM, SNW, UCC, USI, X.
*Specific gravity 0.940 and below - - - - -	ELP, ENJ, PLC, SM.
*Specific gravity over 0.940 - - - - -	AFP, AMO, ATR, CPX, DOW, DUP, ENJ, GOC, HPC, HST, PLC, SLT, UCC, USI.
Polyphenyl aromatic ester resins - - - - -	HPC, MON.
*Polypropylene polymer and copolymer resins - - - - -	AMO, ATR, EKX, ELP, ENJ, GOC, HIM, HPC, MIL, NWP, PLC, SHC, SLT, USS, X.
*Polyterpene resins - - - - -	ARZ, HPC, RCI, SCN.
*ROSIN MODIFICATIONS:	
*Modified rosin (Unesterified) - - - - -	ARZ, CJO, DPP, HPC, MON, NCI, SYL.
*Modified rosin esters - - - - -	AZS, BAK, DPP, EW, FJI, FRP, GRV, HPC, MCC, NCI, PPG, RCI, SCM, SKT, STC, SW(E), SYL.
*Rosin esters, unmodified (Ester gums) - - - - -	ARZ, DPP, FRP, HPC, LII, NCI, PRT, RCI, SKT, SYL.
*STYRENE TYPE PLASTICS MATERIALS:	
*Acrylonitrile-butadiene-styrene (ABS) terpolymer resins - - - - -	DOW, GRD, GYR, MCB, MON.
p-Methyl styrene polymers - - - - -	SM.
α-Methyl styrene polymers - - - - -	AMO.
*Styrene-acrylonitrile copolymer resins (SAN) - - - - -	BFG, CSD, DOW, MCB, MON, RCI, TXS.
POLYSTYRENE:	
*Expandable polystyrene beads - - - - -	ATR, BAS, CSD, HST, SM, VIT.
*Rubber modified polystyrene - - - - -	API, ATR, CSD, DOW, DPI, HST, MON, PLR, SHC, SM.
*Straight polystyrene - - - - -	AEP, AMO, API, ATR, CSD, DOW, DPI, GOC, HGC, HST, KTP, MMM, MON, PLR, SHC, SM, TXS.
STYRENE LATEXES:	
*Styrene-butadiene latexes - - - - -	DOW, GNT, GRD, GYR, MIL, PLR, UOC.
*Styrene latexes, all other - - - - -	ADC, DOW, GNT, GRD, MON, PVI, UCC, UOC.

TABLE 2.--PLASTICS AND RESIN MATERIALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED,
IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

PLASTICS AND RESIN MATERIALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
THERMOPLASTIC RESINS--CONTINUED	
OTHER STYRENE COPOLYMERS:	
Methyl methacrylate-butadiene styrene (MBS) resins - - - - -	: CYR.
Styrene-allyl alcohol copolymer resins - - - - -	: HPC.
Styrene-divinylbenzene copolymer resins- - - - -	: RH.
Styrene-maleic anhydride copolymer resins- - - - -	: ATR, MON, WTC.
Styrene-methyl methacrylate copolymer resins - - - - -	: MCC, RCD.
Vinyl pyrrolidone styrene copolymer- - - - -	: GAF.
Styrene copolymers, all other- - - - -	: ARZ, BFG, DA, DOW, DUP, GYR, IOC, JNS, MON, MRT, PLC, RCD, VPC, X.
*Styrene type plastics materials, all other- - - - -	: JNS.
*VINYL RESINS:	
*Polyvinyl acetate resins - - - - -	: AIP, AZS, BAL, BOR, DAN, DSO, FJI, FLH, FLN, GLC, GRD, JOB, JSC, KMP, MCC, MNP, MON, NSC, PYI, RCI, RPC, SCM, SCO, UCC, UOC, X, X.
*Polyvinyl alcohol resins - - - - -	: AIP, AZS, DUP, MON.
Polyvinyl butyral resins - - - - -	: DUP, MON, PNT.
Polyvinyl formal resin - - - - -	: EW, MON.
Vinyl acetate-acrylate copolymers- - - - -	: ACO, DSO, FLN, NCJ, NTC, OBC, PYI, SCM, SPC, UCC, UOC.
*POLYVINYL CHLORIDE AND COPOLYMER RESINS:	
Vinyl chloride-acetate copolymer resins- - - - -	: MCC.
Polyvinyl chloride copolymer resins, all other - - - - -	: CNI, FOR, GNT, HKP, HN.
Polyvinyl chloride homopolymer resins- - - - -	: AIP, BFG, BOR, CNT, CO, DA, FOR, GNT, GP, HKP, HN, KYS, MIL, SHT, TNA, UCC.
*POLYVINYLIDINE CHLORIDE RESINS:	
Latex type polyvinylidene chloride resins- - - - -	: BFG, DOW, GRD, MRT, UOC.
Solid type polyvinylidene chloride resins- - - - -	: DOW, SNW.
Vinyl resins, all other - - - - -	: DOW, DSO, DUP, RH, SCM, UCC.
Thermoplastic resins, benzenoid, all other - - - - -	: CXI, DPP, DUP, MON, MRT, SW(E), UOC.

TABLE 3.—PLASTICS AND RESIN MATERIALS: DIRECTORY OF MANUFACTURERS, 1983

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 1983 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.	CPX	Chemplex Co.
ACR	CPC International, Inc., Acme Resin Corp.	CRS	Colorado Resins, Inc.
ACO	Adco Chemical Co.	CSD	Cosden Oil & Chemical Co.
ACY	American Cyanamid Co.	CTP	Continental Polymers, Inc.
ADC	Anderson Development Co.	CTR	Bemis Co., Inc., Custom Resins Div.
AEP	A & E Plastics Corp.	CWN	Upjohn Co., Fine Chemical Div.
AFP	Allied Corp., Allied Fibers & Plastics Co. Div.	CYR	CYRO Industries, Inc.
AGI	EMS-American Grilon, Inc.	CXI	Chemical Exchange Industries, Inc.
AIP	Air Products & Chemicals, Inc.	DA	Diamond Shamrock Corp.
AMO	Standard Oil Co. (Indiana)	DAN	Dan River, Inc., Chemical Products Div.
APH	The Alpha Resins Corp.	DCC	Dow Corning Corp.
API	Asoma Polymers, Inc.	DEG	Degan Oil & Chemical Co.
APX	Apex Chemical Co., Inc.	DGO	Day-Glo Color Corp.
ARA	Syntex Chemical, Inc.	DNS	Dennis Chemical Co.
ARK	Armstrong World Industries, Inc.	DOW	Dow Chemical Co.
ARO	Arnco	DPI	Dart Polymers, Inc. Sub. of Dart Container Corp.
ARZ	Arizona Chemical Co.	DPP	Dixie Pine Chemicals, Inc.
ASH	Ashland Oil, Inc.	DRB	The Derby Co., Inc.
ATR	Atlantic Richfield Co., Arco Chemical Co.	DRC	Dock Resins Corp.
AUX	Auralux Corp.	DRR	Delta Resins & Refractory
AZS	AZS Corp. & AZS Chemical Corp.	DSO	DeSoto, Inc.
BAK	Baker International - Magna Corp.	DUP	E.I. duPont de Nemours & Co., Inc.
BAL	Sherwin-Williams Co., Dutch Boy, Inc., Consumers Div.	ECC	Eastern Color & Chemical Co.
BAS	BASF Wyandotte Corp.	EEP	Eaton Corp., EPP Div.
BCM	Belding Chemical Industries	EFH	E.F. Houghton & Co.
BEN	Bennett Paint and Glass	EK	Eastman Kodak Co.:
BFF	Beatrice Foods Co., Farboil Co. Div.	EKT	Tennessee Eastman Co. Div.
BFG	B.F. Goodrich Co., B.F. Goodrich Chemical Group	EKX	Texas Eastman Co. Div.
BLC	Ball Chemical Co.	ELP	El Paso Products Co.
BMC	Brin-Mont Chemicals, Inc.	EMR	Emery Industries Div. of National Distillers & Chemical Corp.
BME	Bendix Corp.	ENJ	Exxon Chemical Americas
BOR	Borden Co., Borden Chemical Co. Div.	ENP	Insilco Corp., The Enterprise Cos.
BPT	Beatrice Foods Co., Permuthane Div.	EPI	Eagle Pitcher Industries, Inc., Ohio Rubber Co. Div.
BRU	M.A. Bruder & Sons, Inc.	EW	Westinghouse Electric Corp., Insulating Materials Div.
BSC	Cascade Resins, Inc.	FJI	Foy-Johnson, Inc.
CAS	Caschem, Inc.	FLH	H.B. Fuller Co.
CBD	Chembond Corp.	FLN	Franklin Chemical Industries
CBM	Carborundum Co.	FMO	Ford Motor Co., Paint Plant
CCC	C.N.C. Chemical Corp.	FMC	FMC Corp., Industrial Chemical Div.
CCS	Colorado Chemical Specialties, Inc.	FOC	Handschy Industries, Inc., Farac Varnishes & Chemicals
CEI	Combustion Engineering, Inc., C-E Cast Products	FOR	Formosa Plastics Corp.-U.S.A.
CEL	Celanese Corp.: Celanese Engineering Resin Celanese Specialty Resins	FRE	Freeman Chemical Corp.
CFX	Chemfax, Inc.	FRF	Firestone Tire & Rubber Co., Firestone Fibers & Textile Co.
CGL	Cargill, Inc.	FRP	FRP Company
CGY	Ciba-Geigy Corp.	GAF	GAF Corp.
CHC	Carpenter Chemical Co.	GAI	Glasurit America, Inc.
CHP	C.H. Patrick & Co., Inc.	GE	General Electric Co.:
CJO	C. J. Osborn Chemicals, Inc.	GEI	Insulating Materials Products Sec.
CLK	Clark Oil & Refining Corp.	GLC	General Latex & Chemical Corp.
CLU	Core-Lube, Inc.	GNT	General Tire & Rubber Co.
CMF	Commercial Products Co., Inc.	GOC	Gulf Oil Corp., Gulf Oil Products Co.
CNI	Conap, Inc.	GP	Georgia-Pacific Corp.:
CNT	Certainteed Corp.		Plaquemine Div.
CO	Conoco, Inc.		Resins Operations
COO	The Terrell Corp.		
CPV	Cook Paint & Varnish Co.		

TABLE 3.—PLASTICS AND RESIN MATERIALS: DIRECTORY OF MANUFACTURERS, 1983—CONTINUED

CODE	NAME OF COMPANY	CODE	NAME OF COMPANY
GRD	W.R. Grace & Co., Polymers & Chemicals Div.	OBC	O'Brien Corp.
GRG	P.D. George Co.	OCF	Owens-Corning Fiberglas Corp.
GRV	Guardman Chemicals, Inc.	OMC	Olin Corp.
GYR	Goodyear Tire & Rubber Co.		
		PAC	Pacific Anchor Chemical Corp.
HAN	Hanna Chemical Coating Corp.	PAI	Polymer Applications, Inc.
HER	Heresite-Saekaphen, Inc.	PAS	Pennwalt Corp.
HGC	Goodson Chemical Corp.	PDI	Phelps Dodge Industries, Inc., Phelps Dodge Magnet Wire Co. Div.
HIM	Himont U.S.A., Inc.		
	Occidental Chemical Corp.	PEL	Peirson Corp.
HKD	Durez Div.	PER	Perry & Derrick Co., Inc.
HKP	PVC Div.	PKI	Perkins Industries, Inc.
HN	Tenneco Polymer, Inc.	PKL	Plaskolite, Inc.
HPC	Hercules, Inc.	PKP	Plaskon Products, Inc.
HST	American Hoechst Corp.	PLC	Phillips Petroleum Co.
	Hoechst Fiber Industries Div.	PLN	Disogrin Industries Corp.
	Petrochemical Div.	PLR	Polysar, Inc.
	Plastics Div.		Polysar Latex Div.
HVG	Ametek, Inc., Havg Div.		Resins Div.
HXL	Hexcel Corp., Hexcel Chemical Products	PLS	Plastics Engineering Co.
HYC	Dexter Corp., Hysol Div.	PMC	Plastics Manufacturing Co.
		PNT	Pantasote, Inc., Film/Compound & Packaging Div.
ICF	Inmont Corp.	PPG	PPG Industries, Inc.
ICI	ICI Americas, Inc. & Chemical Specialties Co.	PPL	Pioneer Plastics Div. of LOF Plastics, Inc.
INL	Van Leer Containers, Inc.	PRC	Products Research & Chemical Corp.
INP	Synair Corp.	PRI	Poly Resins, Inc.
IOC	Sybron Corp., Sybron Chemical Div.	PRT	Pratt & Lambert, Inc.
IOV	Iovite, Inc.	PSL	Plaslok Corp.
IPC	Interplastic Corp.	PST	Perstorp Compounds, Inc.
IRI	Ironsides Co.	PTC	Polycast Technology Corp.
		PVI	Polyvinyl Chemical Industries
JNS	S.C. Johnson & Son, Inc.	PYI	Polymer Industries
JOB	Jones-Blair Co.	PYZ	Polyrez Co., Inc.
JSC	Sybron Corp., Sybron Chemical Div.		
		QCP	Quaker Chemical Corp.
KMC	Komac Paint, Inc.	QUN	K.J. Quinn & Co., Inc.
KMP	Kelly-Moore Paint Co., Inc.		
KPT	Koppers Co., Inc.	RAB	Raymark Corp.
KTP	Kent Polymers, Inc.	RAS	Raffi and Swanson, Inc.
KYS	Keysor Corp.	RBI	Reeves Brothers, Inc.
		RCD	Richardson Polymer Corp.
LC	Lord Corp., Chemicals Products Group	RCI	Reichhold Chemicals, Inc.
LIC	Lilly Industrial Coatings, Inc.	REL	Reliance Universal, Inc., Louisville Resins Operations
LII	Lawter International, Inc.		
		RH	Rohm & Haas Co.
MCA	Masonite Corp., Alpine Div.	RPC	Millmaster Onyx Group, Lyndall Chemical Co. Div.
MCB	Borg-Warner Corp., Borg-Warner Chemicals		
MCC	McCloskey Varnish Co.	RSN	Rilsan Corp.
MCC	McCloskey Varnish Co. of Northwest	RTC	Riegel Textile Corp., Riechem Div.
MCC	McCloskey Varnish Co. of the West	RUO	Ruco Polymers Corp.
MID	Dexter Corp., Midland Div.		
MIL	Milliken & Co., Milliken Chemicals Co.	S	Sandoz, Inc., Colors & Chemicals Div.
MMM	Minnesota Mining & Manufacturing Co.	SAC	Southeastern Adhesives Co.
MNP	McWhorter, Inc.	SAR	Leski, Inc.
MOB	Mobay Chemical Co., Pittsburgh Div.	SBG	Samuel Bingham, Co.
MON	Monsanto Corp.	SCM	SCM Corp., Coatings & Resins Div.
MRT	Morton-Thiokol, Inc., Morton Chemical Co. Div.	SCN	Schenectady Chemicals, Inc.
		SCO	Scholler, Inc.
		SCP	Henkel Corp.
NCI	Union Camp Corp., Chemical Products Div.	SDH	Sterling Drug, Inc., Hilton Davis Chemical Co. Div.
NCJ	National Casein of New Jersey		
NCP	Niles Chemical Paint Co. and Kordell Industries Div.	SHC	Shell Oil Co., Shell Chemical Co. Div.
NEV	Neville Chemical Co.	SHT	Shintech, Inc.
NSC	National Starch & Chemical Corp.	SIC	Sohio Chemicals Co., Silmar Div.
NTC	National Casein Co.	SIM	Simpson Timber Co.
NVM	Nevamer Corp.	SKP	Shakespeare Co., Monofilament Div.
NWP	Northern Petrochemical Co.	SKT	Textron Inc., Spencer Kellogg Div.

TABLE 3.--PLASTICS AND RESIN MATERIALS: DIRECTORY OF MANUFACTURERS, 1983--CONTINUED

CODE	NAME OF COMPANY	CODE	NAME OF COMPANY
SLC	Soluol Chem Co., Inc.	UNO	United-Erie, Inc.
SLT	Soltex Polymer Corp.	UOC	Union Oil Co. of California
SM	Mobil Oil Corp.:	UPJ	Upjohn Co. and Polymer Chemical Div.
	Mobil Chemical Co.:	USI	National Distillers & Chemical Corp.:
	Chemical Coatings Div.		U.S. Industrial Chemicals Co.:
	Petrochemical Div.		National Petro Chemical Corp.
SNW	Sun Chemical Corp., Chemicals Div.	USM	Crown Metro, Inc.
SOR	MW Manufacturers, Southern Resin Div.	USM	Emhart Corp., Bostik U.S. Div.
SPC	Insilco Corp., Sinclair Paint Co. Div.	USR	Uniroyal, Inc., Uniroyal Chemical Div.
SPD	General Electric Co., Silicone Products Dept.	USS	U.S. Steel Corp., USS Chemicals Div.
SPL	Spaulding Fiber Co., Inc., Industrial Plastics		
	Div.	VAL	Valchem Div. of United Merchants &
SRY	Synray Corp.		Manufacturers, Inc.
STC	American Hoechst Corp., Sou-Tex Works	VIT	Vititek Corp.
STT	Standard T Chemicals, Inc.	VPC	Mobay Chemical Corp., Dye & Pigment Div.
SW	Sherwin-Williams Co.	VSV	Valentine Sugars, Inc., Valite Div.
SYL	Sylvachem Corp.		
SYT	Synthron, Inc.	WCA	West Coast Adhesives Co.
		WLN	Wilmington Chemical Corp.
TKL	Morton-Thiokol Inc., Morton Chemical Div.	WM	American Can Co., Inolex Chemical Co.
TNA	Ethyl Corp., Polymer Products Div.	WPG	West Point-Pepperill, Inc., Gifftex Chemical
TX	Texaco, Inc.		Co. Sub.
TXS	Textstyrene Plastics, Inc.	WRD	Weyerhaeuser Co.
		WTC	Witco Chemical Corp.
UCC	Union Carbide Corp.		

Note.--Complete names, telephone numbers, and addresses of the above reporting companies are listed in table 1 of the appendix. The above codes identify those of the 265 reporting companies and company divisions for which permission to publish was not restricted.

STATISTICAL HIGHLIGHTS

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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 1983 are given in table 1.¹

Production of rubber-processing chemicals as a group in 1983 amounted to 293 million pounds or 26 percent more than the 232 million pounds produced in 1982. Sales of rubber-processing chemicals in 1983 amounted to 203 million pounds, valued at \$312 million, compared with 154 million pounds, valued at \$264 million, in 1982.

The production of cyclic rubber-processing chemicals in 1983 amounted to 246 million pounds, or 18 percent more than the 208 million pounds produced in 1982. Sales of cyclic rubber-processing chemicals in 1983 total 163 million pounds, valued at \$279 million, compared with 135 million pounds, valued at \$241 million, in 1982. Of the total production of cyclic rubber-processing chemicals in 1983, antioxidants, antiozonants, and stabilizers accounted for 69 percent and accelerators, activators, and vulcanizing agents for 28 percent. Production of antioxidants, antiozonants, and stabilizers, which amounted to 169 million pounds in 1983, included 106 million pounds of amino compounds and 63 million pounds of phenolic and phosphite compounds. Sales of amino antioxidants, antiozonants, and stabilizers in 1983 amounted to 70 million pounds, valued at \$117 million; sales of phenolic and phosphite antioxidants, antiozonants, and stabilizers were 38 million pounds, valued at \$62 million.

Production of acyclic rubber-processing chemicals in 1983 amounted to 46 million pounds, or 92 percent more than the 24 million pounds produced in 1982. Sales in 1983 totaled 40 million pounds, valued at \$33 million, compared with 19 million pounds, valued at \$23 million, in 1982. Dithiocarbamic acid derivatives accounted for 11 percent of sales (based on quantity) of acyclic rubber-processing chemicals in 1983.

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

TABLE 1.--RUBBER-PROCESSING CHEMICALS: U.S. PRODUCTION AND SALES, 1983

[Listed below are all rubber-processing chemicals for which any reported or estimated 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 ¹
	1,000 pounds	1,000 pounds	1,000 dollars	Per pound
Grand Total-----	292,520	203,023	312,307	\$1.54
CYCLIC				
Total-----	246,050	162,528	279,164	1.72
Accelerators, activators, and vulcanizing agents, total-----	68,032	45,711	73,913	1.62
Thiazole derivatives, total-----	62,947	40,698	59,076	1.45
2,2'-Dithiobis[benzothiazole]-----	8,747	7,637	9,116	1.19
2-Mercaptobenzothiazole-----	...	5,958	4,830	.81
All other thiazole derivatives-----	54,200	27,103	45,130	1.67
All other accelerators, activators, and vulcanizing agents ^{2 3} -----	5,085	5,013	14,837	2.96
Antioxidants, antiozonants, and stabilizers, total-----	168,970	108,030	180,071	1.67
Amino compounds, total-----	105,578	70,099	117,488	1.68
Substituted p-phenylenediamines-----	64,907	40,136	74,375	1.85
All other amino compounds ⁴ -----	40,671	29,963	43,113	1.44
Phenolic and phosphite compounds, total ⁵ -----	63,392	37,931	62,583	1.65
Nonylphenyl phosphites, mixed-----	17,237	10,384	8,170	.79
Phenolic compounds:				
Phenol, alkylated-----	...	3,217	7,191	2.24
Phenol, styrenated, mixtures-----	...	883	1,006	1.14
All other phenolic and phosphite compounds-----	46,155	23,447	46,216	1.97
All other cyclic rubber-processing chemicals ⁶ -----	9,048	8,787	25,180	2.87
ACYCLIC				
Total-----	46,470	40,495	33,143	.82
Accelerators, activators, and vulcanizing agents, total-----	8,793	7,431	15,640	2.10
Dithiocarbamic acid derivatives, total ³ -----	5,667	4,424	9,640	2.18
Dibutyldithiocarbamic acid, nickel salt-----	...	417	1,505	3.61
All other dithiocarbamic acid derivatives-----	5,667	4,007	8,135	2.03
All other accelerators, activators, and vulcanizing agents-----	3,126	3,007	6,000	1.99
All other acyclic rubber-processing chemicals ⁸ -----	37,677	33,064	17,503	.53

¹Calculated from unrounded figures.

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

³Data 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."

⁴Includes aldehyde- and acetone-amine reactions products.

⁵Also includes other antioxidants, antiozonants, and stabilizers.

⁶Includes blowing agents, peptizers, and other cyclic rubber-processing chemicals.

⁷Includes thurams, xanthates, sulfides, and other accelerators, activators, and vulcanizing agents.

⁸Includes 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, 1983

[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.
2,4-Dinitrophenyl dimethyldithiocarbamate - - - - -	USR.
GUANIDINES:	
Diccatechol borate, di-o-tolylguanidine salt - - - - -	DUP.
* THIAZOLE DERIVATIVES:	
1,3-Bis(2-benzothiazolylmercaptomethyl) urea - - - - -	RBC.
N-tert-Butyl-2-benzothiazolesulfenamide - - - - -	BFG, MON, USR.
N-Cyclohexyl-2-benzothiazolesulfenamide - - - - -	MON, USR.
N,N-Diisopropyl-2-benzothiazolesulfenamide - - - - -	ACY.
2,5-Dimercapto-1,3,4-thiadiazole - - - - -	VNC.
*2,2'-Dithiobis[benzothiazole] - - - - -	BFG, GYR, MON, USR.
*2-Mercaptobenzothiazole - - - - -	GYR, MON, USR.
2-Mercaptobenzothiazole, copper salt - - - - -	ACY.
2-Mercaptobenzothiazole derivative - - - - -	VNC, X.
2-Mercaptobenzothiazole, zinc chloride - - - - -	DUP.
2-Mercaptobenzothiazole, zinc salt - - - - -	ACY, GYR, USR, VNC.
N-Morpholinyl-2-benzothiazolyl disulfide - - - - -	GYR.
N-Oxydiethylene-2-benzothiazolesulfenamide - - - - -	BFG, USR.
N-Oxydiethylenethiocarbamyl-N'-oxydiethylenesulfenamide - - - - -	BFG.
ALL OTHER CYCLIC ACCELERATORS, ACTIVATORS, AND VULCANIZING AGENTS:	
Bis(morpholinethiocarbamoyl) disulfide - - - - -	ACY.
Dibenzylamine - - - - -	USR.
1,3-Dihydro-2H-benzimidazole-2-thione, zinc salt	VNC.
1,3-Dihydro-4(or 5)-methyl-2H-benzimidazole-2-	

TABLE 2.--RUBBER-PROCESSING CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1983--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	
thione - - - - -	VNC.
Dimethylammonium hydrogen isophthalate - - - - -	VNC.
Di-N,N'-pentamethylenethiuram tetrasulfide - - - - -	VNC.
4,4'-Dithiodimorpholine - - - - -	MON, USR.
m-Phenylenebismaleimide - - - - -	DUP.
Tetramethylthiuram disulfide - - - - -	DUP.
Tetramethylthiuram tetrasulfide - - - - -	GYR.
p-Toluenesulfinic acid, zinc salt - - - - -	USR.
Triallyl isocyanurate - - - - -	DUP.
*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, USR.
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 - - - - -	GYR, UPM, USR.
N,N'-Di-2-naphthyl-p-phenylenediamine - - - - -	BFG.
N,N'-Diphenyl-p-phenylenediamine - - - - -	BFG, USR.
N-Isopropyl-N'-phenyl-p-phenylenediamine - - - - -	UPM, USR.
N-(1-Methylpentyl)-N'-phenyl-p-phenylenediamine - - - - -	USR.
p-Phenylenediamines, substituted, other - - - - -	KPI.
OTHER AMINES:	
p-Anilinophenol - - - - -	BFG.
1,2-Dihydro-6-dodecyl-2,2,4-trimethylquinoline - - - - -	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, 1983--CONTINUED

RUBBER-PROCESSING CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
CYCLIC--CONTINUED	
ANTIOXIDANTS, ANTIOZONANTS, AND STABILIZERS--Con.	
*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.
2,2'-Methylenebis[6-(1-methylcyclohexyl)-p-cresol]- - - - -	ACY, ICI.
4,4'-Thiobis(6-tert-butyl-m-cresol)- - - - -	MON.
1,1,3-Tri(2-methyl-4-hydroxy-5-tert-butylphenyl) butane - - - - -	ICI.
ALL OTHER PHENOLIC ANTIOXIDANTS AND STABILIZERS:	
*Phenol, alkylated - - - - -	ACY, BFG, GYR, NEV, RCI.
*Phenol, hindered - - - - -	OMC, USR.
Phenol, styrenated, mixtures - - - - -	GYR, NEV, USR.
N-Stearoyl-p-aminophenol - - - - -	HXL.
ALL OTHER ANTIOXIDANTS, ANTIOZONANTS, AND STABILIZERS:	
Antioxidants, antiozonants, and stabilizers, cyclic, other - - - - -	
	OMC, TNA.
BLOWING AGENTS:	
Dinitrosopentamethylenetetramine - - - - -	OMC.
p,p'-Oxybis(benzenesulfonhydrazide)- - - - -	OMC, USR.
5-Phenyltetrazole - - - - -	OMC.
p-Toluenesulfonylhydrazide - - - - -	USR.
p-Toluenesulfonylsemicarbazide - - - - -	USR.
PEPTIZERS:	
2,2,2'-Dithiobis(benzanilide) - - - - -	ACY.
ALL OTHER CYCLIC RUBBER-PROCESSING CHEMICALS:	
p-tert-Amylphenol sulfide (Tackifier) - - - - -	MON, PAS.
4-Chloro-2,6-bis(2,4-dihydroxybenzyl)phenol - - - - -	ICI.
Diphenyl-4,4'-diphenylmethylenedicarbamate - - - - -	USR.
Nitrosodiphenylamine (Retarder) - - - - -	GYR.
Rubber-processing chemicals, cyclic, all other - - - - -	FER.

TABLE 2.--RUBBER-PROCESSING CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1983--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, X.
*Dibutyldithiocarbamic acid, nickel salt - - - - -	DUP, USR, VNC.
Dibutyldithiocarbamic acid, sodium salt - - - - -	DUP, USR, VNC.
Dibutyldithiocarbamic acid, zinc salt - - - - -	RBC, VNC.
Diethyldithiocarbamic acid, cadmium salt and bis(diethylthiocarbamoyl)disulfide, mixture - - - - -	VNC.
Diethyldithiocarbamic acid, selenium salt - - - - -	VNC.
Diethyldithiocarbamic acid, sodium salt - - - - -	ALC, VNC.
Diethyldithiocarbamic acid, tellurium salt - - - - -	VNC.
Diethyldithiocarbamic acid, zinc salt - - - - -	ALC, GYR.
Diethyldithiocarbamic, nickel salt - - - - -	VNC.
Dimethyldithiocarbamic acid, bismuth salt - - - - -	VNC.
Dimethyldithiocarbamic acid, copper salt - - - - -	VNC.
Dimethyldithiocarbamic acid, lead salt - - - - -	VNC.
Dimethyldithiocarbamic acid, nickel salt - - - - -	VNC.
Dimethyldithiocarbamic acid, selenium salt - - - - -	VNC.
Dimethyldithiocarbamic acid, sodium salt and sodium polysulfide - - - - -	BFG.
Dimethyldithiocarbamic acid, zinc salt - - - - -	GYR, USR, VNC.
Di(2-methylpropyl)dithiocarbamic acid, nickel salt - - - - -	VNC.
Dithiocarbamic acid derivatives, acyclic, other	DUP.
THIURAMS:	
Bis(dibutylthiocarbamoyl) disulfide - - - - -	VNC.
Bis(diethylthiocarbamoyl) disulfide - - - - -	GYR.
Bis(dimethylthiocarbamoyl) disulfide - - - - -	GYR.
Bis(dimethylthiocarbamoyl) sulfide - - - - -	GYR, USR.
N,N'-Diocetadecyl-N,N'-diisopropyl thiuram disulfide - - - - -	USR.
XANTHATES AND SULFIDES:	
Di-n-butylxantho disulfide - - - - -	USR.
Polydiethoxytetrasulfides, mixed - - - - -	RBC.
Zinc isopropyl xanthate - - - - -	VNC.
ALL OTHER ACYCLIC ACCELERATORS, ACTIVATORS, AND VULCANIZING AGENTS:	
p-Aminocyclohexylmethane carbonate - - - - -	DUP.
n-Butyraldehyde-butylamine condensate - - - - -	DUP.
Ethylenediamine carbamate - - - - -	DUP.

TABLE 2.--RUBBER-PROCESSING CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

RUBBER-PROCESSING CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
BLOWING AGENTS:	
1,2-Hydrazinedicarboxylic acid, bis(1-methylethyl) ester	: USR.
POLYMERIZATION REGULATORS:	
Alkyl mercaptans, mixed	: PLC.
n-Dodecyl mercaptans	: PAS, PLC.
tert-Hexadecyl mercaptan	: PLC.
tert-Nonyl mercaptan	: PAS, PLC.
n-Octyl mercaptan	: PLC.
tert-Octyl mercaptan	: PAS.
SHORTSTOPS:	
Dimethyldithiocarbamic acid, potassium salt	: ALC, USR.
Dimethyldithiocarbamic acid, sodium salt	: ALC, USR.
ALL OTHER ACYCLIC RUBBER-PROCESSING CHEMICALS:	
Waxes and paraffinic products	: DUP, RCI.
Zinc laurate (Activator, physical property improver, and processing auxiliary)	: USR.
Rubber-processing chemicals, acyclic, all other	: OMC, VNC, WVA.

TABLE 3.--RUBBER-PROCESSING CHEMICALS: DIRECTORY OF MANUFACTURERS, 1983

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 1983 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.
HXL	Hexcel, Inc., Hexcel Chemical Products	RCI	Reichhold Chemicals, Inc.
ICI	ICI Americas, Inc., Chemical Specialties Co.	UFM	UOP, Inc., UOP Process Div.
KPI	Kenrich Petrochemicals, Inc.	USR	Uniroyal, Inc., Uniroyal Chemical Div.
MCB	Borg-Warner Corp., Borg-Warner Chemicals	VNC	Vanderbilt Chemical Corp.
		WVA	Westvaco Corp., Chemical Div.

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

STATISTICAL HIGHLIGHTS

Jesse Lawrence Johnson/Mildred C. Higgs

202-523-0127

202-523-0472

Elastomers (synthetic rubber) are high polymeric materials with properties similar to those of natural rubber. The term "elastomers" as used in this report, means a substance, 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 its original length and, after having been so stretched and the stress removed, will return with force to approximately. U.S. production and sales of elastomers in 1983 are shown in table 1.

Total U.S. production of synthetic rubber in 1983 amounted to 4,013 million pounds, an increase of 3.5 percent from that produced in 1982. Total sales of elastomers in 1983 amounted 2,688 million pounds, an increase of 5.6 percent from that sold in 1982.

Styrene-butadiene rubber (SBR, or S-type rubber) in 1983 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 S-type rubber, including 22 million pounds of its vinyl pyridine sub-type, amounted to 1,962 million pounds in 1983. Solution polymerized butadiene rubber, a stereo type elastomer, was produced domestically in 1983 in the next largest amount--483 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 363 million pounds in 1983; acrylonitrile-butadiene (N-type) rubber, production of which was 116 million pounds; and silicone type elastomers, production of which was 120 million pounds.

Sales of S-type rubber by U.S. producers in 1983 amounted to 1036 million pounds. Sales of solution polymerized butadiene rubber amounted to 264 million pounds, and those of ethylene-propylene rubber to 296 million pounds. Sales of N-type rubber in 1983 amounted to 94 million pounds.

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.

Urethane type elastomers are now included in the section "Plastics and Resin Materials."

TABLE 1.--ELASTOMERS (SYNTHETIC RUBBER):¹ U.S. PRODUCTION AND SALES, 1983

[Listed below are all 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 ²	SALES		
		QUANTITY ²	VALUE	UNIT VALUE ³
	1,000	1,000	1,000	Per
	pounds	pounds	dollars	pound
Grand total-----	4,013,030	2,688,415	2,195,579	\$0.81
Acrylonitrile-butadiene type (N-type)-----	116,544	93,728	96,291	1.03
Ethylene-propylene type-----	363,115	296,902	243,517	.82
Polyacrylate ester type-----	5,529	3,446	7,644	2.22
Polybutadiene (solution polymerized) type-----	483,173	264,114	148,656	.56
Silicone type-----	120,696	...	...	...
Styrene-butadiene type (S-type)-----	1,940,367	1,035,577	436,766	.42
Styrene-butadiene-vinylpyridine type-----	21,535	...	...	...
All other elastomers ⁴ -----	962,071	994,648	1,262,705	1.27

¹The term "elastomers" is defined as substance 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.

²Includes oil content of oil-extended elastomers.

³Calculated from unrounded figures.

⁴Includes acrylic ester, butyl, chloroprene, epichlorohydrin, fluorinated, isobutylene, isoprenes, polysulfide, certain solution elastomers, chlorinated rubber, chlorosulfonated polyethylene, thermoplastic rubber, silicone type (sales only), styrene-butadiene-vinylpyridine type (sales only), and miscellaneous elastomers.

Note.--Data on production and sales of urethane elastomers are now reported in the section "Plastics and Resin Materials" with urethane plastics and polyols.

TABLE 2.--ELASTOMERS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1983

[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	
BUTADIENE-STYRENE TYPE:	
*Butadiene-styrene (S-Type) - - - - -	ASY, BFG, CPY, FRS, GNT, GYR, MMM, PLC, PLR, USR.
*Butadiene-styrene-vinylpyridine - - - - -	BFG, FRS, GNT, GRD, GYR.
*Polyisoprene, cyclized - - - - -	WAY.
ELASTOMERS, CYCLIC, ALL OTHER - - - - -	HPC, SHC.
ACYCLIC	
*POLYACRYLATE ESTER TYPE:	
Polyacrylate ester, type elastomers - - - - -	ACY, BFG.
Polyalkalene oxide - - - - -	PRC.
POLYALKALENE SULFIDE TYPE:	
Butadiene-acrylic acid-acrylonitrile - - - - -	ASY.
*BUTADIENE-ACRYLONITRILE TYPE (N-TYPE):	
*Butadiene-acrylonitrile type (N-Type) - - - - -	BFG, CPY, GYR, MMM, USR.
POLYBUTADIENE TYPE (EMULSION):	
Polybutadiene type (Emulsion) - - - - -	GYR, LC.
POLYCHLOROPRENE TYPE (NEOPRENE):	
Epichlorohydrin rubbers - - - - -	DUP, HPC.
Fluoroelastomers - - - - -	DUP, MMM.
Polychloroprene type (Neoprene) - - - - -	DKA, DUP.
POLYISOBUTYLENE TYPE:	
Polisobutylene, type elastomers - - - - -	ENJ.
ISOBUTYLENE-ISOPRENE TYPE (BUTYL):	
Isobutylene-isoprene type (Butyl) - - - - -	CBN, ENJ.
*SILICONE TYPE:	
*Silicone type elastomers - - - - -	DCC, SPD, SWS.
STEREOISOMER TYPE:	
*Ethylene-propylene rubber - - - - -	CPY, DUP, ENJ, USR.
*Polybutadiene (Solution polymerized) - - - - -	ASY, FRS, GNT, GYR, PLC.
Polyisoprene (Solution polymerized) - - - - -	GYR.
Stereoisomer type, all other - - - - -	ADC, FRS.
ELASTOMERS, ACYCLIC, ALL OTHER - - - - -	BFG, DUP, PLC, USR.

TABLE 3.--ELASTOMERS (SYNTHETIC RUBBER): DIRECTORY OF MANUFACTURERS, 1983

ALPHABETICAL DIRECTORY BY CODE

[Names of manufacturers that reported production and/or sales of elastomers to the U.S. International Trade Commission for 1983 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.	HPC	Hercules, Inc.
ADC	Anderson Development Co.	LC	Lord Corp., Chemical Products Group
ASY	American Synthetic Rubber Corp.	MMM	Minnesota Mining and Manufacturing Co.
BFG	B. F. Goodrich Co., B. F. Goodrich Chemical Group	PLC	Phillips Petroleum Co.
CBN	Columbian Chemicals Co.	PLR	Polysar, Inc., Polysar Latex Div.
CPY	Copolymer Rubber & Chemical Corp.	PRC	Products Research & Chemical Corp.
DCC	Dow Corning Corp.	SHC	Shell Oil Co., Shell Chemical Co. Div.
DKA	Denka Chemical Corp.	SPD	General Electric Co., Silicone Products Dept.
DUP	E. I. duPont de Nemours & Co., Inc.	SWS	Stauffer Chemical Co., SWS Silicones Div.
ENJ	Exxon Chemical Americas	TKL	Morton-Thiokol, Morton Chemical Div.
FRS	Firestone Tire & Rubber Co., Firestone Synthetic Rubber & Latex Co. Div.	USR	Uniroyal, Inc., Uniroyal Chemical Div.
GNT	General Tire & Rubber Co.	WAY	Philip A. Hunt Chemical Corp., Organic Chemical Div.
GRD	W. R. Grace & Co., Polymers & Chemical Div.		
GYR	Goodyear Tire & Rubber Co.		

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

STATISTICAL HIGHLIGHTS

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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 1983, an increase of 21.2 percent from the 1,411 million pounds reported for 1982. Sales of plasticizers totaled 1,597 million pounds, valued at \$775 million, in 1983, compared with 1,316 million pounds, valued at \$741 million, in 1982.

Production of cyclic plasticizers in 1983, which consisted chiefly of the esters of phthalic anhydride, phosphoric acid, and trimellitic acid, amounted to 1,280 million pounds, an increase of 19.4 percent from the 1,072 million pounds reported for 1982. Sales of cyclic plasticizers in 1983 totaled 1,232 million pounds, valued at \$518 million, compared with 1,015 million pounds, valued at \$510 million, in 1982. The most important cyclic plasticizers were the dioctyl phthalates, with production of 300 million pounds, in 1983.

Production of acyclic plasticizers in 1983 totaled 430 million pounds, an increase of 27.1 percent from the 338 million pounds reported for 1982. Sales of acyclic plasticizers totaled 365 million pounds, valued at \$257 million, in 1983, compared with 301 million pounds, valued at \$231 million, in 1982. Epoxidized soya oils were the most important acyclic plasticizers in 1983 with production of 97 million pounds.

XI -- PLASTICIZERS

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TABLE 1.--PLASTICIZERS:¹ U.S. PRODUCTION AND SALES, 1983

[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
	1,000 pounds	1,000 pounds	1,000 dollars	Per pound
Grand total-----	1,710,083	1,596,611	775,357	\$0.49
Benzenoid ³ -----	1,430,691	1,353,101	609,692	0.45
Nonbenzenoid-----	279,392	243,510	165,665	0.68
CYCLIC				
Total-----	1,280,190	1,231,593	518,289	0.42
Phosphoric acid ester ⁴ -----	53,159	52,741	57,717	1.09
Phthalic anhydride esters, total-----	1,146,595	1,101,473	405,226	0.37
Dibutyl phthalates (including diisobutyl phthalates)-----	20,211	18,518	7,858	0.42
Diethyl phthalate-----	15,482	13,142	16,762	1.28
Diisodecyl phthalate ⁵ -----	157,986	...	...	...
Dimethyl phthalate-----	7,843	7,491	4,327	0.58
Dioctyl phthalates, total ⁵ -----	300,188	298,739	96,765	0.32
Di-tridecyl phthalate-----	14,560	15,509	8,639	0.56
Hexyl-n-decyl and n-octyl-n-decyl phthalates-----	58,921	...	...	...
All other phthalic anhydride esters-----	571,404	748,074	270,875	0.36
Trimellitic acid esters, total-----	40,881	40,368	25,666	0.64
Trioctyl trimellitides-----	26,225	29,713	17,944	0.60
All other trimellitic acid esters-----	14,656	10,655	7,722	0.72
All other cyclic plasticizers ⁶ -----	39,555	37,011	29,680	0.80
ACYCLIC				
Total-----	429,893	365,018	257,068	0.70
Adipic acid esters, total-----	116,322	91,653	64,188	0.70
Di(2-(2-butoxyethyl)ethyl) adipate-----	3,196	2,763	2,247	0.81
Di(2-ethylhexyl) adipate-----	22,199	27,316	15,845	0.58
Diisodecyl adipate-----	...	2,864	1,947	0.68
Diisooctyl and di-n-octyl adipates-----	1,407	2,372	1,520	0.64
Diisopropyl adipate-----	...	380	315	0.83
Di-tridecyl adipate-----	7,871	7,663	7,182	0.94
All other adipic acid esters-----	81,649	48,295	35,132	0.73
Complex linear polyesters and polymeric plasticizers, total-----	56,883	34,163	31,821	0.93
Adipic acid type-----	12,710	11,127	9,534	0.86
All other-----	44,173	23,036	22,287	0.97
Epoxidized esters, total-----	117,414	113,756	58,379	0.51
Epoxidized linseed oils-----	6,700	6,510	4,900	0.75
Epoxidized soya oils-----	97,381	94,816	45,289	0.48
All other epoxidized esters-----	13,333	12,430	8,190	0.66
Oleic acid esters, total-----	12,259	10,055	6,113	0.61
Butyl oleate-----	1,401	1,372	848	0.62
Decyl oleate-----	311	261	395	1.51
All other oleic acid esters-----	10,547	8,422	4,870	0.58

See footnotes at end of table.

TABLE 1.--PLASTICIZERS:¹ U.S. PRODUCTION AND SALES, 1983--CONTINUED

PLASTICIZERS	PRODUCTION	SALES		
		QUANTITY	VALUE	UNIT VALUE ¹
	1,000 pounds	1,000 pounds	1,000 dollars	per pound
ACYCLIC--Continued				
Palmitic acid esters-----	5,776	4,075	3,322	\$0.82
Phosphoric acid esters-----	26,627	21,386	23,983	1.12
Sebacic acid esters, total-----	5,641	...	...	...
Di(2-ethylhexyl) sebacate-----	2,741	2,892	4,252	1.47
All other sebacic acid esters-----	2,900	...	...	...
Stearic acid esters, total-----	8,581	8,826	6,300	0.71
n-Butyl stearate-----	5,768	5,827	3,088	0.53
all other stearic acid esters-----	2,813	2,999	3,212	1.07
All other acyclic plasticizers ⁷ -----	80,390	78,212	58,710	0.75

¹Includes data for compounds used principally (but not exclusively) as primary plasticizers. Does not include clearly defined extenders of secondary plasticizers.

²Calculated from unrounded figures.

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

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

⁵The 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), 1982, results from a combination of incorrect reporting by some companies, end-of-year inventory adjustments, and rounding.

⁶Includes data for glycol dibenzoates, toluenesulfonamides, tetrahydrofurfuryl oleate, and other cyclic plasticizers.

⁷Includes data for azelaic acid esters, citric and acetylcitric acid esters, myristic acid esters except isopropyl myristate, 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, 1983

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	
Coumarone-indene plasticizers- - - - -	NEV.
Dibenzyl azelate - - - - -	HAL.
Diethylene glycol dibenzoate - - - - -	KLM, VEL.
Dipropenediol dibenzoate (Dipropylene glycol dibenzoate)- - - - -	KLM, VEL.
N-Ethyl-p-toluenesulfonamide - - - - -	MON, NES.
Isopropylidenediphenoxypropanol- - - - -	DOW.
2-Nitrodiphenylamine - - - - -	TKL.
*PHOSPHORIC ACID ESTERS:	
Diphenyl octyl phosphate - - - - -	MON.
Isodecyl diphenyl phosphate- - - - -	SFS.
Tricresyl phosphate- - - - -	FMC, SFS.
Triphenyl phosphate- - - - -	EK, MON.
Phosphoric acid esters, all other- - - - -	FMC, MON, SFS, SM.
*PHTHALIC ANHYDRIDE ESTERS:	
Alkyl benzyl phthalates- - - - -	MON.
Bis(2-ethylhexyl)terephthalate- - - - -	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 - - - - -	PFZ.
Diethylene glycol phthalate- - - - -	CMB.
Diethyl isophthalate - - - - -	PFZ.
*Diethyl phthalate- - - - -	EKT, KF, MON, PFZ.
*Diisodecyl phthalate - - - - -	DBC, ENJ, NOD, RCI, TEK, USS.
Diisohexyl phthalate - - - - -	ENJ.
Diisononyl phthalate - - - - -	ENJ, TEK, USS.
Di(2-methoxyethyl) phthalate - - - - -	EKT.
Dimethyl isophthalate- - - - -	PFZ.
*Dimethyl phthalate - - - - -	EKT, KF, PFZ, WTC.
Dinonyl phthalate- - - - -	ENJ.
*Di-tridecyl phthalate- - - - -	EMR, ENJ, HCC, NOD, RCI, TEK, USS.
Diundecyl phthalate- - - - -	MON.
D1-(n-heptyl-n-nonyl) undecyl phthalate- - - - -	ENJ.

TABLE 2.--PLASTICIZERS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1983

PLASTICIZERS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
CYCLIC--Continued	
*PHTHALIC ANHYDRIDE ESTER--CONTINUED	
Hexyl n-decyl phthalate	CO, ENJ.
Hexyl iso-octyl phthalate	PFZ.
n-Octyl n-decyl phthalate	RCI, TEK, USS.
Phthalic acid, diallyl ester	TNA.
*DIOCTYL PHTHALATES:	
Dicapryl phthalate	WTH.
Di(2-ethylhexyl) phthalate	CO, DBC, EKT, ENJ, HCC, MOD, RCI, TEK, USS.
Diiso-octyl phthalate	ENJ, RCI, TEK.
Di-n-octyl phthalate	EK.
GLYCOL PHTHALATE ESTERS:	
Butyl phthalyl butyl glycolate	PFZ.
*Phthalic anhydride esters, all other	DBC, HCC, MON, MOD, SFS, TEK.
Tetrahydrofurfuryl oleate	EMR.
Toluenesulfonamide o-, p-mixtures	MON.
*TRIMELLITIC ACID ESTERS:	
Tri(2-ethylhexyl) trimellitate	DBC, HCC.
Tri-n-hexyl trimellitate	PFZ.
Triisodecyl trimellitate	HCC, MOD.
Triisononyl trimellitate	ENJ, TEK.
Triisooctyl trimellitate	ENJ, HAL, PFZ, RCI, TEK, USS.
Trimethyl trimellitate	FER.
Tri-n-octyl n-decyl trimellitate	RCI.
*Triooctyl trimellitate	EKT, HAL, MOD, RCI, TEK, USS, WTH.
*all other Trimellitic acid esters	HAL, HCC, TEK, USS, X.
*Cyclic plasticizers, all other	DBC, NEV, MOD, SBC.
ACYCLIC	
*ADIPIIC ACID ESTERS:	
Butylene glycol adipate	HAL.
*Di(2-(2-butoxyethoxy)ethyl) adipate	EKT, HAL, MON, RCI, TKL.
Dibutoxyethyl adipate	HAL.
Dibutyl glycol adipate	PFZ.
*Di(2-ethylhexyl) adipate	DBC, EKT, HAL, HCC, MOD, PFZ, RCI, TEK, USS, WM, WTH.
Di-n-hexyl adipate	EKT, MON.
Diisobutyl adipate	HAL, HCC.
*Diisodecyl adipate	EMR, HAL, HCC, MOD, RCI, SM.
Diisononyl adipate	ENJ, USS.
Diiso-octyl adipate	ENJ, HAL, HCC, RCI.
*Diisopropyl adipate	VND, WM, WTH.
Dimethyl adipate	PFZ, X.
Di-n-octyl adipate	WM, WTH.
Di-n-propyl adipate	HCC.

TABLE 2.--PLASTICIZERS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1983
--CONTINUED

PLASTICIZERS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--Continued	
*ADIPIC ACID ESTERS--CONTINUED	
*Di-tridecyl adipate	EMR, HCC, NOD, SM, WM.
Ethylene glycol adipate	HAL.
n-Hexyl n-decyl adipate	TEK.
n-Octyl n-decyl adipate	HAL, HCC, MON, RCI, USS.
Propylene glycol adipate	HAL.
*Adipic acid esters, all others	HAL, HCC, WTC.
*AZELAIC ACID ESTERS:	
Bis(hydroxypropyl) azelate	EMR.
Di(2-ethylhexyl) azelate	EKT, EMR, HAL, RCI.
Diiso-octyl azelate	EMR.
D1-n-hexyl azelate	PFZ.
*CITRIC AND ACETYLCITRIC ACID ESTERS:	
Tributyl acetylcitrate	PFZ.
Triethyl acetylcitrate	PFZ.
Triethyl citrate	PFZ.
Citric and acetylcitric acid esters, all other	PFZ.
*COMPLEX LINEAR POLYESTERS AND POLYMERIC PLASTICIZERS:	
Adipic acid type complex linear polyesters and polymeric plasticizers	HCC, SHX, SM, TEK, WTC, WTH.
*Complex linear polyesters and polymeric plasticizers, all other	EKX, EMR, HPC, MON, PFZ, RCI, SCP, SFS, SM, VND, WM, WTC.
Poly(2,2,4-trimethyl-1,3-pentanediol) maleate	EKT.
Di(2-(2-butoxyethoxy)ethyl) methane	TKL.
*EPOXIDIZED ESTERS:	
*Epoxidized linseed oils	FER, SWT, UCC, VIK, WTC.
*epoxidized pentaerythritol tetraphthalate	UCC.
Epoxidized soya oils	FER, FMC, SHX, UCC, VIK, WTC.
2-Ethylhexyl epoxytallates	UCC.
Octyl epoxytallates	WTC.
*Epoxidized esters, all other	VIK.
Glyceryl tripropionate	EKT.
*GLUTARIC ACID ESTERS:	
Butylene glycol glutarate	HAL.
Neopentyl glycol glutarate	HAL.
Propylene glycol glutarate	HAL.
Glutaric acid esters, all other	HAL.
*MYRISTIC ACID ESTERS:	
Isopropyl myristate	TCH, WM, WTH.
Myristyl ethoxy myristate	SCP.
Myristic acid esters, all other	SBC.

TABLE 2.--PLASTICIZERS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1983
--CONTINUED

PLASTICIZERS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--Continued	
*OLEIC ACID ESTERS:	
2-Butoxyethyl oleate - - - - -	: HAL.
*Butyl oleate - - - - -	: CHL, EMR, HAL, TCH, WTC, WTH.
*Decyl oleate - - - - -	: SBC, SCP, VND.
PROPYL OLEATES:	
n-Propyl oleate- - - - -	: CHL, EMR, TCH.
2-Ethylhexyl oleate- - - - -	: HAL.
Glyceryl trioleate (Triolein)- - - - -	: EMR, WTC.
Isobutyl oleate- - - - -	: DA.
Isooctyl oleate- - - - -	: HAL.
Methyl oleate- - - - -	: DA, EMR, HDG, TCH, WTC.
Oleyl oleate - - - - -	: SBC.
Oleic acid esters, all other - - - - -	: EMR, HAL. *
*PALMITIC ACID ESTERS:	
n-Butyl palmitate- - - - -	: EKT.
2-Ethylhexyl palmitate - - - - -	: WTH.
Isopropyl palmitate- - - - -	: TCH, WM, WTH.
2-Methoxyethyl palmitate - - - - -	: EKT.
PELARGONIC ACID ESTERS:	
Glycol pelargonate - - - - -	: EMR, TCH.
Isodecyl pelargonate - - - - -	: EMR.
*PHOSPHORIC ACID ESTERS:	
Tri(2-butoxyethyl) phosphate - - - - -	: FMC.
Tri(2-chloroethyl) phosphate - - - - -	: SFS.
Tri(2-chloropropyl) phosphate - - - - -	: FER.
Triethyl phosphate - - - - -	: EKT.
Tris(2-ethylhexyl)phosphate- - - - -	: NOD.
Phosphoric acid esters, all other - - - - -	: SFS.
RICINOLEIC AND ACETYLRICINOLEIC ACID ESTERS:	
n-Butyl acetylricinoleate- - - - -	: CAS.
Butyl ricinoleate- - - - -	: CAS.
Glyceryl monoricinoleate - - - - -	: CAS.
Glyceryl tri(acetylricinoleate)- - - - -	: CAS.
Methyl ricinoleate - - - - -	: CAS, DA.
*SEBACIC ACID ESTERS:	
Dibutoxyethyl sebacate - - - - -	: HAL.
Dibutyl sebacate - - - - -	: EKT, X.
*Di(2-ethylhexyl) sebacate- - - - -	: HAL, HCC, X.
Diisopropyl sebacate - - - - -	: X.
Dimethyl sebacate- - - - -	: X.
Propylene glycol sebacate- - - - -	: HAL.
*Sebacic acid esters, all other - - - - -	: EKT, HAL, HCC, X, X.

TABLE 2.--PLASTICIZERS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1983
--CONTINUED

PLASTICIZERS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
*STEARIC ACID ESTERS:	
*n-Butyl stearate - - - - -	: CHL, EMR, TCH, WM, WTC, WTH.
Diethylene glycol succinate- - - - -	: CMB.
2-Ethylhexyl stearate- - - - -	: STC, TCH.
Hexadecyl stearate - - - - -	: HCC.
Isobutyl stearate- - - - -	: DA, TCH, WTH.
Isodecyl stearate- - - - -	: WM.
Methyl pentachlorostearate - - - - -	: VDM.
Methyl stearate- - - - -	: CHL.
Myristyl stearate- - - - -	: VND.
2-Octyldecyl-12-stearoyl stearate- - - - -	: VND.
Polyethylene tetrastearate - - - - -	: X.
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) - - - - -	: UCC.
Triethylene glycol di(2-ethylhexanoate)- - - - -	: EKT.
2,2,4-Trimethyl-1,3-pentanediol diisobutyrate- - - - -	: EKX.
*Acyclic plasticizers, all other- - - - -	: ARZ, EMR, HCC, HPC, PFZ, TCH.

TABLE 3.—PLASTICIZERS: DIRECTORY OF MANUFACTURERS, 1983

ALPHABETICAL DIRECTORY BY CODE

[Names of manufacturers that reported production and/or sales of plasticizers to the U.S. International Trade Commission for 1983 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, Inc.	NOD	Nuodex, Inc.
CMB	Cambridge Industries Co.	PFZ	Pfizer, Inc.
CO	Conoco, Inc.	RCI	Reichhold Chemicals, Inc.
DA	Diamond Shamrock Corp.	SBC	Scher Chemicals, Inc.
DBC	Badische Corp.	SCP	Henkel, Inc.
DOW	Dow Chemical Co.	SFS	Stauffer Chemical Co., Specialty and Intermediates Div.
DUP	E. I. duPont de Nemours & Co., Inc.	SHX	Sherex Chemical Co., Inc.
EK	Eastman Kodak Co.:	SM	Mobil Oil Corp., Mobil Chemical Co., Chemical Coatings Div.
EKT	Tennessee Eastman Co. Div.	STC	American Hoechst Corp., Sou-Tex Works
EKX	Texas Eastman Co. Div.	SWT	Eschem Inc.
EMR	Emery Industries Div. of National Distillers & Chemical Corp.	TCH	Emery Industries, Inc., Tylon Div.
ENJ	Exxon Chemical Americas	TEK	Teknor Apex Co.
FER	Ferro Corp.:	TKL	Morton-Thiokol Inc., Morton Chemicals Div.
	Ferro Chemical Div.	TNA	Ethyl Corp.
	Grant Cheical Div.	UCC	Union Carbide Corp.
FMC	FMC Corp., Industrial Chemical Group	USS	U.S. Steel Corp., USS Chemicals Div.
HAL	C. P. Hall Co.	VDM	Van De Mark Chemical Co., Inc.
HCC	Hatco Chemical Corp.	VEL	Velsicol Chemical Corp.
HOD	Hodag Chemical Corp.	VIK	Viking Chemical Co.
HPC	Hercules, Inc.	VND	Van Dyk & Co., Inc.
KF	Kay-Fries Inc., Chemical Div., Dynamit Nobel of America, Inc.	WM	American Can Co., Inolex Chemical Div.
KLM	Kalama Chemical, Inc.	WTC	Witco Chemical Corp.
MON	Monsanto Co.	WTH	Union Camp Corp.

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

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.

Total U.S. production of surface-active agents in 1983 amounted to 5,068 million pounds, or 16.0 percent more than the 4,367 million pounds reported for 1982. Sales of bulk surface-active agents in 1983 amounted to 3,030 million pounds, valued at \$1,464 million, compared with sales in 1982 of 2,595 million pounds, valued at \$1,248 million. In terms of quantity, sales in 1983 were 16.8 percent more than in 1982.

Production of anionic surface-active agents in 1983 amounted to 3,182 million pounds, or 62.8 percent of the total surfactant output reported for 1983. Sales of anionics in 1983 amounted to 1,588 million pounds, valued at \$523 million.

Production of cationic surface-active agents in 1983 amounted to 377 million pounds, 0.8 percent less than the 380 million pounds reported in 1982. Production of nonionic surface-active agents amounted to 1,476 million pounds in 1983, 62.7 percent more than the 907 million pounds reported in 1982. Sales of cationic surface-active agents in 1983 decreased by 1.9 percent in terms of quantity and increased by 10.9 percent in terms of value when compared with sales as reported in 1982. Sales of nonionics in 1983 increased by 45.2 percent in terms of quantity and increased by 35.1 percent in terms of value when compared with sales as reported in 1982.

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 phosphation or sulfation.

XII -- SURFACE-ACTIVE AGENTS

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TABLE 1.--SURFACE-ACTIVE AGENTS: U.S. PRODUCTION AND SALES, 1983

[Listed below are all 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	PRODUCTION ¹	SALES ²		
		QUANTITY	VALUE	UNIT VALUE ³
	1,000 pounds	1,000 pounds	1,000 dollars	Per pound
Grand total-----	5,068,392	3,030,172	1,464,311	\$0.48
AMPHOTERIC				
Total-----	32,686	27,569	29,762	1.08
ANIONIC				
Total-----	3,182,261	1,588,439	522,992	.33
Carboxylic acids (and salts thereof), total-----	832,468	132,047	80,968	.61
Amine salts of fatty, rosin, and tall oil acids----	2,096	1,210	1,608	1.33
Carboxylic acids having amide, ester, or ether linkages-----	4,135	3,617	5,681	1.57
Castor oil acids, potassium salt-----	...	91	57	.63
Coconut oil acids, potassium salt-----	...	300	149	.50
Coconut oil acids, sodium salt-----	121,201	...	...	...
Oleic acid, potassium salt-----	2,454	...	...	...
Oleic acid, sodium salt-----	560	...	...	...
Palm oil acids, sodium salt-----	156	...	...	...
Soybean oil acids, potassium salt-----	...	75	99	1.31
Stearic acid, potassium salt-----	670	...	...	...
Stearic acid, sodium salt-----	301	303	196	.65
Tall oil acids, potassium salt-----	...	2,675	1,432	.54
Tallow acids, sodium salt-----	374,355	...	...	...
All other carboxylic acids (and salts thereof)-----	326,540	123,776	71,746	.58
Phosphoric and polyphosphoric acid esters (and salts thereof), total-----	41,947	30,618	27,895	.91
Alcohols and phenols, alkoxylated and phosphated, total-----	31,718	26,068	20,435	.78
Decyl alcohol, ethoxylated and phosphated-----	2,324	2,045	1,279	.63
Dodecyl alcohol, ethoxylated and phosphated-----	100	...	...	...
Mixed linear alcohols, ethoxylated and phosphated-----	4,170	2,708	2,655	.98
Nonylphenol, ethoxylated and phosphated-----	15,029	13,122	7,981	.61
Polyhydric alcohol, ethoxylated and phosphated-----	2,015	1,930	2,145	1.11
Tridecyl alcohol, ethoxylated and phosphated-----	1,047	...	...	...
All other-----	7,033	6,223	6,375	1.02
All other phosphoric and polyphosphoric acid esters (and salts thereof), total-----	10,229	4,550	7,460	1.64
2-Ethylhexyl phosphate, sodium salt-----	279	224	319	1.42
Mixed alkyl phosphate-----	2,602	1,212	2,489	2.05
All other-----	7,348	3,114	4,652	1.49
Sulfonic acids (and salts thereof), total-----	1,641,735	1,181,251	255,180	.22
Alkylbenzenesulfonates, total-----	506,736	170,975	81,653	.48
Dodecylbenzenesulfonic acid-----	182,077	100,670	44,269	.44
Dodecylbenzenesulfonic acid, calcium salt-----	7,548	4,183	4,156	.99
Dodecylbenzenesulfonic acid, isopropylamine salt-----	3,819	3,703	2,930	.79
Dodecylbenzenesulfonic acid, sodium salt-----	212,382	53,570	25,192	.47
Dodecylbenzenesulfonic acid, triethanolamine salt-----	6,247	6,182	3,506	.57
All other-----	94,663	2,667	1,600	.60

See footnotes at end of table.

TABLE 1.--SURFACE-ACTIVE AGENTS: U.S. PRODUCTION AND SALES, 1983--CONTINUED

SURFACE-ACTIVE AGENTS	PRODUCTION ¹	SALES ²		
		QUANTITY	VALUE	UNIT VALUE ³
<i>ANIONIC--Continued</i>	<i>1,000 pounds</i>	<i>1,000 pounds</i>	<i>1,000 dollars</i>	<i>per pound</i>
Sulfonic acids (and salts thereof)--Continued				
Benzene-, cumene-, toluene-, and xylenesulfonates, total-----	120,679	96,094	24,815	\$0.26
Cumenesulfonic acid, sodium salt-----	9,575	8,906	3,514	.39
Xylenesulfonic acid, ammonium salt-----	21,736	21,925	5,617	.26
Xylenesulfonic acid, sodium salt-----	62,264	53,808	11,110	.21
All other-----	27,104	11,455	4,574	.26
Ligninsulfonates and naphthalenesulfonates, total-----	906,262	847,577	86,463	0.10
Diisopropyl-naphthalenesulfonic acid, sodium salt-----	1,804	1,351	2,104	1.56
Ligninsulfonic acid, ammonium salt-----	6,220	6,144	418	.07
Ligninsulfonic acid, calcium salt-----	577,427	544,093	25,199	.05
Ligninsulfonic acid, chromium salt-----	66,847	71,977	12,248	.17
Ligninsulfonic acid, sodium salt-----	188,478	167,178	17,708	.11
All other-----	65,486	56,834	28,786	.51
Sulfosuccinamic acid derivatives-----	2,623	2,016	2,404	1.19
Taurine derivatives-----	2,277	1,207	2,321	1.92
Sulfonic acids having ester or ether linkages, total-----	64,478	26,056	36,273	1.39
Sulfosuccinic acid esters, total-----	22,910	16,795	19,809	1.18
Sulfosuccinic acid, bis(2-ethylhexyl) ester, Sodium salt-----	18,252	12,725	16,589	1.30
Sulfosuccinic acid, diisooctyl ester, sodium salt-----	1,057	627	552	.88
All other-----	3,601	3,443	2,668	.77
All other sulfonic acids (and salts thereof)-----	38,680	37,326	21,251	.57
Sulfuric acid esters (and salts thereof), total-----	627,857	228,124	149,570	.66
Acids, amides, and esters, sulfated-----	9,713	6,586	3,619	.55
Alcohols, sulfated, total-----	296,605	95,347	68,644	.72
Decyl sulfate, sodium salt-----	1,406	811	744	.92
Dodecyl sulfate, ammonium salt-----	30,657	26,287	14,207	.54
Dodecyl sulfate, diethanolamine salt-----	2,227	2,194	1,451	.66
Dodecyl sulfate, magnesium salt-----	199	167	178	1.07
Dodecyl sulfate, sodium salt-----	37,666	31,981	22,384	.70
Dodecyl sulfate, triethanolamine salt-----	15,215	11,914	9,166	.77
2-Ethylhexyl sulfate sodium salt-----	1,109	1,053	1,526	1.45
Mixed linear alcohols, sulfated, ammonium salt-----	29,319	5,300	4,310	.81
Octyl sulfate, sodium salt-----	176	174	241	1.39
All other-----	178,631	15,466	14,437	.93
Ethers, sulfated, total-----	291,081	100,611	60,509	.60
Alkylphenols, ethoxylated and sulfated-----	7,607	5,418	6,055	1.12
Dodecyl alcohol, ethoxylated and sulfated, ammonium salt-----	9,154	7,099	3,293	.46
Dodecyl alcohol, ethoxylated and sulfated, sodium salt-----	22,089	20,114	15,105	.75
Mixed linear alcohols, ethoxylated and sulfated ammonium salt-----	104,733	30,830	17,793	.58
Mixed linear alcohols, ethoxylated and sulfated, sodium salt-----	146,667	36,358	17,458	.48
All other-----	831	792	805	1.02
Natural fats and oils, sulfated, total-----	30,458	25,580	16,798	.66
Castor oil, sulfated, sodium salt-----	3,734	2,781	2,430	.87
Herring oil, sulfated, sodium salt-----	1,854	...	...	...
Mixed fish oils, sulfated, sodium salt-----	5,373	4,309	1,622	.38
Neatsfoot oil, sulfated, sodium salt-----	2,828	...	...	...
Soybean oil, sulfated, sodium salt-----	266	262	112	.43
Tall oil, sulfated, sodium salt-----	1,002	809	290	.36
Tallow sulfated, sodium salt-----	973	731	302	.41
All other-----	14,428	16,688	12,042	.72
Other anionic surface-active agents-----	38,254	16,399	9,379	.57

See footnotes at end of table.

TABLE 1.--SURFACE-ACTIVE AGENTS: U.S. PRODUCTION AND SALES, 1983--CONTINUED

SURFACE-ACTIVE AGENTS	PRODUCTION ¹	SALES ²		
		QUANTITY	VALUE	UNIT VALUE ³
	1,000 pounds	1,000 pounds	1,000 dollars	Per pound
<i>CATIONIC</i>				
Total-----	377,077	289,925	272,880	\$0.94
Amine oxides and oxygen-containing amines (except those having amide linkages), total-----	86,736	33,773	31,782	.94
Acyclic, total-----	78,401	27,417	24,427	.89
N,N-Bis(2-hydroxyethyl)octadecylamine-----	84	73	102	1.41
(Coconut oil alkyl)amine, ethoxylated-----	2,212	...	...	...
(Hydrogenated tallow alkyl)amine, ethoxylated-----	147	117	128	1.10
(9-Octadecenyl)amine, ethoxylated-----	1,097	...	...	...
Octadecylamine, ethoxylated-----	370	...	...	...
(Soybean oil alkyl)amine, ethoxylated-----	710	674	829	1.23
(Tallow alkyl)amine, ethoxylated-----	5,635	4,801	3,366	.70
All other-----	68,146	21,752	20,002	.89
Cyclic (including imidazoline and oxazoline derivatives), total-----	8,335	6,356	7,355	1.16
N-(2-Hydroxyethyl)-1,2-diphenylethylenediamine-----	80	...	...	...
1-(2-Hydroxyethyl)-2-nonyl-2-imidazoline-----	908	907	1,122	1.24
1-(2-Hydroxyethyl)-2-nor(coconut oil alkyl)-2-imidazoline-----	74	...	...	...
1-(2-Hydroxyethyl)-2-nor(tall oil alkyl)-2-imidazoline-----	819	359	532	...
All other-----	6,454	5,090	5,701	1.12
Amines and amine oxides having amide linkages, total-----	35,322	20,266	16,801	.83
Oleic acid-diethylenetriamine condensate-----	72	53	77	1.45
Stearic acid-diethylenetriamine condensate-----	382	380	496	1.30
Stearic acid-ethylenediamine condensate, mono-ethoxylated-----	165	170	127	.75
Tall oil acids polyalkylenepolyamine condensate-----	13,773	...	...	...
All other-----	20,930	19,663	16,101	.82
Amines, not containing oxygen (and salts thereof), total-----	77,600	71,369	61,357	.86
Amine salts-----	2,208	1,878	1,784	.95
Diamines and polyamines, total-----	21,606	17,559	14,144	.81
Imidazoline derivatives, total-----	2,099	2,448	3,254	1.33
n-(Coconut oil alkyl)trimethylene diamine-----	1,189	1,154	1,427	1.24
All other-----	910	1,294	1,827	1.41
N-(9-Octadecenyl)trimethylenediamine-----	635	987	980	.99
N-(Tallow alkyl)dipropylenetriamine-----	333	310	291	.94
All other-----	18,539	13,814	9,619	.70
Monoamines, total-----	53,786	51,932	45,429	.87
(Coconut oil alkyl)amine-----	...	1,401	1,535	1.10
N,N-Dimethyloctadecylamine-----	992	923	1,327	1.44
N,N-Dimethyl(soybean oil alkyl)amine-----	1,766	1,809	1,900	1.05
(Hydrogenated tallow alkyl)amine-----	2,661	2,736	2,079	.76
9-Octadecenylamine-----	5,883	5,449	4,095	.75
Octadecylamine-----	1,131	1,084	1,210	1.12
(Soybean oil alkyl)amine-----	883	870	741	.85
(Tallow alkyl)amine-----	11,161	11,007	7,241	.66
All other-----	29,309	26,653	25,301	.95
Quaternary ammonium salts, containing oxygen-----	37,658	32,694	30,028	.92
Quaternary ammonium salts, not containing oxygen, total-----	137,847	129,987	107,461	.83
Acyclic, total-----	108,279	103,958	75,136	.72
Bis(hydrogenated tallow alkyl)dimethylammonium chloride-----	57,160	56,964	34,225	.60
N,N,N',N',N'-Pentamethyl-N-(tallow alkyl)trimethylene-bis[ammonium chloride]-----	963	875	680	.78
All other-----	50,156	46,119	40,231	.87

See footnotes at end of table.

TABLE 1.--SURFACE-ACTIVE AGENTS: U.S. PRODUCTION AND SALES, 1983--CONTINUED

SURFACE-ACTIVE AGENTS	PRODUCTION ¹	SALES ²		
		QUANTITY	VALUE	UNIT VALUE ³
	1,000 pounds	1,000 pounds	1,000 dollars	per pound
<i>CATIONIC--Continued</i>				
Quaternary ammonium salts, not containing oxygen--				
Continued				
Benzenoid, total ⁴ -----	29,568	26,029	32,325	\$1.24
Benzyl(coconut oil alkyl)dimethylammonium				
chloride-----	919	638	997	1.56
Benzyltrimethyl(mixed alkyl)ammonium chloride-----	14,666	13,684	18,604	1.36
Benzyltrimethyloctadecylammonium chloride-----	2,338	1,982	3,351	1.69
Benzyltrimethylammonium chloride-----	3,165	2,501	1,976	0.79
All other-----	8,480	7,224	7,397	1.02
Other cationic surface-active agents-----	1,914	1,836	25,451	13.87
<i>NONIONIC</i>				
Total-----	1,476,368	1,124,239	638,677	.57
Carboxylic acid amides, total-----	64,084	52,942	40,680	.77
Diethanolamine condensates (amine/acid ratio=2/1),				
total-----	14,757	12,310	8,913	.72
Coconut oil acids-----	6,916	6,098	4,500	.74
Coconut oil and tallow acids-----	1,841	1,757	1,183	.67
Lauric acid-----	54	58	58	1.00
Lauric and myristic acids-----	1,019	504	479	.95
Linoleic acid-----	119	118	137	1.16
Oleic acid-----	807	542	360	.66
Tall oil acids-----	1,346	1,116	785	.70
All other-----	2,655	2,117	1,411	.67
Diethanolamine condensates (other amine/acid				
ratios), total-----	32,677	29,352	22,787	.78
Coconut oil acids (amine/acid ratio=1/1)-----	24,160	22,092	16,588	.75
Lauric acid (amine/acid ratio=1/1)-----	4,171	3,110	2,734	.88
Lauric and myristic acids (amine/acid ratio=1/1)-----	2,151	2,133	1,979	.93
Linoleic acid (amine/acid ratio=1/1)-----	706	704	587	.83
Stearic acid (amine/acid ratio=1/1)-----	120	62	44	.71
All other-----	1,369	1,251	855	.68
Other carboxylic acid amides, total-----	16,650	11,280	8,980	.80
Coconut oil acid-ethanolamine condensate (amine/				
acid ratio=1/1)-----	6,059	4,482	3,163	.71
Oleic acid ethanolamine condensate, ethoxylated--	225	...	...	...
All other-----	10,366	6,798	5,817	.86
Carboxylic acid esters, total-----	247,442	204,530	163,654	.80
Anhydrosorbitol esters, total-----	33,674	32,245	22,691	.70
Anhydrosorbitol monolaurate-----	5,157	4,848	3,496	.72
Anhydrosorbitol mono-oleate-----	7,120	5,862	4,777	.81
Anhydrosorbitol monostearate-----	18,471	18,473	11,678	.63
Adhydrosorbitol trioleate-----	...	1,350	1,180	.87
All other-----	2,926	1,712	1,560	.91
Diethylene glycol esters, total-----	1,148	786	664	.84
Diethylene glycol monolaurate-----	231	234	143	.61
Diethylene glycol monostearate-----	139	159	176	1.11
All other-----	778	393	345	.88
Ethoxylated anhydrosorbitol esters, total-----	27,306	25,545	20,343	.80
Ethoxylated anhydrosorbitol monolaurate-----	6,347	6,019	4,995	.83
Ethoxylated anhydrosorbitol mono-oleate-----	6,160	5,939	4,701	.79
Ethoxylated anhydrosorbitol monopalmitate-----	407	384	360	.94
Ethoxylated anhydrosorbitol monostearate-----	10,908	10,126	7,832	.77
Ethoxylated anhydrosorbitol trioleate-----	2,425	2,098	1,650	.79
Ethoxylated anhydrosorbitol tristearate-----	857	817	687	.84
All other-----	202	162	118	.72

See footnotes at end of table.

TABLE 1.--SURFACE-ACTIVE AGENTS: U.S. PRODUCTION AND SALES, 1983--CONTINUED

SURFACE-ACTIVE AGENTS	PRODUCTION ¹	SALES ²		
		QUANTITY	VALUE	UNIT VALUE ³
	1,000 pounds	1,000 pounds	1,000 dollars	Per pound
<i>NONIONIC--Continued</i>				
Carboxylic acid esters--Continued				
Ethylene glycol distearate-----	3,317	3,426	1,937	\$0.57
Ethylene glycol monostearate-----	2,335	2,317	1,689	.73
Glycerol esters, total-----	62,795	53,262	40,630	.76
Complex glycerol esters-----	11,579	9,945	7,569	.76
Glycerol esters of chemically defined acids, total-----	18,531	16,161	12,300	.76
Glycerol mono-oleate-----	4,815	3,402	2,722	.80
Glycerol monoricinoleate-----	48	39	49	1.24
Glycerol monostearate-----	13,480	12,496	9,218	.74
All other-----	188	224	311	1.39
Glycerol esters of mixed acids-----	32,685	27,156	20,761	.76
Natural fats and oils, ethoxylated, total-----	27,534	21,186	17,450	.82
Castor oil, ethoxylated-----	10,597	7,641	6,276	.82
Hydrogenated castor oil, ethoxylated-----	4,991	3,891	4,303	1.11
Lanolin, ethoxylated-----	1,463	1,208	1,099	.91
All other-----	10,483	8,446	5,772	.68
Polyethylene glycol esters, total-----	47,870	39,081	31,327	.80
Polyethylene glycol diester of tall oil acids-----	3,134	...	...	...
Polyethylene glycol dilaurate-----	1,160	1,120	1,102	.98
Polyethylene glycol dioleate-----	3,171	1,620	1,164	.72
Polyethylene glycol distearate-----	4,122	...	...	...
Polyethylene glycol monoester of tall oil acids-----	1,298	1,002	912	.91
Polyethylene glycol monolaurate-----	4,437	4,270	3,329	.78
Polyethylene glycol mono-oleate-----	3,987	2,989	2,270	.76
Polyethylene glycol monopalmitate-----	351	323	283	.87
Polyethylene glycol monostearate-----	6,680	5,859	4,729	.81
Polyethylene glycol sesquieater of coconut oil acids-----	992	971	1,096	1.13
Polyethylene glycol sesquieater of tall oil acids-----	4,066	3,753	2,000	.53
All other-----	14,472	17,174	14,442	.84
Polyglycerol esters, total-----	2,563	2,513	3,820	1.52
Polyglycerol mono-oleate-----	698	698	850	1.22
All other-----	1,865	1,815	2,970	1.64
1,2-Propanediol monostearate-----	1,808	1,319	1,819	1.38
All other carboxylic acid esters-----	37,092	22,850	21,284	.93
Ethers, total-----	1,116,266	844,726	413,527	.49
Benzenoid ethers, total-----	389,920	322,800	168,960	.52
Dinonylphenol, ethoxylated-----	4,691	4,508	3,198	.71
Dodecylphenol, ethoxylated-----	13,776	12,496	6,997	.56
Nonylphenol, ethoxylated-----	269,986	236,307	110,416	.47
Nonylphenol, ethoxylated and propoxylated-----	596	481	557	1.16
n-Octylphenol, ethoxylated-----	1,524	2,083	1,147	.55
Phenol, ethoxylated-----	2,322	962	811	.84
All other-----	97,025	65,963	45,834	.69
Nonbenzenoid ethers, total-----	644,823	458,271	193,796	.42
Chemically-defined linear alcohols, ethoxylated, total-----	20,666	14,212	13,070	.92
Decyl alcohol, ethoxylated-----	6,671	4,390	2,501	.57
Dodecyl alcohol, ethoxylated-----	2,490	...	...	...
9-Octadecenyl alcohol, ethoxylated-----	1,364	697	723	1.04
Octadecyl alcohol, ethoxylated-----	1,397	1,196	1,939	1.62
Oleyl alcohol, ethoxylated-----	1,201	1,027	1,149	1.12
All other-----	7,543	6,902	6,758	.98
Mixed linear alcohols, alkoxylated, total-----	624,157	444,059	180,726	.41
Mixed linear alcohols, ethoxylated-----	571,411	398,832	155,711	.39
Mixed linear alcohols, ethoxylated and propoxylated-----	23,561	20,549	13,356	.65
All other-----	29,185	24,678	11,659	.47

See footnotes at end of table.

TABLE 1.--SURFACE-ACTIVE AGENTS: U.S. PRODUCTION AND SALES, 1983

SURFACE-ACTIVE AGENTS	PRODUCTION ¹	SALES ²		UNIT ³ VALUE
		QUANTITY	VALUE	
<i>NONIONIC--Continued</i>	<i>1,000 pounds</i>	<i>1,000 pounds</i>	<i>1,000 dollars</i>	<i>per pound</i>
Ethers--Continued				
Other ethers and thioethers, total-----	81,523	63,655	50,771	\$0.82
tert-Dodecylmercaptan, ethoxylated-----	669	...	...	...
Mixed alcohols, ethoxylated-----	3,929	...	...	...
Poly(mixed ethylene, propylene) glycol-----	38,581	...	...	...
Polypropylene glycol, ethoxylated-----	3,144	2,192	1,774	.81
Tridecyl alcohol, ethoxylated-----	12,952	8,594	5,390	.63
All other-----	22,248	52,869	43,607	.82
Other nonionic surface-active agents-----	48,576	22,041	20,816	.94

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

²Sales include products sold as bulk surface-active agents only.

³Calculated from unrounded figures.

⁴The 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).

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1983

[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)
AMPHOTERIC	
Acyclic amphoteric surface-active agents, all other	: DUP, S, X.
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- imidazolinium hydroxide, sodium derivative, sodium salt	: MIR.
(1-Carboxyheptadecyl)trimethylammonium hydroxide, inner salt	: DUP.
Carboxymethyl-3-cocoamidopropyl dimethyl ammonium chloride, sodium salt	: NCW.
(Carboxymethyl)[3-(coconut oil amido)propyl]- dimethylammonium hydroxide, inner salt	: CYL, HLI, JOR, MIR, ONX, SCP, SHX, WM.
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	: MIR.
1-Carboxymethyl-1-(2-hydroxyethyl)-2-undecyl-2- imidazolinium hydroxide, sodium derivative, sodium salt	: MIR, SHX.

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED,
IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

SURFACE-ACTIVE AGENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
AMPHOTERIC--CONTINUED	
1-Carboxymethyl-1-(2-hydroxyethyl)-2-undecyl-2-imidazoliniumhydroxide, sodium derivative, sodium salt	MIR.
Cocoamidoamphoglycinate	MOA.
Cocoamidoethyl propionate	SVC.
Cocoamidopropyl betaine	CRD.
Cocoamidopropyl betaine	MOA.
3-[3-(Cocoamidopropyl)dimethylammonio]-2-hydroxypropane sulfonate	MIR.
(3-Cocoamidopropyl)(2-hydroxy-3-sulfopropyl)dimethylhydroxide, 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)- β -alanine, partial sodium salt	SCP.
N-(Coconut oil alkyl)- β -alanine, sodium salt	DUP, SCP.
3-[(Coconut oil alkyl)amidoethylene-(2-hydroxyethyl)-amino]propionic acid	MIR.
N-[(Coconut oil alkyl)amino]butyric acid	ARC.
N,N-Di(hydroxyethyl)-N-carboxymethyl tallow ammonium quat, inner salt	SHX.
Dimethyloleylammonium ethanoate	MIR.
Dimethyltallowammonium ethanoate	MIR.
N-Dodecyl-3-iminodipropionic acid, disodium salt	AAC, MIR, SCP.
N-Dodecyl-3-imino-dipropionic acid, monosodium salt	MIR.
N-Dodecyl-3-iminodipropionic acid, sodium and cocoamphocarboxy-glycinate salt	AAC.
N-Dodecyl-3-iminopropionic acid, monosodium salt	SCP.
N-(Dodecyl and tetradecyl)- β -alanine	SCP.
Heptadecylmethylbenzimidazolesulfonic acid, sodium salt	BRD.
1-(2-Hydroxyethyl)-2-heptyl-3-carboxyethyl-imidazoline, sodium salt	SCP.
1-Hydroxyethyl-1-(2-hydroxy-3-sodiumsulfonatopropyl)-2-capryl-2-imidazolinium hydroxide	MIR.
1-Hydroxyethyl-1-(2-hydroxy-3-sodiumsulfonatopropyl)-2-nor-coconut oil fatty acids-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, 1983--CONTINUED

SURFACE-ACTIVE AGENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
AMPHOTERIC---CONTINUED	
1-Hydroxyethyl-1-(2-hydroxy-3-sodiumsulfonatopropyl-2- oleyl-2-imidazolinium hydroxide- - - - -	MIR.
1-(2-Hydroxyethyl)-1-(sodium carboxymethyleneoxyethylene)-2-nor-coconut oil fatty acids-2-imidazolinium hydroxide- - - - -	MIR.
Isodecyloxypropyliminopropionic acid, monosodium salt	NCW.
Isostearic amphopropionate - - - - -	MOA.
Laurylamidopropyl betaine- - - - -	MOA.
Laurylamphoglycinate - - - - -	MOA.
Mixed acyclic primary amines, ethoxylated and sulfated, sodium salt- - - - -	RH.
(Mixed alkyl)sulfobetaine- - - - -	BRD, MOA.
Oleyl betaine- - - - -	SCP.
Polypeptide ammonium salt- - - - -	STP.
Polypeptide, sodium salt - - - - -	STP.
1-(Sodium carboxyethylene)-1-(sodium carboxymethyleneoxyethylene)-2-nor-(tall oil fatty acids)-2-imidazolinium hydroxide - - - - -	MIR.
1-(Sodium carboxymethyl)-1-(sodium carboxymethyleneoxyethylene)-2-nor-(coconut oil fatty acids)-2-imidazolinium lauryl sulfate- - - - -	MIR.
N-(Tallow alkyl)-3-iminodipropionic acid, disodium salt - - - - -	MIR, MOA, SCP.
Tridecyloxypoly(ethyleneoxy)propionic acid, potassium salt - - - - -	MRV.
ANIONIC	
*CARBOXYLIC ACIDS (AND SALTS THEREOF):	
*AMINE SALTS OF FATTY, ROSIN, AND TALL OIL ACID:	
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, morpholine salt- - - - -	X.
Oleic acid, triethanolamine salt - - - - -	X.
Stearic acid, N,N,N',N'-tetrakis(2-hydroxyethyl)- ethylenediamine salt - - - - -	ICI.
Stearic acid, triethanolamine salt - - - - -	GLY, PCI.
Tallow acids, ethanolamine salt- - - - -	SBP, TX.
Tallow acids, triethanolamine salt - - - - -	SBP, X.

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED,
IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

SURFACE-ACTIVE AGENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ANIONIC--CONTINUED	
CARBOXYLIC ACIDS (AND SALTS THEREOF)--CONTINUED	
AMINE SALTS OF FATTY, ROSIN, AND TALL OIL ACIDS--CONTINUED	
Triethylamine salt - - - - -	STC.
Amine salts of fatty, rosin, and tall oil acids, all other- - - - -	S, WM.
*CARBOXYLIC ACIDS HAVING AMIDE, ESTER, OR ETHER LINKAGES:	
Calcium stearolactate- - - - -	STP.
5(or 6)-Carboxy-4-hexyl-2-cyclohexene-1-octanoic acid, reaction products with castor oil- - - - -	X.
N-(Coconut oil acyl)polypeptide, triethanolamine salt - - - - -	STP.
N-(coconut oil acyl)potassium salt - - - - -	STP.
N-(Coconut oil acyl)sarcosine- - - - -	HMP.
N-(Coconut oil acyl)sarcosine, sodium salt - - - - -	HMP, SFS.
Dodecyloxypoly(ethyleneoxy)acetic acid, sodium salt - - - - -	MIR.
N-Lauroyl iminodocetic acid- - - - -	HMP.
N-Lauroylsarcosine - - - - -	HMP.
N-Lauroyl sarcosine, ammonium salt - - - - -	HMP.
N-Lauroylsarcosine, sodium salt- - - - -	HMP, ONX.
Mixed(secondary linear alcohol)polyethylene propionic acid, sodium salt- - - - -	CHP.
N-Oleoylsarcosine- - - - -	HMP.
N-Oleoylsarcosine, sodium salt - - - - -	GAF.
Carboxylic acids with amide, ester or ether linkage, other - - - - -	DA, HMP, STP.
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, sodium salt- - - - -	X.
*Castor oil acids, potassium salt - - - - -	CAS, DA, SEA.
Castor oil acids, sodium salt- - - - -	ESS, HEW.
*Coconut oil acids, potassium salt- - - - -	AGP, CON, HEW, HIP, HNT, LAS, LUR, NMC, PG, PNK, SOP.
*Coconut oil acids, sodium salt - - - - -	BSW, CON, CP, HEW, JRG, LAS, LEV, NMC, NPR, PG, SOP.
Corn oil acids, potassium salt - - - - -	HNT, NMC.
Heptanoic acid, potassium salt - - - - -	X.
Isostearic acid, isopropoxy titanium salt- - - - -	KPI.
Lauric acid, potassium salt- - - - -	DA.
Lauric acid, sodium salt - - - - -	HEW.
Mixed vegetable fatty acids, potassium salt- - - - -	DYS, GRL, QCP.
Mixed vegetable fatty acids, sodium salt - - - - -	NMC, QCP.

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED,
IDENTIFIED BY MANUFACTURER, 1983--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	
Naphthenic acid, potassium salt- - - - -	WBG.
Octanoic acid, potassium salt- - - - -	UPF.
Oleic acid, epoxidized, ammonium salt- - - - -	SCP.
*Oleic acid, potassium salt- - - - -	HAL, HNT, PG, WBG, X.
*Oleic acid, sodium salt- - - - -	BSW, DA, HAL, LAS, USR, WBG.
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, DA, X.
Rosin acids, sodium salt- - - - -	ARZ, DA, SLM(E), X.
*Soybean oil acids, potassium salt- - - - -	DA, LUR, PNK.
Stearic acid, ammonium salt- - - - -	BSW.
Stearic acid, magnesium salt- - - - -	CCW.
*Stearic acid, potassium salt- - - - -	BSW, CCC, CON, DA, HEW.
*Stearic acid, sodium salt- - - - -	CON, DA, NOC, SYP.
*Tall oil acids, potassium salt- - - - -	CCC, CON, DA, DAN, DYS, ESS, HIP, HNT, PEC, PNK, SOP, VAL.
Tall oil acids, sodium salt- - - - -	CON, GDC, NMC, WVA, X.
Tallow acids, potassium salt- - - - -	AGP, DA, DYS, PG, PNK, VAL.
*Tallow acids, sodium salt- - - - -	BSW, CON, CP, HEW, JRG, LAS, LEV, NMC, NPR, PG, PRX(E).
Potassium and sodium salts of fatty, rosin, and tall oil acids, all other- - - - -	DA, USR.
*OTHER CARBOXYLIC ACIDS:	
Carboxylic acids, all other- - - - -	STC.
*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, TCH.
Decyl alcohol, potassium salt- - - - -	RPC.
Dinonylphenol, ethoxylated and phosphated- - - - -	GAF, WAY.
*Dodecyl alcohol, ethoxylated and phosphated- - - - -	GAF, JOR, MET.
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, WAY.
2-Ethylhexanol, ethoxylated, phosphated, potassium salt- - - - -	CHP.

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED,
IDENTIFIED BY MANUFACTURER, 1983--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	
2-Ethyl hexanol, phosphated- - - - -	MCB.
Hexylalcohol, ethoxylated and phosphated - - - - -	GAF.
Hexylalcohol, phosphated, potassium salt solubilized- - - - -	MCB.
Mixed linear alcohols, ethoxylated, butoxylated and phosphated - - - - -	SCP.
Mixed linear alcohols, ethoxylated and phosphated	AZS, CHP, CRT, CYL, FER, GAF, HIP, HRT, MOA, MRV, RPC, SCP, TCH, WTC, WVA, X.
Mixed linear alcohols, ethoxylated and phosphated, sodium salt - - - - -	CHP, SCP.
Mixed tridecyl alcohol and 2-ethylhexanol, phosphated, potassium salt - - - - -	CHP, SCP.
*Nonylphenol, ethoxylated and phosphated- - - - -	AZS, BAS, CRT, CTL, CYL, DA, DEX, ESS, GAF, GDC, HRT, MCB, MCP, MET, MOA, MZC, SCP, SOP, TCC, VPC, WAY, WTC, WVA, X.
Nonylphenol, ethoxylated and phosphated, barium salt - - - - -	WTC.
9-Octadecenyl alcohol, ethoxylated and phosphated	GAF, JOR.
9-Octadecyl alcohol, ethoxylated and phosphated	GAF.
Octylphenol, ethoxylated and phosphated- - - - -	RH, WTC.
Octylphenol, ethoxylated and phosphated, magnesium salt - - - - -	ONX.
Phenol, ethoxylated and phosphated - - - - -	DA, GAF, MIL, MZC, TCH.
Phosphated, potassium salt - - - - -	MCB.
*Polyhydric alcohol, ethoxylated and phosphated	CYL, DEX, GAF, MOA, RH, WTC.
Tridecyl alcohol, ethoxylated and phosphated polyalkylene polyamine salt- - - - -	X.
*Tridecyl alcohol, ethoxylated and phosphated - - - - -	DAN, DEX, GAF, HIP, MIL, SNW, WTC, X.
Tridecyl alcohol ethoxylated and phosphated, potassium salt - - - - -	DEX.
*Alcohols and phenols, alkoxyalted and phosphated or polyphosphated, all other - - - - -	GAF.
ALCOHOLS, PHOSPHATED OR POLYPHOSPHATED:	
Butyl phosphate, potassium salt- - - - -	DUP.
Decyl and octyl phosphate - - - - -	MZC.
2-Ethylhexyl phosphate - - - - -	MCP, SOS.
*2-Ethylhexyl phosphate, sodium salt- - - - -	CHP, DAN, SFS, WTC.
2-Ethylhexyl polyphosphate - - - - -	X.
Hexyl phosphate - - - - -	ICI.
Hexyl phosphate, potassium salt- - - - -	ICI.
Methyl butyl phosphate ethylenedioxy titanium salt/N,N-dimethyl amino ethyl methacrylate salt - - - - -	KPI.

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED,
IDENTIFIED BY MANUFACTURER, 1983--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	
Methylbutyl pyrophosphate, ethylenedioxy titanium salt - - - - -	: KPI.
Mixed alkyl phosphate, sodium salt - - - - -	: VAL, X.
*Mixed alkyl phosphate - - - - -	: DUP, SCP, SFS, STC, WTC, 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 - - - - -	: SCP, X.
Octyl phosphate, ethylenedioxy titanium salt - - - - -	: KPI.
Octyl phosphate, isopropoxy titanium salt - - - - -	: KPI.
Octyl phosphate oxoethylenedioxy titanium salt - - - - -	: KPI.
Octyl phosphate, potassium salt - - - - -	: DEX.
Octyl polyphosphate - - - - -	: DEX.
Octyl polyphosphate, potassium salt - - - - -	: SMW.
Octyl pyrophosphate, ethylenedioxy titanium salt - - - - -	: KPI.
Octyl pyrophosphate, ethylenedioxy titanium salt/dimethylamino methacrylate salt - - - - -	: KPI.
Octyl pyrophosphate, isopropoxy titanium salt - - - - -	: KPI.
Octyl pyrophosphate, oxoethylenedioxy titanium salt - - - - -	: KPI.
Octyl pyrophosphate oxoethylenedioxy titanium salt/N,N-dimethylamino butanol salt - - - - -	: KPI.
Tridecyl alcohol/nonyl phenol ethoxylate, coester phosphate - - - - -	: MET.
*Phosphated and polyphosphated alcohols, all other - - - - -	: HRT, WTC.
OTHER PHOSPHORIC AND POLYPHOSPHORIC ACID ESTERS:	
Glycerol, ethoxylated and phosphated - - - - -	: X.
Glycerol monoester of mixed fatty acids, phosphated - - - - -	: WTC.
Hydroxyamine, phosphate ester and salts - - - - -	: SCP.
Polyoxyalkylate(fatty alcohol), phosphate ester - - - - -	: BAS.
Stearyl amine polyphosphoric acid, ethoxylated - - - - -	: GDC.
Phosphoric and polyphosphoric acid esters, all other - - - - -	: X, X.
*SULFONIC ACIDS (AND SALTS THEREOF):	
*ALKYLBENZENESULFONATES:	
DODECYLBENZENESULFONATES:	
Dodecylbenzenesulfonic acid, monoethanolamine salt - - - - -	: RPC.

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED,
IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

SURFACE-ACTIVE AGENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ANIONIC--CONTINUED	
SULFONIC ACIDS (AND SALTS THEREOF)--CONTINUED	
ALKYLBENZENESULFONATES--CONTINUED	
DODECYLBENZENESULFONATES--CONTINUED	
*Dodecylbenzenesulfonic acid-	CO, CRT, CTL, EMK, HLI, JLP, LEV, MON, ONX, PIL, PLX, PRX(E), STP, TCI, TEN, WTC, WVA, 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, WVA, X.
Dodecylbenzenesulfonic acid, diethanolamine salt - - - - -	VPC, WTC.
*Dodecylbenzenesulfonic acid, isopropanolamine salt - - - - -	PIL.
Dodecylbenzenesulfonic acid, isopropoxy titanium salt/2-dimethylamino butanol-1 salt	KPI.
Dodecylbenzenesulfonic acid, isopropylamine salt - - - - -	CIN, CTL, ICI, STP, TCH, WTC.
Dodecylbenzenesulfonic acid, isopropoxy titanium salt - - - - -	KPI.
Dodecylbenzenesulfonic acid, potassium salt - - -	GDC, MRV, PRX(E), VAL.
*Dodecylbenzenesulfonic acid, sodium salt - - -	AAC, BLA, CO, CP, CTL, CYL, DUP, ECC, HLI, JLP, LEV, NMC, ONX, PG, PIL, PLX, PNK, RPC, SOP, STP, TEN, WTC, WVA.
*Dodecylbenzenesulfonic acid, triethanolamine salt - - - - -	AAC, BRD, CCC, CHP, CIN, CTL, ESS, HLI, MRV, ONX, PIL, PNK, STP, WTC.
Dodecylbenzene sulfonates, all other - - - - -	WTC.
OTHER ALKYLBENZENESULFONATES:	
Benzenesulfonic acid, mixed linear (C9-14) - - -	LEV.
Decylbenzenesulfonic acid, sodium salt - - - - -	CRT.
Didodecylbenzenesulfonic acid - - - - -	WTC.
Tridecylbenzenesulfonic acid - - - - -	PLX.
Tridecylbenzenesulfonic acid, sodium salt - - -	BLA, CMT, CP, LAS, NPR, PG, WTC.
Alkylbenzene sulfonates, 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 - - - - -	NES, STP, WTC.
Toluenesulfonic acid, potassium salt - - - - -	NES.
Toluenesulfonic acid, sodium salt - - - - -	CO, NES, ONX, PG, WTC.
Trichlorobenzene sulfonic acid, sodium salt - - -	UPF.

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED,
IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

SURFACE-ACTIVE AGENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ANIONIC--CONTINUED	
SULFONIC ACIDS (AND SALTS THEREOF)--CONTINUED	
BENZENE-, CUMENE-, TOLUENE-, and XYLENESULFONATES-- CONTINUED	
*Xylenesulfonic acid, ammonium salt - - - - -	CO, NES, STP, WTC.
Xylenesulfonic acid, potassium salt - - - - -	CO.
*Xylenesulfonic acid, sodium salt - - - - -	NES, PIL, SDC, STP, WTC.
*LIGNINSULFONATES:	
*Ligninsulfonic acid, ammonium salt - - - - -	MAR, PSP, SPA, WVA.
*Ligninsulfonic acid, calcium salt - - - - -	FPC, LKY, MAR, PSP.
*Ligninsulfonic acid, chromium salt - - - - -	MAR, PSP, RAY.
Ligninsulfonic acid, iron salt - - - - -	MAR, PSP.
Ligninsulfonic acid, manganese salt - - - - -	MAR.
Ligninsulfonic acid, mixed chromium and iron salts - - - - -	PSP.
Ligninsulfonic acid, potassium salt - - - - -	PSP.
*Ligninsulfonic acid, sodium salt - - - - -	MAR, PSP, RAY, WVA.
Ligninsulfonic acid, zinc salt - - - - -	MAR, PSP.
*NAPHTHALENESULFONATES:	
Butylnaphthalenesulfonic acid, sodium salt - - - - -	DA, ECC, UDI.
Di(C5-C6 alkyl)naphthalenesulfonic acid - - - - -	X.
Dibutylnaphthalenesulfonic acid - - - - -	UDI.
*Diisopropylnaphthalenesulfonic acid, sodium salt	DA, DUP, UDI.
Isopropylnaphthalenesulfonic acid - - - - -	UDI.
Methylnaphthalenesulfonic acid, sodium salt - - - - -	DA, UDI.
Methylnonylnaphthalenesulfonic acid, sodium salt	UDI.
Naphthalenesulfonic acid, ammonium salt - - - - -	DA.
4,4'-Sulfonyldiphenolnaphthalenesulfonic acid - - -	PCI.
Naphthalenesulfonates, all other - - - - -	ICI, PCI.
SULFONIC ACIDS HAVING AMIDE LINKAGES:	
*SULFOSUCCINAMIC ACID DERIVATIVES:	
N-(Coconut oil alkyl)sulfosuccinamic acid and 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.
N-(Oleoyloxyisopropyl)sulfosuccinamic acid - - -	WTC.
Sulfosuccinamic acid derivatives, all other - - -	BRD.
*TAURINE DERIVATIVES:	
N-(Coconut oil acyl)-N-methyltaurine, sodium salt - - - - -	FTX(E), GAF.
N-Cyclohexyl-N-palmitoyltaurine, sodium salt	GAF.
N-Methyl-N-oleoyltaurine, sodium salt - - - - -	FTX(E), GAF, HRT, STC.

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED,
IDENTIFIED BY MANUFACTURER, 1983--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--CONTINUED	
TAURINE DERIVATIVES--CONTINUED	
N-Methyl-N-palmitoyltaurine, sodium salt - - - -	: GAF, STC.
N-Methyl-N-(tall oil acyl)taurine, sodium salt	: CCC, GAF, WVA.
ALL OTHER SULFONIC ACIDS HAVING AMIDE LINKAGES:	
Sulfonic acids having amide linkages, all other	: STC.
*SULFONIC ACID HAVING ESTER OR ETHER LINKAGES:	
SULFOSUCCINIC ACID ESTERS:	
Sulfosuccinic acid, monoricinolamide ethyl,	
disodium salt - - - - -	: TCH.
Sulfosuccinic acid, bis(2,6-dimethyl-4-heptyl)-	
ester, sodium salt - - - - -	: MOA, NSC.
Sulfosuccinic acid, bis(2-ethylhexyl)ester,	
sodium salt - - - - -	: ACY, ARI(E), CCC, CHP, CRT, DAN, ECC, EMK, FTX(E),
	: HDG, HIP, HRT, MCP, MOA, MRV, RH, RPC, SCO, SCP,
	: STC, WTC.
Sulfosuccinic acid, dihexyl ester, sodium salt	: ACY.
Sulfosuccinic acid, diisodecyl ester, sodium	
salt - - - - -	: ACY.
Sulfosuccinic acid, diisooctyl ester, sodium	
salt - - - - -	: CIM, DA, MOA, SOS.
*Sulfosuccinic acid, dioctyl ester, sodium salt	: MOA.
Sulfosuccinic acid, dipentyl ester, sodium salt	: ACY.
Sulfosuccinic acid, bis(diisobutyl)ester,	
amidodisodium salt - - - - -	: MOA.
Sulfosuccinic acid, ditridecyl ester, sodium	
salt - - - - -	: ACY, MOA.
Sulfosuccinic acid, (coconut oil alkyl)-	
iminoisopropanol half-ester, sodium salt - - -	: MOA.
Sulfosuccinic acid, monolauryl(polyethoxy)ester,	
disodium salt - - - - -	: TCH.
Sulfosuccinic acid,	
monooleamidopolyethyleneglycol ester,	
disodium salt - - - - -	: SCP.
Sulfosuccinic acid, oleamidopolyethyleneglycol,	
disodium salt - - - - -	: MOA.
Sulfosuccinic acid esters, all other - - - - -	: WTC.
*ALL OTHER SULFONIC ACIDS HAVING ESTER OR ETHER	
LINKAGES:	
Coconut oil acids, 2-sulfoethyl ester, sodium	
salt - - - - -	: GAF, HDG, LEV.
Dipolyetherdisulfonic acid, diethanolamine salt	: VPC.
Dodecyldiphenyloxydisulfonic acid - - - - -	: X.
Dodecyldiphenyloxydisulfonic acid, disodium	
salt - - - - -	: CTL, DOW, X.

TABLE 2.—SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/SALES WERE EITHER REPORTED OR ESTIMATED,
IDENTIFIED BY MANUFACTURER, 1983--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	
ALL OTHER SULFONIC ACIDS HAVING ESTER OR ETHER LINKAGES--CONTINUED	
Dodecyl sulfoacetate, sodium salt- - - - -	STP.
Glycerol monostearate sulfoacetate, sodium salt	WTC.
Heptanoyloxybenzenesulfonic acid, sodium salt	MMC.
Iso-octylphenol, ethoxylated and sulfonated, sodium salt- - - - -	GAF, RH.
Octanoyloxybenzenesulfonic acid, sodium salt	MMC.
n-Octylphenol, ethoxylated and sulfonated, sodium salt- - - - -	AAC, CRT, PG.
Sulfonic acid with ester linkages, all other	WTC.
Sulfonic acids with ether linkages, all other	DA, WTC.
*OTHER SULFONIC ACIDS:	
Allyl sulfonate, sodium salt - - - - -	ARD.
Mixed alkanesulfonic acid- - - - -	X.
Mixed alkane sulfonic acid, sodium salt- - - - -	AAC, CCL, DUP, ONX, WTC, WVA, X.
n-Octanesulfonic acid, sodium salt - - - - -	ONX, X.
Oleyloxyethylidiamide oxypropanol sulfonic acid	S.
para-toluidine-meta-sulfonic acid- - - - -	UPF.
Petroleumsulfonic acid, water soluble (Acid layer), sodium salt- - - - -	PIL, WTC.
Styrene maleic anhydride copolymers, sulfonated sodium salt- - - - -	X.
Tall oil, sulfated, potassium salt - - - - -	X.
Triglycerides, sulfonated- - - - -	AZS.
Sulfonic acids, all other- - - - -	CLU, HAL, SLM(E), STP, WTC.
*SULFURIC ACID ESTERS (AND SALTS THEREOF):	
ACIDS, AMIDES, AND ESTERS, SULFATED:	
Coconut oil acids-ethanolamine salt, sulfated, potassium salt - - - - -	EMK.
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 - - - - -	AKS(E), CRT.
Glycerol trioleate, sulfated, sodium salt- - - - -	SCP.
Isopropyl oleate, sulfated, sodium salt - - - - -	DEX.
Isopropyl tallate, sulfated, sodium salt - - - - -	ARI(E).
Methyl oleate, sulfated, sodium salt - - - - -	DA, ICI.
Oleic acid, sulfated - - - - -	ACT.
Oleic acid, sulfated, disodium salt- - - - -	CIN, MCP, TEN.

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED,
IDENTIFIED BY MANUFACTURER, 1983--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, sodium salt - - - - -	: ACY.
Propyl oleate, sulfated, sodium salt - - - - -	: AKS(E), CHP, MRV.
Esters of sulfated oleic acid, all other - - - - -	: DA.
OTHER SULFATED ESTERS:	
Glycerol monoester of coconut oil acids,	
sulfated, sodium salt - - - - -	: CP.
Mixed fatty acids, sulfated, sodium salt - - - - -	: SCO.
9-Octadecenyl acetate, sulfated, sodium salt - - - - -	: DUP.
Tall oil acids, sulfated, sodium salt - - - - -	: ICI.
*ALCOHOLS, SULFATED:	
Decyl and octyl sulfate, sodium salt - - - - -	: TCH.
Decyl sulfate, ammonium salt - - - - -	: HLI.
*Decyl sulfate, sodium salt - - - - -	: AAC, CRT, HLI, ONX, SCP.
*Dodecyl sulfate, ammonium salt - - - - -	: AAC, BRD, CTL, CYL, HLI, JRG, LEV, ONX, STP, TCH, TNI, WTC.
*Dodecyl sulfate, diethanolamine salt - - - - -	: AAC, BRD, CYL, DUP, JRG, ONX, STP, TCH.
Dodecyl sulfate, diethylamine salt - - - - -	: AAC.
Dodecyl sulfate, N,N-diethylcyclohexylamine	
salt - - - - -	: DUP.
Dodecyl sulfate, isopropanolamine salt - - - - -	: BRD, JRG, TCH.
*Dodecyl sulfate, magnesium salt - - - - -	: AAC, BRD, CYL, HLI, ONX, WTC.
Dodecyl sulfate, potassium salt - - - - -	: PG.
*Dodecyl sulfate, sodium salt - - - - -	: AAC, BRD, DUP, HLI, ONX, STP, WTC, WVA.
*Dodecyl sulfate, triethanolamine salt - - - - -	: AAC, BRD, CYL, HLI, ONX, STP, TCH, TNI, WTC.
3,9-Diethyl-6-tridecyl sulfate, sodium salt - - - - -	: MCC.
*2-Ethylhexyl sulfate, sodium salt - - - - -	: AAC, MCC, PCI(E), SCP, TCH, WTC.
7-Ethyl-2-methyl-4-undecyl hydrogen sulfate,	
sodium salt - - - - -	: MCC.
DODECYLSULFATE SALTS:	
Hexadecyl sulfate, sodium salt - - - - -	: AAC, CTL.
Hexyl sulfate, potassium salt - - - - -	: AAC, DEX.
Lauryl sulfate, sodium salt - - - - -	: AZS.
Linear alcohols, sulfated, all other - - - - -	: DA, WTC.
*Mixed linear alcohols, sulfated, ammonium salt	: CP, NTL, ONX, PG, S, SCP, WTC.
Mixed linear alcohols, sulfated, diethanolamine	
salt - - - - -	: SCP.
Mixed linear alcohols, sulfated, magnesium salt	: SCP.
Mixed linear alcohols, sulfated, mixed	
diethanolamine/triethanolamine salt - - - - -	: SCP.
Mixed linear alcohols sulfated, mixed	
sodium/cocodiethanolamine salts - - - - -	: AAC.

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED,
IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

SURFACE-ACTIVE AGENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ANIONIC--CONTINUED	
ALCOHOLS, SULFATED--CONTINUED	
DODECYLSULFATE SALTS--CONTINUED	
Mixed linear alcohols, sulfated, sodium salt - - -	: DA, DUP, PG, SCP, WTC.
Mixed linear alcohols, sulfated, triethanolamine salt - - - - -	: CTL, ONX, PG, SCP, WTC.
Naphthalene-formaldehyde condensate sulfate, sodium salt - - - - -	: UDI.
1-Octadecenyl-2-naphthenyl tetrahydropyrimidine	: EMK.
*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 - - - - -	: X.
1-Naphthol, ethoxylated and sulfated, free acid	: TCH.
Nonylphenol, ethoxylated and phosphated, partial sodium salt - - - - -	: GAF.
Nonylphenol, ethoxylated and sulfated, ammonium salt - - - - -	: GAF, STP, WTC.
Nonylphenol, ethoxylated and sulfated, sodium salt - - - - -	: GAF, WTC.
Octylphenoxy polyethoxy ethyl sulfate - - - - -	: RH.
Styrophenoxy, ethoxylated and sulfated, ammonium salt - - - - -	: X.
Decyl alcohol, propoxylated and sulfated, sodium salt - - - - -	: APX.
*Dodecyl alcohol, ethoxylated and sulfated, ammonium salt - - - - -	: AAC, HLI, MOA, ONX, STP.
*Dodecyl alcohol, ethoxylated and sulfated, sodium salt - - - - -	: AAC, CTL, CYL, HLI, ONX, SCP, STP, TCH.
Hexyl alcohol, propoxylated and sulfated, sodium salt - - - - -	: APX.
Isobutanol, ethoxylated and sulfated, ammonium salt - - - - -	: X.
Mixed linear alcohol, ethoxylated, sulfated, mixed sodium and cocoamphocarboxy glycinate salts - - - - -	: AAC.
*Mixed linear alcohols, ethoxylated and sulfated, ammonium salt - - - - -	: CO, PG, PIL, SCP, SHC, STP, WTC, X, X.
Mixed linear alcohols, ethoxylated and 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, 1983--CONTINUED

SURFACE-ACTIVE AGENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ANIONIC--CONTINUED	
ETHERS, SULFATED--CONTINUED	
*Mixed linear alcohols, ethoxylated and sulfated, sodium salt - - - - -	AAC, BRD, CO, DUP, GAF, ONX, PG, PIL, SCP, SHC, STP, TCI, WTC, WVA.
Tridecyl alcohol, ethoxylated and sulfated, sodium salt - - - - -	AAC.
Sulfated ethers, all other - - - - -	WTC.
*NATURAL FATS AND OILS, SULFATED:	
*Castor oil, sulfated, sodium salt - - - - -	ACT, ACY, AKS(E), APX, ARI(E), ARL, CRT, DA, DEX, HIP, ICI, LEA, LUR, MRV, SCO, SCP, SEA, SLM(E), WHW.
Coconut oil, sulfated, sodium salt - - - - -	ACY, CIN, MRD.
Cod oil, sulfated, sodium salt - - - - -	ARI(E), SEA.
Grease, other than wool, sulfated, sodium salt - - - - -	WHW.
Herring oil, sulfated - - - - -	SLM(E).
*Herring oil, sulfated, sodium salt - - - - -	ARI(E), SEA, SLM(E), WHW.
Lard, sulfated, sodium salt - - - - -	CRT, MRD.
*Mixed fish oils, sulfated, sodium salt - - - - -	CIN, MRD, SLM(E), WHW, WTC.
Mustard seed oil, sulfated, sodium salt - - - - -	DA.
*Neatsfoot oil, sulfated, sodium salt - - - - -	ACT, ARI(E), CIN, MRD, SLM(E), WHW.
Peanut oil, sulfated, sodium salt - - - - -	ACY.
Pecan oil, sulfated, sodium salt - - - - -	CRT.
Pine oil, sulfated - - - - -	SCM.
Ricebean oil, sulfated, sodium salt - - - - -	DA.
Salmon oil, sulfated, sodium salt - - - - -	ACT.
*Soybean oil, sulfated, sodium salt - - - - -	ACT, SEA, WHW.
Sperm oil, sulfated, sodium salt - - - - -	ARI(E).
Sulfated fish and marine fat oils, all other - - - - -	DA.
*Tall oil, sulfated, sodium salt - - - - -	ACT, APX, ARI(E), CIN, CRT, SEA, SOS, WHW.
*Tallow, sulfated, sodium salt - - - - -	ACT, ACY, ARI(E), CCC, DA, ECC, LUR, MRD, NSC, SLM(E), SOS, WHW.
Sulfuric acid esters, all other - - - - -	BFP, DA, SLM(E), WTC.
*OTHER ANIONIC SURFACE-ACTIVE AGENTS:	
Alkylalcohol ethoxylated and carbonated, sodium salt - - - - -	S.
Ethoxylated acetic acid, sodium salt - - - - -	S.
Lignin, sodium salt - - - - -	WVA.
Maleated esterified tall oil - - - - -	ENP.
Maleated linseed oil - - - - -	ENP.
Mixed linear alcohols, ethoxylated and carbonated, sodium salt - - - - -	S.
Tridecyl alcohol, ethoxylated and carbonated, sodium salt - - - - -	S.
Anionic surface-active agents, all other - - - - -	DAN, DUP, MIR, SLM(E).

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED,
IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

SURFACE-ACTIVE AGENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
CATIONIC	
*AMINE OXIDES AND OXYGEN-CONTAINING AMINES (EXCEPT THOSE HAVING AMIDE LINKAGES):	
*ACYCLIC:	
3-(C12-15 alkyloxy)-1-propanamine - - - - -	: NCW.
3-(C12-18 alkyloxy)-1-propanamine - - - - -	: NCW.
N-(C12-18 alkyl)oxypropyl trimethylene diamine	: NCW.
N,N-Bis(2-hydroxyethyl)(coconut oil alkyl)amine oxide - - - - -	: ARC.
Bis-(2-hydroxyethyl)isodecyloxypropylamine oxide	: NCW.
*N,N-Bis(2-hydroxyethyl)octadecylamine - - - - -	: ARC, MET, SHX.
N,N-Bis(2-hydroxyethyl)-oleamide - - - - -	: CGY.
N,N-Bis(2-hydroxyethyl)(tallow alkyl)amine - - - - -	: ARC, MZC, SHX.
N,N-Bis(2-hydroxyethyl)(tallow alkyl)amine acetate - - - - -	: MZC.
*(Coconut oil alkyl)amine, ethoxylated - - - - -	: ARC, ICI, MCB, MZC, SHX, SVC, TCH, X.
(Coconut oil alkyl)amine, ethoxylated, oleate - - - - -	: BRD.
Cocoyl amidopropyl dimethylamine oxide - - - - -	: SCP.
Diethylenetriamine, ethoxylated and propoxylated	: BAK.
Diethylenetriamine, propoxylated - - - - -	: BAK.
N,N-Dimethyl(coconut oil alkyl)amine oxide - - - - -	: ARC.
N,N-Dimethyldecylamine oxide - - - - -	: BRD.
N,N-Dimethyldodecylamine oxide - - - - -	: BRD, HLI, JOR, PG, SBC.
N,N-Dimethylhexadecylamine oxide - - - - -	: ARC, BRD, ONX.
N,N-Dimethyl(hydrogenated tallow alkyl)amine oxide - - - - -	: ARC.
N,N-Dimethyl(mixed alkyl)amine oxide - - - - -	: PG, S.
N,N-Dimethyl oleyl amine oxide - - - - -	: SCP.
Ethoxydiethanolamine - - - - -	: TCH.
Hexyloxypropyl amine - - - - -	: DUP, NCW.
*(Hydrogenated tallow alkyl)amine, ethoxylated - - - - -	: CPC, NCW, SHX.
N-(2-Hydroxyethyl)-N,N',N'-tris(2-hydroxypropyl)- ethylenediamine - - - - -	: ONX, WTC, X.
Isodecyloxypropylamine - - - - -	: NCW, SHX.
Isodecyloxypropylamine, ethoxylated - - - - -	: NCW.
3-(3-Isodecyloxy)propylaminopropyl amine - - - - -	: SHX.
N-Isodecyloxypropyl trimethylene diamine - - - - -	: NCW.
Isononyloxypropylamine - - - - -	: NCW.
Isopropoxy-tris(2-ethylenediamino)ethyl titanate	: KPI.
Isotridecyloxypropylamine - - - - -	: NCW.

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED,
IDENTIFIED BY MANUFACTURER, 1983--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	
N-Isotridecyloxypropyl trimethylene diamine - - - -	NCW.
Methoxypropylamine - - - - -	AZS.
3-(Mixed alkoxy)propylamine, ethoxylated oxides - - - -	SHX.
3-(3-Mixed alkoxy)propylaminopropyl amine - - - - -	SHX.
(Mixed alkyl)amine, ethoxylated - - - - -	ARC, ICI, RH.
(Mixed alkyl)ether diamine - - - - -	AZS.
(Mixed alkyl)oxypropylamine - - - - -	AZS.
Mixed tert-alkyl primary amines, ethoxylated - - - -	BAK.
*(9-Octadecenyl)amine, ethoxylated - - - - -	GAF, MET, TCH, X.
*Octadecylamine, ethoxylated - - - - -	ARC, MET, TCH.
3-Ocyloxy and 3-dicyloxy-propylamine - - - - -	ARC.
Oleylamine, ethoxylated - - - - -	MCB.
Polyalkylene polyamine, ethoxylated - - - - -	X.
Polyethylenepolyamine, alkoxyated - - - - -	TKL.
*(Soybean oil alkyl)amine, ethoxylated - - - - -	ARC, NCW, SHX, SVC.
(Tallow alkyl)amine, ethoxylated - - - - -	ARC, BAS, DUP, GAF, MCB, MRV, S, SHX, TCH, WVA, X.
(Tallow alkyl)amine, propoxylated - - - - -	ARC.
N-(Tallow alkyl) diamine, propoxylated - - - - -	ARC.
N-(Tallow alkyl)trimethylenediamine, ethoxylated - - - -	ARC.
N-(Tallow alkyl)trimethylenediamine, propoxylated - - - -	ARC.
[Tallow ethyl alkyl]amine, ethoxylated, sulfate - - - -	RPC.
N,N,N',N'-Tetrakis(2-hydroxyethyl)ethylenediamine - - - -	MZC.
N,N,N',N'-Tetrakis(2-hydroxypropyl)- ethylenediamine, propoxylated and ethoxylated - - - -	BAS.
3-(3-Tridecyloxy)propylaminopropyl amine - - - - -	SHX.
Triethanolamine, ethoxylated - - - - -	MIL.
Amine oxides and oxygen-containing amines (Except those with amide linkages), acyclic, all other - - - -	DA, SDH.
*CYCLIC:	
Aniline, ethoxylated - - - - -	MIL.
2-Butenedioic acid-(#)-diamine - 1-(2-aminoethyl)- - - -	
2-(tall oil alkyl)-2-imidazoline condensate - - - -	BAK.
2,5-Dimethoxyaniline, ethoxylated - - - - -	MIL.
2-Heptadecyl-1,4-hydroxymethyl-4-ethyl-2- oxazoline - - - - -	BRD.
N-Hexadecylmorpholine - - - - -	BRD.
*N-(2-Hydroxyethyl)-1,2-diphenylethylenediamine - - - -	BRD, DA, MIR.
*1-(2-Hydroxyethyl)-2-nonyl-2-imidazoline - - - - -	BRD, MIR, MOA, MZC, SBC, SCP, SHX.
*1-(2-Hydroxyethyl)-2-nor(coconut oil alkyl)-2- imidazoline - - - - -	AAC, MOA, TCH, WTC.
*1-(2-Hydroxyethyl)-2-nor (tallow alkyl)-2- imidazoline - - - - -	MZC.

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED,
IDENTIFIED BY MANUFACTURER, 1983--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--CONTINUED	
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.
1-(2-Hydroxyethyl)-2-tridecyl-2-imidazoline hydrochloride-	CGY.
Eignin amine	WVA.
1-(2-Naphthenic acid amidoethyl)-2-naphthenyl-2- imidazoline-	ARC.
Rosin amine, ethoxylated	BAK, HPC, WTC.
m-Toluidine, ethoxylated	MIL.
Amine oxides and oxygen-containing amines (Except those having amine linkages), cyclic, all other	STC, 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, GAF, WTC.
Coconut oil acids-N,N-dimethyltrimethylenediamine condensate	SCP.
Mixed fatty acids-polyalkylenepolyamine condensate	AZS, TCH.
Naphthenic acids-polyalkylene polyamine condensate	X.
Naphthenic acids-tall oil fatty acids- polyalkylene polymine condensate	X.
2-Nor tall oil alkyl-1-tall oil amidoethyl imidazoline-	SHX.
Oleic acid-diethylenetriamine condensate	DA, ICI, LUR.
Oleic acid-N,N-dimethyltrimethylenediamine condensate	CCW.
Pelargonic acid-tetraethylenepentamine condensate	ICI.
Stearic acid-diethylenetriamine condensate	ARI(E), DA, FTX(E), JOR, S.
Stearic acid-diethylenetriamine condensate, ethyl sulfate-	GDC.
Stearic acid - ethylenediamine condensate-	CLD.

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED,
IDENTIFIED BY MANUFACTURER, 1983--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	
Stearic acid-ethylenediamine condensate, monoethoxylated, ethyl sulfate- - - - -	GDC.
Stearic acid-ethylenediamine condensate, monoethoxylated ethyl sulfate- - - - -	GDC.
Stearic acid-tetraethylenepentamine condensate	ONX.
Stearic acid-tetraethylenepentamine condensate, acetate salts- - - - -	X.
Tall oil acids/aminoethylpiperazine condensate	NCW.
Tall oil acids-diethylenetriamine condensate - - -	ARI(E), AZS, MET, SCP, STC, WTC, WVA.
Tall oil acids-N,N-dimethylpropylenediamine condensate - - - - -	FER.
Tall oil acids/ethylene/amine distillation residue, condensate- - - - -	NCW.
Tall oil acids-polyalkylenepolyamine condensate	AZS, QCP, SCP, WVA, X.
Tall oil acids-polyalkylene polyamine 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, alkoxylated- - - - -	WVA.
Oleic acid-ethylenediamine condensate, monoethoxylated- - - - -	DEX.
Stearic acid-diethylenetriamine condensate, polyethoxylated- - - - -	SOS.
Stearic acid-ethylenediamine condensate, monoethoxylated- - - - -	DEX, ICI, SLC.
OTHER AMINES AND AMINE OXIDES HAVING AMIDE LINKAGES:	
N,N'-(Di-tall oil acid)amidoethylamine - - - - -	BAK.
3-Lauramido-N,N-dimethylpropylamine oxide- - - - -	JOR, ONX, SNW.
Stearamidoethyldiethylamine- - - - -	S.
Stearamidoethylethanolamine acetate- - - - -	S.
Stearic acid, diethanolamine condensate, methyl sulfate- - - - -	DUP.
Tallow-amido-propyl dimethylamine oxide- - - - -	ONX.
AMINES, NOT CONTAINING OXYGEN (AND SALTS THEREOF):	
AMINE SALTS:	
N-(2-((2-Aminoethyl)amino)ethyl)octadecanamide acetate or octadecanamide, N,N'-(imino-2,1- ethanediy)bis, monoacetate- - - - -	DA.
N,N-Dimethyl-N-alkylamine phosphate- - - - -	X.

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED,
IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

SURFACE-ACTIVE AGENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
CATIONIC--CONTINUED	
AMINES, NOT CONTAINING OXYGEN (AND SALTS THEREOF)-- CONTINUED	
AMINE SALTS--CONTINUED	
(Hydrogenated tallow alkyl)amine acetate - - - - -	ARC, WTC.
(Mixed alkyl)amine phosphate - - - - -	X.
Octadecylamine acetate - - - - -	ARC.
(Tallow alkyl)amine acetate - - - - -	ARC, PCI.
N-(Tallow alkyl)trimethylenediamine acetate - - - - -	ARC.
N-(Tallow alkyl)trimethylenediamine oleate - - - - -	ARC, JTO.
*DIAMINES AND POLYAMINES:	
*IMIDAZOLINE DERIVATIVES:	
1-(2-Aminoethyl)-2-nor(tall oil alkyl)-2-	
imidazoline - - - - -	SCP, WTC.
*N-(Coconut oil alkyl)trimethylenediamine - - - - -	ARC, JTO, SHX.
N-(Coconut oil alkyl)trimethylenediamine,	
adipic acid salt - - - - -	X.
N-(Dimeracidalkyl)trimethylenediamine - - - - -	ENO.
Dimethylaminopropylamine - - - - -	AZS.
N-(Docosyl and eicosyl)trimethylenediamine - - - - -	ENO.
2-Heptadecyl-2-imidazoline - - - - -	CGY, SCO.
N-(Mixed alkyl)polyethylenepolyamine - - - - -	CCW, WTC.
N-(9-Octadecenyl)trimethylenediamine - - - - -	ARC, JTO, SHX.
N-(Soybean oil alkyl)trimethylenediamine - - - - -	ENO.
Stearamidoethyl-2-heptadecyl imidazoline - - - - -	ICI.
3-(Tall oil amino)propyl amine - - - - -	SHX.
*N-(Tallow alkyl)dipropylenetriamine - - - - -	ARC, JTO, NCW.
N-(Tallow alkyl)trimethylenediamine - - - - -	ARC, ENO, JTO, NCW.
N-(Tallow alkyl)-N,N',N'-trimethyl-1,3-propane	
diamine - - - - -	ARC.
3-Tetradecylaminopropyl amine - - - - -	SHX.
Diamines and polyamines, all other - - - - -	X, X.
PRIMARY MONOAMINES:	
Arachidylbehenylalkyl amine - - - - -	ENO.
* (Coconut oil alkyl)amine - - - - -	ARC, ENO, JTO, MCB, SHX.
Dimeracidalkyl amine - - - - -	ENO.
Dodecylamine - - - - -	ARC, SHX.
[Erucyl alkyl]amine - - - - -	ENO.
Hexadecylamine - - - - -	ARC, ENO.
* (Hydrogenated tallow alkyl)amine - - - - -	ARC, ENO, JTO, NCW, 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 - - - - -	ATC, ENO, JTO, NCW, SHX.

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED,
IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

SURFACE-ACTIVE AGENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
CATIONIC--CONTINUED	
AMINES NOT CONTAINING OXYGEN (AND SALTS THEREOF)-- CONTINUED	
DIAMINES AND POLYAMINES--CONTINUED	
SECONDARY AND TERTIARY MONOAMINES:	
Bis(coconut oil alkyl)amine-	ARC.
Bis(hydrogenated tallow alkyl)amine-	ARC.
Bis(tallow alkyl)amine-	ARC.
N,N-Didecylmethylamine-	BRD.
N,N-Dimethyl(behenyl alkyl)amine-	ENO.
N,N-Dimethyl(coconut oil alkyl)amine-	AAC, ARC, ENO.
N,N-Dimethyldodecylamine-	ARC, TNA.
N,N-Dimethylhexadecylamine-	ARC, ONX, TNA.
N,N-Dimethyl(hydrogenated tallow alkyl)amine-	ARC.
N,N-Dimethyl(mixed alkyl)amine-	BRD, ONX, TNA.
N,N-Dimethyl-9-octadecenylamine-	ARC.
*N,N-Dimethyloctadecylamine-	ARC, ENO, TNA.
*N,N-Dimethyl(soybean oil alkyl)amine-	ARC, ENO, TNA.
N,N-Dimethyl(tallow alkyl)amine-	ENO.
N,N-Dimethyltetradecylamine-	ARC, ONX.
N-methylbis(octyl-decyl)amine-	TNA.
N-Methylbis(coconut oil alkyl)amine-	ARC.
N-Methylbis(hydrogenated tallow alkyl)amine-	ARC, ENO, SHX.
N-Methylidide cyclamine-	ARC.
Triisodecylamine-	SCP.
Trilaurylamine-	SCP.
Tri(mixed alkyl)amine-	SHX.
Trioctadecyl-t-amine-	AZS.
Trioctylamine-	SCP, SHX.
Tri(tridecyl)amine-	SHX.
Secondary and tertiary monoamines, all other	ARC.
*OXYGEN-CONTAINING QUATERNARY AMMONIUM SALTS:	
Alkyldimethylamine diethyl sulfate-	DA.
(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-	BAK.
Benzene-methan ammonium-N,N-dimethyl-N-tetradecyl-chloride-	BAK.
Benzyl(coconut oil alkyl)bis(2-hydroxyethyl)-ammonium chloride-	SCP, X.
Benzyl(coconut oil alkyl,ethoxylated)-dimethylammonium chloride-	SCP.
1-Benzyl-1-(2-hydroxyethyl)-2-nor(tall oil alkyl)-2-imidazoline-	BAK, X.

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED,
IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

SURFACE-ACTIVE AGENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
CATIONIC--CONTINUED	
OXYGEN CONTAINING QUATERNARY AMMONIUM SALTS--CONTINUED	
Benzyl(rosin amine)ammonium chloride, ethoxylated	: BAK.
Benzyl(tallow alkyl)bis(2-hydroxyethyl)ammonium chloride	: DUP.
Bis(N-Amidopropyl, N,N-dimethyl, N-benzyl ammonium chloride)	: SBC.
Bis(N-amidopropyl)-N,N-dimethyl-N-ethylammonium ethyl sulfate, dimer acid	: SBC.
Bis(N,N1-ethyl(stearic/arachidic/behenic)amide)-	
cyanoethyl ethylammonium ethosulfate	: PCI.
Bis(2-hydroxyethyl, ethoxylated)methyl(9- octadecenyl)-ammonium chloride	: ARC, GAF, SHX.
Bis(2-hydroxyethyl, ethoxylated)- methyloctadecylammonium 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 (Coconut oil alkyl)bis(2-hydroxyethyl, ethoxylated)-	: HXL.
methylammonium chloride	: ARC, GAF, NCW, SHX.
(Coconut oil alkyl)-bis-(2-hydroxyethyl)methyl ammonium nitrate	: ARC.
Dimethyl dodecyl ethyl ammonium ether sulfate	: PCI.
Ethanaminium,2-hydroxy-N,N-bis[2-hydroxyethyl]-N- methyl-,salt with silicic acid, sodium salt	: TCH.
Ethanaminium, 2-hydroxy-N,N-bis(2-hydroxyethyl)-N- methyl-, salt with silicic acid	: TCH.
(Ethoxybenzyl)dimethyl(octylphenoxy)ammonium chloride	: RH.
Ethoxylated(hydrogenated tallow amine), methyl ammonium chloride	: NCW.
Ethoxylated, quaternized(C12-18 alkyl) oxypropyl trimethylene diamine	: MCB, NCW.
Ethoxylated, quaternized reaction product of formaldehyde and tallow diamine	: NCW.
N-Ethyl-N,N-bis(polyoxyethylene)tallow ammonium ethyl sulfate	: SHX.
1-Ethyl-2-(8-heptadecenyl)-1-(2-hydroxyethyl)-2- imidazolinium ethyl sulfate	: ICI, SHX.
1-Ethyl-2-(8-heptadecenyl)-1-(9-octadecenyl)- amidoethylammonium sulfate	: SHX.

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED,
IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

SURFACE-ACTIVE AGENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
CATIONIC--CONTINUED	
OXYGEN-CONTAINING QUATERNARY AMMONIUM SALTS--CONTINUED	
N-Ethyl-N-hexadecylmorpholinium ethyl sulfate	BRD, ICI.
1-Ethyl-2-isoheptadecyl-1-(2-hydroxyethyl)-2-imidazolinium ethyl sulfate	SBC.
N-Ethyl-N-(soybean oil alkyl)morpholinium ethyl sulfate	ICI.
α-Glyconamidopropyl dimethyl-2-hydroxyethyl 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 amide ethyl] ammonium ethyl sulfate	SHX.
(3-Lauramidopropyl)trimethylammonium methyl sulfate	ACY.
2-(2-Lauroyloxyethyl)carbamoyl-1-methylpyridinium chloride	ARC, WTC.
Methyl, bis-(2-hydroxyethyl) hydrogenated tallow alkylammonium chloride	NCW.
Methyl, bis-(2-hydroxyethyl) isodecyloxypropylammonium chloride	NCW.
Methyl, bis-(2-hydroxyethyl) isotridecyloxypropylammonium chloride	NCW.
Methyl, bis-(2-hydroxyethyl) soyaalkylammonium chloride	NCW.
Methyl dioleyl ethoxy ammonium methyl sulfate	SHX.
1-Methyl-2-(8-heptadecenyl)-1-(9-octadecenyl)amido ethyl	SHX.
1-methyl-2-nox-tallow-1-[2-tallow amidoethyl]imidazoliniummethyl 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	WTC.
Methyltallowdiethylenetriamine condensate, polyethoxylated, methyl sulfate	SVC.
Methyltallowdiethylenetriamine condensate, polypropoxylated, methyl sulfate	SVC.

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED,
IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

SURFACE-ACTIVE AGENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
CATIONIC--CONTINUED	
OXYGEN-CONTAINING QUATERNARY AMMONIUM SALTS--CONTINUED	
Mink-amidopropyl dimethyl-2-hydroxyammonium chloride	SBC.
Mixed(coco and soya fatty acids), reaction products with chloromethane and diethylenetriamine, ethoxylated, quaternized	NCW.
Oxygen-containing quaternary ammonium salts (Except those having amide linkages), all other-	ARC, BAK, X, X.
1-Propanaminium, N-ethyl-N,N-dimethyl-3-[(1-oxooctadecyl)aminol-, ethyl sulfate-	SBC.
Soya fatty acids, reaction products with chloromethane and diethylenetriamine, ethoxylated, quaternized	NCW.
Soya fatty acids, reaction products with chloromethane and diethylenetriamine, propoxylated, quaternized	NCW.
Stearylamidopropyl dimethyl myristyl acetate ammonium chloride-	VND.
Stearyl dimethyl phenethyl ammonium tosylate	HXL.
Tallow amine, ethoxylated, quaternary ammonium salt	DUP, VND.
Tris(2-hydroxyethyl)(tallow alkyl)ammonium acetate	ARC.
Tris(2-hydroxyethyl)tallowammonium chloride-	X.
Quaternary ammonium salts having amide linkages, all other-	BAK, SNW.
*QUATERNARY AMMONIUM SALTS, NOT CONTAINING OXYGEN:	
*ACYCLIC:	
Bis(coconut oil alkyl)dimethylammonium chloride	ARC, NCW, ONX, SCP, SHX, WTC.
Bis(coconut oil alkyl) dimethylammonium nitrate	ARC.
*Bis(hydrogenated tallow alkyl)dimethylammonium chloride	ARC, ENO, SHX, SVC, WTC.
Bis(hydrogenated tallow alkyl)-dimethylammoniummethyl sulfate	ARC, SHX.
Bis(tallow alkyl)dimethyl ammonium chloride-	SHX.
Bis(tallow alkyl)dimethylammonium chloride	ARC.
Cocodimethyl ethyl ammonium ethyl sulfate-	SHX.
N-[(Coconut oil alkyl)aminolbutyric acid, sodium salt	ARC, JTO, SHX.
Dicocodimethyl ammonium methyl sulfate	SHX.
Didecyldimethylammonium chloride	BRD, HNT, ONX.
Dilauryldimethylammonium chloride-	HXL.
Dimethylarachidylbehenylammonium chloride-	ENO.

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED,
IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

SURFACE-ACTIVE AGENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
CATIONIC--CONTINUED	
QUATERNARY AMMONIUM SALTS, NOT CONTAINING	
OXYGEN--CONTINUED	
ACYCLIC--CONTINUED	
Dimethyldi(C12-18)ammonium chloride (mixed	
straight and branched chains)- - - - -	SHX.
Dimethyldioctadecylammonium choride- - - - -	SHX.
Dimethyldioctadecylammonium methyl sulfate - - - - -	SHX.
N,N-Dioctyl-N,N-dimethyl ammonium chloride - - - - -	BRD.
Ditallowamidoammonium sulfate- - - - -	CRD.
Dodecyltrimethylammonium chloride- - - - -	ARC, SHX.
Ethyl dimethyl (mixed alkyl) ammonium ethyl sulfate	DEX, JOR.
Ethylhexadecyldimethylammonium bromide - - - - -	HXL.
Hexadecyltrimethylammonium bromide - - - - -	HXL.
Hexadecyltrimethylammonium chloride- - - - -	ARC, BRD, SHX.
(Hydrogenated tallow alkyl)trimethylammonium	
chloride - - - - -	ARC.
Methyl-1-tallowamidoethyl-2-tallowimidazolium-	
methyl sulfate - - - - -	CRD.
Methyl tri(C9-10)ammonium chloride - - - - -	SHX.
Methyltrioctylammonium chloride- - - - -	BRD, SCP.
(Mixed alkyl)ammonium chloride - - - - -	MIL.
Mixed linear alcohols, sulfated, ammonium salt	STC.
(Mixed linear alkyl)trimethyl ammonium bromide	ARC, DUP.
Mixture of N-octyl, N-decyl, N,N-dimethyl	
ammonium chloride and benzyl, dimethyl, (mixed	
alkyl) ammonium chloride - - - - -	BRD.
N-Octyl, N-decyl, N,N-dimethyl ammonium chloride	BRD.
N,N,N',N',N'-Pentamethyl-N-(tallow alkyl)-	
trimethylene-bis[ammonium chloride]- - - - -	ARC, JTO, SHX.
Tetrabutylammonium bromide - - - - -	EK, HXL, RSA.
Tetra butylammonium hydroxide- - - - -	RSA.
Tetraethylammonium bromide - - - - -	EK, RSA, WCC.
Tetraethylammonium chloride- - - - -	EK.
Tetraethylammonium chloride- - - - -	TNA.
Tetraethylammonium hydroxide - - - - -	RSA.
Tetraheptylammonium bromide - - - - -	EK.
Tetramethylammonium chloride - - - - -	RSA.
Tetramethylammonium hydroxide- - - - -	RSA.
Tetrapropylammonium bromide- - - - -	EK, RSA.
Tetrapropylammonium hydroxide- - - - -	RSA.
Tributylmethylammonium chloride- - - - -	TNA.
Trihydrogenated tallow ammonium chloride - - - - -	ENO.
Trimethyl-dodecylammonium chloride- - - - -	ONX.
Trimethyl laurylammonium chloride- - - - -	SHX.
Trimethyloctadecylammonium chloride- - - - -	ARC, SVC.

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED,
IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

SURFACE-ACTIVE AGENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
CATIONIC--CONTINUED	
QUATERNARY AMMONIUM SALTS, NOT CONTAINING OXYGEN--CONTINUED	
ACYCLIC--CONTINUED	
Trimethyl(soybean oil alkyl)ammonium chloride - - -	JTO, SHX.
Trimethyl(tallow alkyl)ammonium chloride - - - -	ENO, JTO, SHX.
Trimethyltetradecylammonium bromide - - - - -	HXL.
Quaternary ammonium salts, not containing oxygen, acyclic, all other - - - - -	WTC, X.
*BENZENOID:	
Benzyl(alkylpyridinium)chloride - - - - -	X.
*Benzyl(coconut oil alkyl)dimethylammonium chloride - - - - -	ARC, CCL, CRT, ENO, HNT, ONX, SCP, TCC.
Benzyl-di(hydrogenated tallow alkyl)- methylammonium chloride - - - - -	ARC.
*Benzyl dimethyl(mixed alkyl)ammonium chloride - - -	AAC, BKM, BRD, JOR, ONX, PCI, RH, SCP, SDH, SHX, WTC, X.
*Benzyl dimethyloctadecylammonium chloride - - - -	CRD, CYL, HXL, ONX, SCP, SHX, TNI.
Benzyl dimethyl(tallow alkyl)ammonium chloride - - -	ENO, HLI, JOR.
Benzyl dimethyltetradecylammonium chloride - - - -	HXL.
Benzyl(dodecyl-carbamyl-methyl)dimethylammonium chloride - - - - -	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.
1-Benzyl-2-picolinium bromide - - - - -	HXL.
Benzyl picolinium chloride - - - - -	AKS(E).
1-Benzylpyridinium chloride - - - - -	BRD, PCI.
Benzyltriethylammonium chloride - - - - -	RSA.
*Benzyltrimethylammonium chloride - - - - -	CRT, HIP, PCI, RSA, SHX, TCC.
Benzyl-tris(2-hydroxyethyl)ammonium chloride - - -	TCC.
2,4-Dichlorobenzyl dimethyl(mixed alkyl)ammonium chloride - - - - -	X.
(3,4-Dichlorobenzyl)dodecyl dimethylammonium chloride - - - - -	ONX.
2-Dodecylisoquinolinium bromide - - - - -	ONX.
(Dodecylmethylbenzyl)trimethylammonium chloride	RH.
1-Dodecylpyridinium chloride - - - - -	CCL, DAN.
(Ethylbenzyl)dimethyl(mixed alkyl)ammonium chloride - - - - -	HNT.
Methyl-bis(coconut oil alkyl)benzyl ammonium chloride - - - - -	ARC.

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED,
IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

SURFACE-ACTIVE AGENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
CATIONIC--CONTINUED	
QUATERNARY AMMONIUM SALTS, NOT CONTAINING OXYGEN--CONTINUED	
BENZENOID--CONTINUED	
(Mixed alkyl)dibenzyltrimethyl-1,3-propane diammonium chloride- - - - -	GDC.
α -Naphthyl-dodecyl-dimethyl ammonium chloride- - -	ONX.
1-Phenethyl-2-picolinium bromide - - - - -	HXL.
Phenethyl pyridinium bromide - - - - -	HXL.
Quaternary ammonium salts not containing oxygen, cyclic, all other- - - - -	BAK, ICI, X, X.
*OTHER CATIONIC SURFACE-ACTIVE AGENTS:	
Cationic surface-active agents, all other- - - - -	DUP, MIR, 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) - - - - -	CLI, HNT, NSC.
*Coconut oil acids (Ratio = 2/1) - - - - -	AKS(E), ARD, CCL, CLI, CON, CPC, CTL, CYL, DA, ECC, EFH, FTX(E), GDC, HLI, HRT, HTN, JOR, LEA, LUR, MCP, MOA, MRV, MZC, ONX, PNK, RPC, SBC, SCP, SHX, SOP, STP, TCH, UNN, VAL, WTC.
*Coconut oil and tallow acids (Ratio = 2/1)- - - -	BRD, CRT, CTL, ESS, MOA, SBC, SVC, WTC.
Lard oil acids - - - - -	FER.
Lard oil and tall oil acids- - - - -	FER.
Lauric acid (Ratio = 2/1) - - - - -	CLI, CRD, MOA, MZC, WTC.
*Lauric and myristic acids (Ratio = 2/1) - - - - -	CRD, HRT, MOA, MZC, PG, SBC, STP.
Lauric and oleic acids (Ratio = 2/1) - - - - -	SCP.
*Linoleic acid (Ratio = 2/1) - - - - -	KNP, MOA, VND.
Mixed carboxylic acids - - - - -	HLI.
*Oleic acid (Ratio = 2/1)- - - - -	CLI, EMR, MZC, STP.
Palmitic and stearic acids (Ratio = 2/1)- - - - -	RPC.
Pelargonic acid (Ratio = 2/1) - - - - -	TCH.
Soybean oil acids (Ratio=2/1) - - - - -	MZC.
Stearic acid (Ratio = 2/1)- - - - -	CLI, MCB, VAL.
*Tall oil acids (Ratio = 2/1)- - - - -	ECC, MOA, MZC, SBC, STC, WTC, WVA.
Tallow acids (Ratio = 2/1)- - - - -	CLI, EFH, ICI, MOA.
Diethanolamine condensates (Amine/acid = 2/1), all other- - - - -	SOS.
DIETHANOLAMINE CONDENSATES (OTHER AMINE/ACID RATIOS)	
*Coconut oil acids (Ratio = 1/1) - - - - -	BRD, CLI, CTL, DA, EMK, FTX(E), GAF, HLI, HNT, HRT, HTN, JOR, JRG, MOA, MZC, ONX, PEL, PIL, SBC, SCP, SHX, STP, TCC, TCH, WTC, X.
Lauric acid (Ratio = 1/1) - - - - -	ARD, CLI, CYL, MOA, ONX, SBC, TCH, TNI.
*Lauric and myristic acid (Ratio = 1/1)- - - - -	BRD, CLI, CPC, CYL, HTN, MOA, SBC, WTC.

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED,
IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

SURFACE-ACTIVE AGENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
NONIONIC--CONTINUED	
CARBOXYLIC ACID AMIDES--CONTINUED	
DIETHANOLAMINE CONDENSATES (OTHER AMINE/ACID RATIOS)--CONTINUED	
*Linoleic acid (Ratio = 1/1) - - - - -	: CLI, MOA, SBC, VND.
Myristic acid (Ratio=1/1) - - - - -	: MOA.
Oleic acid (Ratio = 1/1)- - - - -	: HLI.
Soybean oil acids (Ratio=1/1) - - - - -	: MOA, MZC.
*Stearic acid (Ratio = 1/1)- - - - -	: BRD, CHP, ECC, HIP, MRV.
*Tall oil acids - - - - -	: CHP, WTC.
Tallow acids - - - - -	: MOA, VPC.
*ALL OTHER CARBOXYLIC ACID AMIDES:	
Alkanolamine condensates, all other- - - - -	: TCH, VND, WTC.
Carboxylic acid - alkanolamine condensates, all other- - - - -	: DA, ROB, WTC.
Castor oil acids-polyalkylene polyamine maleic anhydride condensate - - - - -	: X.
Cocoaminoamide - - - - -	: DA.
*Coconut oil acids- - - - -	: STP.
Coconut oil acids (Ratio = 1/1) - - - - -	: CYL, MOA, ONX, PG, SOS, VND, WTC.
Coconut oil acids (Ratio = 2/1) - - - - -	: HLI, STP.
Coconut oil acids- - - - -	: CCC, DA.
Coconut oil acids-dimethylaminopropylamine condensate (amine/acid ratio = 1/1 - - - - -	: JRG.
Coconut oil acids-ethanolamine condensate, ethoxylated- - - - -	: DA, STP.
*Diethanolamine condensate, all other - - - - -	: DA.
Dioleic acid (Ratio = 1/2) - - - - -	: CLD, MZC.
Ethanolamine condensates, amine/acid ratio = 1/1, all other- - - - -	: VND.
Fatty acid alkenolamide- - - - -	: MCB.
Hydrogenated (tallow acids) aminoethylethanolamine condensate (amine/acid ratio=1/2) - - - - -	: DAN.
Hydrogenated tallow acids, aminoethylethanolamide, acetate salt- - - - -	: PCI.
Hydrogenated tallow acids-ethanolamine condensate, ethoxylated - - - - -	: ARC.
Isononoyl acid, mono and triethanolamine condensates- - - - -	: STC.
Isopropanolamine condensates, all other- - - - -	: WTC.
Isostearic acid, aminoethylethanolamide, acetate salt - - - - -	: PCI.
*Lauric acid- - - - -	: CLI, HTN, MOA.
Lauric acid - ethanolamine condensate, ethoxylated- - - - -	: MZC.

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED,
IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

SURFACE-ACTIVE AGENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
NONIONIC--CONTINUED	
CARBOXYLIC ACID AMIDES--CONTINUED	
ALL OTHER CARBOXYLIC ACID AMIDE--CONTINUED	
Lauric and myristic acids (Ratio = 1/1) - - - - -	MOA.
Mixed mono-and diethanolamines - - - - -	SCP.
Mixture(tall oil acids, tallow acids, and coconut oil acids)-diethanolamine condensate - - - - -	DA.
Myristic acid- - - - -	CRN.
Oleic acid (amine/acid ratio=1/1)- - - - -	SBC.
Oleic acid (Ratio = 1/2) - - - - -	EFH.
Oleic acid aminoethylethanolamine condensate (amine/acid ratio=1/2) - - - - -	CLD.
Oleic acid aminoethylethanolamine-condensate [amine/acid ratio=1/1]ethyl sulfate- - - - -	RPC.
*Oleic acid-ethanolamine condensate, ethoxylated	ARC, ONX, SHX.
Stearic acid (Ratio = 1/1)- - - - -	MOA, SBC, VND, WTC.
Stearic acid (Ratio = 1/2) - - - - -	HAL, WTC.
Stearic acid (Ratio = 2/1)- - - - -	AKS(E), CLI, ECC.
Stearic acid aminoethanolamine (amine acid ratio = 1.0/1.65)- - - - -	CHP.
Stearic acid-aminoethyl ethanolamine (amine/acid ratio=1.75/1.0)- - - - -	CLD, SBC.
Stearic acid-N-aminoethyl ethanolamine condensate	MRV.
Stearic acid diethanolamine (amine acid ratio = 1.0/11.6)- - - - -	CHP.
Stearic acid-ethylenediamine condensate amine/acid ratio=1/2 - - - - -	TCH, WTC.
Tall oil acids-ethylenediamine condensate (Amine acid ratio = 1/2)- - - - -	SCP.
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.
Carboxylic acid amides, all other- - - - -	BAK, BKM, WTC.
*CARBOXYLIC ACID ESTERS:	
*ANHYDROSORBITOL ESTERS:	
Anhydrosorbitol dioleate - - - - -	ICI.
Anhydrosorbitol monoester of tall oil acids- - - - -	MZC, WTC.
*Anhydrosorbitol monolaurate- - - - -	BAS, BRD, GLY, ICI, MZC, TCH.
*Anhydrosorbitol mono-oleate- - - - -	BAS, BRD, GLY, HDG, ICI, MZC, TCH.
Anhydrosorbitol monopalmitate- - - - -	BAS, ICI, TCH.
*Anhydrosorbitol monostearate - - - - -	BAS, BRD, GLY, HDG, ICI, MZC, TCH.
Anhydrosorbitol sesquioleate - - - - -	GLY, TCH.

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED,
IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

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

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED,
IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

SURFACE-ACTIVE AGENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
NONIONIC--CONTINUED	
CARBOXYLIC ACID ESTERS--CONTINUED	
ETHYLENE GLYCOL ESTERS:	
*Ethylene glycol distearate - - - - -	CGY, EMR, HAL, ICI, MZC, STP, TCH, WM, WTC.
Ethylene glycol mono-oleate - - - - -	EFH.
*Ethylene glycol monostearate - - - - -	CLI, CYL, GLY, HAL, HDG, KNP, 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 mixed fatty acids, acetylated - - - - -	EKT.
Glycerol monoester of mixed fatty acids, succinylated - - - - -	EKT.
Glycerol mono-oleate, acetylated - - - - -	WTC.
Glycerol mono-oleate, ethoxylated - - - - -	SCP.
Glycerol monoester of hydrogenated tallow fatty acids - - - - -	PCI(E).
*GLYCEROL ESTERS OF CHEMICALLY DEFINED ACIDS:	
Glycerol dilaurate - - - - -	MCB, VND.
Glycerol dioleate - - - - -	STP.
Glycerol monocaprylate - - - - -	GLY, STP.
Glycerol monolaurate - - - - -	GLY.
*Glycerol mono-oleate - - - - -	EFH, EMR, GLY, HAL, HDG, MZC, STP, TCH.
Glycerol monopalmitate - - - - -	HDG.
*Glycerol monoricinoleate - - - - -	CAS, GLY, HDG, MZC.
*Glycerol monostearate - - - - -	ARI(E), CCC, CHL, CLD, CPC, CYL, DA, EMR, GLY, HAL, HRT, LUR, MZC, SOS, STP, SVC, TCH, VND, WM, WTC, X.
*GLYCEROL ESTERS OF MIXED ACIDS:	
Glycerol caprate/caprylate - - - - -	HDG.
Glycerol mixed ester of soybean oil-trimethylolpropane - - - - -	ENP.
Glycerol mono-, di-, and triesters of hydrogenated tallow acids - - - - -	WPG.
Glycerol monoester of C ₈ -C ₁₀ acids - - - - -	SVC.
Glycerol monoester of coconut oil acids - - - - -	GLY.
Glycerol monoester of coconut oil acids and trioleic acid, mixed - - - - -	SVC.
Glycerol monoester of cottonseed oil acids - - - - -	EKT.

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1983--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--CONTINUED	
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 hydrogenated tallow acids	TCH.
Glycerol monoester of lard acids - - - - -	EKT.
Glycerol monoester of mixed fatty acids- - - - -	PCI(E).
Glycerol monoester of palm oil acids - - - - -	EKT.
Glycerol monoester of safflower oil acids- - - - -	EKT.
Glycerol monoester of tall oil acids - - - - -	FER.
Glycerol monoester of tallow acids - - - - -	EKT.
Glycerol sesquiester of hydrogenated tallow acids- - - - -	WTC.
Glycerol sesquiester of tall oil acids - - - - -	SLM(E).
Glycerol esters of mixed acids, all other- - - - -	BFP, DA.
*NATURAL FATS AND OILS, ETHOXYLATED:	
Carnauba wax, ethoxylated - - - - -	SHX.
*Castor oil, ethoxylated- - - - -	BAS, CAS, DA, GAF, GLY, HTN, ICI, MCB, MIL, S, STC, SVC, TCH, TMH, WVA, X.
Coconut oil, ethoxylated - - - - -	SVC.
*Hydrogenated castor oil, ethoxylated - - - - -	BAS, CAS, DA, ICI, MCB, MIL, S, TCH.
*Lanolin, ethoxylated - - - - -	AAC, CRD, CRN, TCH.
Lanolin, ethoxylated and propoxylated- - - - -	TCH.
Oleic acid, ethoxylated and propoxylated - - - - -	MIL.
Propoxylated lanolin - - - - -	TCH.
Soybean oil, ethoxylated - - - - -	DA.
Stearic acid, ethoxylated- - - - -	GAF.
Stearic acid propoxylated- - - - -	ARC.
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- - - - -	BAS, GLY, HAL, HDG, MZC, STP, TCH, WM.
*Polyethylene glycol dioleate - - - - -	BAS, CGY, CLD, DA, EFH, GLY, HAL, MIL, SLC, STP, TCH, X.
*Polyethylene glycol distearate - - - - -	CHP, GLY, HDG, MZC, SBC, STP, TCH.
Polyethylene glycol hydroxyacetate - - - - -	CCA.
Polyethylene glycol monocaprylate- - - - -	ECC.

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED,
IDENTIFIED BY MANUFACTURER, 1983--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 monolaurate- - - - -	BAS, CCA, CGY, ECC, EFH, GLY, HAL, HDG, ICI, MZC, STP, TCH, WM.
*Polyethylene glycol mono-oleate- - - - -	ARC, BAS, CCA, CCC, CLD, CPC, CRT, DA, DEX, ECC, EFH, GAF, GDC, GLY, HAL, HDG, MCB, MRT, MRV, MZC, ONX, SHX, STC, STP, SVC, TCH, WTC.
*Polyethylene glycol monopalmitate- - - - -	GLY, ICI, STC, WTC.
Polyethylene glycol monopelargonate, methoxylated - - - - -	TCH.
Polyethylene glycol monopelargonate- - - - -	TCH.
Polyethylene glycol monoricinoleate- - - - -	ECC.
*Polyethylene glycol monostearate - - - - -	AKS(E), ARC, ARI(E), BAS, CCC, CRT, CYL, DA, EFH, GAF, GDC, GLY, HRT, ICI, MZC, SLC, SOS, STC, STP, TCH, VND, WPG, WTC.
Polyethylene glycol sesquinoate- - - - -	TCH, WTC.
Polyethylene glycol terephthalate- - - - -	PCI.
Polyethylene glycol esters of chemically defined acids, all other - - - - -	WTC.
POLYETHYLENE GLYCOL ESTERS OF MIXED ACIDS:	
Polyethylene glycol diester of coconut oil and oleic acids- - - - -	EFH.
Polyethylene glycol diester of mixed linier acid/oleic acid- - - - -	PCI.
*Polyethylene glycol diester of tall oil acids	EFH, MZC, WVA, X.
Polyethylene glycol monoester of coconut oil acids- - - - -	ICI.
Polyethylene glycol monoester of soybean oil acids- - - - -	GLY.
*Polyethylene glycol monoester of tall oil acids	ARC, BKM, EFH, FER, GAF, 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- - - - -	AKS(E), DA, LUR, MRT.
*Polyethylene glycol sesquiester of tall oil acids- - - - -	AZS, ICI, MET, SLM(E), WTC, WVA.
Polyethylene glycol sesquiester of tallow acids	RPC, SHX, WTC.
Polyethylene glycol esters of mixed acids, all other- - - - -	EFH, SOS.
*POLYGLYCEROL ESTERS:	
Decaglycerol oleate- - - - -	GLY.

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED,
IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

SURFACE-ACTIVE AGENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
NONIONIC--CONTINUED	
CARBOXYLIC ACID ESTERS--CONTINUED	
POLYGLYCEROL ESTERS--CONTINUED	
Polyglycerol decaoleate- - - - -	: GLY, TCH.
Polyglycerol distearate- - - - -	: GLY.
Polyglycerol esters of mixed fatty acids - - - - -	: SVC.
*Polyglycerol mono-oleate - - - - -	: HDG, MZC, WTC.
Polyglycerol monostearate- - - - -	: GLY, MZC.
Triglycerol distearate - - - - -	: EMR.
Polyglycerol esters, all other - - - - -	: WTC.
PROPANEDIOL ESTERS:	
1,2-Propanediol monolaurate- - - - -	: SBC.
1,2-Propanediol mono-oleate- - - - -	: EFH.
*1,2-Propanediol monostearate - - - - -	: EKT, GLY, HAL, MZC, SBC, TCH, WM.
Propanediol esters, all other- - - - -	: DA.
*OTHER CARBOXYLIC ACID ESTERS:	
Di-isobutylene maleate - - - - -	: RH.
Ethoxylated 1,3-butyleneglycol condensed with oil fatty acid - - - - -	: STC.
Ethoxylated glycerol mono- and diesters of hydrogenated tallow 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, alkoxylated- - - - -	: X.
Methylglucoside- - - - -	: CRN.
Methylglucoside dioleate - - - - -	: CRN.
Methylglucoside laurate- - - - -	: HDG.
Methylglucoside sesquisteate- - - - -	: CRN.
Mixed di and triethylene glycol mono ester of tall oil acid- - - - -	: WVA.
Pentaerythritol stearate - - - - -	: SCP, VAL.
Pentaerythritol, tall oil acid ester, alkoxylated	: X.
Polycarboxylic acid, alkylate- - - - -	: X.
Polycarboxylic acid, alkylphenoxylalkoxylate- - - - -	: X.
Polypropylene glycol diester of tall oil acids	: MET.
Polypropylene glycol dioleate- - - - -	: CLD.
Polypropylene glycol monooleate- - - - -	: CLD.
Propylene glycol esters of hydrogenated palm oil	: PG.
Propylene glycol esters of hydrogenated soybean oil- - - - -	: PG.
Propylene glycol monostearate- - - - -	: VND.

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED,
IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

SURFACE-ACTIVE AGENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
NONIONIC--CONTINUED	
CARBOXYLIC ACID ESTERS--CONTINUED	
OTHER CARBOXYLIC ACID ESTERS--CONTINUED	
Tripentaerythritol esters of tall oil acids- - - -	X.
Carboxylic acid esters, all other- - - - -	BAK, CHP, CRN, DA, EMR, MCB, ROB, SYL, WTC.
*ETHERS:	
*BENZENOID ETHERS:	
Alkylphenol-formaldehyde condensates, alkoxyated,	
all other - - - - -	WTC.
t-Amylphenol, ethoxylated- - - - -	X.
Dinonylphenol, ethoxylated - - - - -	BAS, CPC, DA, GAF, HTN, MCB, MZC, RH, S, TCH.
Dodecylphenol, ethoxylated - - - - -	BAS, DA, GAF, MON, SOC, TCH, TMH.
Epichlorohydrin bisphenol A, ethoxylated - - - -	X.
Furfuryl alcohol, ethoxylated- - - - -	SVC.
Iso-octylphenol, ethoxylated - - - - -	AAC, GAF, MCB, MZC, RH, TMH.
(Mixed alkyl)phenol, alkoxyated - - - - -	X.
(Mixed alkyl)phenol alkylenediamine dicarboxylic	
acid-formaldehyde, alkoxyated - - - - -	X.
(Mixed alkyl)phenol alkylenediamine-formaldehyde,	
alkoxyated- - - - -	X.
(Mixed alkyl)phenol epichlorohydrin-formaldehyde,	
alkoxyated- - - - -	X.
(Mixed alkyl)phenol epichlorohydrin-glycerin-	
formaldehyde, alkoxyated - - - - -	X.
(Mixed alkyl)phenol, ethoxylated - - - - -	GAF, MIL, NTL.
(Mixed alkyl)phenol, ethoxylated, butyl ether- - -	RH, TX.
(Mixed alkyl)phenol formaldehyde, methoxylated	STC.
(Mixed alkyl)phenol-formaldehyde, alkoxyated- - -	WTC, X.
(Mixed alkyl)phenoxypoly(ethyleneoxy)ethyl	
chloride - - - - -	GAF.
β-Naphthol, ethoxylated- - - - -	X.
* Nonylphenol, ethoxylated - - - - -	ARC, BAK, BAS, CPC, DA, GAF, HDG, HTN, ICI, MCB, MET,
	MIL, MON, MZC, OMC, RH, S, SHX, STC, STP, TCH, TMH,
	TX, UCC, WTC, WVA, X, X.
* Nonylphenol, ethoxylated and propoxylated- - - -	GAF, RH, S, X.
Nonylphenol-formaldehyde, alkoxyated- - - - -	STC, WTC, X.
* n-Octylphenol, ethoxylated - - - - -	AAC, BAS, DA, TCH, WTC.
n-Octylphenol ethoxylated propoxylated - - - -	RH.
tert-Octylphenol-formaldehyde, ethoxylated - - -	SDW.
* Phenol, ethoxylated- - - - -	BAS, DA, GAF, ICI, MCB, MIL, STC, TCH.
p-Phenylphenol, alkoxyated- - - - -	MCB.
Soya sterols, ethoxylated- - - - -	SCP.
Tridecylphenol, ethoxylated- - - - -	TCH.
Phenols, ethoxylated, all other- - - - -	ONX.

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED,
IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

SURFACE-ACTIVE AGENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
NONIONIC--CONTINUED	
ETHERS--CONTINUED	
NONRENZENOID ETHERS:	
CHEMICALLY-DEFINED LINEAR ALCOHOLS, ALKOXYLATED:	
Butanol, alkoxyated - - - - -	X.
Butanol, ethoxylated - - - - -	DA, GAF, X.
Cetyl alcohol, propoxylated- - - - -	MCB.
Decyl alcohol, ethoxylated and propoxylated- - - - -	DA.
*Decyl alcohol, ethoxylated - - - - -	AAC, BAS, GAF, ICI, MCB, MRV, S, STC, TCH.
Decyloxypropyl(ethyleneoxy)ethyl chloride- - - - -	GAF.
*Dodecyl alcohol, ethoxylated - - - - -	AAC, HDG, ICI, MIL, WTC, X.
Eicosyl alcohol, ethoxylated - - - - -	SHX.
Hexadecyl alcohol, ethoxylated - - - - -	ICI, MZC, TCH.
N-Hexyl alcohol, ethoxylated - - - - -	GAF.
*9-Octadecenyl alcohol, ethoxylated - - - - -	AAC, DA, GAF, ICI, TCH.
*Octadecyl alcohol, ethoxylated - - - - -	CRD, CRN, DA, GAF, HDG, ICI, STC.
*Oleyl alcohol, ethoxylated - - - - -	BAS, GLY, HTW, MZC, S, SHX.
Oleyl alcohol, propoxylated- - - - -	HDG.
Stearyl alcohol, propoxylated- - - - -	HDG, ICI.
Stearyl alcohol, propoxylated and ethoxylated	TCH.
Chemically-defined linear alcohols, alkoxyated,	
all other- - - - -	WTC.
Coconut oil alcohol, ethoxylated - - - - -	GAF, GLY, MZC, STC, TX.
Decyl and octyl alcohols, ethoxylated- - - - -	GAF.
Lanolin alcohol, propoxylated- - - - -	CRN, MCB.
Mixed linear alcohols, alkoxyated - - - - -	X.
*Mixed linear alcohols, ethoxylated - - - - -	CO, DA, DUP, GAF, HDG, ICI, MCB, MET, MIL, PG, RH, S, SHC, SHX, STC, STP, TCH, TNA, TX, UCC, WTC, WVA.
Mixed linear alcohols, ethoxylated, benzyl ether	X.
*Mixed linear alcohols, ethoxylated and	
propoxylated - - - - -	BAS, DA, DUP, GAF, MCB, MIL, OMC, PG, S, STP, TCH, UCC, WTC, WVA, X.
Mixed linear alkylpoly(ethyleneoxy)ethyl chloride	GAF.
Tallow alcohol, ethoxylated- - - - -	AAC, PG, TX.
Mixed linear alcohols, alkoxyated, all other- - - - -	CRD, CRN, DA, X.
*OTHER ETHERS AND THIOETHERS:	
Bis(alkyl-aryl)alcohols, ethoxylated - - - - -	DA.
Bis-cumylphenyl-oxoethylene titanate - - - - -	KPI.
Butanediol, ethoxylated- - - - -	GAF.
Butyl carbitol, ethoxylated and propoxylated - - - - -	WVA.
Butyl carbitol, propoxylated - - - - -	WVA.
1,3-Butylene glycol, ethoxylated - - - - -	STC.
Butynediol, ethoxylated- - - - -	GAF.

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

SURFACE-ACTIVE AGENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
NONIONIC--CONTINUED	
ETHERS--CONTINUED	
OTHER ETHERS AND THIOETHERS--CONTINUED	
Coconut fatty acid-ethoxylated nonylphenol ester	: RPC, WVA.
*tert-Dodecyl mercaptan, ethoxylated	: AAC, GAF, MET.
Glucose, ethoxylated	: WTC.
Glycerin, alkoxylated maleate	: X.
Glycerine, ethoxylated	: X.
Heavy oxyalcohol bottoms, alkoxylated	: MCB.
Isodecyl alcohol, ethoxylated	: MET.
Isodecyl alcohol, ethoxylated and propoxylated	: MCB.
Lignin, ethoxylated	: WVA.
*Mixed alcohols, ethoxylated	: CRN, MCB, MIL, RH, X.
Polyethylene, ethoxylated	: RH.
*Poly(mixed ethylene, propylene)glycol	: BAS, MZC, S, UCC, X, X.
*Polypropylene glycol, ethoxylated	: DA, MCB, MZC, WTC, X.
Sorbitol, ethoxylated	: TCH.
2,4,7,9-Tetramethyl-5-decyne-4,7-diol,	
ethoxylated	: MCB, TCH.
Thiodiglycol, ethoxylated	: MCB.
*Tridecyl alcohol, ethoxylated	: BAS, DUP, GAF, HTN, ICI, MCB, MIL, MZC, OMC, S, STC,
	: TCH, WTC, X.
Tridecyl alcohol, propoxylated and ethoxylated	: DA, MCB, TX.
Trimethylheptanol, ethoxylated	: TCH.
Trimethylnonyl alcohol, ethoxylated	: TCH, UCC.
Trimethylolpropane, alkoxylated	: BAS, MCB, WTC.
Ethers and thioethers, all other	: AAC, MIL, RH, WTC, X.
*OTHER NONIONIC SURFACE-ACTIVE AGENTS:	
Glycerol polyethylene glycol	: SVC.
(Mixed alkyl)phenol alkylenediaminealkanolamine	
formaldehyde	: X.
Mixed fatty acid-ethoxylated nonyl phenol ester	: RPC.
Octyl phosphate, ethoxylated	: DUP.
Polyol polyether alkenyl alkanyl esters surfactant	: UPF.
Tetra-(2,2-diallyloxymethylene)-1-butoxy titanium	
bis-(ditridecyl) phosphite	: KPI, WTC.
Tetra-isopropoxy titanium bis(tridecyl) phosphite	: KPI.
Tetra-isopropoxy titanium (bis dioctyl) phosphite	: KPI.
Tetra-octyloxy titanium (bistridecyl) phosphite	: KPI.
Nonionic surface-active agents, all other	: CRN, DUP, MIL, PG, STC, UPF, X, X.

TABLE 3.--SURFACE-ACTIVE AGENTS: DIRECTORY OF MANUFACTURERS, 1983

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 1983 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.	EMR	Emery Industries Div. of National Distillers & Chemical Corp.
ACT	Southland Corp., Chemical Div.	ENO	Enenco, Inc.
AGY	American Cyanamid Co.	ESS	Essential Chemicals Corp.
AGP	Armour-Dial, Inc.		
AKS	Arkansas Co., Inc.	FER	Ferro Corp., Keil Chemical Div.
APX	Apex Chemical Co., Inc.	FPC	Flambeau Paper Corp.
ARC	Akzo Chemie America	FTX	Finetex, Inc.
ARD	Ardmore Chemical Co.		
ARI	Atlas Refining, Inc.	GAF	GAF Corp.
ARL	Arol Chemical Products Co.	GDC	Gresto, Inc.
ARZ	Arizona Chemical Co.	GLY	Glyco, Inc.
AZS	AZS Corp. & AZS Chemical Corp.	GRL	Vestal Laboratories, Inc.
BAK	Baker International - Magna Corp.	HAL	C.P. Hall Co.
BAS	BASF Wyandotte Corp.	HEW	Hewitt Soap Co., Inc.
BFP	Breddo Food Products Corp.	HDG	Hodag Chemical Corp.
BKM	Buckman Laboratories, Inc.	HIP	High Point Chemical Corp.
BLA	Astor Products, Inc., Blue Arrow Div.	HLI	Onyx Chemical Co.
BRD	Lonza, Inc.	HMP	W.R. Grace & Co., Hampshire Chemicals Div.
BSW	Original Bradford Soap Works, Inc.	HNT	Huntington Laboratories, Inc.
		HPC	Hercules, Inc.
CAS	Caschem, Inc.	HRT	Hart Products Corp.
CCA	Interstab Chemicals, Inc.	HTN	Heterene Chemical Co., Inc.
CCC	C.N.C. Chemical Corp.	HXL	Hexcel Corp., Hexcel Chemical Products
CCL	Catawba-Charlax, Inc.		
CCW	Carstab Corp.	ICI	ICI Americas, Inc., Chemical Specialties Co.
CGY	Ciba-Geigy Corp.	IPC	Interplastic Corp.
CHL	Chemol, Inc.		
CHP	C.H. Patrick & Co., Inc.	JLP	J.L. Prescott Co.
CIN	Stockhausen, Inc.	JOR	Jordan Chemical Co.
CLD	Colloids, Inc.	JRG	Andrew Jergens Co.
CLI	Clintwood Chemical Co.	JTO	Jetco Chemicals, Inc.
CLU	Core-Lube, Inc.		
CMT	Chemithon Corp.	KNP	Knapp Products, Inc.
CO	Conoco, Inc.	KPI	Kenrich Petrochemicals, Inc.
CON	Concord Chemical Co., Inc.		
CP	Colgate-Palmolive Co.	LAS	Los Angeles Soap Co.
CPC	Grant Chemical Co.	LEA	Leatex Chemical Co.
CRD	Croda, Inc.	LEV	Lever Brothers Co.
CRN	CPC International, Inc., Amerchol Corp.	LKY	Lake States Div. of Rhineland Paper Co.
CRT	Chemos Corp., Crest Chemical Div.	LUR	Laurel Products Corp.
CTL	Continental Chemical Co.		
CYL	Cyclo Chemicals Corp.	MAR	Reed Lignin, Inc.
		MCB	Borg-Warner Corp., Borg-Warner Chemicals
DA	Diamond Shamrock Corp.	MCP	Moretex Chemical Products, Inc.
DAN	Dan River, Inc., Chemical Products Div.	MET	M & T Chemicals, Inc.
DEX	Dexter Chemical Corp.	MIL	Milliken & Co., Milliken Chemical Div.
DOW	Dow Chemical Corp.	MIR	Miranol Chemical Co., Inc.
DPI	Dart Polymers, Inc. Sub. of Dart Containers Corp.	MMC	EM Industries, Inc., EM Sciences Div.
DUP	E.I. duPont de Nemours & Co., Inc.	MOA	Mona Industrial, Inc.
DYS	Davies-Young Co.	MON	Monsanto Co.
		MRD	Marden-Wild Corp.
ECC	Eastern Color & Chemical Co.	MRT	Morton-Thiokol, Inc., Morton Chemical Co. Div.
EFH	E.F. Houghton & Co.	MRV	Marlowe-Van Loan Corp.
EK	Eastman Kodak Co.	MZC	Mazor Chemicals, Inc.
EKT	Tennessee Eastman Co. Div.		
EMK	Emkay Chemical Co.	NCC	Niacet Corp.

TABLE 3.--SURFACE-ACTIVE AGENTS: DIRECTORY OF MANUFACTURERS, 1983--CONTINUED

CODE	NAME OF COMPANY	CODE	NAME OF COMPANY
NCW	Tomah Products	SHC	Shell Oil Co., Shell Chemical Co.
NES	Ruetgers-Nease Chemical Co.	SHX	Sherex Chemical Co., Inc.
NLC	Nalco Chemical Co.	SLC	Soluol Chemical Co., Inc.
NMC	National Milling & Chemical Co.	SLM	Salem Oil & Grease Co.
NOC	Norac Co., Inc., Mathe Div.	SNW	Sun Chemical Corp., Chemicals Div.
NPR	Safeway Stores, Inc.	SOC	Standard Oil Co. of California, Chevron Chemical Co.
NSC	National Starch & Chemical Corp.	SOP	Southern Chemical Products Co.
NTL	NL Industries, Inc.	SOS	SSC Industries, Inc.
OMC	Olin Corp.	SPA	Scott Paper Co.
ONX	Onyx Chemical Co.	STC	American Hoechst Corp., Sou-Tex Works
ORA	M & T Chemicals, Inc.	STP	Stepan Chemical Co.
PCI	Piedmont Chemical Industries, Inc.	SVC	Industrial Products Group, Armstrong Chemical Plant
PEC	Peerless Chemical Co.	SYL	Sylvachem Corp.
PEL	Pelron Corp.	TCC	Sybron Chemical, Inc.
PG	Procter & Gamble Co., Procter & Gamble Mfg. Co.	TCH	Emery Industries, Inc., Trylon Div.
PIL	Pilot Chemical Co.	TCI	Morton-Thiokol, Inc., Texize Div.
PLX	Plex Chemical Corp.	TEN	Tennessee Chemical Co.
PNX	Murphy-Phoenix Co.	TMH	Thompson Hayward Chemical Co.
PRX	Purex Corp.	TNA	Ethyl Corp.
PSP	Georgia-Pacific Corp., Bellingham Div.	TNI	Gillette Co., Chemical Div.
QCP	Quaker Chemical Corp.	TX	Texaco, Inc.
RAY	ITT Rayonier, Inc.	UCC	Union Carbide Corp.
RH	Rohm & Haas Co.	UDI	Petrochemicals Co., Inc.
ROB	Robeco Chemicals, Inc.	UNN	United Chemical Corp. of Norwood
RPC	Millmaster Onyx Group, Inc., Lyndall Chemical Co. Div.	UPF	Jim Walter Resources, Inc., CIC Div.
RSA	R.S.A. Corp.	USR	Uniroyal, Inc., Uniroyal Chemical Div.
S	Sandoz, Inc., Colors & Chemicals Div.	VAL	Valchem Div. of United Merchants & Manufacturers, Inc.
SBC	Scher Chemicals, Inc.	VND	Van Dyk & Co., Inc.
SBP	Sugar Beet Products Co.	VPC	Mobay Chemical Corp., Dye & Pigment Div.
SCM	SCM Corp., Organic Chemical Div.	WAY	Philip A. Hunt Chemical Corp., Organic Chemical Div.
SCO	Scholler, Inc.	WBG	White & Bagley Co.
SCP	Henkel Corp.	WCC	White Chemical Corp.
SDC	Sodyeco, Inc.	WHW	Whittemore-Wright Co., Inc.
SDH	Sterling Drug, Inc.; Hilton Davis Chemical Co. Div.	WM	American Can Co., Inolex Chemicals Co.
SDW	Sterling Organics Div.	WPC	West Point-Pepperell, Inc., Griffitex Chemical Co. Sub.
SEA	Seaboard Chemicals, Inc.	WTC	Witco Chemical Corp.
SFS	Stauffer Chemical Co., Specialty & Intermediates Div.	WVA	Westvaco Corp., Chemicals Div.

Note.--Complete names, telephone numbers, and addresses of the above reporting companies are listed in table 1 of the appendix. The above codes identify those of the 181 reporting companies and company divisions for which permission to publish was not restricted.

STATISTICAL HIGHLIGHTS

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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 1983 amounted to 1,017 million pounds--8.6 percent less than the 1,113 million pounds reported for 1982 (table 1).¹ Sales in 1983 were 1,017 million pounds, a decline of 11.3 percent, as compared with 1,147 million pounds reported in 1982; the value of sales was \$4,054 million in 1983, compared with \$4,432 million in 1982--a decrease of 8.5 percent.

The output of cyclic pesticides and related products amounted to 711 million pounds in 1983--7.2 percent less than the 766 million pounds produced in 1982. Sales in 1983 were 728 million pounds, valued at \$3,048 million, compared with 766 million pounds, valued at \$3,295 million, in 1982.

Production of acyclic pesticides and related products in 1983 amounted to 306 million pounds, compared with 347 million pounds reported for 1982. Sales in 1983 were 289 million pounds, compared with 381 million pounds reported for 1982; the value of sales were 1,006 million in 1983, compared with \$1,137 million in 1982.

¹See also table 2 which list these products and identifies the manufacturers by codes. These codes are given in table 3.

TABLE 1.--PESTICIDES AND RELATED PRODUCTS: U.S. PRODUCTION AND SALES, 1983

[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 ¹
	1,000 pounds	1,000 pounds	1,000 dollars	Per pound
Grand total-----	1,016,544	1,016,961	4,053,928	\$3.99
CYCLIC				
Total-----	710,922	727,864	3,047,703	4.19
Fungicides, total-----	98,828	84,304	253,742	3.01
Naphthenic acid, copper salt-----	3,187	1,844	1,454	.79
All other cyclic fungicides ² -----	95,641	82,460	252,288	3.06
Herbicides and plant growth regulators, total-----	468,521	503,294	2,093,606	4.16
2-Chloro-4-(ethylamino)-6-(isopropylamino)-s-triazine (Atrazine)-----	50,987	60,929	126,503	2.08
2,4-Dichlorophenoxyacetic acid, dimethylamine salt-----	16,979	18,152	14,007	.77
3',4'-Dichloropropionanilide (Propanil)-----	14,051	12,566	37,846	3.01
1,2-Dihydro-3,6-pyridazinedione (Maleic hydrazide)-----	2,368	...	...	...
All other cyclic herbicides ³ -----	384,136	411,647	1,915,250	4.65
Insecticides and rodenticides, total-----	143,573	140,266	700,355	4.99
Organophosphorus insecticides ⁴ -----	67,433	54,972	260,033	4.73
All other cyclic insecticides and rodenticides ⁵ -----	76,140	85,294	440,322	5.16
ACYCLIC				
Total-----	305,622	289,097	1,006,225	3.48
Fungicides, total-----	23,677	21,765	42,534	1.95
Dithiocarbamic acid salts ⁶ -----	19,389	18,474	30,654	1.66
Methylenebis(thiocyanate)-----	340	...	...	...
All other acyclic fungicides-----	3,948	3,291	11,880	3.61
Herbicides and plant growth regulators ⁷ -----	101,879	101,138	582,370	5.76
Insecticides, rodenticides, soil conditioners, and fumigants, total-----	180,066	166,194	381,321	2.29
Organophosphorus insecticides ⁸ -----	40,641	42,198	175,048	4.15
All other acyclic insecticides, rodenticides, soil conditioners, and fumigants ⁹ -----	139,425	123,996	206,273	1.66

¹ Calculated from unrounded figures.

² Includes benomyl, captafol, captan, chlorothalonil, dinocap, DMTT, folpet, PCNB, PCP, PMA, and others.

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

⁴ Includes diazinon, dioxathion, methyl parathion, and other phosphorothioates and phosphorodithioates.

⁵ Includes carbaryl, carbofuran, chlorinated insecticides (chlordan, chlorobenzilate, DDT, heptachlor, toxaphene, and others), insect attractants, DEET and other insect repellents, small amounts of rodenticides, and others.

⁶ Includes maneb, nabam, and zineb, plus the remaining dithiocarbamates which are used chiefly as fungicides.

⁷ Includes butylate, dalapon, EPTC, methanearsonic acid salts, thiocarbamates, and organophosphorus herbicides, and others.

⁸ Includes acephate, disulfoton, ethion, malathion, phorate, and other organophosphorus insecticides.

⁹ Includes aldicarb, chloropicrin, 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, 1983

[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)
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CYCLIC	
*FUNGICIDES:	
2-Bromo-4'-hydroxyacetophenone - - - - -	: BKM.
5-Chloro-2-methyl-4-isothiazolin-3-one - - - - -	: RH.
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.
Dilphenylmercuric docecenyl succinate - - - - -	: TRO.
5-Ethoxy-3-(trichloromethyl)-1,2,4-thiadiazole - - - - -	: OMC.
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.
2-(1-Methyl-n-heptyl)-4,6-dinitrophenyl crotonate (Dinocap) - - - - -	: RH.
2-Methyl-4-isothiazolin-3-one - - - - -	: RH.
3-(2-Methylpiperidino)propyl 3,4-dichlorobenzoate (Piperalin) - - - - -	: LIL.
*Naphthenic acid, copper salt - - - - -	: CCA, FER, MCI, NOD, TRO, WTC.
2-n-Octyl-4-isothiazolin-3-one - - - - -	: FER, RH.
Pentachloronitrobenzene (PCNB) - - - - -	: OMC.
Pentachlorophenol (PCP) - - - - -	: FRO, RCI.
Phenylmercuric acetate (PMA) - - - - -	: COS, TRO.
Phenylmercuric ammonium acetate - - - - -	: TRO.
Phenylmercuric oleate - - - - -	: COS, TRO.
8-Quinolinol, benzoate salt - - - - -	: SOL.
8-Quinolinol, citrate salt - - - - -	: SOL.
8-Quinolinol(8-hydroxyquinoline), copper salt - - - - -	: FER, NOD, SOL.
8-Quinolinol, sulfate salt - - - - -	: SOL.
cis-N-1(1,1,2,2-Tetrachloroethyl)thiol-1- cyclohexene-1,2-dicarboximide (Captafol) - - - - -	: SOC.

TABLE 2.--PESTICIDES AND RELATED PRODUCTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

PESTICIDES AND RELATED PRODUCTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
CYCLIC--CONTINUED	
*FUNGICIDES--CONTINUED	
2,4,5,6-Tetrachloroisophthalonitrile - - - - -	DA.
Tetrahydro-3,5-dimethyl-2H-1,3,5-thiadiazine-2- thione (DMTT) - - - - -	EFH, MRK, VCC.
2-(Thiocyanomethylthio)benzothiazole - - - - -	BKM.
N-Trichloromethylthio-4-cyclohexene-1,2- dicarboximide (Captan) - - - - -	SFA, SFC, VNC.
N-Trichloromethylthiophthalimide (Folpet) - - - - -	SFA.
1,3,5-Tri(2-isopropanol)-s-triazine - - - - -	EFH.
Triphenyltin hydroxide - - - - -	USR.
Cyclic fungicides, all other - - - - -	LIL, 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.
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- α,α,α -trifluoro-2,6-dinitro-p- toluidine (Benefin) - - - - -	LIL.
Butyl 2-[4-[5-(trifluoromethyl)-2-pyridinyloxy]- pheno- - - - -	X.
N-(Chloroacetyl)-N-(2,6-diethylphenyl)glycine, ethyl ester - - - - -	BHA.
2-Chloro-4,6-bis(ethylamino)-s-triazine (Simazine) - - - - -	CGY.
2-Chloro-4,6-bis(isopropylamino)-s-triazine (Propazine) - - - - -	CGY.
2-Chloro-4-(cyclopropylamino)-6-(isopropylamino)-s- triazine (Cyprazine) - - - - -	SHC.
2-Chloro-2',6'-diethyl-N-(n-butoxymethyl)- acetanilide (Butachlor) - - - - -	MON.
2-Chloro-2',6'-diethyl-N-(methoxymethyl)acetanilide (Alachlor) - - - - -	MON.
2-Chloro-1-(3-ethoxy-4-nitrophenoxy)-4- (trifluoromethyl)benzene (Oxyfluorfen) - - - - -	RH.
*2-Chloro-4-(ethylamino)-6-(isopropylamino)-s- triazine (Atrazine) - - - - -	CGY, FRI, SHC.

TABLE 2.--PESTICIDES AND RELATED PRODUCTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

PESTICIDES AND RELATED PRODUCTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
CYCLIC--CONTINUED	
*HERBICIDES AND PLANT GROWTH REGULATORS--CONTINUED	
N-(2-Chloroethyl)- α,α,α -trifluoro-2,6-dinitro-N-propyl-p-toluidine (Fluchloralin)	BAS, SOL.
2-Chloro-N-isopropylacetanilide (Propachlor)	DOW, MON.
2-Chloro-N-[(4-methoxy-6-methyl-1,3,5-triazin-2-yl)-aminocarbonyl]benzenesulfonamide	DUP.
2-(4-Chloro-2-methylphenoxy)propionic acid (MCP)	DA.
2-(4-Chloro-2-methylphenoxy)propionic acid, dimethylamine salt	RIV.
5-(2-Chloro-4-trifluoromethylphenoxy)-2-nitrobenzoic acid, sodium salt	RDA.
Cyano-3-phenoxybenzyl-cis, trans-3-(2,2-dichlorovinyl)-2,2-dimethylcyclopropane carboxylate	NES, X.
3-Cyclohexyl-6-(dimethylamino)-1-methyl-1,3,5-triazine-2,4-(1H,3H)-dione	DUP.
3,5-Dibromo-4-hydroxybenzonitrile (Bromoxynil)	RDA.
3,6-Dichloro-2-anisic acid (Dicamba)	VEL.
4-(2,4-Dichlorophenoxy)butyric acid, dimethylamine salt	RIV.
2-(2,4-Dichlorophenoxy)propionic acid, butoxyethanol ester	RIV.
3-(3,4-Dichlorophenyl)-1,1-dimethylurea (Diuron)	DUP.
3-(3,4-Dichlorophenyl)-1-methoxy-1-methylurea (Linuron)	DUP.
2,4-Dichlorophenyl p-nitrophenyl ether	RH.
*3',4'-Dichloropropionanilide (Propanil)	CYT, RH, VTC.
S-(O,O-Diisopropyl phosphorodithioate) ester of N-(α -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)	DA.
N-[2,4-dimethyl-5-[[trifluoromethylsulfonyl]amino]phenyl]acetamide, diethanolamine salt	MMM.
Dinitrobutylphenol (DNBP)	USR, VTC.
Dinitrobutylphenol, ammonium salt	VTC.
Dinitrobutylphenol, triethanolamine salt	VTC.
2,6-Dinitro-N,N-dipropyl cumidine	LIL.
3,5-Dinitro-N4,N4-dipropylsulfanilamide	X.

TABLE 2.--PESTICIDES AND RELATED PRODUCTS FOR WHICH U.S.PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

PESTICIDES AND RELATED PRODUCTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
CYCLIC--CONTINUED	
*HERBICIDES AND PLANT GROWTH REGULATORS--CONTINUED	
2-(Ethylamino)-4-(isopropylamino)-6-(methylthio)-s-triazine (Ametryne)	: CGY.
5-Ethyl cyclohexylethylthiocarbamate	: SFA.
S-Ethyl-hexahydro-1H-azepine-1-carbothioate (Molinate)	: SFA.
N-(1-Ethylpropyl)-3,4-dimethyl-2,6-dinitrobenzenamine	: ACY.
2-(Ethylthio)-4,6-bis(isopropylamino)-s-triazine	: CGY.
3-Isopropyl-1H-2,1,3-benzothiadiazin-4(3H)-one 2,2-dioxide	: BAS.
Isopropyl N-(3-chlorophenyl)carbamate (CIPC)	: PPG.
Isopropyl N-phenylcarbamate (IPC)	: PPG.
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.
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 (MCPA)	: DA, RDA.
4-Chloro-2-methylphenoxyacetic acid, butoxyethanol ester	: RIV.
4-Chloro-2-methylphenoxyacetic acid, dimethylamine salt	: DA, RIV.
4-Chloro-2-methylphenoxyacetic acid, iso-octyl ester	: RIV.
2,4-DICHLOROPHENOXYACETIC ACID, ESTERS AND SALTS:	
2,4-Dichlorophenoxyacetic acid (2,4-D)	: DA, DOW, USR.
2,4-Dichlorophenoxyacetic acid, butoxyethanol ester	: DOW.
2,4-Dichlorophenoxyacetic acid, butoxypolypropyleneglycol ester	: DOW.
2,4-Dichlorophenoxyacetic acid,n-butyl ester	: RIV.
2,4-Dichlorophenoxyacetic acid,sec-butyl ester	: DOW.
*2,4-Dichlorophenoxyacetic acid,dimethylamine salt	: DA, DOW, FBI, RIV.

TABLE 2.--PESTICIDES AND RELATED PRODUCTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

PESTICIDES AND RELATED PRODUCTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
CYCLIC--CONTINUED	
*HERBICIDES AND PLANT GROWTH REGULATORS--CONTINUED	
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, lithium salt - - -	GTH.
2,4-Dichlorophenoxyacetic acid, sodium salt - - -	RIV.
2,4-Dichlorophenoxyacetic acid, esters and salts, all other - - - - -	VEL.
2,4,5-TRICHLOROPHENOXYACETIC ACID, ESTERS AND SALTS:	
2,4,5-Trichlorophenoxyacetic acid, butoxyethanol ester - - - - -	DOW.
2,4,5-Trichlorophenoxyacetic acid, butoxypolypropyleneglycol ester - - - - -	DOW.
*PLANT GROWTH REGULATORS:	
2-Chloro-6-(trichloromethyl)pyridine - - - - -	DOW.
n-Decanol - - - - -	USR.
*1,2-Dihydro-3,6-pyridazinedione (Maleic hydrazide) (MH) - - - - -	DRX, FMT, USR.
1,1-Dimethylpiperidinium chloride - - - - -	BAS.
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.
1,1,1-Trichloro-N-(2-methyl-4-(phenylsulfonyl)-phenyl)methanesulfonamide, diethanolamine salt	MMM.
2-(2,4,5-Trichlorophenoxy)propionic acid, 2-butoxypolypropylene ester - - - - -	DOW.
α,α,α -Trifluoro-2,6-dinitro-bn-ethyl-N-(2-methyl-2-propenyl)-p-toluidine - - - - -	LIL.
α,α,α -Trifluoro-2,6-dinitro-N,N-dipropyl-p-toluidine (Trifluralin) - - - - -	LIL.
Cyclic herbicides, all other - - - - -	CGY, X.
INSECT ATTRACTANTS AND REPELLENTS:	
N,N-Diethyltoluamide (DEET) - - - - -	PFZ, TNA, VGC.
Insect attractants, all other - - - - -	X.
INSECTICIDES:	
Bacillus thuringiensis - - - - -	ABB, ZOC.
(5-Benzyl-3-furyl)methyl-2,2-dimethyl-3-(2-	

TABLE 2.--PESTICIDES AND RELATED PRODUCTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

PESTICIDES AND RELATED PRODUCTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
CYCLIC--CONTINUED	
*INSECTICIDES--CONTINUED	
methylpropenyl)cyclopropane carboxylate	
(Resmethrin) - - - - -	PEN.
2,3,4,5- δ^2 -Butenylene-tetrahydrofurfural - - - - -	PLC.
2-(p-tert-Butylphenoxy)cyclohexyl-2-propynyl	
sulfite - - - - -	ACY, USR.
Cyano(3-phenoxyphenyl)methyl-4-chloro- α -(1-	
methylethyl)benzeneacetate - - - - -	SFA.
Cyclic insecticides, all other - - - - -	PEN.
Cypermethrin - - - - -	FMN, SHC.
2,3-Dihydro-2,2-dimethyl-7-	
benzofuranyl[(dibutylamino)thio]methyl carbamate	FMN, NES.
2,3-Dihydro-2,2-dimethyl-7-benzofuranyl	
methylcarbamate - - - - -	FMN.
2,2-Dimethyl-1,3-benzodioxol-4-yl N-methylcarbamate	FSN.
Di-n-propylisocinchomeronate - - - - -	MGK.
Distinnaxane, hexakis(2-methyl-2-phenylpropyl) - - -	SHC.
Isopropyl-11-methoxy-3,7,11-trimethyldodeca-2,4-	
dienoate - - - - -	X.
1-Naphthyl N-methylcarbamate (Carbaryl) - - - - -	UCC.
3-(Phenoxyphenyl) methyl-cis, trans-3-(2,2	
dichloroethenyl)-2,2-dimethyl	
cyclopropanecarboxylate - - - - -	FMN, X.
Tetrahydro-5,5-dimethyl-2(1h)-pyrimidinone[3-[-	
4(trifluoromethyl)phenyl]-1-[2-[4-trifluoromethyl)	
phenyl]ethenyl]-2-propenylidene]hydrozone - - - - -	ACY.
Tricyclohexyltin hydroxide - - - - -	X, X.
2,3,5-Trimethylphenol - - - - -	LAK.
CHLORINATED INSECTICIDES:	
4-(N,N-Dimethylamino)-3,5-xyleneol - - - - -	X.
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) - - - - -	BHA.
1,1,1-Trichloro-2,2-bis(p-chlorophenyl)ethane	
(DDT)- - - - -	MTD.
1,1,1-Trichloro-2,2-bis(p-methoxyphenyl)ethane	
(Methoxychlor) - - - - -	CHF.

TABLE 2.--PESTICIDES AND RELATED PRODUCTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

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PESTICIDES AND RELATED PRODUCTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
CYCLIC--CONTINUED	
*INSECTICIDES--CONTINUED	
ORGANOPHOSPHORUS INSECTICIDES	
S-[[[p-Chlorophenyl]thio]methyl] O,O-diethyl phosphorodithioate (Carbophenothion)- - - - -	SFA.
2-Chloro-1-(2,4,5-trichlorophenyl)vinyl dimethyl phosphate (Tetrachlorvinphos) - - - - -	SHC.
O-(2,4-Dichlorophenyl) O-ethyl S-propyl phosphorodithioate - - - - -	CHG.
2-(Diethoxyphosphinylimino)-4-methyl-1,3- dithiolane - - - - -	ACY.
O-(2-(Diethylamino)-6-methyl (4-pyrimidinyl) o,o- dimethyl phosphorothioate - - - - -	X.
O,O-Diethyl O-(2-isopropyl-4-methyl-6-pyrimidinyl) phosphorothioate (Diazinon)- - - - -	CGY, VEL.
O,O-Diethyl O-[4-(methylsulfinyl)phenyl]- phosphorothioate - - - - -	CHG.
O,O-Diethyl O-(p-nitrophenyl)phosphorothioate (Parathion)- - - - -	MON.
O,O-Diethyl O-3,5,6-trichloro-2-pyridyl phosphorothioate - - - - -	DOW.
O,O-Dimethyl O-[4-(methylthio)-m-tolyl]- phosphorothioate (Fenthion) - - - - -	CHG.
O,O-Dimethyl O-(p-nitrophenyl)phosphorothioate (Methyl parathion) - - - - -	MON.
O,O-Dimethyl S-[c4-oxo-1,2,3-benzotriazin-3(3H)- yl)methyl]phosphorodithioate (Azinphos-methyl) :	CHG.
2,3-p-Dioxanedithiol S,S-bis-(O,O-diethyl phosphorodithioate (Dioxathion) - - - - -	BHA.
O-Ethyl O-[4-(methylthio)phenyl] S-propyl phosphorodithioate - - - - -	CHG.
O-Ethyl O-(p-nitrophenyl)phenylphosphonothioate (EPN)- - - - -	DUP.
O-Ethyl-S-phenylethylphosphonodithioate - - - - -	SFA.
RODENTICIDES:	
3-(α-Acetylbenzyl)-4-hydroxycoumarin (Warfarin)	MOT.
3-[3-(4'-Bromo[1,1'-biphenyl]-4-yl)-1,2,3,4- tetrahydro-1-naphthalenyl]-4-hydroxy-2H-1- benzopyran-2-one - - - - -	X.
2-Diphenylacetyl-1,3-indandione and sodium salt - -	MOT.
2-Isovaleryl-1,3-indandione - - - - -	MOT.
2-Pivaloyl-1,3-indandione (Pindone)- - - - -	MOT.
Rodenticides, cyclic, all other - - - - -	RBC.

TABLE 2.--PESTICIDES AND RELATED PRODUCTS FOR WHICH U.S.PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

PESTICIDES AND RELATED PRODUCTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
CYCLIC--CONTINUED	
CYCLIC PESTICIDES, ALL OTHER:	
alpha-[2-(2-n-Butoxyethoxy)ethoxy]-4,5-methylenedioxy-2-propyltoluene. (Piperonyl butoxide) - - - - -	ALP, TNA.
N-(2-Ethylhexyl)bicyclo(2.2.1-5-heptene-2,3-dicarboximide) - - - - -	MGK.
ACYCLIC	
*FUNGICIDES:	
Bis-1,4-bromoacetoxy-2-butene - - - - -	VIN.
1,2-Dibromo-2,4-dicyanobutane - - - - -	MRK.
Disodium cyanodithioimidocarbonate - - - - -	BKM.
n-Dodecylguanidine acetate (Dodine) - - - - -	ACY.
Dodecylguanidine hydrochloride - - - - -	MRK.
*Methylenebis(thiocyanate) - - - - -	MRK, VCC, VIN.
Poly[oxyethylene(dimethyliminio)-ethylene(dimethyliminio)ethylene dichloride] - - -	BKM.
Poly(n,n,n',n'-tetramethylethylenediamine) with (chloromethyl)oxirane - - - - -	BKM.
DITHIOCARBAMIC ACID FUNGICIDES:	
Dimethyldithiocarbamic acid, potassium salt - - - - -	BKM.
Dimethyldithiocarbamic acid, sodium salt - - - - -	VCC.
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.
Ethylene bis(dithiocarbamic acid), zinc salt (Zineb) - - - - -	RH.
Hydroxymethyl(methyl)dithiocarbamic acid, potassium salt - - - - -	BKM, FMN.
N-Methyldithiocarbamic acid, potassium salt - - - - -	BKM.
Acyclic fungicides, all other - - - - -	SFS.
*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.
Ethyl carbamoylphosphonate, ammonium salt - - - - -	DUP.

TABLE 2.--PESTICIDES AND RELATED PRODUCTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

PESTICIDES AND RELATED PRODUCTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
*HERBICIDES AND PLANT GROWTH REGULATORS--CONTINUED	
S-Ethyl diisobutylthiocarbamate (Butylate) - - - -	SFA.
S-Ethyl dipropylthiocarbamate (EPTC)- - - - -	PPG, SFA.
Ethyl xanthogen disulfide- - - - -	RBC.
Methanearsonic acid, disodium salt (DSMA) - - - -	VIN.
Methanearsonic acid, monosodium salt (MSMA) - - - -	DA, VTC.
Methylthiosulfonic acid, S-(2-hydroxypropyl) ester	BKM.
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 phosphorotriithioate - - - - -	CHG.
Tributyl phosphorotriithioite (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.
Succinic acid, 2,2-dimethylhydrazide - - - - -	USR.
*INSECTICIDES:	
2-(2-Butoxyethoxy)ethyl thiocyanate- - - - -	RH.
Methyl N',N'-dimethyl-N-[(methylcarbamoyl)oxy]-1- thioxaminate- - - - -	DUP.
S-Methyl-N-[(methylcarbamoyl)oxy]thioacetimidate (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.
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.
O,S-Dimethylacetylphosphoramidothioate (Acephate)	SOC.
O,O-Dimethyl-O-2,2-dichlorovinyl phosphate (DDVP) - - - - -	AMV.

TABLE 2.--PESTICIDES AND RELATED PRODUCTS FOR WHICH U.S.PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

PESTICIDES AND RELATED PRODUCTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
*INSECTICIDES--CONTINUED	
ORGANOPHOSPHORUS INSECTICIDES--CONTINUED	
S-[[[(1,1-Dimethylethyl)thio]methyl] O,O-diethyl phosphorodithioate (Turbufos)- - - - -	ACY.
Dimethyl phosphate of 3-hydroxy-N-methyl-cis- crotonamide- - - - -	SHC.
O,S-Dimethyl phosphoramidothioate- - - - -	CHG.
O,O-Dimethyl phosphorochloridothioate- - - - -	CHG.
O,O,O',O'-Tetraethyl S,S'-methylene bisphosphorodithioate (Ethion)- - - - -	FMN.
RODENTICIDES:	
Fluoroacetamide- - - - -	RBC.
2-Hydroxyethyl n-octyl sulfide - - - - -	PLC.
Sodium fluoroacetate - - - - -	RBC, TUL.
Rodenticides, acyclic, all other - - - - -	SHC.
SOIL CONDITIONERS:	
Polyacrylonitrile,hydrolyzed,sodium salt - - - - -	ACY.
SOIL FUMIGANTS:	
1,2-Dibromo-3-chloropropane (DBCP) - - - - -	AMV.
1,3-Dichloropropene- - - - -	DOW.
1,3-Dichloropropene,1,2-dichloropropane- - - - -	DOW, SHC.
O-Ethyl S,S-dipropyl phosphorodithioate- - - - -	RDA.
Methyl bromide (Bromomethane)- - - - -	DOW, GTL.
N-Methyldithiocarbamic acid,sodium salt (Metham) : - - - - -	BKM, SFA, X.
Methyl isothiocyanate- - - - -	MRT.
Trichloronitromethane (Chloropicrin) - - - - -	LCP, NLO.
ACYCLIC PESTICIDES, ALL OTHER:	
Bromoacetic acid - - - - -	VIN.
Diamino acetate- - - - -	X.
2-[(Hydroxymethyl)amino]-2-methylpropanol- - - - -	TRO.
2-[(Hydroxymethyl)ethanol - - - - -	TRO.
3-Iodo-2-propynyl butylcarbamate- - - - -	TRO.
Pesticides and related products, acyclic, all other : - - - - -	FKE, USR, X.

TABLE 3.--PESTICIDES AND RELATED PRODUCTS: DIRECTORY OF MANUFACTURERS, 1983

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 1983 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	MOT	Motomco, Inc.
ACY	American Cyanamid Co.	MRK	Merck & Co., Inc.
ADC	Anderson Development Co.	MRT	Morton-Thiokol, Inc., Morton Chemical Co. Div.
ALC	Alco Chemical Corp.	MTO	Montrose Chemical Corp. of California
ALP	Alpha Laboratories, Inc.	NES	Ruetgers-Nease Chemical Co.
AMC	Amvac Chemical Corp.	NLO	Niklor Chemical Co., Inc.
BAS	BASF Wyandotte Corp.	NOD	Nuodex, Inc.
BHA	Boots Hercules Agrochemicals Co.	OMC	Olin Corp.
BKM	Buckman Laboratories, Inc.	PAS	Pennwalt Corp.
CCA	Interstab Chemicals, Inc.	PBI	PBI-Gordon Corp.
CGY	Ciba-Geigy Corp., Agricultural Div.	PEN	CPC International, Inc., Penick Div.
CHF	Kincaid Enterprises, Inc.	PFZ	Pfizer, Inc.
CHG	Mobay Chemical Corp., Agricultural Chemicals Div.	PLC	Phillips Petroleum Co.
COS	Cosan Chemical Corp.	PPG	PPG Industries, Inc.
CWN	Upjohn Co., Fine Chemical Div.	RBC	Fike Chemicals, Inc.
CYT	Cumberland Chemical Corp.	RCI	Reichhold Chemicals, Inc.
DA	Diamond Shamrock Corp. and Diamond Shamrock Agriculture Chemical, Inc.	RDA	Rhone-Poulenc, Inc.
DOW	Dow Chemical Co.	RH	Rohm & Haas Co.
DRX	Drexel Chemical Co.	RIV	Riverdale Chemical Co.
DUP	E. I. duPont de Nemours & Co., Inc.	SFA	Stauffer Chemical Co.: Agricultural Div.
EFH	E. F. Houghton & Co.	SFC	Calhio Chemicals, Inc.
FER	Ferro Corp., Ferro Chemical Div.	SHC	Shell Oil Co., Shell Chemical Co. Div.
FKE	Frank Enterprise, Inc.	SOC	Standard Oil Co. of California, Chevron Chemical Co.
FMN	FMC Corp., Agricultural Chemical Div.	SOL	Southland Corp., Fine Chemicals Div.
FMT	Fairmount Chemical Co., Inc.	TNA	Ethyl Corp.
FRI	Farmland Industries, Inc.	TRO	Troy Chemical Corp.
FRO	Vulcan Materials Co., Chemicals Div.	TUL	Tull Chemical Co., Inc.
FSN	BFC Chemicals, Inc.	UCC	Union Carbide Corp.
GAF	GAF Corp.	USR	Uniroyal, Inc., Uniroyal Chemical Div.
GNW	Greenwood Chemical Co.	VCC	Vinings Chemical Co.
GTH	Guth Corp.	VEL	Velsicol Chemical Corp.
GTL	Great Lakes Chemical Corp.	VGC	Virginia Chemicals, Inc.
HEX	Hexagon Laboratories, Inc.	VIN	Vineland Chemical Co., Inc.
LAK	Bofors Nobel, Inc.	VNC	Vanderbilt Chemical Corp.
LCP	LCP Chemicals-Maine	VTC	Vertac Chemical Corp.
LIL	Eli Lilly & Co.	WTC	Witco Chemical Corp.
MCI	Mooney Chemical, Inc.	ZOC	Zoecon Corp.
MGK	McLaughlin Gormley King Co.		
MMM	Minnesota Mining & Manufacturing Co.		
MON	Monsanto Co.		

Note.--Complete names, telephone numbers, and addresses of the above reporting companies are listed in table 1 of the appendix. The above codes identify those of the 84 reporting companies and company divisions for which permission to publish was not restricted.

SECTION XIV -- MISCELLANEOUS END-USE CHEMICALS
AND CHEMICAL PRODUCTS
STATISTICAL HIGHLIGHTS

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202-523-0493

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 decreased from 1981 levels.

In 1983, the production of miscellaneous end-use chemicals exceeded 21.1 billion pounds, a decrease of 36 percent from the more than 33.0 billion pounds of production reported for 1982. Sales in 1983 totaled 12.9 billion pounds, valued at \$3.6 billion. The sales quantity decreased 1.5 percent from that of 1982 with the value of sales decreasing by 7.1 percent. Polymers for fibers and urea collectively accounted for 82 percent of the 1983 production of these miscellaneous end-use chemicals. Urea accounted for 74 percent of the 1983 sales quantity of these chemicals.

In 1983, the production of lubricating oil and grease additives totaled 1.5 billion pounds, a decrease of 1.1 percent, compared with 1982. Total sales quantity for 1983 was 1.1 billion pounds, 6.2 percent more than the 1982 sales quantity of 1.1 billion pounds, while the value of sales decreased 12 percent to \$813 million.

Production of fuel additives for 1983 totaled 1.4 billion pounds, a decrease of 0.6 percent from the previous year. Total sales quantity for 1983 was 925 million pounds, down 16 percent from the 1982 sales quantity of 1.2 billion pounds, with the sales value decreasing 18 percent to \$530 million.

TABLE 1.--MISCELLANEOUS END-USE CHEMICALS AND CHEMICAL PRODUCTS: U.S. PRODUCTION AND SALES 1983

[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	PRODUCTION	SALES		
		QUANTITY	VALUE	UNIT VALUE ¹
	1,000 pounds	1,000 pounds	1,000 dollars	Per pound
Grand total-----	21,149,302	12,703,360	3,329,795	\$0.26
Chelating agents, nitriloacids and salts, total-----	188,820	149,798	95,636	.64
(Diethylenetrinitrilo)pentaacetic acid, penta- sodium salt-----	5,810	5,059	4,899	.97
(Ethylenedinitrilo)tetraacetic acid (EDTA)-----	8,347	7,781	7,801	1.00
(Ethylenedinitrilo)tetraacetic acid, calcium di- sodium salt-----	569	...	...	...
(Ethylenedinitrilo)tetraacetic acid, tetrasodium salt-----	49,477	26,580	21,312	.80
(N-Hydroxyethylethylenedinitrilo)triacetic acid, iron salt-----	1,929	1,428	800	.56
(N-Hydroxyethylethylenedinitrilo)triacetic acid, trisodium salt-----	8,153	6,162	3,776	.61
Hydroxyethylidene diphosphonic acid-----	963	872	1,098	1.26
Nitrilo-tris-methylene triphosphonic acid-----	3,093	1,534	1,064	.69
All other-----	110,479	100,382	54,886	.55
Chemical indicators-----	5	13	812	63.60
Chemical reagents and fine chemicals-----	503	457	31,243	68.34
Enzymes, total-----	(²)	(²)	71,230	(²)
Bacterial amylase-----	(²)	(²)	12,073	(²)
Glucosylase-----	(²)	(²)	28,139	(²)
Proteases, total-----	(²)	(²)	19,714	(²)
Rennin-----	(²)	(²)	13,851	(²)
All other proteases-----	(²)	(²)	5,863	(²)
All other enzymes-----	(²)	(²)	11,304	(²)
Flotation reagents-----	8,226	2,806	4,316	1.54
Fuel additives, total ³ -----	1,443,339	974,827	529,785	.54
Gasoline additives, total-----	...	916,567	466,341	.51
Ethylenedibromide-----	155,465	...	...	...
Methyl-t-butyl ether-----	838,687	...	...	...
Tetraethyl lead-----	...	146,290	197,375	1.35
Tetra(methyl-ethyl) lead, (TEL-TML, reacted)-----	105,706	93,784	131,016	1.40
All other gasoline additives-----	...	676,493	137,950	.20
All other fuel additives-----	343,481	58,260	63,444	1.09
Lubricating oil and grease additives, total-----	1,504,335	1,172,982	813,501	.69
Chlorosulfurized and sulfurized compounds-----	2,748	...	...	...
Nonylphenol, barium salt-----	6,411	...	...	...
Oil soluble petroleum sulfonates, total-----	...	397,663	221,181	.56
Oil soluble petroleum sulfonate, calcium salt-----	181,024	170,544	105,665	.62
Oil soluble petroleum sulfonate, sodium salt-----	130,805	131,086	57,309	.44
All other oil soluble petroleum sulfonates-----	...	96,033	58,207	.61
Phosphorodithioates (Dithiophosphates)-----	92,465	...	...	...
Sulfurized sperm oil substitutes-----	13,700	12,966	6,381	.49
All other lubricating oil and grease additives-----	1,077,182	762,353	585,939	.77
Methionine and its salts-----	98,308	...	...	...
Paint driers, naphthenic acid salts, total ⁴ ⁵ -----	10,463	8,614	10,061	1.17
Calcium naphthenate-----	677	638	533	.84
Cobalt naphthenate-----	2,724	2,360	5,210	2.21
Manganese naphthenate-----	588	549	430	.78
All other-----	6,474	5,067	3,888	.78

TABLE 1.--MISCELLANEOUS END-USE CHEMICALS AND CHEMICAL PRODUCTS: U.S. PRODUCTION AND SALES, 1983--CONTINUED

	PRODUCTION	SALES		
		QUANTITY	VALUE	UNIT VALUE ¹
	1,000 pounds	1,000 pounds	1,000 dollars	Per pound
Photographic chemicals, total-----	...	1,797	10,461	\$5.82
p-Diethylaminobenzenediazonium chloride-----	107	102	531	5.21
p-Dimethylaminobenzenediazonium chloride-----	...	111	541	4.88
All other photographic chemicals-----	...	1,584	9,389	5.93
Polymers for fibers, total-----	6,091,193	468,058	485,954	1.04
Nylon 6 and 6/6-----	1,978,294	...	...	...
Polyacrylonitrile and acrylonitrile copolymers-----	604,204	...	...	...
Polyethylene terephthalate-----	2,239,334	123,143	104,841	.85
All other polymers for fibers-----	1,269,361	344,915	381,113	1.10
Polymers, water soluble, total-----	421,806	279,023	375,042	1.34
Cellulose ether and esters-----	236,320	178,483	225,545	1.26
Polyacrylamide-----	55,572	23,024	43,399	1.88
Polyacrylic acid salts, total-----	39,328	23,488	15,092	.64
Sodium polyacrylate-----	21,167	17,113	8,264	.48
All other polyacrylic acid salts-----	18,161	6,375	6,828	1.07
All other water soluble polymers-----	90,586	54,028	91,006	1.68
Tanning materials, synthetic-----	27,171	24,135	17,642	.73
Textile chemicals, other than surface-active agents, total-----	32,042	26,682	12,388	.46
Dimethylolhydroxyethylene urea-----	21,755	19,725	7,546	.38
Melamine formaldehyde methanol polymers-----	520	...	...	...
Urea polymers with formaldehyde and methanol-----	1,229	...	...	...
All other textile chemicals, other than surface-active agents-----	8,538	6,957	4,842	.70
Urea in compounds or mixtures, total-----	11,228,576	9,454,017	675,937	.07
In feed compounds-----	310,072	206,479	17,453	.08
In liquid fertilizer-----	3,316,616	2,446,929	202,128	.08
In plastics-----	178,899	...	...	...
In solid fertilizer-----	7,350,879	6,602,992	440,398	.07
Urea in compounds or mixtures, all other-----	72,110	197,617	15,958	.08
All other miscellaneous end-use chemicals and chemical products ⁶ -----	94,408	140,151	195,787	1.40

¹Calculated from unrounded figures.²Not available.³Statistics exclude production and sales of tricresyl phosphate. Statistics on tricresyl phosphate are given with the section on "Plasticizers."⁴Quantities are given on the basis of solid naphthenate.⁵Statistics exclude production and sales of copper naphthenate. Statistics for copper naphthenate are given in the section on "Pesticides and Related Products."⁶Includes 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 EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1983--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]

MISCELLANEOUS END-USE CHEMICALS AND CHEMICAL PRODUCTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)

BIOLOGICAL STAINS:	
Biological stains-----	ALD, EK, MMC.
*CHELATING AGENTS, NITRILACIDS AND SALTS:	
N-alkylaminobismethylene phosphonic acid salts-----	DUP, X.
Aminotrimethyl phosphonic acid-----	SCP.
Diethylenetriaminepenta(methylenephosphonic acid)-----	WAY.
(Diethylenetriamine)pentamethylenephosphonic acid, sodium salt-----	WAY.
(Diethylenetrinitrilo)pentaacetic acid-----	CGY, HMP.
(Diethylenetrinitrilo)pentaacetic acid, monosodium hydrogen ferric salt-----	CGY.
*(Diethylenetrinitrilo)pentaacetic acid, pentasodium salt-----	CGY, DAN, DOW, HMP, RPC.
(Diethylenetrinitrilo)pentamethylene phosphonic acid, pentasodium salt-----	EKT.
N,N-Dihydroxyethylglycine, sodium salt-----	HMP.
N,N-Di-(2-hydroxy-5-sulfonic acid benzyl)glycine, iron salt-----	HMP.
[(Dimethylamino)methylene]bisphosphoric acid, trisodium salt-----	BKM.
[(Dimethylamino)methylene]bisphosphonic acid, monoammonium salt-----	BKM.
Ethanol diglycine, disodium salt-----	HMP.
Ethylenebis(α-amino-2-hydroxyphenol) acetic acid, hydrogenferric salt-----	CGY.
(Ethylene-bis-nitrilo)dimethylene phosphonic acid, potassium salt-----	WAY.
Ethylenediaminetetra(methylene phosphonic acid)-----	X.
*(Ethylenedinitrilo)tetraacetic acid (Ethylenediaminetetraacetic acid) (EDTA)-----	CGY, DOW, HMP.
*(Ethylenedinitrilo)tetraacetic acid, calcium disodium salt-----	CGY, DOW, HMP.
(Ethylenedinitrilo)tetraacetic acid, diammonium salt-----	CGY, DOW.
(Ethylenedinitrilo)tetraacetic acid, disodium copper salt, dihydrate-----	CGY, HMP.
(Ethylenedinitrilo)tetraacetic acid, disodium salt-----	CGY, HMP.

TABLE 2.--MISCELLANEOUS END-USE CHEMICALS AND CHEMICAL PRODUCTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE
EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

MISCELLANEOUS END-USE CHEMICALS AND CHEMICAL PRODUCTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
*CHELATING AGENTS, NITRILLO ACIDS AND SALTS--CONTINUED	
(Ethylenedinitrilo)tetraacetic acid, disodium zinc salt, dihydrate	CGY, DOW, HMP.
(Ethylenedinitrilo)tetraacetic acid, magnesium salt	HMP.
(Ethylenedinitrilo)tetraacetic acid, manganese salt	CGY, HMP.
(Ethylenedinitrilo)tetraacetic acid, monoammonium ferric salt	HMP.
(Ethylenedinitrilo)tetraacetic acid, monosodium iron salt	CGY, HMP.
(Ethylenedinitrilo)tetraacetic acid, tetraammonium salt	CGY, DOW.
(Ethylenedinitrilo)tetraacetic acid, tetrapotassium salt	CGY, HMP, X.
*(Ethylenedinitrilo)tetraacetic acid, tetrasodium salt	CGY, CRT, DAN, DOW, HMP, RPC.
(Ethylenedinitrilo)tetraacetic acid, trisodium salt	CGY, WAY.
Glucosheptonic acid, β -isomer, sodium salt	BLZ.
Glucosheptonic acid, sodium salt	BLZ, PFN, RPC.
Hexamethylenediaminetetra(methylenephosphonic acid), potassium salt	WAY.
Hexamethylenediaminetetra(methylenephosphonic acid)	WAY, X.
(N-Hydroxyethylethylenedinitrilo) triacetic acid	HMP.
*(N-Hydroxyethylethylenedinitrilo) triacetic acid, iron salt	CGY, DOW, HMP.
(N-Hydroxyethylethylenedinitrilo) triacetic acid, magnesium salt	HMP.
*(N-Hydroxyethylethylenedinitrilo) triacetic acid, trisodium salt	CGY, CRT, DAN, DOW, HMP, RPC.
Hydroxyethylidene diphosphonic acid	HMP, MYO, SCP.
Hydroxyethylidene diphosphonic acid, potassium salt	X.
Hydroxyethylidene diphosphonic acid, sodium salt	X.
Nitriloacetic acid, zinc salt	HMP.
Nitrilotriacetic acid	HMP.
Nitrilotriacetic acid, trisodium salt	HMP, MON.
*Nitrilo-tris-methylene triphosphonic acid	BKM, MYO, WAY, X.
Nitrilo-tris-methylene triphosphonic acid, potas	X.
Nitrilo-tris-methylene triphosphonic acid, sodium salt	BAK, MYO, X.
2-Phosphonobutane-1,2,4-tricarboxylic acid, sodium salt	X.
Polyamine polymethane phosphonic acid	SCP, X.
Polyamine polymethane phosphonic acid, magnesium salt	RPC.
Chelating agents, nitriloacids and salts, all other	BKM, X.

TABLE 2.--MISCELLANEOUS END-USE CHEMICALS AND CHEMICAL PRODUCTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

MISCELLANEOUS END-USE CHEMICALS AND CHEMICAL PRODUCTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
*Chemical indicators	ALD, EK, GFS, MMC.
*Chemical reagents and fine chemicals	ACC, ALB, ALD, ARA, COC, EK, ESA, GFS, HMY, PAH, PFN, PIC, PLB, RBC, REG, RSA, UPJ, WBC, WTK, X.
*ENZYMES:	
HYDROLYTIC ENZYMES:	
AMYLASES:	
*Bacterial amylase	ADM, GBF, GNR, MLS, PMP.
Fungal amylases	PFZ.
*Glucoamylase	ADM, CRN, GBF, MLS, NBI.
Amylases, all other	GBF.
*PROTEASES:	
Pancreatin	SPR.
Papain	GBF, PFZ.
Pepsin	CHH, SPR.
Protease (bacterial)	MLS, PMP.
*Rennin	CHH, GNR, MLS, PFZ.
Proteases, all other	GBF, PIC.
OTHER HYDROLYTIC ENZYMES:	
Cholesterol esterase	BCK.
Glucose isomerase	ADM, MLS.
Hydrolytic enzyme mixtures	JFR, WBC.
Lipase	GBF.
Oxidoreductase	WBC.
Pectinase	GBF, GNR, MLS.
Transferase	WBC.
Other hydrolytic enzymes	GNR, MLS, WBC, X.
NON-HYDROLYTIC ENZYMES:	
Cholesterol oxidase	BCK, UPJ.
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.
Dicresylphosphorodithioic acid, sodium salt	KCU.
Rosin amines	HPC.

TABLE 2.--MISCELLANEOUS END-USE CHEMICALS AND CHEMICAL PRODUCTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

MISCELLANEOUS END-USE CHEMICALS AND CHEMICAL PRODUCTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)

*FLOTATION REAGENTS--CONTINUED	
Thiocarbamilide (Diphenylthiourea) - - - - -	: ACY, RBC.
XANTHATES AND SULFIDES, USED AS FLOTATION REAGENTS:	
Potassium amylxanthate - - - - -	: ACY.
Sodium n-butylxanthate - - - - -	: ESX, USR.
Sodium sec-butylxanthate - - - - -	: ESX.
Sodium ethylxanthate - - - - -	: ESX.
Sodium isobutylxanthate - - - - -	: ESX.
Xanthates and sulfides - - - - -	: ESX, PLC.
*FUEL ADDITIVES:	
Adipic acid-diethylenetriamine-epichlorohydrin polymer- - - - -	: X.
DIESEL FUEL ADDITIVES:	
Hexyl nitrate- - - - -	: DUP, TNA.
Diesel fuel additives, cyclic, all other - - - - -	: TNA.
N,N-Dimethyl-1,3-propanediamine polymer with epichlorohydrin, sulfate - - - - -	: X.
N,N'-Disalicylidene-1,2-propanediamine - - - - -	: DUP, FER, SM.
Ethoxylated hydantoin glycol dicocotate - - - - -	: GLY.
Formaldehyde polymer with ethylenediamine and nonyl phenol derivatives - - - - -	: X.
*GASOLINE ADDITIVES:	
N,N'-Di-sec-butyl-p-phenylenediamine - - - - -	: DUP, USR.
N,N'-Diisopropyl-p-phenylenediamine - - - - -	: DUP, USR.
*Ethylene dibromide - - - - -	: DOW, GIL, TNA.
*Methyl-t-butyl ether - - - - -	: ATR, ENJ, TUS.
Methylcyclopentadienylmanganese tricarbonyl- - - - -	: TNA.
*Tetraethyl lead - - - - -	: DUP, TNA, X.
*Tetra(methyl-ethyl)lead, (Tel-tml, reacted) - - - - -	: DUP, PPG, TNA, X.
Tetramethyl lead - - - - -	: DUP, PPG, TNA, X.
Imidazoline from tall oil fatty acids and diethylenetriamine - - - - -	: X.
4,4'-Methylenebis(2,6-di-tert-butylphenol) - - - - -	: TNA.
Methylene-bis(dimethyl)hydantoin and derivatives - - - - -	: GLY.
Mixed aryl diimides - - - - -	: SM.
Phenyl acid phosphate - - - - -	: HDG.
Polybutylether carbamate - - - - -	: SOC.
Poly(dimethylimino(2-hydroxytrimethylene)chloride) - - - - -	: X.
Polyethylenepolyamine polymer with 1,4-dihydroxy-2- butyne - - - - -	: X.
Rust preventing additives- - - - -	: ALX.

TABLE 2.--MISCELLANEOUS END-USE CHEMICALS AND CHEMICAL PRODUCTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

MISCELLANEOUS END-USE CHEMICALS AND CHEMICAL PRODUCTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
*FUEL ADDITIVES--CONTINUED	
Sulfurized fatty acid amides, esters, or ester-amides	CXI.
Tetrahydropyrimidine from tall oil fatty acids and propylenediamine	X.
Fuel additives, acyclic, all other	DUP, SM.
Fuel additives, cyclic, all other	CRT, TNA.
*LUBRICATING OIL AND GREASE ADDITIVES:	
*CHLOROSULFURIZED AND SULFURIZED COMPOUNDS:	
di-t-Amyl acid phosphate	SM.
Methylene-bridged polyalkyl phenols	SOC, TNA.
Oleyl acid phosphate	SM, X.
2,2'-Thiobis(6-tert-butyl-p-cresol)	TNA.
Chlorosulfurized and sulfurized compounds: used as lubricating oil and grease additives, all other	TNA.
*OIL-SOLUBLE PETROLEUM SULFONATES:	
Oil-soluble petroleum sulfonate, ammonium salt	NTL.
Oil-soluble petroleum sulfonate, barium salt	PAR, X.
*Oil-soluble petroleum sulfonate, calcium salt	PAR, PLC, SHC, SOC, TX, WTC, X.
Oil-soluble petroleum sulfonate, magnesium salt	WTC, X.
*Oil-soluble petroleum sulfonate, sodium salt	MOR, PAR, SHC, SOC, WTC, X.
Oil-soluble petroleum sulfonate, all other	DUP, SHC, SOC, WTC.
Oxidized hydrocarbon mixture	ALX, SOC.
PHENOL SALTS:	
Alkyl phenols	X.
Dodecylphenol, sulfurized, calcium carbonate overbased salt	TX.
Dodecylphenol, sulfurized, calcium salt	SOC, TX.
*Nonylphenol, barium salt	CCA, ENJ, FER, WTC.
Phenol, magnesium salt	WTC.
*PHOSPHORODITHIOATES (DITHIOPHOSPHATES):	
Di-2-ethylhexylphosphorodithioic acid	ELC.
Di-N-propylphosphorodithioic acid	ELC, SFS.
Zinc dialkyldithiophosphate	ELC, SOC, TX.
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	VNC.
SUCCINIMIDES:	
Alkenyl succinimide	SOC.
N,N-di(C ₁₅ -C ₂₀)-sec-Alkylasparagine	TX.
Dodecenyl-oleyl succinimide	SM.

TABLE 2.--MISCELLANEOUS END-USE CHEMICALS AND CHEMICAL PRODUCTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

MISCELLANEOUS END-USE CHEMICALS AND CHEMICAL PRODUCTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
*LUBRICATING OIL AND GREASE ADDITIVES--CONTINUED	
SUCCINIMIDES--CONTINUED	
Polyisobutenyl succinimide, zinc sulfate complex	SM.
SULFUR COMPOUNDS:	
Aliphatic hydrocarbon sulfides - - - - -	ELC, FER, SOC, X.
Chlorosulfurized cresylic acids - - - - -	CCW.
Chlorosulfurized lard oil - - - - -	FER.
Chlorosulfurized sperm oil - - - - -	CCW, ELC.
Diisobutylene polysulfide - - - - -	TX.
Di-tertiary nonylpolysulfide - - - - -	PAS.
Sulfurized lard oil - - - - -	CCW, FER, WBG.
*Sulfurized sperm oil substitutes - - - - -	CCW, ELC, FER, WTC.
Triisobutylene polysulfide - - - - -	TX.
Sulfur compounds, all other - - - - -	VNC, WTC.
ALL OTHER LUBRICATING OIL AND GREASE ADDITIVES:	
Alkene thiophosphonate - - - - -	TX.
Alkyl succinic anhydride - - - - -	SM.
Alkyl terephthalamate - - - - -	SOC.
Aminonaphthenic acid salts - - - - -	SM.
Bornyl phenylamine - - - - -	SOC.
Diisopropyl hydrogen phosphite - - - - -	SM.
Dimer acid esters and polyesters - - - - -	EMR.
Di-tetradecyl hydroquinone - - - - -	SM.
Dodecenyl succinic acid, benzotriazole salt - - - - -	SM.
Dodecylphenyl- α -naphthylamine - - - - -	SM.
Dodecylphenyl- α -naphthylamine, dioctyl diphenylamine co-polymer - - - - -	SM.
Fatty acid polyamine condensate - - - - -	SOC.
Hydrocarbon carboxylic acid derivatives (specify) - - - - -	X.
Hydrocarbon phosphorous acid, barium salt - - - - -	X.
Hydrocarbon phosphoryl derivatives - - - - -	X.
Lubricating oil and grease additives, acyclic, all other - - - - -	DUP, MON, SM, TMA, X.
Mixed polyesters - - - - -	HCC.
Pentaerythritol esters - - - - -	HCC.
N-phenylbis[n,β -hydroxyethyl]tetrapropenyl succinate - - - - -	TX.
1,3,4-Thiadiazole, 2,5-bis(dialkyldithio) derivatives - - - - -	ELC.
Tributyl phosphite - - - - -	SM.
Trimethylol propane ester - - - - -	DA, HCC, QCP, SFS.
Very high molecular weight (>1000) hydrocarbons - - - - -	X.
Lubricating oil and grease additives, cyclic, all	

TABLE 2.--MISCELLANEOUS END-USE CHEMICALS AND CHEMICAL PRODUCTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

MISCELLANEOUS END-USE CHEMICALS AND CHEMICAL PRODUCTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
*LUBRICATING OIL AND GREASE ADDITIVES--CONTINUED	
ALL OTHER LUBRICATING OIL AND GREASE ADDITIVES--CON:	
Lubricating oil and grease additives, cyclic, all other-	ENJ, WTC, X.
*PAINT DRIERS, NAPHTHENIC ACID SALTS:	
Cadmium naphthenate-	CCA.
*Calcium naphthenate-	CCA, FER, MCI, NOD, TRO, WTC.
Chromium naphthenate-	MCI.
*Cobalt naphthenate-	CCA, FER, MCI, NOD, SHP, TRO, WTC.
Iron naphthenate-	CCA, MCI, NOD.
Lead naphthenate-	CCA, FER, MCI, NOD, SHP, WTC.
Lithium naphthenate-	CCA, MCI.
*Manganese naphthenate-	CCA, FER, MCI, NOD, SHP, WTC.
Naphthenate driers, mixed salts-	MCI.
Rare earths naphthenate-	CCA.
Strontium naphthenate-	CCA.
Vanadyl naphthenate-	SHP.
Zinc naphthenate-	CCA, FER, MCI, NOD, SHP, TRO, WTC.
*PHOTOGRAPHIC CHEMICALS:	
N-(2-Acetamidophenethyl)-1-hydroxy-2-naphthamide-	TX.
N-2-(4-Amino-N-ethyl-m-toluidino)ethyl methane-sulfonamide-	TX.
2-Amino-5-mercapto-1,3,4-thiadiazole-	FMT.
5-Aminotetrazole-	FMT.
Aryl alkyl polyether alcohol-	DIX.
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.
4-Diazo-3,5-diethoxythiocresol salts-	ESA.
2,5-Diethoxy-4-morpholinobenzenediazonium chloride-	ALL, ESA.
*p-Diethylaminobenzenediazonium chloride (p-Diazo-N,N-diethylaniline zinc chloride)-	ALL, ESA, FMT.
N,N-Diethyltoluene-2,5-diamine, monohydrochloride-	EKT.
2,6-Dihydroxy-4-carboxypyridine-	EK.
*p-Dimethylaminobenzenediazonium chloride (p-Diazo-N,N-dimethylaniline zinc chloride)-	ALL, ESA, FMT.
p-Diphenylaminediazonium sulfate-	ESA, FMT.
p-(N-Ethylbenzimidobenzene)benzenediazonium chloride (p-Diazo-N-benzyl-N-ethylaniline)-zinc chloride-	ESA.
p-[Ethyl(2-hydroxyethyl)amino]benzenediazonium chloride -diazo-n-hydroxyethylaniline zinc chloride)-	ESA.

TABLE 2.--MISCELLANEOUS END-USE CHEMICALS AND CHEMICAL PRODUCTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

MISCELLANEOUS END-USE CHEMICALS AND CHEMICAL PRODUCTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
*PHOTOGRAPHIC CHEMICALS--CONTINUED	
(N-Ethyl-N-(2-hydroxyethyl)-3-methyldehydrogen sulfate)p-phenylenediamine	X.
N-Ethyl-N-hydroxyethyl-p-phenylenediamine sulfate	WAY.
N-Ethyl-N-(<i>β</i> -methane sulfonamidoethyl)toluene-2,5-diaminesulfate	X.
Hexadecylsulfonamidoindole	ARA.
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	WAY.
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.
4-Methyl-1-phenyl-3-pyrazolidione	WAY.
2-Methylthiazoline	FMT.
p-Morpholinyl-2,5-dibutoxybenzene diazonium chloride	ALL, ESA.
6-Nitrobenzimidazole	FMT.
5-Nitrobenzimidazole nitrate	EK.
Phenyl-4,4-dimethyl-3-pyrazolidinone	EK.
Phenyl-5-mercaptotetrazole	FMT.
1-Phenyl-3-pyrazolidone	CWN, EK.
Poly(acrylic acid, ethyl ester)	DUP.
Poly(acrylic acid, methyl ester/ethylene/1,1-dichlorosuccinic acid, methylene-)	DUP.
Poly(acrylic acid, methyl ester/ethylene/1,1-dichlorosuccinic acid, methylene-) with ethyl acrylate	DUP.
Poly(vinyl-0-sulfobenzal)	DUP.
4-N-(1-Pyrrolidyl)-m-toluenediazonium chloride	ALL, ESA.
Photographic chemicals, all other-	DUP, ESA, FMT.
POLYALPHAOLEFINS:	
Poly- α -olefins	CO, SM.
Poly- α -olefins, sulfurized	SM.

TABLE 2.--MISCELLANEOUS END-USE CHEMICALS AND CHEMICAL PRODUCTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

MISCELLANEOUS END-USE CHEMICALS AND CHEMICAL PRODUCTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
*POLYMERS FOR FIBERS:	
Cellulose acetate-	CEL, EKT, MIL.
Cerex/nylon polymer-	MON.
Copolyurethane urea-	DUP.
Linear saturated polyester-	EKT.
Nylon 6 (Polymer for fiber, only), and 6/6-	AFP, DUP, FRF, MON, SKP, WAY.
*Polyacrylonitrile and acrylonitrile copolymers-	ACY, DUP, MON, SFS.
*Polyethylene terephthalate-	DUP, EKT, FND, FRF, GYR.
Poly-m-phenylene isophthalamide-	DUP.
Poly-p-phenylene terephthalamide-	DUP.
Polymers for fibers, all other-	HST.
*POLYMERS, WATER SOLUBLE:	
*CELLULOSE ETHERS AND ESTERS:	
Acrylamide-2-acrylamido-2-methylpropanesulfonic acid,	
sodium salt polymer-	X.
Cationic cellulosic ether-	UCC.
Ethyl 2-hydroxyethyl cellulose-	HPC.
Hydroxyethylcellulose-	MIL, UCC, X.
2-Hydroxypropyl cellulose-	HPC.
Methylcellulose-	DOW.
Sodium carboxymethylcellulose (100%)	BUK, CBC, LCS, MAK, X, X.
Acrylamide-acrylic acid copolymer-	CHP.
Acrylamide-acrylic acid copolymer, sodium salt-	BKM, CIN, SNW, X.
Acrylamide copolymer with N,N,N-trimethyl-2-(2-methyl-	
1-oxo-2-propenyloxy)ethaniminium methyl sulfate-	BKM.
Acrylamide N-dimethylaminomethylacrylamide copolymer	CPS.
Acrylamide-trimethylaminoethyl methacrylate chloride	CIN.
Acrylamide vinyl amino copolymer-	X.
Acrylic maleic copolymers, sodium salt-	X.
Adipic acid-crosslinked polycrylamide-	S.
Dimethylamine epichlorohydrin ethylenediamine	
copolymer-	CPS.
*POLYACRYLIC ACID SALTS:	
Ammonium polyacrylate-	ALC, BFG, CRN, X.
Sodium ammonium polyacrylate and copolymers-	DA, X, X.
*Sodium polyacrylate-	ALC, BAK, BFG, BKM, CHP, DA, MYO, RH, SYT, X.
Polyacrylic acid salts, all other-	ACY, X.

TABLE 2.--MISCELLANEOUS END-USE CHEMICALS AND CHEMICAL PRODUCTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

MISCELLANEOUS END-USE CHEMICALS AND CHEMICAL PRODUCTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
*POLYMERS, WATER SOLUBLE--CONTINUED	
Dimethyl diallyl ammonium chloride polymers-	SHX.
Ethyl acrylate methacrylic acid copolymer-	ALC.
Humic acids, sodium salts-	X.
Hydroxypropyl guar gum -	RPC.
Maleic itaconic copolymer, sodium salt -	X.
*Polyacrylamide -	ACY, DA, DOW, MRK, SNW, X.
Polyacrylamide dimethylammonium ethyl methacryla -	SNW.
Polyacrylate methacrylate copolymers-	ALC, BFG, CRN, X.
Polyacrylic acid -	X.
Polyacrylonitrile, hydrolyzed-	BKM, DIX.
Polyacrylonitrile, starch hydrolyzed polymer -	GPC, SCP.
Polyamines -	BAK, X.
Poly(diallyldimethylammonium chloride)-	BAK, CPS, MRK, X.
Polyethylene glycol, mono(nonylphenol) sulfate, ammonium salt-	BAK.
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.
Xanthan gum-	PFZ.
Polymers, water soluble, all other -	DA, EFH, HPC, TKL, X, X, X.
RARE SUGARS:	
1-Arabinose-	PFN.
D-Galactose-	PFN.
α -D-Glucose pentaacetate -	PFN.
D-Maltose-	PFN.
Rare sugars, all other -	PFN.
Silicone greases -	DCC, SPD, SWS.
*TANNING MATERIALS, SYNTHETIC:	
Cresol-phenol-formaldehyde condensate and salt -	DA.
2-Naphthalenesulfonic acid, formaldehyde condensate and salt -	AKS(E), GRD, RH.
1-Phenol-2-sulfonic acid, formaldehyde condensate (Phenol-formaldehyde, sulfonated) -	RH.
Polyoxyalkylated cyclic amines -	MIL.
Tanning materials, synthetic, all other-	CRT, TKL.
*TEXTILE CHEMICALS, OTHER THAN SURFACE-ACTIVE AGENTS:	
Acrylonitrile/stearyl methacrylate polymer -	RPC.
N,N-bis-(2-Hydroxyethyl)octadecanamide -	CCC.
Castor oil glycerin phthalic anhydride polymer -	RPC.
N,N-Dibenzylhydroxylamine-	CCC.

TABLE 2.--MISCELLANEOUS END-USE CHEMICALS AND CHEMICAL PRODUCTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE
EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

MISCELLANEOUS END-USE CHEMICALS AND CHEMICAL PRODUCTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)

*TEXTILE CHEMICALS, OTHER THAN SURFACE-ACTIVE AGENTS--Con.:	
Dicyanodiamide formaldehyde ammonium chloride polymer	CCC, RPC.
Diethylenetriamine, triethylphosphate, urea polymer,	
stearate	CCC.
*Dimethyldihydroxyethylene urea	ACY, CCC, CHP, DAN, RPC, SYT.
N,N-Ethylene-urea formaldehyde resin	CCC.
Formaldehyde polymer with carbamate esters	RPC, SYT.
Hydrogenated tallow fatty acid aminoethylethanolamine	
condensation products	CCC.
*Melamine formaldehyde methanol polymer	ACY, CCC, SYT.
Melamine formaldehyde triethanolamine mixed fatty	
alcohols polymer	RPC.
Melamine stearyl alcohol polymer	SYT.
1-[(Octadecyloxy)methyl]pyridinium chloride	CCC.
Product from the reaction of stearyl nitrile,	
candelilla wax, paraformaldehyde, phosphorous	
trichloride, and picoline	CCC.
Propoxylated starches	SYT.
*Urea, 2-[(2-aminoethyl)amino]ethanol polymer,	
stearate	CCC.
Urea polymers with formaldehyde and methanol	ACY, CCC, MIL, RPC.
Urea, polymer with tetrakis[hydroxymethyl]phosphonium	
sulfate	CHP.
Textile chemicals, other than surface active agents,	
all other	CCC, ENJ, RPC, X.
UREA, BY END-USE MARKETS:	
Urea, primary solution (Report on 100% urea-content	
basis)	ACS, AGY, APD, ARM, BNP, CAC, CFA, CFI, CHN, CNC, FRI,
	GCC, HKY, HPC, 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)	ACS, AGY, APD, CAC, SOH, TER, TRI, TVA, VLN, WYC.
*Urea in liquid fertilizer (100% Basis)	ACS, AGY, ARM, BNP, CFA, CFI, CHN, CNC, FRI, HKY, HPC,
	MSC, PLC, SMP, SOC, SOH, TER, TRI, TVA, VLN, WYC, X.
*Urea in plastics (100% Basis)	OMC, SOH, TRI.
*Urea in solid fertilizer (100% Basis)	ACS, AGY, APD, CAC, CFA, CFI, CNC, FRI, GCC, MSC, OMC,
	SOH, TER, TRI, UOC, WLC, WYC, X.
*Urea in compounds and mixtures (100% Basis), all	
other	BNP, SOH, TER, X.

TABLE 2.--MISCELLANEOUS END-USE CHEMICALS AND CHEMICAL PRODUCTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

MISCELLANEOUS END-USE CHEMICALS AND CHEMICAL PRODUCTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
AMINO ACIDS AND THEIR SALTS:	
*METHIONINE AND ITS SALTS:	
Methionine (animal feed grade)	DGC.
Methionine, hydroxy analogue, calcium salt	EKT, MON.
Amino acids and salts, acyclic, all other	IMC, WAY.
Aspartic acid	ESX, PFZ.
N,N-Dimethylglycine	MCK.
N,N-Dimethylglycine hydrochloride	MCK.
Glutamic acid hydrochloride	LEM.
Glycine (Aminoacetic acid), non-medical	CHT, HMP.
Potassium glutamate	LEM.
Protein hydrosylates	BRS.
Sarcosine	HMP.
Amino acids and salts, cyclic, all other	AJI, HCC.

TABLE 3.--MISCELLANEOUS END-USE CHEMICALS AND CHEMICAL PRODUCTS: DIRECTORY OF MANUFACTURERS, 1983

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 1983 are listed below in the order of their identification codes as used in table 2]

CODE	NAME OF COMPANY	CODE	NAME OF COMPANY
ACC	Atomergic Chemetals Corp.	ELC	Elco Corp. Sub. of Detrex Chemical Industries, Inc.
ACS	Allied Corp., Allied Chemicals Co.	EMR	Emery Industries Div. of National Distillers & Chemical Corp.
AGY	American Cyanamid Co.	ENJ	Exxon Chemical Americas
ADM	Archer Daniels Midland, ADM Clinton	ESA	East Shore Chemical Co.
AFP	Allied Corp., Allied Fibers & Plastics Co.	ESX	Essex Industrial Chemicals, Inc., Essex Chemical Corp.
AGY	Agway, Inc., Olean Nitrogen Complex		
AJI	Ajinomoto USA, Inc.	FER	Ferro Corp.: Ferro Chemical Div. Keil Chemical Div.
AKS	Arkansas Co., Inc.	FMT	Fairmount Chemical Co., Inc.
ALB	Ames Laboratories, Inc.	FND	Fiber Industries, Inc.
ALC	Alco Chemical Corp.	FRF	Firestone Tire & Rubber Co., Firestone Fibers & Textiles Co.
ALD	Aldrich Chemical Co., Inc.	FRI	Farmland Industries, Inc.
ALL	Alliance Chemical, Inc.		
ALX	Alox Corp.	GAF	GAF Corp.
APD	Atlas Powder Co. Sub. of Tyler Corp.	GBF	GBF Fermentation Industries, Inc.
ARA	Syntex Chemicals, Inc.	GCC	W. R. Grace & Co., Agricultural Chemicals Group
ARM	U.S. Steel Corp., USS Agri-Chemicals Div.	GFS	G. Frederick Smith Chemical Co.
ATR	Atlantic Richfield Co., Arco Chemical Co.	GLY	Glyco, Inc.
		GNR	Genencor, Inc.
BAK	Baker International - Magna Corp.	GPC	Grain Processing Corp.
BCK	Beckman Instruments, Inc.	GRD	W. R. Grace & Co., Polymers & Chemical Div.
BFG	B. F. Goodrich Co., B. F. Goodrich Chemical Group	GTL	Great Lakes Chemical Corp.
BKM	Buckman Laboratories, Inc.	GYR	Goodyear Tire & Rubber Co.
BLZ	Belzak Corp.		
BNP	Bison Nitrogen Products Co.	HCC	Hatco Chemical Corp.
BRS	Bristol-Myers Co.	HDG	Hodag Chemical Corp.
BUK	Buckeye Cellulose Corp.	HEX	Hexagon Laboratories, Inc.
		HKY	Hawkeye Chemical Co.
CAC	Cominco American, Inc.	HMP	W. R. Grace & Co., Hampshire Chemical Div.
CBC	Carbose Corp.	HMY	Humphrey Chemical Co.
CCA	Interstab Chemicals, Inc.	HPC	Hercules, Inc.
CCC	C.N.C. Chemical Corp.	HST	American Hoechst Corp., Hoechst Fiber Industries Div.
CCL	Catawaba-Charlab, Inc.		
CCW	Carstab Corp.	IMC	International Minerals & Chemicals Corp., Industrial Chemicals Div.
CEL	Celanese Corp., Celanese Fibers Co.		
CFA	Cooperative Farm Chemicals Association	JFR	George A. Jeffreys & Co., Inc.
CFI	CF Industries, Inc.		
CGY	Ciba-Geigy Corp.	KCU	Kennecott Minerals Co., Utah Copper Div.
CHG	Mobay Chemical Corp., Agricultural Chemicals Div.		
CHH	CHR. Hansen's Laboratory, Inc.	LCS	Louisiana Cellulose Specialties, Inc.
CHN	N-ReN Corp., Cherokee Nitrogen Div.	LEM	Napp Chemicals, Inc.
CHP	C. H. Patrick & Co., Inc.		
CHT	Chattem, Inc.	MAK	MAK Chemical Corp.
CIN	Stockhausen, Inc.	MCT	Mooney Chemicals, Inc.
CNC	Columbia Nitrogen Corp.	MCK	MacKenzie Chemical Works, Inc.
CO	Conoco, Inc.	MTL	Milliken & Co., Milliken Chemical Co.
COC	Columbia Organic Chemicals Co., Inc.	MLS	Miles Laboratories, Inc., Biotechnology Group
CPS	CPS Chemical Co., Inc.	MMC	EM Industries, Inc. EM Sciences Div.
CRN	GPC International, Inc., Amerchol Corp.		
CRT	Chemos Corp., Crest Chemical Div.	MON	Monsanto Co.
CWN	Upjohn Co., Fine Chemicals Div.	MOR	Marathon Morco, Co.
CXI	Chemical Exchange Industries, Inc.	MRK	Merck & Co., Inc.
		MSC	Mississippi Chemical Corp.
DA	Diamond Shamrock Corp.	MYO	Mayo Chemicals Co.
DAN	Dan River, Inc., Chemical Products Div.		
DCC	Dow Corning Corp.	NBI	Nova Biochemical, Inc.
DGC	Degussa Corp.	NOD	Nuodex, Inc.
DIX	Dixie Chemical Co., Inc.	NTL	NL Industries, Inc.
DOW	Dow Chemical Co.		
DUP	E. I. duPont de Nemours & Co., Inc.		
EFH	E. F. Houghton & Co.		
EK	Eastman Kodak Co.		
EKT	Tennessee Eastman Co. Div.		

TABLE 3.--MISCELLANEOUS END-USE CHEMICALS AND CHEMICAL PRODUCTS: DIRECTORY OF MANUFACTURERS, 1983--CONTINUED

CODE	NAME OF COMPANY	CODE	NAME OF COMPANY
OMC	Olin Corp.	SMW	Sun Chemical Corp., Chemical Div.
PAH	Parish Chemical Co.	SOC	Standard Oil Co. & California, Chevron
PAR	Pennzoil Co., Penreco Div.		Chemical Div.
PAS	Pennwalt Corp.	SOH	Sohio Chemical Co.
PFN	Pfanstiehl Laboratories, Inc.	SPD	General Electric Co., Silicone Products Dept.
PFZ	Pfizer, Inc.	SPR	Scientific Protein Laboratories, Inc.
PIC	Pierce Chemical Co.	SWS	Stauffer Chemical Co., SWS Silicones Div.
PLB	Pharmacia P-L Biochemicals, Inc.	SYT	Synthron, Inc.
PLC	Phillips Petroleum Co.		
PMP	PMP Fermentation Products, Inc.	TER	Terra Chemicals International, Inc.
PPG	PPG Industries, Inc.	TER	Terra Nitrogen, Inc.
PTT	Petro-Tex Chemical Corp.	TNA	Ethyl Corp.
		TRI	Triad Chemical
QCP	Quaker Chemical Corp.	TRO	Troy Chemical Corp.
		TUS	Texaco Butadiene Co.
RBC	Pike Chemicals, Inc.	TVA	Tennessee Valley Authority
REG	Regis Chemical Co.	TX	Texaco, Inc.
RH	Rohm & Haas Co.		
RPC	Millmaster Onyx Group, Inc., Lyndall	UCC	Union Carbide Corp.
	Chemical Co. Div.	UOC	Union Oil Co. of California
RSA	R.S.A. Corp.	UPJ	Upjohn Co.
		USR	Uniroyal, Inc., Uniroyal Chemical Div.
S	Sandoz, Inc., Colors & Chemicals Div.		
SCP	Henkel Corp.	VLN	J. R. Simplot Co.
SFS	Stauffer Chemical Co., Specialty &	VNC	Vanderbilt Chemical Corp.
	Intermediates Div.		
SHC	Shell Oil Co., Shell Chemical Co. Div.	WAY	Phillip A. Hunt Chemical Corp., Organic
SHP	Shepherd Chemical Co.		Chemical Div.
SHX	Sherex Chemical Co., Inc.	WBC	Worthington Diagnostic Systems, Inc.
SKP	Shakespeare Co., Monofilaments Div.	WBG	White & Bagley Co.
SM	Mobil Oil Corp., Mobil Chemical Co. &	WLC	Agrico Chemical Co.
	Chemical Coatings Div.	WTC	Witco Chemical Corp.
SMP	J. R. Simplot Co., M & C Div., Western	WTK	Whittaker Corp., Meico Corp.
	Region	WYC	Wycon Chemical Co.

Note.--Complete names, telephone numbers, and addresses of the above reporting companies are listed in table 1 of the appendix. The above codes identify those of the 171 reporting companies and company divisions for which permission to publish was not restricted.

STATISTICAL HIGHLIGHTS

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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 1983 amounted to 93.3 billion pounds, an increase of 15 percent, compared with production in 1982. U.S. sales for 1983 totaled 39.1 billion pounds, valued at \$11.3 billion. Compared with 1982, sales quantity increased 13 percent, and sales value increased by 6.8 percent. Production of miscellaneous cyclic chemicals composed only 2.7 percent of this section's total production.

The group among miscellaneous acyclic chemicals with the greatest volume of production and sales is the halogenated hydrocarbons. Production of halogenated hydrocarbons increased from 17.6 billion pounds in 1982 to 23.7 billion pounds in 1983, or by 35 percent. Sales of comparable halogenated hydrocarbons rose from 7.4 billion pounds in 1982 to 7.6 billion pounds in 1983, or by 2.3 percent. Production of chlorinated hydrocarbons, the largest segment of this group, increased 35 percent in 1983 to 22.7 billion pounds, from 16.8 billion pounds in 1982. Sales of chlorinated hydrocarbons amounted to 7.4 billion pounds, valued at \$1.3 billion.

TABLE 1.--MISCELLANEOUS CYCLIC AND ACYCLIC CHEMICALS: U.S. PRODUCTION AND SALES, 1983

[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 ¹
	1,000 pounds	1,000 pounds	1,000 dollars	Per pound
Grand total-----	93,347,917	39,128,360	11,326,384	\$0.29
CYCLIC				
Total-----	2,524,203	1,376,263	1,055,771	.77
Benzoyl peroxide-----	8,073	8,070	20,970	2.60
Bis(2,4-dichlorobenzoyl) peroxide-----	78	68	1,024	14.98
tert-Butyl peroxybenzoate-----	3,354	3,306	7,935	2.38
Caprolactam-----	976,906	274,449	189,657	.69
Cumene hydroperoxide-----	...	2,153	1,804	.84
2,6-Di-tert-butyl-p-cresol (BHT), Tech. grade-----	7,842	8,972	12,298	1.37
Dodecenylsuccinic anhydride-----	5,378	4,850	4,246	.88
Hexamethylenetetramine, tech. grade-----	88,562	46,856	15,616	.33
p-Hydroxybenzoic acid, propylester-----	1,535	951	1,715	1.80
Lactones-----	...	11,308	13,605	1.20
Maleic anhydride-----	298,965	304,143	102,953	.34
Pinene and derivatives, total-----	254,093	66,369	24,844	.37
β-Pinene-----	38,793	8,844	2,039	.23
Pine oil, synthetic-----	39,466	44,601	19,820	.44
All other-----	175,834	12,924	2,985	.23
Tall oil salts-----	3,686	...	...	...
Terpene hydrocarbons, monocyclic (Solvenol)-----	...	21,756	5,299	.24
1,3,5-Trichloro-5-triazine-2,4,6-(1H, 3H, 5H)trione--	53,060	...	...	...
All other miscellaneous cyclic chemicals-----	822,671	623,012	653,805	1.05
ACYCLIC				
Total-----	90,823,714	37,752,097	10,270,613	.27
NITROGENOUS COMPOUNDS				
Total-----	6,889,249	2,592,378	1,197,817	.46
Amides, total-----	254,776	137,678	116,232	.84
Acrylamide-----	86,233	31,892	22,072	.69
N,N'-Ethylenebis(stearamide)-----	26,391	26,210	18,914	.72
All other-----	142,152	79,576	75,246	.95
Amines, total ² -----	1,452,482	418,830	340,130	.81
Butylamines, total-----	44,596	31,242	24,795	.79
Di-n-butylamine-----	7,680	4,321	3,659	.85
All other-----	36,916	26,921	21,136	.79
Diisopropylamine-----	5,861	...	...	...
Dimethylaminopropylamine-----	...	4,265	4,477	1.05
Ethylamines, total-----	60,192	43,606	26,269	.60
Diethylamine-----	17,829	6,025	4,741	.79
Ethylamine, mono-----	27,336	24,135	8,928	.37
Triethylamine-----	15,027	13,446	12,600	.94

See footnotes at end of table.

TABLE 1.--MISCELLANEOUS CYCLIC AND ACYCLIC CHEMICALS: U.S. PRODUCTION AND SALES, 1983--CONTINUED

MISCELLANEOUS CYCLIC AND ACYCLIC CHEMICALS	PRODUCTION	SALES		
		QUANTITY	VALUE	UNIT VALUE ¹
ACYCLIC--Continued				
NITROGENOUS COMPOUNDS--Continued	1,000 pounds	1,000 pounds	1,000 dollars	Per pound
Amines ² --Continued				
Isopropylamine, mono-----	45,346	34,925	19,066	\$0.55
Methylamines:				
Dimethylamine-----	61,103	56,875	27,509	.48
Methylamine, mono-----	39,083	...	...	...
Trimethylamine-----	29,371	24,560	9,843	.40
Propylamines-----	22,143	...	...	...
All other-----	1,144,787	223,357	228,171	1.02
Ethanolamines, total-----	467,995	349,903	120,020	.34
2,2'-Aminodiethanol (Diethanolamine)-----	163,427	128,120	42,604	.33
2-Aminoethanol (Monoethanolamine)-----	166,514	111,240	38,506	.35
2,2',2''-Nitrilotriethanol (Triethanolamine)-----	138,054	110,543	38,910	.35
2,2'-(Methylimino)diethanol (Methyldiethanolamine)---	5,727	5,982	9,977	1.67
Nitriles, total-----	...	1,475,114	417,774	.28
Acetonitrile-----	22,300	...	...	...
Acrylonitrile-----	2,146,248	1,168,137	349,329	.30
2-Methylactonitrile (Acetone cyanohydrin)-----	868,530	...	...	...
All other-----	...	306,977	68,445	.22
All other nitrogenous compounds-----	1,671,191	204,871	193,684	.95
ACIDS, ACYL HALIDES, AND ANHYDRIDES				
Total-----	11,646,096	2,108,437	757,848	.36
Acetic acid, synthetic, 100%-----	2,806,677	836,390	129,644	.16
Acetic anhydride, 100%-----	...	111,313	28,397	.26
Acrylic acid-----	733,505	110,437	50,939	.46
Adipic acid-----	...	195,486	96,878	.50
Fumaric acid-----	37,294	28,737	14,751	.51
Pivaloyl chloride-----	1,011	...	...	...
Propionic acid-----	101,373	57,149	14,928	.26
All other acids, acyl halides, and anhydrides-----	7,966,236	768,925	422,311	.55
SALTS OF ORGANIC ACIDS				
Total-----	301,512	260,975	208,344	.80
Acetic acid salts, total-----	21,131	19,558	13,991	.72
Ammonium acetate-----	242	226	365	1.61
Calcium acetate-----	...	559	560	1.00
Magnesium acetate-----	56	67	170	2.53
Potassium acetate-----	871	763	661	.87
Sodium acetate-----	13,863	12,885	6,571	.51
Sodium diacetate-----	2,477	2,390	1,130	.47
Zinc acetate-----	502	428	522	1.22
All other-----	3,120	2,240	4,012	1.79

See footnotes at end of table.

TABLE 1.--MISCELLANEOUS CYCLIC AND ACYCLIC CHEMICALS: U.S. PRODUCTION AND SALES, 1983--CONTINUED

MISCELLANEOUS CYCLIC AND ACYCLIC CHEMICALS	PRODUCTION	SALES		
		QUANTITY	VALUE	UNIT VALUE ¹
ACYCLIC--Continued				
SALTS OF ORGANIC ACIDS--Continued	1,000 pounds	1,000 pounds	1,000 dollars	Per pound
2-Ethylhexanoic acid (α -Ethylcaproic acid salts, total)-----	19,281	15,989	23,200	\$1.45
Calcium 2-ethylhexanoate-----	2,231	2,208	1,957	.89
Cobalt 2-ethylhexanoate-----	5,418	3,375	5,120	1.52
Lead 2-ethylhexanoate-----	915	908	705	.78
Manganese 2-ethylhexanoate-----	1,104	1,024	908	.89
Nickel 2-ethylhexanoate-----	739	774	1,254	1.62
Rare earths 2-ethylhexanoate-----	61	115	301	2.63
Zinc 2-ethylhexanoate-----	618	598	613	1.03
Zirconium 2-ethylhexanoate-----	3,731	3,032	4,374	1.44
All other-----	4,464	3,955	7,968	2.01
Octanoic acid salts-----	188	194	231	1.19
Oleic acid salts-----	150	...	...	...
Propionic acid salts-----	21,209	12,421	8,073	.65
Oxalic acid salts, total-----	...	198	480	2.63
Ammonium oxalate-----	100	91	239	1.63
Potassium oxalate-----	...	65	144	2.20
Oxalic acid salts, all other-----	...	42	97	2.31
Stearic acid salts, total ³ -----	115,767	109,611	82,103	.75
Aluminum stearates-----	4,003	3,950	4,957	1.26
Barium stearate-----	1,144	1,071	939	.88
Calcium stearate-----	64,984	64,525	42,033	.65
Magnesium stearate-----	20,953	14,989	10,745	.72
Zinc stearate-----	22,275	21,707	19,494	.90
All other-----	2,408	3,369	3,935	1.17
All other salts of organic acids-----	123,686	103,004	80,266	.78
ALDEHYDES				
Total-----	7,622,062	1,988,605	193,085	.10
Butyraldehyde-----	860,771	...	...	...
Formaldehyde (37% by weight)-----	5,464,863	1,725,051	110,081	.06
Isobutyraldehyde-----	278,664	5,714	922	.16
Propionaldehyde-----	231,149	7,965	2,407	.30
All other aldehydes-----	786,615	249,875	79,675	.32
KETONES				
Total-----	2,713,110	2,354,879	562,393	.24
Acetone:				
From cumene-----	1,587,108	1,568,881	296,858	.19
From isopropyl alcohol-----	271,436	...	...	...
4-Hydroxy-4-methyl-2-pentanone (Diacetone alcohol)-----	45,686	39,620	14,912	.38
Methyl ethyl ketone (2-Butanone)-----	531,395	480,254	138,904	.29
4-Methyl-2-pentanone (Methyl isobutyl ketone)-----	137,584	132,043	55,630	.42
All other ketones-----	139,901	134,081	56,089	.42
ALCOHOLS, MONOHYDRIC, UNSUBSTITUTED				
Total-----	14,742,136	...	...	...
Alcohols, C ₁₁ or lower, unmixed, total-----	14,008,831	...	...	...
Butyl alcohols, total-----	2,591,073	...	...	...
n-Butyl alcohol (n-Propylcarbinol)-----	833,718	405,994	96,879	.24
Isobutyl alcohol (Isopropylcarbinol)-----	143,269	103,155	22,150	.21
All other-----	1,614,086	...	...	...
Ethyl alcohol, synthetic ⁴ -----	1,077,433	1,041,466	264,775	.25

See footnotes at end of table.

TABLE 1.--MISCELLANEOUS CYCLIC AND ACYCLIC CHEMICALS: U.S. PRODUCTION AND SALES, 1983--CONTINUED

MISCELLANEOUS CYCLIC AND ACYCLIC CHEMICALS	PRODUCTION	SALES		
		QUANTITY	VALUE	UNIT VALUE ¹
ACYCLIC--Continued				
ALCOHOLS, MONOHYDRIC, UNSUBSTITUTED--Continued	1,000 pounds	1,000 pounds	1,000 dollars	Per pound
Alcohols, C ₁₁ or lower, unmixed--Continued				
2-Ethyl-1-hexanol-----	386,644	233,404	74,685	\$0.32
Isopropyl alcohol-----	1,209,412	853,034	206,156	.24
Methanol, synthetic-----	7,981,771	4,195,479	279,982	.07
Propyl alcohol (Propanol)-----	152,888	90,298	31,045	.34
All other-----	609,610	...	...	...
1-Hexadecanol (Cetyl alcohol)-----	...	11,967	7,402	.62
Mixtures of alcohols:				
C ₁₁ or lower only-----	160,264	131,969	51,742	.39
C ₁₂ or higher only-----	...	241,148	120,590	.50
All other alcohols, monohydric, unsubstituted-----	573,041	...	...	...
ESTERS OF MONOHYDRIC ALCOHOLS				
Total-----	4,791,051	3,053,680	1,203,020	.39
Butyl acetates:				
n-Butyl acetate-----	131,624	112,227	46,118	.41
Isobutyl acetate-----	71,215	50,784	18,970	.37
Butyl acrylate-----	401,253	206,096	99,460	.48
tert-Butyl peroxy-2-ethylhexanoate-----	1,735	1,723	5,540	3.22
tert-Butyl peroxy-pivalate-----	...	1,978	7,587	3.84
Dibutyl maleate-----	3,485	3,631	2,003	.55
Di(2-ethyl-1-hexyl) maleate-----	1,476	...	...	...
2-Ethoxyethyl acetate-----	126,375	142,411	66,346	.47
Ethyl acetate (85%)-----	212,950	195,028	51,897	.27
Ethyl acrylate-----	287,751	163,988	70,008	.43
2-Ethyl-1-hexyl acrylate-----	68,348	62,342	35,617	.57
Fatty acid esters, not included with plasticizers or surface-active agents, total-----				
Myristyl myristate-----	325	328	522	1.59
Tridecyl stearate-----	1,244	1,250	1,026	.82
All other-----	15,803	15,507	8,801	.57
Lauryl methacrylate-----				
Methyl methacrylate-----	843,617	240,964	123,588	.51
Phosphorus acid esters, not elsewhere specified-----	83,543	67,934	78,046	1.15
Propyl acetate-----	57,909	53,800	23,725	.44
Tri(butoxyethyl) phosphate-----	...	1,671	2,301	1.38
Vinyl acetate-----	1,962,579	1,360,501	299,296	.22
All other esters of monohydric alcohols-----	519,819	370,867	261,119	.70
POLYHYDRIC ALCOHOLS				
Total ⁵ -----	5,919,704	3,869,398	1,008,467	.26
1,4-Butanediol-----				
Ethylene glycol-----	4,424,515	2,908,351	556,877	.19
Pentaerythritol-----	103,346	96,219	51,355	.53
Propylene glycol-----	483,976	438,149	159,391	.36
Sorbitol (70% by weight)-----	164,834	132,673	50,608	.38
All other polyhydric alcohols-----	582,333	294,006	190,236	.65
POLYHYDRIC ALCOHOL ESTERS				
Total-----	184,297	159,797	105,355	.66
POLYHYDRIC ALCOHOL ETHERS				
Total-----	1,840,128	1,224,418	441,813	.36

See footnotes at end of table.

TABLE 1.--MISCELLANEOUS CYCLIC AND ACYCLIC CHEMICALS: U.S. PRODUCTION
AND SALES, 1983--CONTINUED

MISCELLANEOUS CYCLIC AND ACYCLIC CHEMICALS	PRODUCTION	SALES		
		QUANTITY	VALUE	UNIT VALUE ¹
ACYCLIC--Continued				
POLYHYDRIC ALCOHOL ETHERS--Continued	1,000 pounds	1,000 pounds	1,000 dollars	Per pound
2-Butoxyethanol-----	240,857	186,278	61,998	\$0.33
2-(2-Butoxyethoxy)ethanol (Diethylene glycol mono- butyl ether)-----	63,482	52,578	22,261	.42
2-[2-(2-Butoxyethoxy)ethoxy]ethanol (Triethylene glycol monobutyl ether)-----	8,380	...	...	...
Diethylene glycol-----	462,514	317,799	50,199	.16
Dipropylene glycol-----	41,697	39,817	13,188	.33
2-Ethoxyethanol-----	187,490	72,683	27,991	.39
2-(2-Ethoxyethoxy)ethanol (Diethylene glycol momo- ethyl ether)-----	28,805	24,112	8,993	.37
2-[2-(2-Ethoxyethoxy)ethoxy]ethanol (Triethylene glycol monoethyl ether)-----	22,468	...	...	...
2-Methoxyethanol (Ethylene glycol monomethyl ether)----	83,086	75,309	21,136	.28
2-(2-Methoxyethoxy)ethanol (Diethylene glyco mono- methyl ether)-----	35,028	26,867	8,749	.33
2-[2-(2-Methoxyethoxy)ethoxy]ethanol (Triethylene glycol monomethyl ether)-----	24,929	...	...	...
Polyethylene glycol-----	70,393	66,709	36,359	.55
Polypropylene glycol-----	7,043	9,000	5,599	.62
Tetraethylene glycol-----	22,116	16,559	7,908	.48
Triethylene glycol-----	115,162	106,354	34,394	.32
All other polyhydric alcohol ethers-----	426,678	230,353	143,038	.62
HALOGENATED HYDROCARBONS				
Total-----	23,737,503	...	...	...
Brominated hydrocarbons-----	11,480	10,111	12,645	1.25
Chlorinated hydrocarbons, total-----	22,706,986	7,428,092	1,273,131	.17
Carbon tetrachloride-----	572,828	344,152	44,461	.13
Chlorinated paraffins (C ₁₀ -C ₃₀):				
35%-64% chlorine-----	74,886	75,781	27,734	.37
65% or more chlorine-----	24,364	17,664	10,429	.59
Chloroform-----	362,334	339,603	73,330	.22
Chloromethane (Methyl chloride)-----	409,234	252,952	41,945	.17
Dichloromethane (Methylene chloride)-----	583,961	515,020	99,134	.19
Ethyl chloride (Chloroethane)-----	281,701	97,271	17,030	.18
Ethylene dichloride (1,2-Dichloroethane) ⁶ -----	11,506,143	1,018,061	99,801	.10
Tetrachloroethylene (Perchloroethylene)-----	546,958	457,219	75,757	.17
1,1,1-Trichloroethane (Methyl chloroform)-----	586,400	556,885	139,670	.25
Vinyl chloride, monomer (Chloroethylene) ⁷ -----	6,875,437	3,322,570	521,154	.16
All other-----	882,740	430,914	122,686	.28
Fluorinated (including other fluorohalogenated) hydrocarbons, total-----	1,018,903	...	...	...
Chlorodifluoromethane (F-22)-----	235,639	184,945	198,204	1.07
Dichlorodifluoromethane (F-12)-----	289,510	317,770	208,614	.66
Trichlorofluoromethane (F-11)-----	214,794	159,917	84,004	.53
All other-----	278,960	...	...	...
Iodinated hydrocarbons, total-----	134	127	559	4.40
Iodomethane-----	103	102	260	2.55
All other-----	31	25	299	11.91

See footnotes at end of table.

TABLE 1.--MISCELLANEOUS CYCLIC AND ACYCLIC CHEMICALS; U.S. PRODUCTION AND SALES, 1983--CONTINUED

MISCELLANEOUS CYCLIC AND ACYCLIC CHEMICALS	PRODUCTION	SALES		
		QUANTITY	VALUE	UNIT ¹ VALUE
ACYCLIC--Continued				
ALL OTHER MISCELLANEOUS ACYCLIC CHEMICALS	1,000 pounds	1,000 pounds	1,000 dollars	Per pound
Total-----	9,764,539	4,249,627	1,596,737	\$0.38
Acyclic peroxides:				
2-Butanone peroxide-----	8,582	9,519	15,034	1.58
tert-Butyl peroxide-----	2,706	3,254	4,457	1.37
Epoxides, ethers, and acetals, total-----	7,581,023	...	...	...
Ethylene oxide-----	5,534,052	438,910	121,941	.28
All other-----	2,046,971	...	...	...
Hydrocarbons, not elsewhere specified-----	12,326	7,705	5,610	.73
Methyltrimethoxysilane and polymethyltrisiloxane-----	1,241	...	...	...
2-Mercaptoethanol-----	3,902	...	...	...
Organo-zinc compounds-----	10	10	252	25.97
Phosgene (Carbonyl chloride)-----	1,047,107	...	...	...
Silicone fluids-----	154,961	92,770	202,424	2.18
Sodium methoxide (Sodium methylate)-----	10,074	13,634	7,482	.55
All other miscellaneous acyclic chemicals-----	942,607	3,683,825	1,239,537	.34
MIXTURES NOT SPECIFICALLY ITEMIZED				
Total-----	672,327	481,027	63,171	.13
Glycol residues-----	7,815	14,073	2,512	.18

¹Calculated from unrounded figures.²Statistics exclude production and sales of fatty amines. Statistics on fatty amines are included in the section on "Surface-Active Agents."³Statistics exclude production and sales of potassium and sodium stearates. Statistics on these stearates are included in the section "Surface-Active Agents."⁴Statistics for production of specially denatured alcohol, 196,101,627 wine gallons, and completely denatured alcohol, 154,296,699 wine gallons, for calendar year 1983 are compiled from data supplied by the Bureau of Alcohol, Tobacco, and Firearms. Production of ethyl alcohol for fuel use is estimated to have been 374 million gallons in 1983.⁵Some polyols which are used as intermediates for urethanes have been included in the section "Plastics and Resin Materials."⁶1982 production for ethylene dichloride is revised to 9,734,535,000 pounds.⁷1982 production for vinyl chloride, monomer, is revised to 5,967,649,000 pounds.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED,
IDENTIFIED BY MANUFACTURER, 1983

[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.
Acetylcyclohexane sulfonyl peroxide - - - - -	: WTC, WTL.
Alkylphenolalkylenepolyamine formaldehyde copolymer - - - - -	: X.
Alkylphenol formaldehyde condensate, alkoxyated - - - - -	: X.
Alkylphenol formaldehyde copolymer - - - - -	: X.
Aluminum dodecyl benzene sulfonate trimer - - - - -	: KCH.
1-(2-Aminoethyl)piperazine - - - - -	: TX, UCC.
1-(2-Amino ethyl)piperazine adipamide - - - - -	: MET.
1-(2-Aminoethyl)piperazine, technical - - - - -	: FB.
6-Aminopenicillanic acid - - - - -	: BOC.
p-Aminophenethyl alcohol - - - - -	: EKT.
1-(3-Aminopropyl)morpholine - - - - -	: FB, TX.
Amyl p-dimethylaminobenzoate - - - - -	: VND.
Amyl ortho- and para- dimethylaminobenzoates - - - - -	: VND.
Aniline-formaldehyde polymer, hydrochloride salt - - - - -	: X.
Benzothiazole - - - - -	: RCI, X.
Benzotriazole, substituted - - - - -	: CGY, OMC, X.
*Benzoyl peroxide - - - - -	: AZT, CAD, NOC, PLC, WTC, WTL.
Benzyl alcohol - - - - -	: KLM, SFS, TNA.
Benzyl chloroformate - - - - -	: ESX.
Benzyl cocoalkyl dimethyl ammonium chloride - - - - -	: BAK.
*Bis[p-chlorobenzoyl]peroxide - - - - -	: CAD.
Bis(2,4-dichlorobenzoyl) peroxide - - - - -	: CAD, FB, WTL.
Bis(α,α-dimethylbenzyl)peroxide - - - - -	: FB, WTL.
2,2-Bis(ethylferrocenyl)propane - - - - -	: ARA.
2,2-Bis(ferrocenyl)propane - - - - -	: ARA.
1,4-Bis-(1-hydroxycyclopentyl)-butadiyne - - - - -	: X.
Bis(hydroxymethyl)oleyl oxazoline - - - - -	: ANG.
Bis(1,1,3,3-methyl-butyl-phenyl)ether - - - - -	: HEX.
Bis(perfluoroalkyl ethyl)bis(3-chlor-2-hydroxypropyl)- pyromellitate - - - - -	: SNW, STC.
1,1-Bis[3,3,5-trimethyl]dicyclohexane - - - - -	: WTL.
Bis(triphenylsilyl)chromate - - - - -	: ARA.
Boron fluoride - phenol complex - - - - -	: ACS.
Bromochloro-5,5'-dimethyl hydantoin - - - - -	: GLY.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED,
IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
CYCLIC--CONTINUED	
<i>p</i> -Bromo- <i>p</i> -nitrostyrene - - - - -	: GIV.
2-Butoxyethyl benzoate - - - - -	: X.
Butyl benzoate - - - - -	: PFZ, TCC.
<i>p</i> -tert-Butylbenzoic acid, barium salt - - - - -	: FB.
4-tert-Butylcyclohexyl peroxydicarbonate - - - - -	: CAD.
tert-Butyl- α,α -dimethylbenzoyl peroxide - - - - -	: WTL.
tert-Butylhydroquinone - - - - -	: EKT.
Butyl and isopropyl phthalimides - - - - -	: RPC.
2(and 3)-tert-Butyl-4-methoxyphenol (BHA) - - - - -	: EKT, FB.
*tert-Butyl peroxybenzoate - - - - -	: AZT, FB, FRE, WTC, WTL.
tert-Butyl peroxy-3,5,5-trimethyl cyclohexane - - - - -	: CAD.
tert-Butylphenyl glycidyl ether - - - - -	: WLN.
4-tert-Butylpyrocatechol - - - - -	: CRZ, DOW.
Camphene - - - - -	: SCM, X.
*Caprolactam (2-Oxohexamethylenimine) - - - - -	: AFP, BLY, CNP, DBC.
Caprolactam magnesium bromide - - - - -	: X.
Cellulose acetate hexahydrophthalate - - - - -	: X.
Cellulose acetate phthalate - - - - -	: EK, UCC.
1-(3-Chloroallyl)-3,5,7-triaza-1-azoniaadamantane chloride - - - - -	: DOW.
<i>p</i> -(Chloromethyl)phenyl trimethoxysilane - - - - -	: SCM.
Chlorothiaxanthone - - - - -	: SW.
Cresolsulfonic acid, formaldehyde condensate - - - - -	: STC.
Cresyl glycidyl ether - - - - -	: CPS, WLN.
*Cumene hydroperoxide - - - - -	: CLK, USS, WTC.
α -Cumyl peroxyneodecanoate - - - - -	: WTL.
α -Cyanocinnamic acid - - - - -	: FKE.
Cyanuric acid - - - - -	: FMC, MON.
Cyclohexane dimethanol diglycidyl ether - - - - -	: WLN.
Cyclohexanethiol - - - - -	: PAS.
1,4-Cyclohexylenedimethanol - - - - -	: EKT.
Cyclol chloroacetate - - - - -	: AAC.
Cyclopentenylmagnesium chloride - - - - -	: MHI.
Decabromodiphenyl - - - - -	: DOW, GTL.
Decabromodiphenyl ether (DBDP) - - - - -	: TNA.
Decahydronaphthalene (Decalin) - - - - -	: DUP.
Dehydroacetic acid or sodium salt - - - - -	: EKT, GAN.
Dialkyl naphthalene - - - - -	: X.
Diamino diphenyl sulfone - - - - -	: RSA.
1,4-Diazobicyclo(2.2.2)octane - - - - -	: TX, X.
Diazodinitrophenol - - - - -	: HPC.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED,
IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
CYCLIC--CONTINUED	
Dibenzothiophene - - - - -	: EVN.
2,5-Di(benzoyl peroxy)-2,5-dimethylhexane - - - - -	: AZT, WTL.
Di-t-butyl diperoxyphthalate - - - - -	: WTL.
Di-n-butylferrocene - - - - -	: ARA.
2,5-Di-tert-butylhydroquinone - - - - -	: EKT.
2,4-Di-t-butyl phenyl 3,5-di-t-butyl hydroxybenzoate - - - - -	: FER.
1,3-Dichloro-5,5-dimethylhydantoin - - - - -	: GLY.
Dichloro-s-triazine-2,4,6(1H,3H,5H)trione - - - - -	:
(Dichloroisocyanuric acids and salts) - - - - -	: FMC.
1,1-Dicyclohexane - - - - -	: WTL.
Dicyclohexylammonium nitrite - - - - -	: SHC.
Dicyclopentadienylchromium - - - - -	: ARA.
Dicyclopentadienyliron - - - - -	: ARA.
N,N-Diethylammonium octaphenylphosphate - - - - -	: SM.
N,N'-Diethyl-N,N'-diphenylurea - - - - -	: VDM.
Di(2-ethylhexyl)chlorendate - - - - -	: VEL.
Di(2-ethylhexyl)-5,6-dicarboxy-4-ethyl-cyclohexyl octanoate - - - - -	: MET.
1,5-Diethyl-2-thio-4,6-pyrimidinedione - - - - -	: TNI.
2,5-Dihydrothiophene-1,1-dioxide (Sulfolene) - - - - -	: PIC.
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 - - - - -	: BAK.
p-Dimethoxybenzene (Dimethyl ether of hydroquinone) - - - - -	: ASL, EKT.
4,4-Dimethyl oxazolidine - - - - -	: EFH.
4,4-Dimethyl oxazoline - - - - -	: ANG.
4,4-Dinitrocarbanilide-4,6-dimethyl-2-pyrimidinol - - - - -	: MRK.
Dioxane (1,4-Diethylene oxide) - - - - -	: DOW, FER, MIL.
1,3-Dioxolane - - - - -	: FER.
Diphenyl phosphorochloridate - - - - -	: EK.
Dipropylene glycol salicylate - - - - -	: SBC.
* Dodecenylsuccinic anhydride - - - - -	: BCC, DIX, HMY, MIL, X.
Dodecylidiphenyl oxide - - - - -	: X.
4-(Dodecyloxy)-2-hydroxybenzophenone - - - - -	: EKT.
Dodecyl pyridinium chloride - - - - -	: TLC.
1,2-Epoxy-3-phenoxypropane (Glycidyl phenyl ether) - - - - -	: WLN.
6-Ethoxy-12-dihydro-2,2,4-trimethyl quinoline - - - - -	: MOM.
Ethoxylated methylglucoside - - - - -	: CRN.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED,
IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
CYCLIC--CONTINUED	
5-Ethyl-1-aza-3,7-dioxabicyclo[3.3.0]octane- - - - -	: ANG.
Ethyl chrysanthemate - - - - -	: SFS.
Ethylene glycol mono(dicyclopentadienoate) - - - - -	: VEL.
BENZOIC ACID SALTS:	:
Ammonium benzoate- - - - -	: WTK.
Benzenephosphinic acid - - - - -	: SFS.
Benzenephosphonic acid - - - - -	: SFS.
Cadmium benzoate - - - - -	: VNC.
Cadmium t-butyl benzoate - - - - -	: VNC.
Lauryl benzoate- - - - -	: MET.
Sodium benzoate, U.S.P.- - - - -	: FB, HCP, JRC, KLM, MAL, PFZ.
Sodium benzoate, tech.- - - - -	: PFZ.
Benzoic acid salts, all other- - - - -	: FB, WTC.
CYCLOHEXENE-1,2-DICARBOXYLIC ACID (TETRAHYDROPHTHALIC ACID), DISUBSTITUTED, POLYESTER SALTS:	:
Cyclohexene-1,2-dicarboxylic acid (Tetrahydrophthalic acid),disubstituted, polyester salts, tin salt- - - - -	: X.
Cyclohexene-1,2-dicarboxylic acid (Tetrahydrophthalic acid),disubstituted, polyester salts, all other - - - - -	: PTT.
2,6-DI-TERT-BUTYL-P-CRESOL (BHT):	:
2,6-Di-tert-butyl-p-cresol, (BHT), Food grade- - - - -	: KPT, SHC, USR.
2,6-Di-tert-butyl-p-cresol, (BHT), Technical grade - - - - -	: KPT, SHC, SW, USR.
2-Ethylhexyl benzoate- - - - -	: TCC.
2-Ethylhexyl-p-dimethylaminobenzoate - - - - -	: VND.
Ethyl hydroxymethyl oleyl oxazoline- - - - -	: ANG.
Ethylidene norbornene- - - - -	: UCC.
N-Ethyl-N-methyl morpholinium bromide- - - - -	: RSA.
N-Ethyl-N-methyl pyrrolidinium bromide- - - - -	: RSA.
4-Ethylmorpholine- - - - -	: TX.
FURAN DERIVATIVES:	:
2-Furaldehyde (Furfural) - - - - -	: BAK, QKO.
[5-(Phenylmethyl)]-3-furfuryl alcohol - - - - -	: PEN.
Tetrahydrofurfuryl alcohol - - - - -	: QKO.
Gallic acid, tech. - - - - -	: MAL.
Glyceryl p-aminobenzoate - - - - -	: VND.
4-Guanyl-1-nitrosoguanyl tetrazine - - - - -	: REM.
Hexabromocyclodecane - - - - -	: GTL.
* Hexamethylenetetramine, tech.- - - - -	: BOR, HMP, MOD, OMC, PLS, WCL.
Homomenthyl salicylate - - - - -	: WTC.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED,
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MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
CYCLIC--CONTINUED	
Hydroquinone, di(β-hydroxyethyl) ether - - - - -	: EKT.
p-Hydroxybenzoic acid, butyl ester - - - - -	: KLM.
p-Hydroxy benzoic acid esters- - - - -	: VND.
p-Hydroxybenzoic acid, ethyl ester - - - - -	: KLM.
p-Hydroxybenzoic acid, methyl ester- - - - -	: HXL, KLM, LEM.
p-Hydroxybenzoic acid, propyl ester- - - - -	: KLM, LEM, MCI.
N-(Hydroxyethyl)piperazine - - - - -	: TCH, UCC.
2-Hydroxy-4-methoxybenzophenone- - - - -	: GLY.
2-Hydroxy-2-methylphenyl propanone - - - - -	: MMC.
α-D-p-Hydroxyphenylglycine methyl ester K- - - - -	: BOC.
1,2,3-Indantrione monohydrate (Ninhydrin)- - - - -	: PIC.
o-Iodobenzoic acid - - - - -	: RSA, SFS.
Isobornyl methacrylate - - - - -	: RH.
iso-Hexadecenyl succinic anhydride - - - - -	: HMY.
* LACTONES:	:
Butyrolactone- - - - -	: GAF.
Caprolactone - - - - -	: UCC.
D-Glucoheptono-1,4-lactone, CP - - - - -	: PFN.
Glucono-δ-lactone- - - - -	: PFZ.
Lanolin acetate- - - - -	: CRN.
Lanolin acid - - - - -	: CRN.
Lanolin acid, isopropyl ester- - - - -	: CRN.
Lanolin alcohol acetate- - - - -	: CRN.
Lanolin linoleate- - - - -	: CRN.
Lauryl benzoate- - - - -	: VEL, X.
* Maleic anhydride - - - - -	: AMO, ASH, DKA, MON, USS.
8-p-Menthyl hydroperoxide- - - - -	: HPC.
4-Methoxyphenol- - - - -	: ASL, EKT.
Methylaziridine- - - - -	: ARS.
Methyl-p-benzoquinone- - - - -	: EK.
2,2'-Methylenebis[4-chlorophenol] (Dichlorophene) - - - - -	: GIV.
2,2'-Methylenebis-(4-methyl-6-tert-butylphenol)- - - - -	: SW.
2,2'-Methylenebis[3,4,6-trichlorophenol] - - - - -	:
(Hexachlorophene)- - - - -	: GIV.
4-Methylmorpholine - - - - -	: TX.
1-Methyl-2-pyrrolidone monomer- - - - -	: GAF.
Morpholine - - - - -	: DOW, TX.
Morpholine salt of p-toluene sulfonic acid - - - - -	: AMB.
Neopentyl glycol dibenzoate- - - - -	: VEL.
5-Nitro-1H-indazole- - - - -	: EK.
Octabromodiphenyl oxide- - - - -	: GTL.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED,
IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
CYCLIC--CONTINUED	
Octadecenyl succinic anhydride - - - - -	MIL.
Octenylsuccinic anhydride - - - - -	HMY, MIL.
Oxalyl bis(benzylidene hydrazide)- - - - -	EKT.
Pentabromodiphenyl oxide - - - - -	GTL.
Pentaerythritol tribenzoate- - - - -	VEL.
Phenol, styrenated - - - - -	CHP.
Phenothiazine- - - - -	WAG(E).
2-Phenoxyethanol (Ethylene glycol monophenyl ether)	DOW, TCH.
2-(2-Phenoxyethoxy)ethanol (Diethylene glycol phenyl ether) - - - - -	DOW.
2-Phenoxypropanol- - - - -	DOW.
Phenylglyoxylic acid methyl ester- - - - -	SFS.
Phenyl hydrogen phosphate- - - - -	SM.
Phenyl xylol 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.
α -Pinene - - - - -	ARZ, SCM.
β -Pinene - - - - -	ARZ, HPC, NCI, SCM.
Pinene, sulfate- - - - -	ARZ, NCI.
Pinene, wood - - - - -	NPC, RCI.
Pine oil, natural sulfate- - - - -	NCI.
Pine oil, synthetic- - - - -	ARZ, NCI, SCM.
Polypropylene glycol glycerol triether and epichlorohydrin bisphenol epoxy resin- - - - -	BAK.
Polypropylene glycol glyceryl triether(epichlorohydrin-bisphenol a epoxy resin copolymer, ethoxylated - - - - -	BAK.
Propoxylated methylglucoside - - - - -	CRN.
Propylene glycol dibenzoate- - - - -	VEL.
Propyl gallate - - - - -	EKT.
2,4(1H,3H)Pyrimidinedione- - - - -	SCM.
Resorcinol diglycidyl ether- - - - -	WLN.
Resorcinol monobenzoate- - - - -	EKT.
ROSIN ACID SALTS:	
Rosin acid salts, all other- - - - -	ALI.
Salicylic acid magnesium salt- - - - -	KLM, PD.
Sodium benzene phosphinate - - - - -	SFS.
Stannous octyl phthallate- - - - -	X.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED,
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MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
CYCLIC--CONTINUED	
Stearyl melamine - - - - -	: SNW.
Succinic anhydride - - - - -	: BCC, SOC, UCC.
Sucrose benzoate - - - - -	: VEL.
Tall oil, chemically modified - - - - -	: FOC, GAF, WVA, X, X, X.
* TALL OIL SALTS (LINOLEIC-ROSIN ACID SALTS):	:
Calcium manganese tallate - - - - -	: MCI, SHP.
Calcium tallate - - - - -	: CCA, MCI, X.
Cobalt manganese tallate - - - - -	: MCI, SHP.
Cobalt tallate - - - - -	: MCI, SHP.
Copper tallate - - - - -	: MCI.
Lead manganese tallate - - - - -	: SHP.
Lead tallate - - - - -	: MCI.
Manganese tallate - - - - -	: MCI, SHP.
Tallow alkyl tallate - - - - -	: X.
Zinc tallate - - - - -	: MCI.
Tall oil salts, all other (Linoleic-rosin acid salts) - - - - -	: WTC, WTK.
TANNIC ACID:	:
Tannic acid, N.F. - - - - -	: MAL.
*Terpene hydrocarbons, monocyclic (Solvenol) - - - - -	: HPC, MCI, SCM.
Terpene polymers - - - - -	: ARZ.
Tetrabromobisphenol A - - - - -	: GTL, X.
Tetrabromobisphenol a, ethoxylated - - - - -	: GTL.
Tetrabromobisphenol A (carbonate) oligomer, tribromophenolend-capped - - - - -	: GTL.
n-Tetradecenylsuccinic anhydride - - - - -	: DIX, MIL, TNA.
1,2,3,4-Tetrahydronaphthalene (Tetralin) - - - - -	: DUP.
Tetrahydrothiophene - - - - -	: PAS.
Tetrahydrothiophene-1,1-dioxide (Sulfolane) - - - - -	: PLC.
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.
3,3,5-Trimethylcyclohexanol (m-homomenthol) - - - - -	: ARS.
3,5,5-Trimethyl-2-cyclohexene-1-one (Isophorone) - - - - -	: ENJ, UCC.
2,4,6-Trinitroresorcinol and lead derivative - - - - -	: REM.
2,4,6-Triphenoxy-s-triazine - - - - -	: AMB.
Triphenyltin hydroxide - - - - -	: X.
1,3,5-Tris[2-hydroxyethyl]-S-hexahydrotriazine - - - - -	: HLI.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED,
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MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
CYCLIC--CONTINUED	
Vinyl caprolactam- - - - -	GAF.
1-Vinyl-2-pyrrolidinone--other copolymers- - - - -	GAF.
1-Vinyl-2-pyrrolidinone-methylacrylic acid, dimethylamine ethyl ester, copolymer - - - - -	GAF.
1-Vinyl-2-pyrrolidinone, monomer - - - - -	GAF.
1-Vinyl-2-pyrrolidinone--vinyl acetate copolymer - - - - -	GAF.
Cyclic chemicals, all other- - - - -	ESA, GTL, PAC, PLC, REG, RH, TNA, UCC, VIK, WTK, X, X.
ACYCLIC	
*NITROGENOUS COMPOUNDS:	
Acetamidine hydrochloride- - - - -	WTC.
Acetamidoethanol (N-Acetyl-ethanolamine) - - - - -	GAF, SBC.
Acetone oxime- - - - -	ALB.
Alkyl C ₁₂ -C ₁₄ amine hydrochloride- - - - -	COS.
*AMIDES:	
Acetamide- - - - -	ACS, WTK.
*Acrylamide monomer - - - - -	ACY, DOW, SOH, X.
Acrylamide polymer with N,N-Diethyl-N-methyl-2[(1- oxo-2-propenyloxy)ethaniminium sulfate- - - - -	X.
Amido amine salts as curing agents - - - - -	CEL, PAC, X.
1,1'-Azobisformamide - - - - -	FMT, OMC, USR.
Bis[2-(octadecylamido)ethyl]-N-(2-cyanoethyl)-N- ethyl ammonium ethyl sulfate - - - - -	SBC.
Chloro-N-(2-hydroxyethyl)acetamide - - - - -	GLY.
Coconut oil amide- - - - -	ARC, CAD, FTX(E), SHX.
Cocostearyl butylamide- - - - -	STC.
N,N-Diethyldodecanamide- - - - -	EK.
N,N-Dimethylacetamide- - - - -	DUP, MON.
N,N-Dimethylacetoacetamide - - - - -	EKT.
Dimethylaminopropyl methacrylamide - - - - -	TX.
Dimethyl caprylamide capramide - - - - -	HAL.
N,N-Dimethylformamide- - - - -	AIP, DUP, VGC.
Dimethyl oleamide- - - - -	HAL.
Erucamide- - - - -	ARC, SHX, 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.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED,
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MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
*NITROGENOUS COMPOUNDS--CONTINUED	
AMIDES--CONTINUED	
N-Methylacetamide - - - - -	EKT.
Oleamide (Octadecene amide) - - - - -	ARC, WTC.
Oleoylpalmitamide - - - - -	HXL.
Oxamide - - - - -	HML.
Ricinoleamide - - - - -	TKL.
Stearamide (Octadecane amide) - - - - -	ARC, WTC.
Stearylcerucamide - - - - -	HXL.
Tallow amide, hydrogenated - - - - -	ARC, CAD.
N,N,N,N-Tetra(hydrogenated tallowalkyl)butane diamide - - - - -	ARC.
Amides, all other - - - - -	ARS, BRD, WTC.
*AMINES:	
Allylamines - - - - -	PIC, SHC, VGC.
Bis-hexamethylenetriamine amine - - - - -	DUP, MON.
*BUTYLAMINES:	
n-Butylamine, mono - - - - -	AIP, PAS, VGC.
sec-Butylamine, mono - - - - -	PAS.
tert-Butylamine, mono - - - - -	MON.
*Di-n-butylamine - - - - -	AIP, PAS, VGC.
Diisobutylamine - - - - -	AIP, VGC.
Tri-n-butylamine - - - - -	AIP, PAS, VGC.
n-Butylethylamine - - - - -	AIP, VGC.
Di-tert-butylethyldiamine - - - - -	VGC.
Diethylaminoethanethiol HCl - - - - -	EVN.
Diethylenetriamine - - - - -	DOW, UCC.
*Diisopropylamine - - - - -	AIP, PAS, UCC, VGC.
*Dimethylaminopropylamine - - - - -	ABB, TX, UCC.
Dimethylaminopropylamine, propoxylated - - - - -	TX.
N,N-Dimethylbutylamine - - - - -	SOL, VGC.
1,3-Dimethylbutylamine - - - - -	MET, VGC.
*ETHYLAMINES:	
*Diethylamine - - - - -	AIP, PAS, UCC, VGC.
*Ethylamine, mono - - - - -	AIP, PAS, UCC, VGC.
*Triethylamine - - - - -	AIP, PAS, UCC, VGC.
Ethylenediamine - - - - -	DOW, TX, UCC.
(2-Ethylhexyl)amine, mono - - - - -	ARC, VGC.
1,6-Hexanediamine (Hexamethylenediamine) - - - - -	DUP, MON.
n-Hexylamine - - - - -	CXL, PAS.
*Isopropylamine, mono - - - - -	AIP, UCC, VGC.
METHYLAMINES:	
*Dimethylamine - - - - -	AIP, DUP, GAF, IMC.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED,
IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
*NITROGENOUS COMPOUNDS--CONTINUED	
METHYLAMINES--CONTINUED	
*Methylamine, mono-	AIP, DUP, GAF, IMC.
*Trimethyl amine-	AIP, DUP, GAF, IMC.
Mixed primary T-alkylamines-	RH.
Nitrilotriacetone nitrile-	HMP, VGC.
tert-Octylamine-	RH.
Pentaethylenehexamine-	UCC.
PENTYLAMINES (AMYLAMINES):	
Dipentylamine-	PAS, VGC.
Pentylamine, mono-	PAS.
Tripentylamine-	PAS.
Polyalkylene polyamine-	DOW.
Poly(oxypropylene)diamine-	TX.
1,3-Propanediamine (1,3-Diaminopropane)-	TX.
PROPYLAMINES:	
Dipropylamine-	AIP, PAS, VGC.
Propylamine, mono-	PAS, VGC.
Tripropylamine-	PAS, VGC.
Tetraethylenepentamine-	DOW, UCC.
N,N,N',N'-Tetramethyl-1,3-butanediamine-	MON, UCC.
Tetramethylethylenediamine-	DOW.
Triethylenetetramine-	UCC.
Triethyl ethylenediamine-	ALB.
Amines, all other-	MON, USR, X.
2-Amino-1-butanol-	HMY.
2-Aminoethanol hydrochloride-	HCP, OMC.
2-Aminoethanol (Monoethanol amine) sulfite-	EVN, OMC.
Aminoethoxyethanol-	TX.
2-(2-Aminoethylamino)ethanol (Aminoethylethanolamine)-	DOW, UCC.
2-Aminoethyl mercaptoacetate (Monoethanolamine thioglycolate)-	EVN.
2-Amino-2-ethyl-1,3-propanediol-	ANG.
Aminoguanidine hydrochloride-	REM.
2-Amino-2-(hydroxymethyl)-1,3-propanediol [Tris(hydroxymethyl)aminomethane]-	ANG, WTK.
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.
Bisurea adduct of polyoxypropylenediamine-	TX.
tert-Butylaminoethanol-	PAS.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED,
IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
*NITROGENOUS COMPOUNDS--CONTINUED	
tert-Butylaminoethyl methacrylate - - - - -	AAC, CPS.
tert-Butylaminoethyl methacrylate - - - - -	RH.
tert-Butyldiethanolamine - - - - -	PAS.
1-Butyl-3-ethyl-2-thiourea - - - - -	PAS.
Butyl isocyanate - - - - -	UPJ.
2-Chloro-n,n-diisopropylethylamine - - - - -	SK.
2-Chloro-N,N-dimethylethylamine (Dimethylamino ethyl chloride) hydrochloride - - - - -	SOL.
2-Chloro-N,N-dimethylpropylamine hydrochloride - - -	SOL.
3-Chloro-2-hydroxypropyltrimethyl ammonium chloride	DOW.
Choline - - - - -	HFT, RH.
N-Cocoamidopropyl-N,N-dimethyl-N-sodium acetate, ammonium salt - - - - -	BAK.
Creatine and creatinine - - - - -	PFM.
1-(2-Cyanoethyl)ethyl urea - - - - -	GAF.
Di-amine derivatives of dimer acids - - - - -	SCP.
2-Dibutylaminoethanol - - - - -	PAS.
1,3-Dibutyl-3-thiourea - - - - -	RBC, VMC.
2-Diethylaminoethanol (N,N-Diethylethanolamine) - -	PAS, UCC.
2-(2-Diethylaminoethoxy)ethanol - - - - -	PAS, UCC.
Diethylaminoethylacrylate, dimethyl sulfate, quaternary salt - - - - -	CPS.
2-Diethylaminoethyl methacrylate - - - - -	BLM, CPS, DUP.
N,N-Diethylammonium butoxyethyl phosphate - - - - -	SM.
N,N-Diethylammonium 2-hydroxy acid phosphate-3- butyl pyrophosphate - - - - -	SM.
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.
2-Diisopropylaminoethanol (N,N- Diisopropylethanolamine) - - - - -	PAS, UCC.
2-Diisopropylaminoethyl methacrylate - - - - -	DUP.
Dimer acid isocyanates - - - - -	SCP.
Dimethylamine epichlorohydrin copolymer - - - - -	X.
Dimethylamine hydrochloride - - - - -	RSA.
Dimethylamine sulfate - - - - -	RH.
2-Dimethylaminoethanethiol hydrochloride - - - - -	EVN.
2-Dimethylaminoethanol (N,N-Dimethylethanolamine)	PAS, PEL, TX, UCC.
Dimethylaminoethyl acrylate - - - - -	BLM.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED,
IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
*NITROGENOUS COMPOUNDS--CONTINUED	
Dimethylaminoethylacrylate, methyl chloride, quaternary salt	BLM, CPS.
Dimethylaminoethyl-3-dimethylaminopropyl ether	TX.
Dimethylaminoethyl methacrylate	AAC, BLM, CPS.
Dimethylaminoethylmethacrylate, dimethyl sulfate, quaternary salt	AAC, BLM, CPS.
Dimethylaminoethylmethacrylate, methyl chloride, quaternary salt	AAC, BLM, CPS.
Dimethylaminomethanol	X.
2-Dimethylamino-2-methyl-1-propanol hydrochloride	WPG.
1-(Dimethylamino)-2-propanol	ANG, PEL.
1,1-Dimethylhydrazine	USR.
2,5-Dithiobiurea	FMT.
Dithiooxamide	GAF, RBC.
tert-Dodecylsuccinamide	GAF.
*ETHANOLAMINES:	
*Diethanolamine	DOW, OMC, TX, UCC.
*Monoethanolamine	DOW, OMC, TX, UCC.
*Triethanolamine	DOW, OMC, TX, UCC.
2-Ethylaminoethanol (Ethylmonoethanolamine)	PAS.
N,N-Ethylenebis(12-hydroxystearamide)	CAS.
Ethylenediamine dihydrochloride	RSA.
1,1-Ethylenediurea	EK.
2-Ethylhexyl nitrate	SDC, X.
5-(N-Ethyl-N-hydroxyethylamino)-2-pentanone	SDW.
N-Ethyl-N-hydroxyethyl-1,4-pentanedi-amine	SDW.
2-Ethyl-2-nitro-1,3-propanediol	ANG.
Glycine ethyl ester hydrochloride	SFS.
Guanidine hydrochloride	MMC.
Hexamethylenediamine adipate (Nylon salt)	BLY, DUP, MON.
N-(2-Hydroxyethyl)-12-hydroxystearamide	CAS.
2-(Hydroxymethyl)-2-nitro-1,3-propanediol (Tris- (hydroxymethyl)nitromethane)	ANG.
Iminodiacetic acid	HMP.
ISOPROPANOLAMINES:	
2-Isopropylaminoethanol	PAS.
Ketimine, tetrafunctional	PAC, SCP.
2-Methoxyethyl carbamate	VAL.
3-Methoxypropylamine	TX.
2-Methylaminoethanol (N-Methylethanolamine)	PAS, UCC.
Methylaminopropylamine	TX.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED,
IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
*NITROGENOUS COMPOUNDS--CONTINUED	
Methyl carbamate - - - - -	NSC.
Methylimino bis(propylamine) - - - - -	TX.
*2,2'-(Methylimino)diethanol (Methyldiethanolamine) - - - - -	DOW, PAS, UCC.
Methyl isocyanate - - - - -	UCC.
2-Methyl-2-nitro-1,3-propanediol - - - - -	ANG.
2-Methyl-2-nitro-1-propanol - - - - -	ANG.
Monoisopropylamine - - - - -	DOW.
Diisopropylamine - - - - -	DOW, X.
Triisopropylamine - - - - -	DOW.
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 - - - - -	EKX, WYT.
Citral nitrile - - - - -	SBC.
Crotononitrile - - - - -	RBC.
Cyanoacetic acid - - - - -	KF.
Cyanoethyl acrylate - - - - -	TKL.
3-Ethoxypropionitrile - - - - -	DIX.
Ethyl cyanoacetate - - - - -	KF.
Hexadecanenitrile a - - - - -	ARC.
Isobutyronitrile - - - - -	AIP, EKX.
Lactonitrile - - - - -	MON.
3-Methoxypropionitrile - - - - -	X.
Methyl cyanoacetate - - - - -	KF.
Methylisobutyl ketone aminonitrile - - - - -	HMP.
*2-Methyl lactonitrile (Acetone cyanohydrin) - - - - -	CYR, DUP, MON, RH, SOH.
Oleonitrile (Octadecene nitrile) - - - - -	ARC.
Pentenitrile - - - - -	DUP.
Propionitrile - - - - -	MON.
Soya nitrile - - - - -	ARC.
Stearonitrile (Octadecane nitrile) - - - - -	SHX.
Tallow nitrile - - - - -	ARC, SHX.
Tallow nitrile, hydrogenated - - - - -	SHX.
3,3'-Thiodipropionitrile - - - - -	EVN.
Nitriles, all other - - - - -	DUP, EVN, OMC.
Nitroethane - - - - -	ANG.
Nitromethane - - - - -	ANG.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED,
IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
*NITROGENOUS COMPOUNDS--CONTINUED	
1-Nitropropane - - - - -	: ANG.
2-Nitropropane - - - - -	: ANG.
Octadecyl isocyanate - - - - -	: MOB.
Pentaerythritol tetranitrate - - - - -	: DUP, HPC.
Polyvinyl octadecyl carbamate - - - - -	: ESA.
n-Propylaminoethanol - - - - -	: X.
Semicarbazide hydrochloride - - - - -	: OMC.
Stearic, palmitic-aminoethylethanolamine acetate	: RPC.
Stearic, palmitic-diethylenetriamine(2:1) acetate	: RPC.
Stearic, palmitic-diethylenetriamine diethyl	: RPC.
sulfate - - - - -	: RPC.
Tallow glycerides diethylenetriamine and	:
dimethylaminopropyl - - - - -	: RPC.
Tetramethylguanidine - - - - -	: ACY.
Tetranitromethane - - - - -	: HML.
Thiosemicarbazide - - - - -	: FMT.
Triaminoguanidine nitrate - - - - -	: TLI.
Trimethylamine hydrochloride - - - - -	: X.
Trimethylaminoethyl ethanolamine - - - - -	: EKT.
Nitrogenous compounds, acyclic, all other - - - - -	: BLY, LMI, OMC, REG, RPC, UCC, WTC, X, X, X.
* ACIDS, ACID ANHYDRIDES, AND ACYL HALIDES:	
ACETIC ACID, 100%:	
Acetic acid, recovered (100%) - - - - -	: AIP, CEL, EKT, MON, RDA, SD, UCC.
*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, UCC.
Acetic anhydride from acetic acid, recovered, by	:
vapor-phase process - - - - -	: CEL, PFZ.
Acetyl chloride - - - - -	: WCC.
*Acrylic acid - - - - -	: CEL, DEC, RH, UCC.
*Adipic acid - - - - -	: AFP, DUP, MON.
Azelaic acid - - - - -	: EMR.
Azelaoyl chloride - - - - -	: WTL.
2,2-bis(Hydroxy-methyl)-propionic acid - - - - -	: IMC.
Bromoacetyl bromide - - - - -	: WCC.
Bromobutyric acid - - - - -	: GTL.
tert-Butylperoxy maleic acid - - - - -	: WTC, WTL.
Butyric acid - - - - -	: CEL, EKT.
Butyric anhydride - - - - -	: EKT.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED,
IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
*ACIDS, ACID ANHYDRIDES, AND ACYL HALIDES--CONTINUED	
β-Carboxypropionyl chloride (Mono-ethyl malonate acid chloride)	: ABB.
Chloroacetic acid, mono-	: BUK, DOW, PFZ.
Chloroacetyl chloride	: DOW, MON.
α-Chloropropionic acid, mono	: DOW.
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 (α-Ethylcaproic acid)	: EKT, UCC.
2-Ethylhexanoyl chloride	: PPG, VEL, WTL.
Fatty acids, hydrogenated	: DRL, GLY, SHX.
Fatty acids, non-hydrogenated	: DRL, WVA.
Formic acid, 90%	: CEL, UCC.
*Fumaric acid	: AGC, MON, PFZ, USS.
Gluconic acid, technical	: PFZ.
Glycolic acid (Hydroxyacetic acid)	: DUP.
Heptanoic acid	: CEL.
Heptanoyl chloride	: WCC.
n-Hexadecenylsuccinic anhydride	: HMY.
Isethionic acid (2-Hydroxyethanesulfonic acid)	: WTC.
Isoascorbic acid (Erythorbic acid)	: PFZ.
Isobutyric acid	: EKX.
Isobutyric anhydride	: EKT.
Isononanoyl chloride	: STC, WTL.
Iso-octadecenoic acid	: SYL.
Iso-octadecenylsuccinic anhydride	: HMY.
Isopentanoic acid	: UCC.
Itaconic acid (Methylenesuccinic acid)	: PFZ.
LACTIC ACID:	:
Lactic acid, edible, 100%	: MON.
Lauroyl chloride	: WCC, WTL.
Maleic acid	: PFN, PFZ.
Malic acid	: AGC.
Mercaptoacetic acid (Thioglycolic acid)	: EVN.
3-Mercaptopropionic acid	: EVN.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED,
IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
*ACID, ACID ANHYDRIDES, AND ACYL HALIDES--CONTINUED	
Mercaptosuccinic acid (Thiomalic acid)	: EVN.
Methacrylic acid	: RH.
Methanesulfonic acid	: PAS.
Methanesulfonyl chloride	: PAS.
Methanesulfonyloxypropionic acid	: ARA.
Methanesulfonyloxypropionyl chloride	: ARA.
Myristoyl chloride	: WCC.
Neodecanoic acid	: ENJ.
Nonanoic acid (Pelargonic acid)	: CEL, EMR.
Nonanoyl chloride	: WCC.
Nonenylsuccinic anhydride	: HMY.
Octanoyl chloride	: WCC.
Oleic acid	: DRL.
Oleoyl chloride	: CCC, HRT, STC.
Oxalic acid	: ACS, HK.
Oxalyl chloride	: X.
Oxidized fischer tropsch wax	: SNW.
3-Oxo-1,5-pentanedioic acid	: SDC.
Palmitoyl chloride	: STC, X.
Peroxyacetic acid	: FMB, UCC.
*Pivaloyl chloride	: AZT, PPG, VEL, WCC.
Polyacrylic acid	: BFG, BKM, RH, SNW, X.
*Propionic acid	: CEL, EKT, UCC.
Propionic anhydride	: EKT.
Sebacic acid	: WTH.
Sebacoyl chloride	: WTL.
Sorbic acid (2,4-Hexadienoic acid)	: MON.
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, DRL, FMC, PAH, TNA.
*SALTS OF ORGANIC ACIDS:	
*ACETIC ACID SALTS:	
Aluminum acetate	: NCC.
Aluminum tridecanate	: KCH.
Aluminum tris(ethyl acetoacetate)	: KCH.
*Ammonium acetate	: ACS, BKC, WTK.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED,
IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
*SALTS OF ORGANIC ACIDS--CONTINUED	
*ACETIC ACID SALTS--CONTINUED	
Barium acetate	BKC.
Butyltin acetate (Dibutyltin diacetate)	X.
*Calcium acetate	ACS, HFT, JRC, NCC.
Chromium acetate	SHP.
Cobalt acetate	SHP.
Copper acetate	BKC.
Lead acetate	BKC.
Lead subacetate	BKC.
*Magnesium acetate	BKC, HCP, JRC, SHP.
Manganese acetate	SHP.
Nickel acetate	BKC, SHP.
*Potassium acetate	ACS, BKC, HCP, JRC, NCC.
*Sodium acetate	ACS, ATL, BKC, EKT, HCP, JRC, MAL, NCC, X.
*Sodium diacetate	HCP, JRC, MAL, NCC.
*Zinc acetate	ACS, BKC, DIX, NCC, SHP, WTK.
Zirconium acetate	TZC.
Acetic acid salts, all other	X.
Adipic acid, ammonium salt	SOL.
Allylsulfonic acid, sodium salt	IOC.
Bis(2-ethylhexyl) phosphate, sodium salt	WPG.
3-Chloro-2-hydroxypropanesulfonic acid, sodium salt	SDH.
CITRIC ACID SALTS:	
Ammonium citrate	PFZ.
Calcium citrate	PFZ.
Diethanolamine citrate	X.
Ferric ammonium citrate	PFZ.
Potassium citrate	HXL, MLS, PFZ.
Sodium citrate	HXL, MLS, PFZ, X.
Citric acid salts, all other	WTK.
*2-ETHYLHEXANOIC ACID (ALPHA-ETHYLCAPROIC ACID) SALTS:	
Aluminum 2-ethylhexanoate	NOC, WTC.
Barium 2-ethylhexanoate	NOD.
Bismuth 2-ethylhexanoate	SHP.
Cadmium 2-ethylhexanoate	CCA, VNC, WTC.
*Calcium 2-ethylhexanoate	CCA, COS, FER, MCI, NOD, TRO, WTC.
Chromium 2-ethylhexanoate	MCI, SHP.
*Cobalt 2-ethylhexanoate	CCA, FER, MCI, NOD, SHP, TRO, WTC.
Cobalt-potassium 2-ethylhexanoate	MCI.
Copper 2-ethylhexanoate	NOD.
Dibutyltin di-2-ethylhexanoate	COS.
Iron 2-ethylhexanoate	CCA, NOD.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED,
IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
*SALTS OF ORGANIC ACIDS--CONTINUED	
*2-ETHYLHEXANOIC ACID (ALPHA-ETHYLCAPROIC ACID)	
SALTS--CONTINUED	
*Lead 2-ethylhexanoate - - - - -	: CCA, COS, FER, NOD, SHP, TRO, WTC.
*Manganese 2-ethylhexanoate - - - - -	: CCA, COS, FER, MCI, NOD, SHP, TRO, WTC.
*Nickel 2-ethylhexanoate - - - - -	: MCI, SHP, WTC.
*Potassium 2-ethylhexanoate - - - - -	: CCA, MCI, PEL, WTC.
*Rare earths 2-ethylhexanoate - - - - -	: CCA, MCI, NOD, SHP.
*Sodium 2-ethylhexanoate - - - - -	: BOC, LIL.
*Stannous 2-ethylhexanoate - - - - -	: FER, WTC.
*Zinc 2-ethylhexanoate - - - - -	: CCA, COS, FER, MCI, NOD, SHP, VNC, WTC.
*Zirconium 2-ethylhexanoate - - - - -	: CCA, COS, FER, MCI, NOD, TRO, WTC.
2-Ethylhexanoic acid salts, all other - - - - -	: NOD, WTC.
FORMIC ACID SALTS:	
Calcium formate - - - - -	: IMC.
Potassium formate - - - - -	: HCP, WTK.
Sodium formate, refined - - - - -	: WTK.
Sodium formate, technical - - - - -	: BKC, IMC, PST, X.
Formic acid salts, all other - - - - -	: WTK.
Fumaric acid, lead salt - - - - -	: ALI.
GLUCOHEPTANOIC ACID SALTS:	
Zinc α -glucoheptonate - - - - -	: PFN.
GLUCONIC ACID SALTS:	
Potassium glycolate - - - - -	: HCP, X.
Sodium gluconate - - - - -	: PFN, PFZ, PMP, X.
Glycolic acid, sodium salt - - - - -	: HCP.
2-Hydroxy-3(2-propenyloxy)-1-propanesulfonic acid, sodium salt - - - - -	: AAC.
Isoascorbic acid, sodium salt (Sodium erythorbate)	: PFZ.
TERTIARY-ALPHA-ALKYLCARBOXYLIC ACID SALTS (ISOCARBOXYLIC ACID SALTS):	
Calcium t- α -alkylcarboxylate - - - - -	: MCI.
Cobalt t- α -alkylcarboxylate - - - - -	: MCI, MCK.
Copper t- α -alkylcarboxylate - - - - -	: MCI.
Iron t- α -alkylcarboxylate - - - - -	: MCI.
Isononanoic acid, lead salt - - - - -	: CCA.
Isocetanoic acid, calcium salt - - - - -	: CCA.
Lead t- α -alkylcarboxylate - - - - -	: MCI.
Manganese t- α -alkylcarboxylate - - - - -	: CCA, MCI.
Mixed t- α -alkylcarboxylic acid salts - - - - -	: MCI.
Zinc t- α -alkylcarboxylate - - - - -	: MCI.
Zirconium t- α -alkylcarboxylate - - - - -	: MCI.
LACTIC ACID SALTS:	
Sodium lactate (Malac) - - - - -	: PFN.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED,
IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
*SALTS OF ORGANIC ACIDS--CONTINUED	
*LACTIC ACID SALTS--CONTINUED	
Lactic acid salts, all other - - - - -	SM.
LAURIC ACID SALTS:	
Barium cadmium laurate - - - - -	FER.
Dibutyltin dilaurate - - - - -	FER, X.
Lead salts of menhaden fish oil, c-14 to c-22(lead fishate)- - - - -	ELC, MCI.
LINOLEIC ACID SALTS:	
Calcium linoleate- - - - -	CCA.
MALEIC ACID SALTS:	
Dibutyltin maleate - - - - -	FER.
Tribasic lead maleate- - - - -	ALI.
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:	
Cadmium neodecanoate - - - - -	CCA.
Calcium neodecanoate - - - - -	MCI, SHP.
Cobalt neodecanoate - - - - -	MCI, SHP, UCC.
Copper neodecanoate- - - - -	SHP.
Lead-cobalt neodecanoate - - - - -	MCI.
Lead neodecanoate- - - - -	MCI.
Lithium neodecanoate - - - - -	MCI.
Manganese neodecanoate - - - - -	MCI, SHP.
Nickel neodecanoate- - - - -	MCI.
Rare earths neodecanoate - - - - -	MCI.
Zinc/calcium/cobalt neodecanoate - - - - -	MCI.
Zinc neodecanoate- - - - -	SHP.
Zirconium neodecanoate - - - - -	MCI, SHP, WTC.
*OCTANOIC-ACID (CAPRYLIC ACID) SALTS:	
Aluminum octanoate - - - - -	SYP.
Potassium octanoate- - - - -	BMC.
Stannous octanoate - - - - -	SYP.
Octanoic acid (Caprylic acid) salts, all other	ALI, WTC.
*OLEIC ACID SALTS:	
Calcium oleate - - - - -	X.
Copper oleate- - - - -	WTC.
Zinc oleate- - - - -	MCI, SHP.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED,
IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
*SALTS OF ORGANIC ACIDS--CONTINUED	
*OXALIC ACID SALTS:	
*Ammonium oxalate - - - - -	ACS, BKC, HML, WTK.
Copper oxalate - - - - -	SHP.
*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 diethyl phosphorodithioate - - - - -	ACY.
Sodium dihexyl phosphorodithioate - - - - -	ACY.
Sodium diisopropyl phosphorodithioate - - - - -	ACY.
*PROPIONIC ACID SALTS:	
Calcium propionate - - - - -	HFT, MAL, MCC, PFZ.
Cobalt propionate - - - - -	MCI, X.
Sodium propionate - - - - -	HFT, MAL, MCC, PFZ, X.
RICINOLEIC ACID SALTS:	
Silver trifluoroacetate - - - - -	EK.
Sodium di-2-ethylhexyl sulfoxysuccinate - - - - -	WPG.
Ricinoleic acid salts, all other - - - - -	WTC.
Sodium formaldehyde bisulfite - - - - -	EK.
Sodium formaldehyde sulfoxylate - - - - -	DA.
Sodium-N-methyl-N-oley l taurate - - - - -	WPG.
*STEARIC ACID SALTS:	
ALUMINUM STEARATES:	
Aluminum distearate - - - - -	NOC, NOD, SYP, WTC.
Aluminum monostearate - - - - -	MAL, NOD, SYP.
Aluminum tristearate - - - - -	NOC, NOD, SYP, WTC, X.
Ammonium stearate - - - - -	DA, WPG.
Barium stearate - - - - -	NOC, NOD, SYP, VNC, WTC.
Cadmium stearate - - - - -	SYP, VNC, WTC.
*Calcium stearate - - - - -	DA, FER, MAL, NOC, NOD, SNW, SYP, WTC.
Cobalt stearate - - - - -	FER, 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.
Trioxo aluminum tristearate - - - - -	KCH.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED,
IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
*SALTS OF ORGANIC ACIDS--CONTINUED	
*STEARIC ACID SALTS--CONTINUED	
*Zinc stearate	CCC, DA, MAL, NOC, NOD, PLS, SYP, WTC.
Stearic acid salts, all other	SYP, WTC.
TARTARIC ACID SALTS:	
Potassium sodium tartrate	PFZ.
XANTHIC ACID SALTS, NOT USED FOR FLOTATION:	
Sodium isopropylxanthate	ESX.
Salts of organic acids, all other	OMC, PAH, TCH, WTC.
*ALDEHYDES:	
Acetaldehyde	CEL, EKX, UCC.
Acrolein (Acrylaldehyde)	UCC.
*Butyraldehyde	CEL, DBC, EKX, UCC.
Chloral (Trichloroacetaldehyde)	MTD.
Crotonaldehyde	EKT.
2-Ethylhexanal (α -Ethylcaproaldehyde)	EKX, UCC.
2-Ethyl-3-hydroxyhexanal	UCC.
*Formaldehyde (37% HCHO by Weight)	BOR, CBD, CEL, DUP, GAF, GP, HPC, IMC, MON, NOD, PKI, RCI, WCL.
Glutaraldehyde	UCC.
Glyoxal	ACY.
*Isobutyraldehyde	CEL, DBC, EKX, TU, UCC.
Isopentaldehyde, mixed isomers	UCC.
Methacrolein (methacrylaldehyde)	RDA.
*Propionaldehyde	CEL, EKX, UCC.
Succinaldehyde-sodium bisulfite complex	EK.
Valeraldehyde (Pentanal)	UCC.
*KETONES:	
ACETONE:	
*Acetone from cumene	AFP, CLK, DOW, GE, GP, GYR, MON, SHC, SKO, SOC, USS.
*Acetone from isopropyl alcohol	EKT, ENJ, SHC, UCC.
Acetone, all other	ATR.
5-Chloro-2-pentanone	SDW.
1-Chloropinacolone	CHG.
Chloro-2-propanone (Chloroacetone)	EK, MRK.
Diisoamyl ketone	EKT.
Diisopropyl ketone (2,4-Dimethyl-3-pentanone)	EKX.
2-Heptanone (Methyl amyl ketone)	EKT.
3-Heptanone (Ethyl butyl ketone)	UCC.
*4-Hydroxy-4-methyl-2-pentanone (Diacetone alcohol)	CEL, SHC, UCC.
Isovalerone (Diisobutyl ketone)	EKT, UCC.
*Methyl ethyl ketone	ATR, CEL, ENJ, SHC, UCC.
5-Methyl-2-hexanone (Methyl isoamyl ketone)	EKT.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED,
IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
*KEYTONES--CONTINUED	
*Methyl isobutyl ketone - - - - -	: EKT, ENJ, SHC, UCC.
4-Methyl-3-penten-2-one (Mesityl oxide) - - - - -	: ENJ, SHC, UCC.
Methylpseudoionone - - - - -	: NCI.
Methyl vinyl ketone - - - - -	: PFZ.
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 - - - - -	: UCC.
*ALCOHOLS, MONOHYDRIC, UNSUBSTITUTED:	
*ALCOHOLS, C11 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, CO, DBC, EKX, GAF, SHC, UCC.
sec-Butyl alcohol (Methylethylcarbinol) - - - - -	: ENJ, SHC.
tert-Butyl alcohol (Trimethylcarbinol) - - - - -	: ATR, SHC.
*Isobutyl alcohol (Isopropylcarbinol) - - - - -	: CEL, CPS, DBC, EKX, SHC, UCC.
1-Decanol - - - - -	: CO, TNA.
2,3-Dibromopropanol - - - - -	: GTL.
2,6-Dimethyl-4-heptanol (Diisobutylcarbinol) - - - - -	: UCC.
*Ethyl alcohol, synthetic only - - - - -	: CEL, CO, EKX, SHC, UCC, USI, WEC, X.
*2-Ethyl-1-hexanol - - - - -	: DBC, EKX, ENJ, SHC, TU, UCC.
n-Heptyl alcohol - - - - -	: EKX.
n-Hexyl alcohol - - - - -	: CO, TNA.
Isodecyl alcohol - - - - -	: ENJ.
Isoheptyl alcohol - - - - -	: ENJ.
Isononyl alcohol - - - - -	: ENJ, SHC.
Iso-octadecyl alcohol - - - - -	: SHX.
Iso-octyl alcohol - - - - -	: ENJ, SCM.
*Isopropyl alcohol - - - - -	: ACS, ATR, ENJ, SHC, UCC.
*Methanol, synthetic only - - - - -	: AIP, ALM, ATR, BOR, CEL, DUP, EKT, GP, HST, IMC, MON, TID.
2-Methyl-1-pentanol - - - - -	: ENJ, UCC.
4-Methyl-2-pentanol (1-Methylisobutylcarbinol) - - - - -	: SHC, UCC.
1-Octanol - - - - -	: CO, TNA.
2-Octanol (sec-Capryl alcohol) - - - - -	: WTH.
4-Penten-1-ol - - - - -	: ALD.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED,
IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
*ALCOHOLS, C11 OR LOWER, UNMIXED (95% OR MORE PURE)--CONTINUED	
Propyl alcohol (Propanol) - - - - -	: CEL, EKX, UCC.
2-Propyn-1-ol (Propargyl alcohol)- - - - -	: GAF.
Alcohols, unmixed C11 or lower, all other-	: UCC.
ALCOHOLS C12 OR HIGHER, UNMIXED (95% OR MORE PURE):	:
Dodecyl alcohol (Lauryl alcohol)- - - - -	: CO, TNA.
*1-Hexadecanol (Cetyl alcohol) - - - - -	: CO, CRN, PG, TNA.
2-Hexyl-1-decanol- - - - -	: SCP.
Isohexacosanol - - - - -	: SCP.
1-Octadecanol (Stearyl alcohol) - - - - -	: CO, CRN, PG.
cis-9-Octadecen-1-ol (Oleyl alcohol)- - - - -	: SHX.
2-Octyl dodecan-1-ol - - - - -	: SCP.
1-Tetradecanol (Myristyl alcohol) - - - - -	: CO, TNA.
1-Tridecanol - - - - -	: ENJ.
2,6,8-Trimethyl-4-nonanol- - - - -	: UCC.
MIXTURES OF ALCOHOLS:	:
Alcohol mixtures, other- - - - -	: CO, ENJ, SCP, TNA.
*Alcohol mixtures, C-11 or lower only - - - - -	: CO, CXI, EKX, ENJ, NCI, PG, SHC, TNA.
*Alcohol mixtures, C-12 through C-18 only - - - - -	: CO, SHC, TNA, WTH.
*ESTERS OF MONOHYDRIC ALCOHOLS:	:
Acrylic monomers, mixed- - - - -	: AAC.
Allyl methacrylate - - - - -	: AAC, BLM, CPS, GLY, SHC, UCC.
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, EKX, UCC.
Bis[t-butylperoxy]-1,9-nonanedioate - - - - -	: WTL.
*Butyl acrylate - - - - -	: CEL, DBC, RH, UCC.
n-Butyl chlorocrotonate - - - - -	: MAL.
sec-Butyl chloroformate - - - - -	: PPG.
Butyl maleate- - - - -	: TCH.
Butyl mercaptopropionate - - - - -	: EVN.
Butyl methacrylate - - - - -	: 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.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
*ESTERS OF MONOHYDRIC ALCOHOLS--CONTINUED	
Butyl stearate	CRN.
Cetyleicosyl methacrylate	RH.
Cetyl lactate	VMD.
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) chloroformate	WTC.
*Di(2-ethyl-1-hexyl) maleate	CCC, CHP, DAN, RPC, WPG.
Di(2-ethyl-1-hexyl) peroxydicarbonate	WTL.
Diethyl maleate	ACY.
Diethyl oxalate (Ethyl oxalate)	PFZ.
Diisopropyl peroxydicarbonate (Isopropyl percarbonate)	EKX, PPG.
Dilauryl-3,3'-thiodipropionate	CCW, EVN.
Dimethyl carbonate	PPG.
Dimethyl maleate	AAC.
Dimyristyl-3,3'-thiodipropionate	CCW.
Diocetyl maleate	RCI, USS.
Distearyl-3,3'-thiodipropionate	CCW, EVN.
Dithiobis(stearyl propionate)	EVN.
Ditridecyl maleate	EFF.
Di(tridecyl)-3,3'-thiodipropionate	EVN, SM.
Dodecylpentadecyl methacrylate	RH.
*2-Ethoxyethyl acetate	EKT, EKX, ICI, UCC.
*Ethyl acetate (85%)	CEL, EKX, MON, UCC.
Ethyl acetoacetate	BRD, EKT.
*Ethyl acrylate	CEL, RH, UCC.
Ethyl chloroacetate	SK.
Ethyl chloroformate	ESX, PPG.
Ethyl chlorothiolfornate	SFA.
Ethylene carbonate	TX.
2-Ethyl-1-hexyl acetate	EKT.
*2-Ethyl-1-hexyl acrylate	CEL, DBC, UCC.
2-Ethyl-1-hexyl methacrylate	DUP.
2-Ethylhexyl titanate	KF.
Ethyl monofluoroacetate	RBC.
Ethyl phosphonothiodichloridate	TNA.
Ethyl silicate	KF, SFS.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED,
IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
*ESTERS OF MONOHYDRIC ALCOHOLS--CONTINUED	
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.
Dodecenyl succinic 12-hydroxystearate - - - - -	TX.
Isocetyl docosenoate - - - - -	SBC.
Isocetyl stearate - - - - -	SCP.
Isopropyl lanolate - - - - -	VND.
Isopropyl linoleate - - - - -	VND.
Methyl esters of coconut oil - - - - -	PG, WTC.
Methyl esters of tallow - - - - -	CHL.
Methyl 12-hydroxystearate - - - - -	WTH.
Methyl iso-octadecenoate - - - - -	SYL.
Methyl linoleate - - - - -	HRT.
*Myristyl myristate - - - - -	CYL, SBC, VND.
Propyl oleate - - - - -	CHP.
*Tridecyl stearate - - - - -	DA, SCP, WM, WTC.
Fatty acid esters, not included with plasticizers	
surface-active agents, all other - - - - -	DA, SCP.
Hexyl acetate - - - - -	EMJ.
Hexyl acrylate - - - - -	CPS.
Isoamyl ethylmalonate - - - - -	ABB.
Isobutyl acrylate - - - - -	DBC.
Isobutyl chloroformate - - - - -	PPG.
Isobutyl isobutyrate - - - - -	EKX.
Isobutyl methacrylate - - - - -	DUP, RH.
Isodecyl acrylate - - - - -	CPS.
Isodecyl methacrylate - - - - -	CPS, RH.
Isodecyl thioglycolate - - - - -	EVN.
Iso-octyl mercaptoacetate - - - - -	CCW, EVN, MET, WTC.
Iso-octyl-3-mercaptopropionate - - - - -	EVN.
Isopropenyl acetate - - - - -	UCC.
Isopropyl acetate - - - - -	EKT, UCC.
Isopropyl borate - - - - -	ADC.
Isopropyl chloroformate - - - - -	PPG.
Isostearyl neopentanoate - - - - -	SBC, VND.
Lauryl acrylate - - - - -	CPS.
Lauryl lactate - - - - -	VND.
*Lauryl methacrylate - - - - -	AAC, CPS, RH, TX.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED,
IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
*ESTERS OF MONOHYDRIC ALCOHOLS--CONTINUED	
Laurylstearyl methacrylate - - - - -	: RH.
Maleic esters and copolymers - - - - -	: GAF, X.
Menthallylidene diacetate - - - - -	: RDA.
2-Mercaptoethyl adipate - - - - -	: X.
2-Methoxyethyl acrylate - - - - -	: CPS.
Methyl acetate - - - - -	: EKT, MON.
Methyl acetoacetate - - - - -	: BRD, EKT.
Methyl acrylate, monomer - - - - -	: CEL.
Methyl borate - - - - -	: SFS.
Methyl butyrate - - - - -	: WCC.
Methyl chloroacetate - - - - -	: STC.
Methyl chloroformate - - - - -	: ESX, PPG."
Methyl formate - - - - -	: CEL.
Methyl-3-mercaptopropionate - - - - -	: PLC.
*Methyl methacrylate, monomer - - - - -	: CYR, DUP, RH.
Methyl pivaloylacetate - - - - -	: EKT.
Methyl sulfate (Dimethyl sulfate) - - - - -	: DUP.
Myristyl lactate - - - - -	: VND.
Octadecyl-3-mercaptopropionate - - - - -	: DUP, EVN.
*PHOSPHORUS ACID ESTERS:	
Amyl hydrogen phosphate - - - - -	: HK.
Bis (2-Chloroethyl)-2-chloroethylphosphonate - - - - -	: SM.
2,2-bis(Chloromethyl)-1,3-propanediyl tetra bis chloroethyl phosphate - - - - -	: MIL.
Bis(2-ethylhexyl) hydrogen phosphate - - - - -	: SM.
Bis(2-ethylhexyl)hydrogen phosphite - - - - -	: SM.
Bis(2-ethylhexyl) pyrophosphoric acid - - - - -	: SM.
Bis(tridecyl) hydrogen phosphite - - - - -	: SM.
Butyl dithiophosphoric acid - - - - -	: ESX.
Butyl hydrogen phosphate - - - - -	: HK, SM.
Butyl xylyl acid phosphate - - - - -	: HK.
Dibutyl hydrogen phosphite - - - - -	: SFS, SM.
Dibutyl pyrophosphate - - - - -	: SM.
Diethyl chlorophosphate - - - - -	: TNA.
Diethyl hydrogen phosphite - - - - -	: SM.
Diethyl phosphorochloridothionate - - - - -	: SFS.
Dilauryl hydrogen phosphite - - - - -	: SM.
Dimethyl hydrogen phosphite - - - - -	: SM.
Dimethyl methylphosphonate - - - - -	: SM.
Dimethyl phosphoridothionate - - - - -	: SFS.
Dioleyl hydrogen phosphite - - - - -	: SM.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED,
IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
*ESTERS OF MONOHYDRIC ALCOHOLS--CONTINUED	
*PHOSPHOROUS ACID ESTERS--CONTINUED	
2-Ethylhexyl hydrogen phosphate - - - - -	SM.
Iso-octyl hydrogen phosphate - - - - -	SM.
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.
*Tri(butoxyethyl)phosphate - - - - -	MCB, NOD, SM.
Tributyl phosphate - - - - -	FMC.
Triethyl phosphite - - - - -	SFA, SM.
Triiso-octyl phosphite - - - - -	MCB, SM.
Trimethyl phosphite - - - - -	SFA, SM.
Tris(2-chloroethyl) phosphite - - - - -	PEL, SM.
Tris(chloroisopropyl)thionophosphate - - - - -	SM.
Tris-2-chloropropyl phosphate - - - - -	PEL.
Tris(2-ethylhexyl)phosphite - - - - -	SM.
Phosphorus acid esters, all other - - - - -	MCB, MON, 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.
Tetraoctyl orthosilicate - - - - -	MON.
TITANIC ACID ESTERS:	
Bis(2-[bis(2-hydroxyethyl)amino]ethyl)diisopropyl titanate - - - - -	DUP.
Di(hydroxy)bis(ammoniumlactato)titanium - - - - -	DUP.
Diisopropyl titanate bis(ethyl-3-oxobutanoate) - - - - -	DUP.
Tetrabutyl titanate - - - - -	DUP.
Tetraisopropyl titanate - - - - -	DUP.
Tetrakis(2-ethylhexyl)titanate - - - - -	DUP.
Triethanolamine titanate - - - - -	KF.
Titanic acid esters, all other - - - - -	DUP, X.
Tributyl borate - - - - -	TKL.
Trichloromethyl chloroformate - - - - -	MHI.
Triethyl borate - - - - -	TSA.
Triethyl orthoacetate - - - - -	KF.
Triethyl orthoformate - - - - -	KF.
Triethyl orthopropionate - - - - -	KF.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED,
IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
*ESTERS OF MONOHYDRIC ALCOHOLS--CONTINUED	
Triisobutyl vanadate - - - - -	SFS.
Trimethyl borate - - - - -	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 - - - - -	ICI, PAH, SNW, USR, X.
*POLYHYDRIC ALCOHOLS:	
2,2-Bis(bromomethyl)-1,3-propanediol - - - - -	DOW.
1,2(and 1,3)-Butanediol - - - - -	CEL, DUP.
*1,4-Butanediol - - - - -	BAS, GAF, X.
2-Butene-1,4-diol - - - - -	BAS, GAF.
2-Butyne-1,4-diol - - - - -	BAS, GAF.
3-Chloro-1,2-propanediol (Glycerol α -chlorohydrin) - - - - -	DIX, EKT, EVN.
2,2-Dimethyl-1,3-propanediol (Neopentyl glycol) - - - - -	DBC, EKX.
*Ethylene glycol - - - - -	BAS, CEL, DOW, EKX, HCF, ICI, NWP, OMC, PPG, SHC, TX, UCC.
2-Ethyl-1,3-hexanediol - - - - -	UCC.
2-Ethyl-2-(hydroxymethyl)-1,3-propanediol (Trimethylolpropane) - - - - -	CEL.
Glycerol, synthetic only - - - - -	DOW.
2-(Hydroxymethyl)-2-methyl-1,3-propanediol (Trimethylolpropane) - - - - -	IMC.
Mannitol - - - - -	ICI.
3-Mercapto-1,2-propanediol (Thioglycerol) - - - - -	EVN.
2-Methyl-2,4-pentanediol (Hexylene glycol) - - - - -	SHC, UCC.
*Pentaerythritol - - - - -	CEL, HPC, IMC, PST.
*Propylene glycol (1,2-Propanediol) - - - - -	ATR, DOW, DRC, OMC, TX, UCC.
*Sorbitol (70% by Weight) - - - - -	BRD, EHC, ICI, MRK, PFZ.
Tetradecanediol-hexadecanediol mixture - - - - -	SHC.
2,2,4-Trimethyl-1,3-pentanediol - - - - -	EKX.
Polyhydric alcohols, all other - - - - -	ICI, RBC.
ESTERS AND ETHERS OF POLYHYDRIC ALCOHOLS:	
*POLYHYDRIC ALCOHOL ESTERS:	
2-(2-Butoxyethoxy)ethyl acetate - - - - -	EKT, UCC.
2-Butoxyethyl acetate - - - - -	EKT.
1,3-Butylene glycol diborate - - - - -	USB.
1,3-Butylene glycol diborate/hexylene glycol boric anhydride - - - - -	USB.
1,3-Butylene glycol dimethacrylate - - - - -	RH.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED,
IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
*POLYHYDRIC ALCOHOL ESTERS--CONTINUED	
Chlorohydroxypropyl methacrylate - - - - -	: AAC.
Diethylene glycol adipate - - - - -	: CMB, DIX.
Diethylene glycol, borated - - - - -	: OMC.
Diethylene glycol chloroformate - - - - -	: PPG.
Diethylene glycol dimethacrylate - - - - -	: CPS, RH.
Dihydromyrcene - - - - -	: SCM, X.
2-(2-Ethoxyethoxy)ethyl acetate - - - - -	: EKT, TKL.
Ethylene glycol diacetate - - - - -	: EKT.
Ethylene glycol dimercaptoacetate - - - - -	: EVN.
Ethylene glycol dimethacrylate - - - - -	: RH.
Ethylene glycol hydroxyacetate - - - - -	: CCA.
Ethylene glycol phosphite - - - - -	: SM.
2-Ethyl-2(hydroxymethyl)-1,3-propanediol	:
trimethacrylate - - - - -	: WM.
Glycerol tricaprylate caprate - - - - -	: WM.
Glyceryl diacetate (Diacetin) - - - - -	: HAL.
Glyceryl monoacetate (Monoacetin) - - - - -	: HAL.
Glyceryl monothioglycolate - - - - -	: EVN.
Glyceryl triacetate (Triacetin) - - - - -	: EKT.
1,6-Hexanediol diacrylate - - - - -	: CEL, RH.
Hydroxyethyl acrylate - - - - -	: DOW, RH.
Hydroxyethyl methacrylate - - - - -	: RH.
Hydroxypropyl acrylate - - - - -	: DOW, RH.
Hydroxypropyl methacrylate - - - - -	: AAC, GAI, RH.
2-Methoxyethyl acetate - - - - -	: UCC.
Neopentyl glycol diglycidyl ether - - - - -	: WLN.
Pentaerythritol caprylate/caprate - - - - -	: WM.
Pentaerythritol stearate - - - - -	: GLY.
Pentaerythritol tetraacrylate - - - - -	: CEL.
Pentaerythritol tetrakis (3-Mercaptopropionate)	: EVN.
Polyethylene glycol maleate - - - - -	: RPC.
Polyethylene polypropylene glycol glyceryl	:
triether maleate - - - - -	: BAK.
Polyol aluminum chelate - - - - -	: SNW.
Polypropylene-polyethylene glycol glyceryl	:
triether citrate - - - - -	: BAK.
Propylene glycol dicaprylatecaprate - - - - -	: WM.
Propylene oxide, polymer with polyethylene glycol	:
adipate - - - - -	: BAK.
Sucrose octa-acetate - - - - -	: HFT, PD.
2-Sulfoethyl methacrylate - - - - -	: DOW.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED,
IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
*POLYHYDRIC ALCOHOL ESTERS--CONTINUED	
Tetraethylene glycol diacrylate- - - - -	: CEL.
Tetraethylene glycol diheptanoate- - - - -	: WM.
Tetraethylene glycol dimethacrylate- - - - -	: AAC.
Triethylene glycol diacetate - - - - -	: EKT.
Triethylene glycol diacrylate- - - - -	: CEL, HMY.
Trimethylolmethane pelargonate- - - - -	: WM.
Trimethylolpropane-hexyl dimerate- - - - -	: WTC.
Trimethylolpropane triacrylate - - - - -	: CEL, RH.
Trimethylolpropane tridecanoate- - - - -	: SM.
Trimethylolpropane tri(2-mercaptopropionate) - - - - -	: EVN, RH.
Trimethylolpropane trimethacrylate - - - - -	: CEL, TKL.
2,2,3-Trimethyl-1,3-pentanediol monoisobutyrate	: EKX.
Tripropylene glycol diacrylate - - - - -	: CEL.
Polyhydric alcohol esters, all other - - - - -	: ARA, EKX, SNW, 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.
Bis(2-methoxyethyl)ether (Diethylene glycol dimethyl ether) - - - - -	: ASL, FER.
*2-Butoxyethanol (Ethylene glycol monobutyl ether)	: DOW, EKX, ICI, OMC, SHC, UCC.
*2-(2-Butoxyethoxy)ethanol (Diethylene glycol monobutyl ether) - - - - -	: DOW, EKX, 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) - - - - -	: EKX, ICI.
*Diethylene glycol- - - - -	: BAS, CEL, DOW, EKX, HST, ICI, NWP, OMC, PPG, SHC, TX, UCC.
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)	: DOW, EKX, ICI, OMC, SHC, UCC.
*2-(2-Ethoxyethoxy)ethanol (Diethylene glycol monoethyl ether) - - - - -	: DOW, EKX, ICI, OMC, SHC, UCC.
*2-[2-(2-Ethoxyethoxy)ethoxy]ethanol (Triethylene	:

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED,
IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
*POLYHYDRIC ALCOHOL ETHERS--CONTINUED	
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- - - - -	: OMC, UCC.
1-Isobutoxy-2-propanol (Propylene glycol isobutyl ether)- - - - -	: NCW.
*2-Methoxyethanol (Ethylene glycol monomethyl ether)- - - - -	: DOW, ICI, OMC, PPG, TX, UCC.
*2-(2-Methoxyethoxy)ethanol (Diethylene glycol monomethyl ether)- - - - -	: DOW, ICI, OMC, PPG, SHC, TX, 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)- - - - -	: ASI, OMC.
Methoxypolyethylene glycol - - - - -	: ICI, UCC.
1-Methoxy-2-propanol - - - - -	: DOW, OMC.
3-(3-Methoxypropoxy)propanol - - - - -	: DOW.
3-[3-(3-Methoxypropoxy)propoxy]propanol- - - - -	: DOW.
Paraformaldehyde - - - - -	: CEL.
Polyethoxylated-1,4-butanediol - - - - -	: X.
Polyethylene dichloride- - - - -	: WCC.
*Polyethylene glycol- - - - -	: ABB, CEL, DA, DOW, HDG, ICI, OMC, TX, UCC, WTC, WVA, X.
Polyethylene glycol dimethyl ether - - - - -	: SHX, X.
Polyethylene glycol mono decyl ether - - - - -	: BAK.
Polyglycols, ethylene glycol and glycol ether, mixed- - - - -	: DOW, UCC, X.
Polymethylvinyl ether monoethylmaleate - - - - -	: TNI.
Polyoxyalkylene glycol - - - - -	: OMC.
POLYPROPOXY ETHERS:	
Poly(propoxy)butyle ether, ethoxylated - - - - -	: TX.
Polypropoxybutyl ether - - - - -	: DA, TX.
Polypropoxy ethers, all other- - - - -	: ICI, UCC.
Polyoxypropylene polyoxyethylene glycol, mixed - - - - -	: UCC, WTC, WVA.
*Polypropylene glycol - - - - -	: DOW, HDG, OMC, SM, TX, WVA, X.
Polypropylene glycol glycerol tri-ether- - - - -	: BAK.
Polytetramethylene glycol ether- - - - -	: DUP, QKO.
Propoxyethanol (Ethylene glycol monopropyl ether)- - - - -	: EKX.
Propoxyethoxyethanol (Diethylene glycol	

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED,
IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
*POLYHYDRIC ALCOHOL ETHERS--CONTINUED	
monopropyl ether)- - - - -	: EKX.
Propylene glycol, mixed ethers - - - - -	: DOW, UCC.
Sorbitol, ethoxylated- - - - -	: GLY, ICI.
*Tetraethylene glycol - - - - -	: DOW, EKX, ICI, UCC.
2,2'-Thiodiethanol (Thiodiglycol) - - - - -	: MET, X.
Thiodipropanol - - - - -	: X.
*Triethylene glycol - - - - -	: CEL, CXI, DOW, EKX, ICI, OMC, PPG, SHC, TX, UCC.
Triethylene glycol dichloride- - - - -	: RH.
Tripropylene glycol- - - - -	: DOW, OMC, UCC.
Tripropylene glycol monomethyl ether - - - - -	: OMC.
Tri- and tetraethyle glycol monoethyl ethers, borate ester s - - - - -	: OMC.
Polyhydric alcohol ethers, all other - - - - -	: MIL, PPG, UCC, WTC, X.
*HALOGENATED HYDROCARBONS:	
*BROMINATED (INCLUDING BROMOCHLORINATED) HYDROCARBONS:	
Bromochlorinated paraffin C ₁₀ -C ₂₀ - - - - -	: FER.
Bromochloromethane - - - - -	: BKM, DOW.
Bromoethane (Ethyl bromide)- - - - -	: DOW, GTL.
1-Bromohexadecane- - - - -	: HMY.
1-Bromo-octadecane - - - - -	: HMY.
1-Bromopentane (n-Amyl bromide) - - - - -	: DAZ, GTL, HMY.
1-Bromopropane (n-Propyl bromide) - - - - -	: WCC.
2-Bromopropane (Isopropyl bromide)- - - - -	: WCC.
3-Bromopropene (Allyl bromide)- - - - -	: WCC.
Bromotrichloromethane- - - - -	: DOW, OMC.
Dibromohexadecane- - - - -	: TNA.
Dibromomethane (methylene bromide) - - - - -	: DOW.
1,1,2,2-Tetrabromoethane (Acetylene tetrabromide) - - - - -	: DOW.
Vinyl bromide (Bromoethylene) - - - - -	: TNA.
Brominated (Including bromochlorinated) hydrocarbons, all other- - - - -	: WTC.
*CHLORINATED (NOT OTHERWISE HALOGENATED) HYDROCARBONS:	
*Carbon tetrachloride - - - - -	: DA, DOW, DUP, FRO, LCP, SFI.
CHLORINATED PARAFFINS (C ₁₀ -C ₃₀):	
*Chlorinated paraffins, 35-64% chlorine - - - - -	: DA, DVC, FER, NEV, WTC, X.
Chlorinated paraffins, less than 35% chlorine - - - - -	: FER, NEV.
*Chlorinated paraffins, 65% or more chlorine- - - - -	: DA, DVC, FER, NEV.
1-Chlorobutane (n-Butyl chloride) - - - - -	: UCC.
*Chloroform - - - - -	: DA, DOW, FRO, LCP, SFI.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED,
IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
*HALOGENATED HYDROCARBONS--CONTINUED	
*CHLORINATED (NOT OTHERWISE HALOGENATED) HYDROCARBONS--CONTINUED	
*Chloromethane (Methyl chloride) - - - - -	CO, DA(E), DCC, DOW, LCP, TNA.
3-Chloro-2-methyl-1-propene (Methallyl chloride) - - - - -	FMC.
3-Chloropropene (Allyl chloride) - - - - -	DOW, SHC.
1,2-Dichloropropane (Propylene dichloride) - - - - -	DOW, OMC.
2,3-Dichloropropane - - - - -	DOW.
2,2-Dimethylchloropropane (neopentyl chloride) - - - - -	TNA.
*Ethyl chloride (Chloroethane) - - - - -	DOW, DUP, HPC(E), PPG, TNA.
*Ethylene dichloride - - - - -	ATR, BFG, CO, DA, DOW, FOR, FRO, GP(E), OMC, PPG, SHC, TNA, UCC.
Hexyl chloride - - - - -	TNA.
Lauryl chlorides - - - - -	TNA.
*Methylene chloride (Dichloromethane) - - - - -	DA, DOW, FRO, LCP, SFI.
Octyl chloride - - - - -	TNA.
*Perchloroethylene (Tetrachloroethane) - - - - -	DA, DOW, DUP, FRO, PPG, TNA.
*1,1,1-Trichloroethane (Methyl chloroform) - - - - -	DOW, FRO, PPG(E).
1,1,2-Trichloroethane (Vinyl trichloride) - - - - -	DOW, PPG, RSA.
Trichloroethylene - - - - -	DOW, PPG, TNA.
1,2,3-Trichloropropane - - - - -	DOW, SHC.
1,2,3-Trichloropropene - - - - -	DOW.
*Vinyl chloride, monomer (Chloroethylene) - - - - -	BFG, BOR, CO, DOW, FOR, GP, PPG, SHC, TNA.
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.
Bromotrifluoromethane - - - - -	DUP, GTL.
1-Chloro-1,1-difluoroethane - - - - -	PAS.
*Chlorodifluoromethane (F-22) - - - - -	ACS, DUP, KAI, PAS, RCN.
Chloropentafluoroethane - - - - -	DUP.
Chlorotrifluoroethylene (Trifluorovinyl chloride) - - - - -	ACS.
Chlorotrifluoromethane - - - - -	DUP.
*Dichlorodifluoromethane (F-12) - - - - -	ACS, DUP, KAI, PAS, RCN.
Dichlorotetrafluoroethane - - - - -	ACS, DUP.
1,1-Difluoroethane - - - - -	ACS, DUP, PAS.
Hexafluoroethane - - - - -	DUP.
Hexafluoropropylene, monomer - - - - -	DUP.
1-Iodoperfluorohexane - - - - -	DUP.
Polyhexafluoropropylene oxide - - - - -	DUP.
Polytetrafluoroethylene ethyl iodine - - - - -	DUP.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
*HALOGENATED HYDROCARBONS--CONTINUED	
*FLUORINATED (INCLUDING OTHER FLUOROHALOGENATED) HYDROCARBONS--CONTINUED	
Tetrafluoroethylene, monomer	DUP, ICI.
Tetrafluoromethane	AIP, DUP.
*Trichlorofluoromethane	ACS, DUP, KAI, PAS, RCN.
Trichlorotrifluoroethane	ACS, DUP, PAS.
Trifluoroethanol	HOC.
Trifluoromethane	DUP.
Trifluoropropene	HOC.
Vinyl fluoride, monomer	DUP.
Vinylidene fluoride, monomer	PAS.
Fluorinated (Including other fluorohalogenated) hydrocarbons, all other	DUP, GTL, ICI.
*IODINATED (NOT OTHERWISE HALOGENATED) HYDROCARBONS:	
Bismuth formic iodide	RSA.
Diiodomethane (Methylene iodide)	NTB.
Iodobutane	COC.
Iodoethane (Ethyl iodide), non-medical	COC, RSA.
Iodoform (Triiodomethane)	DPW, NTB.
*Iodomethane (Methyl iodide)	COC, DPW, RSA.
Isopropyl iodide	COC.
*OTHER MISCELLANEOUS ACYCLIC CHEMICALS:	
Acetone sodium bisulfite	EK.
ACYCLIC PEROXIDES:	
Acetylacetone peroxide	CAD.
Acetyl peroxide	WTL.
2,2-Bis[t-butyl peroxy]butane	WTL.
*2-Butanone peroxide	CAD, FRE, NOC, RCI, WTC, WTL.
n-Butyl-4,4-bis[t-butylperoxy]valerate	CAD.
*tert-Butyl hydroperoxide	ATR, AZT, WTC, WTL.
tert-Butyl peroxide (Di-tert-butyl peroxide)	AZT, CAD, SHC, WTC, WTL.
Decanoyl peroxide	WTC, WTL.
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.
Dodecanoyl peroxide	MMC.
Aluminum isopropoxide (Aluminum isopropylate)	CHT, KCH.
Carbon disulfide	PAS, PPG, SFI.
*EPOXIDES, ETHERS, AND ACETALS:	
Alkyl glycidyl ethers, C ₁₂ -C ₁₄	WLN.
Alkyl glycidyl ethers, C ₈ -C ₁₀	WLN.
1-(Allyloxy)-2,3-epoxypropane (Allyl glycidyl	

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED,
IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
*OTHER MISCELLANEOUS ACYCLIC CHEMICALS--CONTINUED	
*EPOXIDES, ETHERS, AND ACETALS--CONTINUED	
ether)	AAC, BLM, CPS.
Bis(2-chloroethoxy)methane (Dichloroethylformal)	TKL.
Bis(2-chloroethyl)ether (Dichlorodiethyl ether)	BKM.
1,4-Butanediol diglycidyl ether	WLN.
1-Butoxy-2,3-epoxypropane (Butyl glycidyl ether)	CPS, WLN.
Butylene oxide	DOW.
tert-Butyl glycidyl ether	AAC.
Butyl vinyl ether	GAF.
2,2-Dichloro-1,1-difluoroethyl methyl ether	DOW.
Diethyl-N,N-Bis(2-hydroxyethyl)amino methyl p-	SFS.
Epichlorohydrin	DOW, SHC.
*Ethylene oxide	BAS, CEL, DOW, EKX, ICI, NWP, OMC, PPG, SHC, SMO, TX, UCC.
Ethyl ether, U.S.P.	USI.
Ethyl ether, absolute	EKX, USI.
Ethyl ether, tech.	USI.
2-Ethylhexyl glycidyl ether	WLN.
Ethyl vinyl ether	GAF.
Glycidol (2,3-Epoxy-1-propanol)	DIX.
Isopropyl ether	ENJ, SHC.
Malonaldehyde bis(dimethyl) acetal	KF.
Methylal (Dimethoxymethane)	CEL.
Methyl ether (Dimethyl ether)	DUP.
Methyl vinyl ether	GAF, UCC.
Polyol glycidyl ether	WLN.
Propylene oxide	ATR, DOW, TX.
Epoxides, ethers, acetals, all other	GTL, UCC, VIK.
1,2-Ethanedithiol	RBC.
2-(Ethylmercapto)ethanol	DOM.
FATS AND OILS, CHEMICALLY MODIFIED:	
Brominated vegetable oil	SWT.
Coconut/palm kernel oil (modified)	WCC.
Hydrogenated menhaden fish oil	CHL.
Hydrogenated tallow glycerides	CHL, SHX.
Linseed oil, oxygenated	CJO.
Sulfurized corn oil	SM.
Vegetable glycerides, hydrogenated	GLY.
Fats and oils, chemically modified, all other	DA.
Glutaraldehyde bis(sodium bisulfite)	EK.
Hexachlorodimethyl sulfone	SFS.
1-Hexadecanethiol	HMY.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED,
IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
*OTHER MISCELLANEOUS ACYCLIC CHEMICALS--CONTINUED	
Lauroyl peroxide	: WTL.
Magnesium methylate	: SOI.
*2-Mercaptoethanol	: MET, PLC, TKL.
Methyl sulfide (Dimethyl sulfide)	: CRZ, PAS.
Methyl sulfoxide (Dimethyl sulfoxide)	: CRZ.
*1-Octadecanethiol	: HMY.
HYDROCARBONS:	
n-Decane	: 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	: WTK.
ORGANO-ALUMINUM COMPOUNDS:	
Aluminum acetylacetonate complex	: MCK.
Aluminum di-sec-butoxide acetoacetic ester chelate	: CHT.
Aluminum diisopropoxide acetoacetic ester chelate	: CHT, KCH.
Aluminum (2-ethyl hexanoato)-exo-homopolymer	: KCH.
Aluminum tri-sec-butoxide	: CHT, KCH.
Diethylaluminum chloride	: TNA, TSA.
Diethyl aluminum ethoxide	: TSA.
Diethylaluminum iodide	: TNA, TSA.
Diisobutylaluminum chloride	: TNA, TSA.
Diisobutylaluminum hydride	: TNA, TSA.
Ethylaluminum dichloride	: TNA, TSA.
Ethylaluminum sesquichloride	: TNA, TSA.
Isopropenylaluminum	: TSA, X.
Methylaluminum sesquichloride	: TNA.
Oxy-aluminum octanoate	: CHT.
Sodium aluminum diethyl dihydrate	: TNA.
Sodium dihydrobis(2-methoxyethoxy)aluminum hydride	: HXL, TNA.
Triethylaluminum	: TNA, TSA.
Tri-n-hexyl aluminum	: TNA, TSA.
Triisobutylaluminum	: TNA, TSA.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED,
IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
*OTHER MISCELLANEOUS ACYCLIC CHEMICALS--CONTINUED	
ORGANO-ALUMINUM COMPOUNDS--CONTINUED	
Trimethylaluminum - - - - -	MHI.
Tri-cycloaluminum tri-isopropoxide - - - - -	KCH.
Organo-aluminum compounds, all other - - - - -	TNA.
ORGANO-BORON COMPOUNDS:	
Boron fluoride - ethyl ether complex - - - - -	ACS.
Chromium acetylacetonate complex - - - - -	MCK, SHP.
Cobalt acetylacetonate complex - - - - -	SHP.
Ethylamine with borane (1:1) - - - - -	ACS.
1-Hexyl-1,2-dicarbadodecaborane - - - - -	X.
Iron acetylacetonate complex - - - - -	MCK, SHP.
Manganese acetylacetonate complex - - - - -	SHP.
N-Methyl-methanamine with borane (1:1) - - - - -	X.
2-Methyl-2-propanamine with borane(1:1)- - - - -	X.
Nickel acetylacetonate complex - - - - -	SHP.
Triethylborane - - - - -	X.
Trimethoxyboroxine - - - - -	X.
N,N,N-Trimethyl methanaminium octahydrotriborate	X.
Organo-boron compounds, all other- - - - -	MHI, TKL, X.
ORGANO-LITHIUM COMPOUNDS:	
n-Butyllithium - - - - -	FTE.
sec-Butyllithium - - - - -	FTE.
ORGANO-MAGNESIUM COMPOUNDS:	
Butyl ethyl magnesium- - - - -	TSA.
Di-n-hexyl magnesium - - - - -	TNA.
Methylmagnesium bromide- - - - -	ARA.
Methylmagnesium chloride - - - - -	ARA.
Organo-magnesium compounds, all other- - - - -	ARA.
ORGANO-SILICON COMPOUNDS:	
7-Aminopropyltriethoxysilane - - - - -	SCM.
α-Chloropropyltrichlorosilane - - - - -	DCC.
Chloropropyltrimethoxysilane - - - - -	DCC, KF.
Chlorotrimethylsilane - - - - -	DCC.
Dichlorodimethylsilane - - - - -	DCC.
Dichloromethylsilane - - - - -	DCC.
Dichloromethylvinylsilane - - - - -	DCC, UCC.
Diethoxyphosphorylethyltriethoxysilane - - - - -	UCC.
α-Glycidoxypropyltrimethoxysilane- - - - -	DCC, UCC.
Hexamethyldisilazane - - - - -	SCM.
Isobutyltrimethoxysilane - - - - -	KF.
α-Methacryloxypropyltrimethoxysilane - - - - -	UCC.
*Methyltrimethoxysilane and polymethyltrisiloxane	DCC, KF, UCC.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
*OTHER MISCELLANEOUS ACYCLIC CHEMICALS--CONTINUED	
ORGANO-SILICON COMPOUNDS--CONTINUED	
Polyoxysilane silicones	UCC.
*Silicone fluids	DCC, MON, SPD, SWS, UCC.
Trichloromethylsilane	DCC.
Trichloropropylsilane	DCC.
Trichlorovinylsilane	UCC.
Vinyltriethoxysilane	UCC.
Organo-silicone compounds, all other	UCC, X.
ORGANO-TIN COMPOUNDS:	
Bis(tributyltin)oxide	WTC, X.
Dibutyltin bis(butylmaleate)	CCA.
Dibutyltin bis(isooctylmercaptoacetate)	FER, X.
Dibutyltin bis(mercaptolaurate)	X.
Dibutyltin methoxide (Dibutylmethoxytin)	CCA.
Dibutyltin oxide	WTC, X.
Dimethyltin dichloride	WTC.
Ester tin mercaptoesters	CCA.
Octyltin	CCA, X.
Titanium acetylacetonate complex	KF.
Tributyltin acetate	X.
Tributyltin chloride	X.
Tributyltin fluoride	X.
Tributyltin hydride	ALD.
Tributyltin propylene glycol maleate	CCA.
Organo-tin compounds, all other	CCW, COS.
*ORGANO-ZINC COMPOUNDS:	
Diethylzinc	MHI, TSA.
Zinc acetylacetonate complex	SHP.
Organo-zinc compounds, all other	MCK.
Perchloromethanethiol (Perchloromethyl mercaptan)	SFC.
Perfluoroalkyl polyether	X.
*Phosgene (Carbonyl chloride)	DUP, MOB, OMC, PPG, RUC, UCC, 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.
Trimethylsulfonium iodide	DPW.
Miscellaneous acyclic chemicals, all other	CPS, PD, PLC, X.
*MIXTURES NOT SPECIFICALLY ITEMIZED:	
C ₁₂ -C ₁₅ Alcohol lactates	VND.
Alcohols, monohydric, and their esters, C ₈ and	

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED,
IDENTIFIED BY MANUFACTURER, 1983--CONTINUED

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
*MIXTURES NOT SPECIFICALLY ITEMIZED--CONTINUED	
higher, mixed-	EKX, MON, X.
Azeotropic mixtures of halogenated hydrocarbons-	ACS.
Butyl formcel-	CEL.
Celtone-	CEL.
Fatty acid amide mixtures-	HAL.
*Glycol residues-	CXI, ICI, OMC, TX.
Methacrylate based cationic polyelectrolytes-	COS.
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-	CNI.
Mixtures of miscellaneous acyclic chemicals not specifically itemized-	MCB, UCC.

TABLE 3.--MISCELLANEOUS CYCLIC AND ACYCLIC CHEMICALS: DIRECTORY OF MANUFACTURERS, 1983

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 1983 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.	CLK	Clark Oil & Refining Corp.
ABB	Abbott Laboratories	CMB	Cambridge Industries, Inc.
ACS	Allied Corp., Allied Chemical Co.	CNI	Conap, Inc.
ACY	American Cyanamid Co.	CNP	Nipro, Inc.
ADC	Anderson Development Co.	CO	Conoco, Inc.
AFP	Allied Corp., Allied Fibers & Plastics Co. Div.	COC	Columbia Organic Chemicals Co., Inc.
AGC	Alberta Gas Chemicals, Inc.	COS	Cosan Chemical Corp.
AGI	EMS-American Grilon, Inc.	CPS	CPS Chemical Co.
AIP	Air Products & Chemicals, Inc.	CRN	CPC International, Inc., Amerchol Corp.
AJF	Ajinomoto USA, Inc.	CRZ	Crown Zellerbach Corp., Chemical Products Div.
ALB	Ames Laboratories, Inc.	CXI	Chemical Exchange Industries, Inc.
ALD	Aldrich Chemical Co., Inc.	CYL	Cyclo Chemicals Corp.
ALI	Associated Lead, Inc.	GYR	CYRO Industries
ALM	Allemania Chemical Co.	DA	Diamond Shamrock Corp.
AMB	American Bio-Synthetics Corp.	DAN	Dan River, Inc., Chemical Products Div.
AMO	Standard Oil Co. (Indiana)	DAZ	Diaz Chemical Corp.
ANG	Angus Chemical Co.	DBC	Badische Co.
ARA	Syntex Chemicals, Inc.	DGC	Dow Corning Corp.
ARC	Azko Chemie America	DIX	Dixie Chemical Co., Inc.
ARS	Araynco, Inc.	DKA	Denka Chemical Corp.
ARZ	Arizona Chemical Co.	DOM	Dominion Products
ASH	Ashland Oil, Inc.	DOW	Dow Chemical Co.
ASL	Specialty Chemical Products Corp.	DFW	Deepwater, Inc.
ATL	Atlantic Industries, Inc.	DRG	Dock Resins Corp.
ATR	Atlantic Richfield Co., Arco Chemical Co.	DRL	Darling & Co., Chemical Div.
AZT	Catalyst Resources, Inc.	DUP	E. I. duPont de Nemours & Co., Inc.
		DVC	Dover Chemical Corp. Sub. of ICG Industries, Inc.
BAK	Baker International - Magna Corp.	EFH	E. F. Houghton & Co.
BAS	BASF Wyandotte Corp.	EHK	EthiChem Corp.
BGC	Buffalo Color Corp.	EK	Eastman Kodak Co.
BFG	B. F. Goodrich Co., B. F. Goodrich Chemical Group	EKT	Tennessee Eastman Co. Div.
BKC	J. T. Baker Chemical Co.	EKK	Texas Eastman Co. Div.
BKM	Buckman Laboratories, Inc.	ELC	Elco Corp. Sub. of Detrex Chemical Industries, Inc.
BLM	Balchem Corp., Arc Chemical Corp.	EMR	Emery Industries Div. of National Distillers & Chemical Corp.
BLY	Berkley & Co., Inc.	ENJ	Exxon Chemical Americas
BMC	Brin-Mont Chemicals, Inc.	ESA	East Shore Chemical Co.
BOC	Biocraft, Inc.	ESX	Essex Industrial Chemicals, Inc., Essex Chemical Corp.
BOR	Borden Co., Borden Chemical Div.	EVN	W.R. Grace & Co., Organic Chemicals Div., Evans Chemetics
BRD	Lonza, Inc.	FB	Fritzsche Dodge & Olcott, Inc.
BUK	Buckeye Cellulose Corp.	FER	Ferro Corp.
			Ferro Chemical Div.
CAD	Azko Chemie America, Noury Chemical		Grant Chemical Div.
CAS	Caschem, Inc.		Keil Chemical Div.
CBD	Chembond Corp.	PKE	Frank Enterprises, Inc.
CCA	Interstab Chemicals, Inc.		FMC Corp.
CCC	C.N.C. Chemical Corp.	FMC	Industrial Chemical Group
COL	Catawba-Charlab, Inc.	FMP	Specialty Chemicals Group
CGW	Carstab Corp.	FMT	Fairmount Chemical Co., Inc.
CEL	Celanese Corp.	FOC	Handachy Industries, Inc., Farac Varnishes
	Celanese Chemical Co., Inc.		Chemicals
	Celanese Fibers Co.	FOR	Formosa Plastics Corporation Louisiana
	Celanese Specialties Resins	FRE	Freeman Chemical Corp.
CGY	Ciba-Geigy Corp.	FRO	Vulcan Materials Co., Chemicals Div.
CHG	Mobay Chemical Corp., Agricultural Chemicals Div.		
CHL	Chemol, Inc.		
CHP	C. H. Patrick & Co., Inc.		
CHT	Chattem, Inc.		
CJO	C.J. Osborn Chemicals, Inc.		

TABLE 3.--MISCELLANEOUS CYCLIC AND ACYCLIC CHEMICALS: DIRECTORY OF MANUFACTURERS, 1983--CONTINUED

CODE	NAME OF COMPANY	CODE	NAME OF COMPANY
FTE	Footo Mineral Co.	MRK	Merck & Co., Inc.
FTX	Finetex, Inc.	MTO	Montrose Chemical Corp. of California
GAF	GAF Corp.	NCC	Niacet Corp.
GAI	Glasurit America, Inc.	NCI	Union Camp Corp., Terpenes & Aromatics Div.
GAN	Gane's Chemicals, Inc.	NEV	Neville Chemical Co.
GE	General Electric Co.	NOC	Norac Co., Inc. and Mathe Div.
GIV	Givaudan Corp.	NOD	Nuodex, Inc.
GLY	Glyco, Inc.	NSC	National Starch & Chemical Corp.
GP	Georgia-Pacific Corp.: Plaquemine Div. Resins Operations	NTB	National Biochemical Co.
GTL	Great Lakes Chemical Corp.	NWP	Northern Petrochemicals Co.
GYR	Goodyear Tire & Rubber Co.	OMC	Olin Corp.
HAL	C.P. Hall Co.	ORT	Roehr Chemicals, Inc.
HCC	Hatco Chemical Corp.	PAC	Pacific Anchor Chemical Corp.
HCF	Hercofina	PAS	Pennwalt Corp.
HCP	Honig Chemical & Processing Corp.	PD	Parke-Davis & Co.
HDC	Hodag Chemical Corp.	PEL	Pelron Corp.
HEX	Hexagon Laboratories, Inc.	PEN	CPG International, Inc., Penick Corp.
HFT	Syntex Agribusiness, Inc.	PFN	Pfanstiehl Laboratories, Inc.
HK	Occidental Chemical Corp.	PFZ	Pfizer, Inc. and Pfizer Pharmaceuticals, Inc.
HLI	Onyx Chemical Co.	PG	Procter & Gamble Co., Procter & Gamble Manufacturing Co.
HML	Hummel Chemical Co.	PIC	Pierce Organics, Inc.
HMP	W. R. Grace & Co., Hampshire Chemicals Div.	PKI	Perkins Industries, Inc.
HMV	Humphrey Chemical Co.	PLC	Phillips Petroleum Co.
HOC	Halocarbon Products Corp.	PLS	Plastics Engineering Co.
HPC	Hercules, Inc.	PMP	PMP Fermentation Products, Inc.
HRT	Hart Products Corp.	PPG	PPG Industries, Inc.
HST	American Hoechst Corp., Hoechst Fiber Industries Div.	PST	Perstorp Polyols, Inc.
HXL	Hexcel Corp., Hexcel Chemical Products	PTT	Petro Tex Chemical Corp.
ICI	ICI Americas, Inc. and Chemical Specialties Co.	QKO	Quaker Oaks Co.
IMC	International Minerals & Chemicals Corp., Industries Chemicals Div.	RBC	Fike Chemicals, Inc.
IOC	Sybron Chemical Div. of Sybron Corp.	RCI	Reichhold Chemicals, Inc.
JRC	Jarchem Industries, Inc.	RCN	Racon, Inc.
KAI	Kaiser Aluminum & Chemical Corp.	RDA	Rhone-Poulenc, Inc.
KCH	Joseph Ayers, Inc.	REG	Regis Chemical Co.
KF	Kay-Fries Inc., Chemical Div., Dynamit Nobel of America, Inc.	REM	Remington Arms Co., Inc.
KIM	Kalama Chemical, Inc.	RH	Rohm & Haas Co.
KPT	Koppers Co., Inc.	RPC	Millmaster Onyx Group, Inc., Lyndall Chemical Co. Div.
LCP	LCP Chemicals - West Virginia, Inc.	RSA	R.S.A. Corp.
LEM	Napp Chemicals, Inc.	RUC	Rubicon, Inc.
LIL	Eli Lilly & Co.	SBC	Scher Chemicals, Inc.
LMI	North American Chemical Co.	SCM	SCM Corp.: Organic Chemicals Div. PCR, Inc.
MAL	Mallinckrodt, Inc.	SCP	Henkel Corp.
MCB	Borg-Warner Corp., Borg-Warner Chemicals	SD	Sterling Drug, Inc.
MCI	Mooney Chemicals, Inc.	SDC	Sodeyco, Inc.
MCK	MacKenzie Chemical Works, Inc.	SDH	Sterling Drug, Inc.: Hilton Davis Chemical Co. Div.
MET	M & T Chemicals, Inc.	SDW	Sterling Organics Div.
MNI	Morton-Thiokol, Inc., Ventron Div.	SFA	Stauffer Chemical Co.: Agricultural Div.
MIL	Milliken & Co., Milliken Chemical Co.	SFC	Calhio Chemicals, Inc.
MLS	Miles Laboratories, Inc., Biotechnology Group	SFI	Chlor Alkali Products
MMC	EM Industries, Inc., EM Science Div.	SFS	Specialty & Intermediates Chemical Div.
MOB	Mobay Chemical Corp., Pittsburgh Div.	SHC	Shell Oil Co., Shell Chemical Co. Div.
MON	Monsanto Co.	SHP	Shepherd Chemical Co.
		SHX	Sherex Chemical Co., Inc.

TABLE 3.--MISCELLANEOUS CYCLIC AND ACYCLIC CHEMICALS: DIRECTORY OF MANUFACTURERS, 1983--CONTINUED

CODE	NAME OF COMPANY	CODE	NAME OF COMPANY
SK	SmithKline Beckman Corp., SmithKline Chemicals Div.	UGC	Union Carbide Corp.
SKO	Getty Refining & Marketing Co.	UPJ	Upjohn Co. and Polymer Chemical Div.
SM	Mobil Oil Corp., Mobil Chemical Co., & Chemical Coatings Div.	USB	U.S. Borax Research Corp., U.S. Borax & Chemical Corp.
SNO	SunOlin Chemical Co.	USI	National Distillers & Chemicals Corp., U.S. Industrial Chemicals Co.
SNW	Sun Chemical Corp., Chemicals Div.	USR	Uniroyal, Inc., Uniroyal Chemical Div.
SOC	Standard Oil Co. of California, Chevron Chemical Co.	USS	U.S. Steel Corp., USS Chemicals Div.
SOH	Sohio Chemical Co.	VAL	Valchem Div. of United Merchants & Manufactures, Inc.
SOI	Specialty Organics, Inc.	VDM	Van De Mark Chemical Co., Inc.
SOL	Southland Corp., Fine Chemical Div.	VEL	Velsicol Chemical Corp.
SPD	General Electric Co., Silicone Products Dept.	VGC	Virginia Chemicals, Inc.
STC	American Hoechst Corp., Sou-Tex Works	VIK	Viking Chemical Co.
SW	Sherwin-Williams Co.	VNC	Vanderbilt Chemical Corp.
SWS	Stauffer Chemical Co., SWS Silicones Div.	VND	Van Dyk & Co., Inc.
SWT	Eschem, Inc.	WAG	West Agro-Chemical, Inc.
SYL	Sylvachem Corp.	WAY	Phillip A. Hunt Chemical Corp., Organic Chemical Div.
SYP	Dart & Kraft, Inc., Synthetic Products Co. Div.	WCC	White Chemical Corp.
TCC	Sybron Chemical, Inc.	WCL	Wright Chemical Corp.
TCH	Emery Industries Inc., Trylon Div.	WEC	World Ethanol Co.
TID	Getty Refining & Marketing Co., Delaware Refinery	WLN	Wilmington Chemical Corp.
TKL	Morton-Thiokol, Inc., Specialty Chemicals Div.	WM	American Can Co., Inolex Chemicals Div.
TLC	Twin Lake Chemical, Inc.	WPG	West Point-Pepperell, Inc., Griffitex Chemical Co. Sub.
TLI	Teledyne Industries, Inc., Teledyne McCormick Selph.	WTC	Witco Chemical Corp.
TNA	Ethyl Corp.	WTH	Union Camp Corp.
TNI	The Gillette Co., Chemical Div.	WTK	Whittaker Corp., Heico Div.
TRO	Troy Chemical Corp.	WTL	Pennwalt Corp., Lucidol Div.
TSA	Texas Alkyls, Inc.	WVA	Westvaco Corp., Chemicals Div.
TU	Tenn-USS Chemical Co.	WYT	Wyeth Laboratories, Inc., Wyeth Laboratories Div. of American Home Products Corp.
TX	Texaco, Inc.		
TZC	Magnesium Elektron, Inc.		

Note.--Complete names, telephone number, and addresses of the above reporting companies are listed in table 1 of the appendix. The above codes identify those of the 282 reporting companies and company divisions for which permission to publish was not restricted.

APPENDIX

TABLE 1.--SYNTHETIC ORGANIC CHEMICALS: ALPHABETICAL DIRECTORY OF
MANUFACTURERS, BY COMPANY, 1983

[Names of synthetic organic chemicals manufacturers that reported production and/or sales to the U.S. International Trade Commission for 1983 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 Corp-----	818-968-3801	14505 Proctor Ave., P. O. Box 1268, Industry, CA 91749.
AZS	AZS Corp-----	404-873-1850	762 Marietta Blvd., Atlanta, GA 30318.
	AZS Chemical Corp-----	404-873-1851	762 Marietta Blvd., 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 74127.
AGY	Agway, Inc., Olean Nitrogen Plant-----	315-477-6566	1446 Buffalo St., Olean, NY 14760.
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-----	212-688-8360	4020 Ajinomoto Dr., Raleigh, NC 27610.
ARC	Akzo Chemie America-----	312-786-0400	300 S. Wacker Dr., Chicago, IL 60614.
CAD	Noury Chemical-----	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.
AGC	Alberta Gas Chemicals, Inc-----	201-267-1400	7 Century Dr., Parsippany, NJ 07054.
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.
ALM	Allemania Chemical Co-----	504-687-6311	P. O. Box 716, Plaquemine, LA 70764.
ALL	Alliance Chemical, Inc----- Allied Corp.:	201-344-2344	33 Avenue P, Newark, NJ 07105.
ACS	Allied Chemicals Co-----	201-455-4125	P. O. Box 2251-R, Morristown, NJ 07960.
AFP	Allied Fibers & Plastics Co-----	202-455-5000	Columbia Rd. & Park Ave., Morristown, NJ 07960.
ACU	Union Texas Petroleum Corp-----	713-960-7500	P. O. Box 2120, Houston, TX 77001.
ALX	Alox Corp-----	716-282-1295	3943 Buffalo Ave., Niagara Falls, NY 14303.
ALP	Alpha Laboratories, Inc-----	303-756-1338	1685 S. Fairfax St., P. O. Box 22231, Denver, CO 80222.
APH	Alpha Resins Corporation -----	901-853-2450	P. O. Drawer A, Hwy. 57E, Collierville, TN 38017.
HES	Amerada Hess Corp. (Hess Oil Virgin- Island Corp.).	201-636-3000	1 Hess Plaza, Woodbridge, NJ 07095.
AMB	American Bio-Synthetics Corp-----	414-384-7017	710 W. National Ave., P. O. Box 4275, Milwaukee, WI 53204.
WM	American Can Co., Inolex Chemicals Co--	215-271-6400	Jackson & Swanson Sts., Philadelphia, PA 19148.
ACY	American Cyanamid Co-----	201-831-2000	One Cyannamid Plaza, Wayne, NJ 07470.
HST	American Hoechst Corp.:		
	Hoechst Fibers Industries Div-----	212-869-3850	1515 Broadway, New York, NY 10036.
	Petrochemicals Div-----	201-231-2477	Route 202-206 North, Somerville, NJ 08876.
STC	Sou-tex Words-----	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.
ALB	Ames Laboratories, Inc-----	203-874-2463	200 Rock Lane, Milford, CT 06460.
HVG	Ametek, Inc., Haveg Div-----	302-995-0410	900 Greenbank Rd., Wilmington, DE 19808.
AMV	Ambac Chemical Corp-----	213-264-3910	4100 E. Washington Blvd., Los Angeles, CA 90023.
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.
APX	Apex Chemical Co., Inc-----	201-354-5420	200 S. 1st St., P. O. Box 254, Elizabethport, NJ 07206.
APO	Apollo Colors, Inc-----	312-564-9190	899 Skokie Blvd., Northbrook, IL 60062.

TABLE.--SYNTHETIC ORGANIC CHEMICALS: ALPHABETICAL DIRECTORY OF MANUFACTURERS,
BY COMPANY, 1983--CONTINUED

IDENTIFICATION CODE	NAME OF COMPANY	TELEPHONE NUMBER	OFFICE ADDRESS
ADM	Archer-Daniels-Midland, ADM Clinton	217-424-5200	1251 Beaver Channel Pkwy., Clinton, IA 52732.
ARD	Ardmore Chemical Co.	201-481-2406	29 Riverside Ave., Bldg., 14, Newark, NJ 07104.
ARN	Arenol Chemical Corp.	212-784-0948	40-33 - 23d St., Long Island City, NY 11101.
ARZ	Arizona Chemical Co.	201-794-3200	One Cyanamid Plaza, Wayne, NJ 07470.
AKS	Arkansas Co., Inc.	201-589-0516	185 Foundry St., Newark, NJ 07105.
ALS	Armco, Inc.	513-425-6541	703 Curtis St., Middletown, OH 45043.
AGP	Armour-Dial, Inc.	312-892-4381	2000 Aucutt Rd., Montgomery, IL 60538.
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.	617-978-0144	Old Webster Rd., Oxford, MA 01540.
ALI	Associated Lead, Inc.	215-427-3000	2545 Aramingo Ave., Philadelphia, PA 19125.
BLA	Astor Products, Inc., Blue Arrow Div.	904-783-5000	5244 Edgewood Ct., Jacksonville, FL 32205.
ATL	Atlantic Chemical Corp.	201-235-1800	10 Kingsland Rd., Nutley, NJ 07110.
ATR	Atlantic Richfield Co., Arco Chemical Co.	215-557-3011	515 S. Flower St., Los Angeles, CA 90071.
APD	Atlas Powder Co. Sub. of Tyler Corp.	417-624-0212	P. O. Box 87, Joplin, MO 64801.
APR	Atlas Processing Co.	318-636-2711	P. O. Box 3099, Shreveport, LA 71133.
ARI	Atlas Refinery, Inc.	201-589-2002	142 Lockwood St., Newark, NJ 07105.
ACC	Atomergic Chemetals Corp.	516-349-8800	100 Fairchair Ave., Plainview, NY 11803.
AUX	Auralux Corp.	203-886-2616	29 Statt Ave., Norwick, CT 06389.
KCH	Joseph Ayers, Inc.	215-837-1808	275 Keystone Dr., Bethlehem, PA 18017.
BAS	BASF Wyandotte Corp.	616-392-2391	491 Columbus Ave., Holland, MI 49423.
		201-263-4055	and 100 Cherry Hill Rd., Parsippany, NJ 07054.
FSN	BFC Chemicals, Inc.	302-575-7850	3509 Silverside Rd., P. O. Box 7495, Wilmington, DE 19803.
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.
BAK	Baker International - Magna Corp.	713-795-4270	P. O. Box 33387, Houston, TX 77233.
BLM	Balchem Corp., Arc Chemical Div.	914-355-2891	P. O. Box 180, Slate Hill, NY 10973.
BLG	Ball Chemical Co.	412-486-1111	1486 Butler Plank Rd., Glenshaw, PA 15116.
BAX	Baxter Travenol Laboratories, Inc.	312-948-2000	6301 N. Lincoln Ave., Morton Grove, IL 60053.
BFF	Beatrice Foods: Farboil Co. Div.	301-477-8200	8200 Fisher Rd., Baltimore, MD 21222.
BPT	Permuthane Div.	617-531-1880	13 Corwin St., Peabody, MA 01960.
BCK	Beckman Instruments, Inc.	619-438-9151	6200 El Camino Real, Carlsbad, CA 92008.
	Spinco Div.	714-871-4848	1050 Page Mill Rd., Palo Alto, CA 94304.
BEE	Beecham, Inc., Beecham Laboratories Div.	201-469-5200	101 Passumtown Rd., Piscataway, NJ 08854.
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.
CTR	Bemis Co., Inc., Custom Resins Div.	612-340-6000	800 Northstar Center, Minneapolis, MN 55402.
BME	Bendix Corp.	518-273-6550	P. O. Box 238, Troy, NY 12180.
BEN	Bennett's Paint and Glass	801-486-2211	P. O. Box 1320, Salt Lake City, UT 84110.
BLY	Berkley & Co., Inc.	713-336-1520	Trilene Dr., Spirit Lake, IA 51360.
BTS	Bethlehem Steel Corp.	215-694-4522	Martin Tower - 8th Fl., Bethlehem, PA 18016.

TABLE 1.--SYNTHETIC ORGANIC CHEMICALS: ALPHABETICAL DIRECTORY OF MANUFACTURERS,
BY COMPANY, 1983--CONTINUED

IDENTIFICATION CODE	NAME OF COMPANY	TELEPHONE NUMBER	OFFICE ADDRESS
BDS	Biddle Sawyer Corp-----	212-736-1580	2 Penn Plaza - Suite 2355, New York, NY 10121.
BNS	Binney and Smith, Inc-----	215-253-6271	P. O. Box 431, 1100 Church Lane, Easton, PA 18042.
BOC	Biocraft Laboratories, Inc-----	201-796-3434	12 Industrial Park, Waldwick, NJ 07463.
BNP	Bison Nitrogen Products Co-----	712-277-1340	P. O. Box 1828, Sioux City, IA 51101.
LAK	Bofors Nobel, Inc-----	616-788-2341	5025 Evanston Ave., Muskegon, MI 49443.
BHA	Boots Hercules Agrochemicals Co-----	303-575-2000	3509 Silverside Rd., P. O. Box 7495, Wilmington, DE 19805.
BOR	Borden, Inc.:		
	Borden Chemical Div-----	614-225-4000	180 E. Broad St., Columbus, OH 43215.
	Graphics Div., Specialty Products-----	513-782-6200	630 Glendale-Milford Rd., Cincinnati, OH 45215.
MCB	Borg-Warner Corp., Borg-Warner Chemicals	304-424-5411	International Center, Parkersburg, WV 26101.
BFP	Breddo Food Products Corp., Inc-----	913-321-5300	18th & Kansas Ave., Kansas City, KS 66105.
BMC	Brin-Mont Chemicals, Inc-----	919-292-0566	3921 Spring Garden St., Greensboro, NC 27407
BRS	Bristol-Myers Co-----	212-546-4000	345 Park Ave., 11th Fl., New York, NY 10154.
BRU	M. A. Bruder & Sons, Inc-----	215-353-5100	52d St. & Grays Ave., Philadelphia, PA 19143.
BUK	Buckeye Cellulose Corp-----	901-454-8100	2899 Jackson Ave., Memphis, TN 38108.
BKM	Buckman Laboratories, Inc-----	901-278-0330	1256 N. McLean Blvd., Memphis, TN 38108.
BCC	Buffalo Color Corp-----	716-827-4500	P. O. Box 7027, Buffalo, NY 14240.
BJL	Burdick & Jackson Laboratories-----	616-726-3171	1953 S. Harvey St., Muskegon, MI 49442.
BUR	Burroughs Wellcome Co-----	919-248-3000	3030 Cornwallis Rd., Research Triangle Park, NC 27709.
CLF	CF&I Steel Corp., Pueblo Plant-----	303-561-6100	P. O. Box 316, Pueblo, CO 81002.
CFI	CF Industries, Inc-----	312-438-4500	Salem Lake Dr., Long Grove, IL 60047.
CCC	C.N.C. Chemical Corp-----	401-751-7711	P. O. Box 997, Annex Station, Providence, RI 02901.
	CPC International, Inc.:		
ACR	Acme Resin Corp-----	312-771-9680	1401 Circle Ave., Forest Park, IL 60130.
CRN	Amerchol Corp-----	201-287-1600	Talmadge Rd., Englewood Cliffs, NJ 07632.
PEN	Penick Corp-----	201-935-6600	1050 Wall St. W., Lyndhurst, NJ 07071.
CPS	CPS Chemical Co., Inc-----	201-727-3100	P. O. Box 162, Old Bridge, NJ 08857.
CYR	CYRO Industries-----	201-930-6100	155 Tice Blvd., P. O. Box 8588, Woodcliff, NJ 07675.
CMB	Cambridge Industries Co-----	617-924-0026	440 Arsenal St., Watertown, MA 02172.
CBM	Carborundum Co-----	716-731-3221	P. O. Box 477, Niagara Falls, NY 14303.
CBC	Carbose Corp-----	814-443-1611	100 Maple St., Somerset, PA 15501.
CGL	Cargill, Inc-----	612-475-7575	P. O. Box 5630, Minneapolis, MN 55440.
CHC	Carpenter Chemical Co-----	804-359-0800	P. O. Box 27205, Richmond, VA 23261.
CCW	Carstab Corp-----	513-733-2100	West St., Reading, OH 45215.
BSG	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.
CEL	Celanese Corp.:		
	Celanese Chemical Co., Inc-----	214-689-4000	1250 W. Mockingbird Lane, Dallas, TX 75247.
	Celanese Engineering Resins-----	201-635-2600	26 Main St., Chatham, NJ 07928.
	Celanese Fibers Co-----	704-554-2000	P. O. Box 32414, Charlotte, NC 28232.
	Celanese Specialties Resins-----	502-585-8011	P. O. Box 37600, Louisville, KY 40233.
CLP	Cell Products, Inc-----	512-882-8871	5 Georges Rd., New Brunswick, NJ 08901.
CNT	Certainteed Corp-----	215-687-5000	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-----	713-640-4700	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	P. O. Box 270, Springfield, OR 97477.

TABLE 1.--SYNTHETIC ORGANIC CHEMICALS: ALPHABETICAL DIRECTORY OF MANUFACTURERS, BY COMPANY, 1983--CONTINUED

IDENTIFICATION CODE	NAME OF COMPANY	TELEPHONE NUMBER	OFFICE ADDRESS
CFX	: Chemfax, Inc-----	: 601-863-6511	: Three Rivers Rd., Gulfport, MS 39503.
CI	: Chem-Fleur, Inc-----	: 201-589-4266	: 189 Clifford, ST., Newark, NJ 07105.
CXI	: Chemical Exchange Industries, Inc-----	: 713-526-8291	: P. O. Box 812, Houston, TX 77001.
CMT	: Chemithon Corp-----	: 206-937-9954	: 5430 W. Marginal Way, SW., Seattle, WA 98106.
CHL	: Chemol, Inc-----	: 919-272-3121	: P. O. Box 20687, Greensboro, NC 27420.
CRT	: Chemos Corp., Crest Chemical Div-----	: 201-623-3334	: 225-235 Emmett St., Newark, NJ 07114.
CPX	: Chemplex Co-----	: 312-437-7800	: 3100 Golf Rd., Rolling Meadows, IL 60008.
AIC	: Chemsampco, Inc., DBA, Albany International Corp. Chemical Div.	: 614-876-3637	: 1979 Atlas St., Columbus, OH 43228.
CHO	: Cholineco, Inc-----	: 803-943-4176	: P. O. Box 476, Hampton, SC 29924.
CHH	: CHR. Hansen's Laboratory, Inc-----	: 414-476-3630	: 9015 W. Maple St., West Allis, WI 53214.
CGY	: Ciba-Geigy Corp-----	: 914-478-3131	: 444 Saw Mill River Rd., Ardsley, NY 10502.
	: Agricultural Div-----	: 919-292-7100	: P. O. Box 18300, Greensboro, NC 27419.
CGO	: Citgo Petroleum Corp-----	: 318-491-6011	: P. O. Box 1562, Charles, LA 70602.
CLK	: Clark Oil & Refining Corp-----	: 314-889-9600	: 7930 Clayton Rd., St. Louis, MO 63117.
CLI	: Clintwood Chemical Co-----	: 312-390-5790	: 4342 S. Wolcott Ave., Chicago, IL 60609.
CSP	: Coastal Corp., Coastal States Petroleum Co.	: 512-887-4100	: P. O. Drawer 521, Corpus Christi, TX 78403.
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 07114.
CCS	: Colorado Chemical Specialties, Inc-----	: 303-278-1963	: 4295 McIntyre St., Golden, CO 80403.
CRS	: Colorado Resins, Inc-----	: 303-278-1963	: 4925 McIntyre St., Golden, CO 80403.
CIC	: Color Chem International Corp-----	: 201-444-8563	: 7 Plymouth Rd., Glen Rock, NJ 07452.
CBN	: Columbian Chemicals Co-----	: 918-744-1770	: 2431 E. 61st St., Tulsa, OK 74136.
CNC	: Columbia Nitrogen Corp-----	: 404-823-4000	: P. O. Box 1483(13), Augusta, GA 30913.
COC	: Columbia Organic Chemical Co., Inc-----	: 803-776-4990	: P. O. Box 1045, Camden, SC 29020.
CEI	: Combustion Engineering, Inc., CE Cast Products.	: 412-531-7945	: P. O. Box 457, Muse, PA 15350.
CAC	: Cominco American, Inc-----	: 509-747-6111	: W. 818 Riverside Ave., Spokane, WA 99220.
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, Inc-----	: 405-767-3456	: P. O. Box 1267, 100 S. Pine, Ponca City, OK 74603.
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 90220.
CPV	: Cook Paint & Varnish Co-----	: 816-391-6100	: P. O. Box 389, Kansas City, MO 64141.
CFA	: Cooperative Farm Chemicals Association.	: 913-843-7300	: P. O. Box 308, Lawrence, KS 06044.
COP	: Coopers Creek Chemical Corp-----	: 215-828-0375	: River Rd., West Conshohocken, PA 19428.
CPY	: Copolymer Rubber & Chemical Corp-----	: 504-355-5655	: P. O. Box 2591, Baton Rouge, LA 70821.
CLU	: Core-Lube, Inc-----	: 217-662-2136	: P. O. Box 811, Danville, IL 61832.
CRP	: Corpus Christi Petrochemicals Co-----	: 713-751-7100	: 1000 Louisiana, Suite 2700, Allied Bank Plaza, Houston, TX 77002.
COS	: Cosan Chemical Corp-----	: 201-460-9300	: 400 - 14th St., Carlstadt, NJ 07072.
CSD	: Cosden Oil & Chemical Co-----	: 214-750-2400	: 8350 N. Central, Dallas, TX 75206.
CRD	: Croda, Inc-----	: 212-683-3089	: 183 Madison Ave., New York, NY 10010.
CK	: Crompton & Knowles Corp., Dyes & Chemical Div.	: 215-376-6731	: 500 Pear St., Reading, PA 19603.
CCP	: Crown Central Petroleum Corp-----	: 301-539-7400	: 1 N Charles St., Baltimore, MD 21203.
USH	: Crown Metro, Inc-----	: 803-277-1870	: P. O. Box 5695, Greenville, SC 29606.
CRZ	: Crown Zellerbach Corp., Chemical Products Div.	: 206-254-0922	: P. O. Box 4266, Vancouver, WA 98662.
CYT	: Cumberland Chemical 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 60672.
CYH	: Cychem, Inc-----	: 513-641-4371	: P. O. Box 16056, 5366 Este Ave., 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.
DAT	: Daitom, Inc-----	: 913-371-1452	: 5150 Speaker Rd., Kansas City, KS 66110.
DAN	: Dan River, Inc., Chemical Products Div.	: 804-779-7000	: P. O. Box 261, Danville, VA 24540.

TABLE 1.--SYNTHETIC ORGANIC CHEMICALS: ALPHABETICAL DIRECTORY OF MANUFACTURERS,
BY COMPANY, 1983--CONTINUED

IDENTIFICATION CODE	NAME OF COMPANY	TELEPHONE NUMBER	OFFICE ADDRESS
DRL	Darling & Co-----	312-927-3000	4650 S. Racine Ave., Chicago, IL 60609.
SYP	Dart & Kraft, Inc: Synthetic Products Co. Div-----	216-531-6100	16601 St. Clair Ave., Cleveland, OH 44110.
DPI	Dart Polymers, Inc. Sub. of Dart Container Corp.-----	517-676-3800	432 Hogstack Rd., Mason, MI 48854.
DYS	Davies-Young Co-----	314-291-1900	2700 Wagner Place, Maryland Heights, MO 63043.
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.
DEG	Degen Oil & Chemical Co., Inc-----	201-432-1192	200 Kellogg St., Jersey City, NJ 07305.
DGC	Degussa Corp-----	201-288-6500	Rt. 46 at Hollister Rd., Teterboro, NJ 07608.
DRR	Delta Resins & Refractories-----	414-462-1200	6263 Teutonia Ave., Milwaukee, WI 53209.
DKA	Denka Chemical Corp-----	713-477-8821	8701 Park Place Blvd., Houston, TX 77017.
DNA	Dennis Chemical Co-----	314-771-1800	2700 Papin St., St. Louis, MO 63103.
DRB	The Derby Co., Inc-----	617-881-3160	P. O. Box 146, Megunco Rd., Ashland, MA 01721.
DSO	DeSoto, Inc-----	312-391-9000	1700 S. Mt. Prospect Ave., Des Plaines, IL 60018.
DEX	Dexter Chemical Corp-----	212-542-7700	845 Edgewater Rd., Bronx, NY 10474.
HYC	Hysol Div-----	818-968-6511	15051 E. Don Julian Rd., Industry, CA 91749.
MID	Midland Div-----	312-623-4200	1-7 E. Water St., Waukegan, IL 60085.
DA	Diamond Shamrock Corp-----	216-694-5000	1100 Superior Ave., Cleveland, OH 44114.
	Diamond Shamrock Agricultural Chemicals, Inc.:-----	205-556-3500	P. O. Box H, Tuscaloosa, AL 35404.
	Cresylic Plant-----	205-556-3500	P. O. Box H, Tuscaloosa, AL 35404.
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.
DIX	Dixie Chemical Co., Inc-----	713-526-2604	3635 W. Dallas Ave., Houston, TX 77019.
DDP	Dixie Pine Chemicals, Inc-----	601-584-6221	P. O. Box 470, Hattiesburg, MS 39401.
DRC	Dock Resins Corp-----	201-862-2351	1512 W. Elizabeth Ave., Linden, NJ 07036.
DOM	Dominion Products, Inc-----	212-499-3050	882 - 3d Ave., Brooklyn, NY 11232.
DVC	Dover Chemical Corp. Sub. of ICC Industries, Inc.-----	216-343-7711	W. 15th & Davis Sts., P. O. Box 40, Dover, OH 44622.
DOW	Dow Chemical Co-----	517-636-1000	2020 Willard R., Dow Center, Midland, MI 48640.
DCC	Dow Corning Corp-----	517-496-4000	P. O. Box 1767, Mail Code #C02205, Midland, MI 48640.
DRX	Drexel Chemical Co-----	901-774-4370	P. O. Box 9306, Memphis, TN 38109.
DUP	E. I. duPont de Nemours & Co., Inc-----	302-774-4090	DuPont Bldg., Wilmington, DE 19898.
DSC	Dye Specialties, Inc-----	201-866-9504	100 Plaza Center, P. O. Box 1447, Secaucus, NJ 07094.
MMC	EM Industries, Inc., EM Science Div-----	609-423-6300	2909 Highland Ave., Cincinnati, OH 45212.
AGI	EMS-American Grilon, Inc-----	803-481-9173	P. O. Box 1948, Sumter, SC 29150.
EPI	Eagle Pitcher Industries, Ohio Rubber Co., Orthane Div. Co.-----	817-387-0585	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.
EKK	Texas Eastman Co. Div-----	214-236-5000	P. O. Box 1974, Kingsport, TN 37662.
ESA	East Shore Chemical Co-----	616-726-3106	1221 E. Barney Ave., Muskegon, MI 49443.
EPP	Eaton Corp., EPP 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 Industries, Inc.-----	216-749-2605	P. O. Box 09186, Cleveland, OH 44109.
ELP	El Paso Products Co-----	915-333-7200	7th & Grant Sts., Odessa, TX 79760 and P. O. Box 3986, Odessa, TX 79760.
EMR	Emery Industries Div. of National Distillers & Chemical Corp.-----	513-762-6200	1300 Carew Tower, Cincinnati, OH 45202.
TCH	Emery Industries, Inc., Trylon Div-----	803-963-4031	P. O. Box 628, Mauldin, SC 29662.
USM	Emhart Corp., Bostik U.S. Div-----	617-777-0100	Boston St., Middleton, MA 01949.

TABLE 1.--SYNTHETIC ORGANIC CHEMICALS: ALPHABETICAL DIRECTORY OF MANUFACTURERS, BY COMPANY, 1983--CONTINUED

IDENTIFICATION CODE	NAME OF COMPANY	TELEPHONE NUMBER	OFFICE ADDRESS
EMK	Emkay Chemical Co-----	201-352-7053	319 - 2d St., Elizabeth, NJ 07206.
EKO	Empire Coke Co-----	205-945-8061	530 Beacon Pwy. W., Birmingham, AL 35209.
ENO	Enenco, Inc-----	901-320-5800	P. O. Box 125, Memphis, TN 38101.
EPC	Enterprise Products Co-----	713-880-6865	P. O. Box 4324, Houston, TX 77210.
SWT	Eschem, Inc-----	312-971-6800	3101 Woodcreek Dr., Downers Grove, IL 60515.
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.
EHC	EthiChem Corp-----	201-933-7881	150 Grand St., Carlstadt, NJ 07072.
TNA	Ethyl Corp-----	804-788-5000	330 S. 4th St., Richmond, VA 23231.
	Polymer Products Div-----	804-788-5000	8000 G.S.R.I. Ave., Baton Rouge, LA 70808.
ENJ	Exxon Chemical Americas-----	713-870-6018	P. O. Box 3272, Houston, TX 77001.
	FMC Corp.:-----		
FMN	Agricultural Chemical Corp-----	215-299-6000	2000 Market St., Philadelphia, PA 19103.
FMG	Industrial 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 Houten St., P. O. Box 2398, Paterson, NJ 07509.
FMT	Fairmount Chemical Co., Inc-----	201-344-5790	117 Blanchard St., Newark, NJ 07105.
FRI	Farmland Industries, Inc-----	816-459-6407	P. O. Box 7305, Kansas City, MO 64116.
FEL	Felton International, Inc-----	212-497-4664	599 Johnson Ave., Brooklyn, NY 11237.
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.
	Ottawa Chemical Div-----	419-691-3507	700 N. Wheeling St., Toledo, OH 43605.
	Productol Chemical Div-----	213-945-3401	10051 Romandel Ave., Santa Fe Springs, CA 90670.
FND	Fiber Industries, Inc-----	704-554-2000	P. O. Box 32414, Charlotte, NC 28232.
RBC	Fike Chemicals, Inc-----	304-755-3336	P. O. Box 546, Nitro, WV 25143.
FTX	Finetex, Inc-----	201-797-4686	418 Falmouth Ave., Elmwood Park, NJ 07407.
	Firestone Tire & Rubber Co.:-----		
FRF	Firestone Fibers & Textile Co-----	804-541-2044	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	200 N. First Ave., P. O. Box 340, Park Falls, WI 54552.
FLM	Fleming Laboratories, Inc-----	704-372-5613	2205 Thrift Rd., P. O. Box 34384, Charlotte, NC 28234.
GIK	Flint Ink Corp., Cal/Inc Div-----	415-525-1188	1404 - 4th St., Berkeley, CA 94710.
FTE	Foote Mineral Co-----	215-363-6500	Route 100, Exton, PA 19341.
FMO	Ford Motor Co., Paint Plant-----	313-344-6051	400 Groesbeck Hwy., Mt. Clements, 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-Johnson, 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 Chemical Industries-----	614-443-0241	2020 Bruck St., Columbus, OH 43207.
PRE	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	4450 Malsbary Rd., Blue Ash, OH 45242.
GAF	GAF Corp., Chemical Corp-----	201-862-2600	P. O. Box 12, Linden, NJ 07036.
GBF	GB Fermentation Industries, Inc-----	704-527-9000	5550-77 Center Dr., P. O. Box 241068, Charlotte, NC 28224.
GLX	Galxie Chemicals Corp-----	201-279-0558	26 Piercy St., Paterson, NJ 07524.
GNA	Gane's Chemicals, Inc-----	212-391-2580	1114 Avenue of the Americas, New York, NY 10036.

TABLE 1.--SYNTHETIC ORGANIC CHEMICALS: ALPHABETICAL DIRECTORY OF MANUFACTURERS,
BY COMPANY, 1983--CONTINUED

IDENTIFICATION CODE	NAME OF COMPANY	TELEPHONE NUMBER	OFFICE ADDRESS
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
		413-494-4747	and 1 Plastics Ave., Pittsfield, MA 01201.
GEI	Insulating Materials Products Sec----	518-385-2211	1 Campbell Rd., Schenectady, NY 12306.
SPD	Silicone Products Dept-----	518-266-2641	Waterford-Mechanicville Rd., Bldg. 11-MD24, Waterford, NY 12188.
GNF	General Foods Manufacturing Corp., Maxwell House Coffee Div.	914-335-2500	1125 Hudson St., Hoboken, NJ 07030.
GLC	General Latex & Chemical Corp-----	617-576-8000	675 Mass. Ave., Cambridge, MA 02139.
GNT	General Tire & Rubber Co., Chemical Div.	216-798-3305	1 General St., Akron, OH 44329.
GRG	P. D. George Co-----	314-621-5700	5200 N. 2d St., St. Louis, MO 63147.
	George-Pacific Corp.:		
PSP	Bellingham Div-----	206-733-4410	P. O. Box 1236, Bellingham, WA 98227.
GP	Houston Div-----	713-475-4453	P. O. Box 1959, Pasadena, TX 77501.
GP	Plaquemine Div-----	404-521-4000	P. O. Box 629, Plaquemine, LA 70746.
GP	Resins Operations-----	404-521-4000	133 Peachtree St. NE., Atlanta, GA 30348.
SKO	Getty Refining & Marketing Co-----	918-560-6000	P. O. Box 1650, Oil Center Bldg., Tulsa, OK 74102.
TID	Delware Refinery-----	302-834-6259	Delware City, DE 19706.
TNI	The Gillette Co., Chemical Div-----	617-421-7000	3500 W. 16th St., N. Chicago, IL 60064.
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.
GLY	Glyco, Inc-----	203-661-0123	51 Weaver St., Greenwich, CT 06830.
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 Highland Dr., Suite 200, Salt Lake City, UT 84106.
GYR	Goodyear Tire & Rubber Co-----	216-796-2121	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.
EYN	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.
GPC	Grain Processing Corp-----	319-264-4211	P. O. Box 349, Muscatine, IA 52761.
CPC	Grant Chemical Co-----	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 North, W. Lafayette, IN 47906.
GNW	Greenwood Chemical Co-----	703-456-6832	P. O. Box 26, State Hwy. #690, Greenwood, VA 22943.
GDC	Gresto, Inc-----	919-475-8101	216 E. Holly Hill Rd., Thomasville, NC 27360.
GPV	Guardman Chemicals Inc-----	616-452-5181	1350 Steele Ave., S.W., Grand Rapids, MI 49507.
GOC	Gulf Oil Corp., Gulf Oil Products Co----	713-754-2000	P. O. Box 2001, Houston, TX 77252.
GTH	Guth Corp-----	312-547-7030	551 Granville, Hillside, IL 60162.
HAR	Haarmann & Reimer Corp-----	201-686-3132	111 U.S. Hwy. 22, P. O. Box 175, 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.
FOC	Handschy Industries, Inc., Farac Varnishes & Chemicals.	312-468-4900	13601 S. Ashland Ave., Riverdale, IL 60627.
HAN	Hanna Chemical Coatings Corp-----	614-294-3361	1313 Windsor Ave., Columbus, OH 43211.
HSH	Harshaw/Filtrol Partnership-----	216-721-8300	1000 Harvard Ave., Cleveland, OH 44100.
HRT	Hart Products Corp-----	201-433-6632	173 Sussex St., Jersey City, NJ 07302.
HCC	Hatco 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.

TABLE 1.--SYNTHETIC ORGANIC CHEMICALS: ALPHABETICAL DIRECTORY OF MANUFACTURERS,
BY COMPANY, 1983--CONTINUED

IDENTIFICATION CODE	NAME OF COMPANY	TELEPHONE NUMBER	OFFICE ADDRESS
HCF	Hercofina-----	919-343-1150	310 N. Front St., P. O. Box 1694 Wilmington, DE 28402.
HPC	Hercules, Inc-----	302-594-5000	Hercules Plaza, Wilmington, DE 19899.
PFW	PFW Div-----	914-343-1900	33 Sprague Ave., Middletown, NY 10940.
HER	Heresite-Saekaphen, Inc-----	414-684-6646	822 S. 14th St., Manitowoc, WI 54220.
HTN	Heterene Chemical Co-----	201-278-2000	790 - 21st Ave., Paterson, NJ 07513.
HET	Heterochemical Corp-----	516-561-8225	111 E. Hawthorne Ave., Valley Stream, NY 11580.
HEC	Hewchem-----	601-863-6600	2500 - 33d Ave., P. O. Box 188, 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.
HXL	Hexcel Corp., Hexcel Chemical Products.	201-472-6800	205 Main St., Lodi, NJ 07644.
HIP	High Point Chemical Corp-----	919-883-1433	P. O. Box 2316, 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.
EFH	E. F. Houghton & Co-----	215-666-4000	Madison & Van Buren Aves., Valley Forge, PA 19482.
HML	Hummel Chemical Co-----	201-754-1800	P. O. Box 250, S. Plainfield, NJ 07080.
HMV	Humphrey Chemical Co-----	203-281-0012	P. O. Box 325, N. Haven, CT 06473.
WAY	Philip A. Hunt Chemical Corp., Organic Chemical Div.	201-944-4000	One Wellington Rd., Lincoln, RI 02865.
HNT	Huntington Laboratories, Inc-----	219-356-8100	970 E. Tipton St., Huntington, IN 46750.
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.
IGI	ICI Americas, Inc-----	302-575-3000	Concord Pike & Murphy Rd., Wilmington, DE 19897.
	Chemical Specialties Co-----	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	Industry Ave., Bldg. 28, Joliet, IL 60435.
INL	Inland Steel Co-----	312-346-0300	30 W. Monroe St., Chicago, IL 60603.
ICF	Inmont Corp-----	201-365-3400	1255 Broad St., Clifton, NJ 07015.
ICC	Inmont Corp. Div of United Technologies Corp.	201-427-6700	150 Wagawar Rd., Hawthorne, NJ 07506.
	Insilco Corp.:		
ENP	Enterprise Cos. Div-----	312-541-9000	1191 S. Whelling 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-----	312-564-8600	421 E. Hawley St., Mundelein, IL 60060.
IPP	International Pigment Processing Corp.	201-595-8181	200 Sheridan Ave., Paterson, NJ 07502.
IPC	Interplastic Corp-----	612-331-6850	2015 N.E. Broadway St., 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, Mattison, 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 709, Salem, VA 24153.
JEN	Jennison-Wright Corp-----	419-382-3411	P. O. Box 691, Toledo, OH 43694.
JRG	Andrew Jergens Co-----	513-421-1400	2535 Spring Grove Ave., Cincinnati, OH 45214.

TABLE 1.--SYNTHETIC ORGANIC CHEMICALS: ALPHABETICAL DIRECTORY OF MANUFACTURERS,
BY COMPANY, 1983--CONTINUED

IDENTIFICATION CODE	NAME OF COMPANY	TELEPHONE NUMBER	OFFICE ADDRESS
JTO	: Jetco Chemicals, Inc-----	: 214-872-3011	: P. O. Box 1898, Corsicana, TX 75110.
UPF	: Jim Walter Resources, Inc., CIC Div----	: 205-849-3001	: P. O. Box 5327, Birmingham, AL 35207.
JNS	: S. C. Johnson & Son, Inc-----	: 414-631-2000	: 1525 Howe St., Racine, WI 52403.
JOB	: Jones-Blair Co-----	: 214-353-1600	: 2728 Empire Center, Dallas, TX 75235.
JLS	: Jones & Laughlin Steel, Inc-----	: 412-227-5836	: 1600 W. Carson St., Pittsburgh, PA 15203.
JOR	: Jordan Chemical Co-----	: 215-583-7000	: 1830 Columbia Ave., Folcroft, PA 19032.
KAI	: Kaiser Aluminum & Chemical Corp-----	: 504-869-5711	: P. O. Box 337, Gramercy, LA 70052.
KLM	: Kalama Chemical, Inc-----	: 206-682-7890	: Suite 1110, Bank of California Center, Seattle, WA 98164.
KF	: Kay-Fries, Inc., Chemical Div., Dynamit Nobel of America, Inc.	: 201-784-0200	: 10 Link Dr., Rockleigh, NJ 07647.
KMP	: Kelly-Moore Paint Co., Inc-----	: 415-592-8337	: 987 Commercial St., San Carlos, CA 94070.
KCU	: Kennecott Minerals Co., Utah Copper Div.	: 801-322-6123	: P. O. Box 31838, Salt Lake City, UT 84131.
KPI	: Kenrich Petrochemicals, Inc-----	: 201-823-9000	: P. O. Box 32, Bayonne, NJ 07002.
KTP	: Kent Polymers, Inc-----	: 717-455-2021	: P. O. Box 920, Hazleton, PA 18201.
KYS	: Keysor 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.
KNP	: Knapp Products, Inc-----	: 201-478-7945	: 187 Garibaldi Ave., Lodi, NJ 07644.
KHI	: Koch Refining Co-----	: 316-832-5182	: P. O. Box 2302, Wichita, KS 67201.
KON	: H. Kohnstamm & Co., Inc-----	: 212-622-4800	: 161 Avenue of the Americas, New York, NY 10013.
KMC	: Komax Paint, Inc-----	: 303-534-5191	: P. O. Box 546, Denver, CO 80201.
KPT	: Koppers Co., Inc-----	: 412-227-2000	: Koppers Bldg., K-1050, 10th Fl., Pittsburgh, PA 15219.
LCP	: LCP Chemicals: Maine-----	: 800-526-7616	: P. O. Box 149, Orrington, ME 04474.
LKY	: Lake States Div. of Rhineland Paper Co.	: 304-843-1310 715-369-4356	: P. O. Box Box J, Moundsville, WV 26041. 515 W. Davenport St., Rhineland, WI 54501.
LUR	: Laurel Products Corp-----	: 215-423-5300	: 2600 E. Tioga St., Philadelphia, PA 19134.
LII	: Lawter International, Inc-----	: 312-498-4700	: 990 Skokie Blvd., Northbrook, IL 60062.
LEA	: Leatex Chemical Co-----	: 215-739-6324	: 2722 N. Hancock St., Philadelphia, PA 19133.
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 Dunks Ferry Rd., Bensalem, PA 19020.
LIL	: Eli Lilly & Co., Inc-----	: 317-261-2000	: 307 E. McCarty St., Indianapolis, IN 46285.
LIC	: Eli Lilly Industries, Inc-----	: 809-757-4150	: G.P.O. Box 71325, San Juan, PR 00936.
	: Lilly Industrial Coatings, Inc-----	: 317-634-8512	: 546 Abbott St., 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.
LAS	: Los Angeles Soap Co-----	: 213-627-5011	: 617 E. 1st St., P. O. Box 2198, T.A., Los Angeles, CA 90012.
LCP	: Louisiana Cellulose Sepcialties, Inc----	: 504-222-4141	: P. O. Box 209, Greensburg, LA 70441.
MAK	: MAK Chemical Corp-----	: 317-288-4464	: 1200 Rochester Ave., P. O. Box 2423, Muncie, IN 47302.
MET	: M & T Chemicals, Inc-----	: 201-499-0200	: P. O. Box 889, Laurens, SC 29360.
SOR	: MW Manufacturers, Southern Resin Div----	: 703-483-0211	: P. O. Box 68, Thomasville, NC 27360.
MCK	: MacKenzie Chemical Works, Inc-----	: 516-234-8600	: 1 Cordello Ave., Central Islip, NY 11722.
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., P. O. Box 5480, St. Louis, MO 63134.
MOR	: Marathon Morco Co-----	: 713-337-1534	: P. O. Drawer C, Dickinson, TX 77539.
MOC	: Marathon Petroleum Co., Texas Refining Div.	: 419-422-2121	: 539 S. Main St., Findlay, OH 48540.

TABLE 1.--SYNTHETIC ORGANIC CHEMICALS: ALPHABETICAL DIRECTORY OF MANUFACTURERS, BY COMPANY, 1983--CONTINUED

IDENTIFICATION CODE	NAME OF COMPANY	TELEPHONE NUMBER	OFFICE ADDRESS
MRD	Marden-Wild Corp-----	617-666-0400	P.O. Box 499, 500 Columbia St., Somerville, MA 02143.
MRV	Marlowe-Van Loan Corp-----	919-886-7126	P. O. Box 1851, 1511 Joshua Circle, High Point, NC 27261.
MRX	Max Marx Color & Chemical Co-----	201-373-7801	192 Coit St., Irvington, NJ 07111.
MCA	Masonite Corp., Alpine Chemical Div-----	601-863-5772	P. O. Box 2392, Gulfport, MS 39503.
MYO	Mayo Chemical Co-----	404-696-6711	5544 Oakdale Rd., Smyrna, GA 30080.
MZC	Mazer Chemical, Inc-----	312-244-3410	3938 Porett Dr., Gurnee, IL 60031.
MCC	McCloskey Varnish Co-----	215-624-4400	7600 State Rd., Philadelphia, PA 19136.
MCC	McCloskey Varnish Co. of the Northwest.	503-226-3751	4155 N.W. Yeon Ave., Portland, OR 97210.
MCC	McCloskey Varnish Co. of the West-----	213-726-7272	5501 W. Slauson, Commerce, CA 90040.
STG	McCormick & Co., Inc., McCormick/Stange, Flavor Div.	301-667-7400	230 Schilling Circle S. Hunt Valley, MD 21031.
MGK	McLaughlin Gormley King Co-----	612-544-0341	8810 - 10th Ave., N., Minneapolis, MN 55427.
MNP	McWhorter, Inc-----	312-428-2657	400 E. Cottage Place, Carpentersville, IL 60110.
MLC	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.
MER	Merichem Co-----	713-455-1311	1914 Haden Rd., Houston, TX 77015.
MLS	Miles Laboratories, Inc., Biotechnology Group.	219-262-7445	P. O. Box 932, Elkhart, IN 46515.
MIL	Milliken & Co., Milliken Chemical Co-----	803-472-9041	P. O. Box 817, Inman, SC 29349.
RPC	Millmaster Onyx Group, Inc., Lyndall Chemical Co. Div.	212-687-2757	Coronet Dr., Dalton, GA 30720.
MMM	Minnesota Mining & Manufacturing Co-----	612-733-1110	3M Center 224-65E, St. Paul, MN 55144.
MIR	Miranol Chemical Co., Inc-----	201-329-3900	P. O. Box 411, 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-----	412-777-2000	P. O. Box 385, Union Metropolitan Park, Union, NJ 07083.
MOB	Pittsburgh Div-----	412-777-2000	Penn Lincoln Pkwy. W., Pittsburgh, PA 15205.
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 and P. O. Box 26683, Richmond, VA 23261.
	Chemical Coatings Div-----	804-798-4291	P. O. Box M-1, Short Hills, NJ 07078.
	Petrochemicals Div-----	201-467-8500	World Tower One, 15600 Drunitt Blvd., Houston, TX 77022.
MOA	Mona Industries, Inc-----	713-590-7700	76 E. 24th St., Paterson, NJ 07544.
MON	Monsanto Co-----	201-345-8220	800 N. Lindberg Blvd., St. Louis, MO 63167.
MTO	Montrose Chemical Corp. of California.	314-694-1000	2401 Morris Ave., P. O. Box 219, Union, NJ 07083.
MGI	Mooney Chemicals, Inc-----	201-494-7522	2301 Scranton Rd., Cleveland, OH 44113.
MCP	Moretex Chemical Products, Inc-----	216-781-8383	314 W. Henry St., Spartanburg, SC 29304.
	Morton Thiokol, Inc.:	803-583-8441	
MRT	Morton Chemical Co. Div-----		
TKL	Morton Chemical Div-----	312-621-5200	2 N. Riverside Plaza, Chicago, IL 60606.
TCL	Texize Div-----	312-621-5200	110 N. Wacker Dr., Chicago, IL 60606.
MHI	Ventron Div-----	803-963-4261	P. O. Box 368, Greenville, WI 29602.
MOT	Motomco, Ltd-----	617-774-3100	150 Andover St., Danvers, MA 01923.
PNX	The Murphy-Phoenix Co-----	608-244-2904	P. O. Box 8422, Madison, WI 53708.
		216-831-0404	P. O. Box 22930, Beechwood, OH 44122.
NTL	NL Industries, Inc-----		
CHN	N-Ren Corp., Cherokee Nitrogen Div-----	212-621-9400	1230 Avenue of the Americas, New York, NY 10020.
LEM	Napp Chemicals, Inc-----	800-543-6736	P. O. Box 429, Pryor, OK 74362.
NTB	National Biochemical Co-----	201-773-3900	199 Main St., Lodi, NJ 07644.
NTC	National Casein Co-----	312-722-0126	3127 W. Lake St., Chicago, IL 60612.
NCJ	National Casein of New Jersey-----	312-846-7300	601 W. 80th St., Chicago, IL 60620.
		609-829-1880	P. O. Box 226, Riverton, NJ 08077.

TABLE 1.--SYNTHETIC ORGANIC CHEMICALS: ALPHABETICAL DIRECTORY OF MANUFACTURERS,
BY COMPANY, 1983--CONTINUED

IDENTIFICATION CODE	NAME OF COMPANY	TELEPHONE NUMBER	OFFICE ADDRESS
USI	National Distillers & Chemicals Corp.:		
	U.S. Industrial Chemicals Co-----	513-530-6572	P. O. Box 429550, 11500 N. Lake Dr., Cincinnati, OH 45249.
	National Petro Chemicals Corp-----	513-530-6572	P. O. Box 429550, 11500 N. Lake Dr., Cincinnati, OH 45249.
NMC	National Milling & Chemical Co-----	215-482-6600	4601 Flat Rock Rd., Philadelphia, PA 19127.
NSC	National Starch & Chemical Corp-----	201-685-5000	10 Finderne Ave., Bridgewater, NJ 08807.
	National Steel Corp., Great Lakes Plant.	313-297-2100	Tecumseh Rd., 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 21133.
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 14307.
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	P. O. Box 930, Mishawaka, IN 46544.
NIL	Nilok Chemicals, Inc-----	513-841-4000	2235 Langdon Farm Rd., Cincinnati, OH 45237 and P. O. Box 27134, 5030 Millington Rd., Memphis, TN 38127.
		901-358-7011	
CNP	Nipro, Inc-----	404-823-4000	P. O. Box 1483(13), Augusta, GA 30903.
NOC	The Norac Co., Inc-----	818-334-2508	405 S. Motor Ave., P. O. Box F, Azusa, CA 91703.
	Mathe Div-----	201-779-4981	169 Kennedy Dr., P. O. Box 2230, Lodi, NJ 07644.
LMI	North American Chemical Co-----	617-686-2907	19 S. Canal St., Lawrence, MA 01843.
NWP	Northern Petrochemical Co-----	402-633-5682	2223 Dodge St., Omaha, NB 68102.
NW	Northwestern Chemical Co-----	312-231-6111	120 N. Aurora St., West Chicago, IL 60185.
NPC	Northwest Petrochemical Corp. Div. of Stimpson Lumber Co.	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.
NUT	Nutrius, Inc-----	216-526-5522	8221 Brecksville Rd., Brecksville, OH 44141.
OBC	The O'Brien Corp-----	415-761-2300	450 E. Grand Ave., S. San Francisco, CA 94080.
HK	Occidental Chemical Corp-----	716-286-3000	360 Rainbow Blvd. S., Niagara Falls, NY 14303.
HKD	Durex Div-----	716-696-6000	Walck Rd., N. Tonawanda, NY 14120.
HKP	PVC Div-----	215-327-6400	P. O. Box 699, Pottstown, PA 19464.
OH	Ohio Medical Anesthetics-----	608-273-0019	2005 W. Beltline Hwy., Madison, WI 53713.
OMC	Olin Corp-----	203-356-2000	120 Long Ridge Rd., Stamford, CT 06940.
HLI	Onyx Chemical Co-----	312-371-2000	14000 S. Seeley Ave., Blue Island, IL 60406.
ONX	Onyx Chemical Co-----	201-434-1700	190 Warren St., Jersey City, NJ 07302.
OPC	Orbis Products Corp-----	201-889-5600	140 Route 10, E. Hanover, NJ 07936.
ORG	Organics/LaGrange, Inc-----	312-764-6700	7125 N. Clark St., Chicago, IL 60626.
OCC	Orient Chemical Corp-----	201-465-0714	125 Tyler St., Port Newark, NJ 07114.
BSW	Original Bradford Soap Works, Inc-----	401-821-2141	200 Providence St., W. Warwick, RI 02893.
CJO	C. 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.
PMP	PMP Fermentation Products, Inc-----	414-347-7300	P. O. Box 766, Milwaukee, WI 53201.
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 & Packaging 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.
PSC	Passaic Color & Chemical Co-----	201-279-0400	28-36 Paterson St., Paterson, NJ 07501.

TABLE 1.--SYNTHETIC ORGANIC CHEMICALS: ALPHABETICAL DIRECTORY OF MANUFACTURERS,
BY COMPANY, 1983--CONTINUED

IDENTIFICATION CODE	NAME OF COMPANY	TELEPHONE NUMBER	OFFICE ADDRESS
CHP	C. H. Patrick & Co., Inc-----	803-244-4831	P. O. Box 2526, Greenville, SC 29602.
PEK	Peck's Products Co-----	314-385-5454	2515 W. 35th St., Chicago, IL 60632.
PEC	Peerless Chemical Co-----	313-933-7525	12416 Cloverdale, Detroit, MI 48204.
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.
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.
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 Co., Inc-----	817-625-2111	600 E. Central St., P. O. Box 2199, Fort Worth, TX 76113.
PTT	Petro-Tex Chemical Corp-----	713-477-9211	8600 Park Place Blvd., Houston, TX 77017.
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.
PEZ	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 Stefkco Blvd., Bethlehem, PA 18018.
PLB	Pharmacia P-L Biochemicals, Inc-----	414-225-2600	2202 N. Barlett Ave., Milwaukee, WI 53202.
PDI	Phelps Dodge Industries, Inc.,	219-456-4444	1302 E. Creighton Ave., Fort Wayne, IN 46801.
	Phelps Dodge Magnet Wire Co. Div		
PPX	Phillips Paraxylene, Inc-----	809-864-1515	G. P.O. Box 4129, San Juan, PR 00936.
PLC	Phillips Petroleum Co-----	918-661-6600	15 Al Phillips Bldg., Bartlesville, OK 74004.
PPR	Phillips Puerto Rico Core, Inc-----	809-864-1515	G.P.O. Box 4129, San Juan, PR 00936.
PHC	Phthalchem, Inc-----	513-681-0099	6675 Beechland 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. Meridian Rd., Rockford, IL 61103.
PIL	Pilot Chemical Co-----	213-723-0036	11756 Burke St., Santa Fe Springs, CA 90670.
PGP	Pioneer Gas Products Co-----	806-378-8607	P. O. Box 511, Amarilli, TX 79163.
PPL	Pioneer Plastics Div. of LOF	207-784-9111	Pionite Rd., Auburn, ME 04210.
	Plastics, Inc.		
PIT	Pitt-Consol Chemical Co-----	405-767-3456	P. O. Box 1267, Ponca City, OK 74601.
PKL	Plaskolite, Inc-----	614-294-3281	1770 Joyce Ave., P. O. Box 1497, Columbus, OH 43216.
PKP	Plaskon Products, Inc-----	419-389-5600	2829 Glendale Ave., Toledo, OH 43614.
PSL	Plaslok Corp-----	716-681-7755	3155 Broadway, Buffalo, NY 14227.
PLS	Plastics Engineering Co-----	414-458-2121	3518 Lakeshore Rd., Sheboygan, WI 53081.
PMC	Plastics Manufacturing Co-----	214-330-8671	2700 S. Westmoreland, Dallas, TX 75223.
PLX	Plex Chemical Corp-----	415-471-6555	1205 Atlantic St., Union City, CA 94587.
PTC	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.
PYI	Polymer Industries-----	803-244-5351	P. O. Box 2184, Roberts Rd., Greenville, SC 29602.
PRI	Poly Resins, Inc-----	818-768-6600	11778 Sheedon St., Sun Valley, CA 91352.
PYZ	Polyrez Co., Inc-----	609-845-1813	P. O. Box 304, Woodbury, NJ 08096.
PLR	Polysar, Inc.:		
	Polysar Latex Div-----	216-836-0451	1795 W. Market St., Akron, OH 44313.
	Resins Div-----	671-537-9901	29 Fuller St., P. O. Box 90, 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-----	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 &	513-627-5194	P. O. Box 599, Cincinnati, OH 45201.
	Gamble Mfg. Co.		
PRC	Products Research & Chemical Corp-----	818-240-2060	5430 San Fernando Rd., P. O. Box 1800, Glendale, CA 91209.
PRX	Purex Corp-----	213-630-7487	5101 Clark Ave., Lakewood, CA 90712.
QCP	Quaker Chemical Corp-----	215-828-4250	Lime & Elm Sts., Conshohocken, PA 19428.
QKO	The Quaker Oats Co-----	312-222-7111	Merchandise Mart Plaze, Chicago, IL 60654.

TABLE 1.--SYNTHETIC ORGANIC CHEMICALS: ALPHABETICAL DIRECTORY OF MANUFACTURERS,
BY COMPANY, 1983--CONTINUED

IDENTIFICATION CODE	NAME OF COMPANY	TELEPHONE NUMBER	OFFICE ADDRESS
QUN	K. J. Quin & Co., Inc-----	617-321-3200	195 Canal St., Malden, MA 02148.
QN	Quintana Petrochemical Co-----	512-289-2600	5441 Up River Rd., Corpus Christi, TX 78469.
RSA	R.S.A. Corp-----	914-693-1818	690 Saw Mill River Rd., Ardsley, NY 10502.
RLS	Rachelle Laboratories, Inc-----	213-432-3956	700 Henry Ford Ave., Long Beach, CA 90801.
RCN	Racon, Inc-----	316-524-3245	P. O. Box 198, 6040 S. Ridge Rd., Wichita, KS 67201.
RAS	Raffi and Swanson, Inc-----	617-933-4200	100 Eames St., Wilmington, MA 01887.
RAB	Raymark Corp-----	203-371-0101	75 E. Main St., Stratford, CT 06497.
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-----	312-367-6000	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-----	312-247-8141	1510 Market Square Center, 151 N. Delaware St., Indianapolis, IN 46204.
REL	Reliance Universal, Inc., Louisville Resins Operation.	502-459-9110	P. O. Box 37510, Louisville, KY 40233.
REM	Remington Arms Co, Inc-----	203-333-1112	939 Barnum Ave., Bridgeport, CT 06601.
RSC	Republic Steel Corp-----	216-622-3000	P. O. Box 6778, Cleveland, OH 44101.
RNL	Resinall Corp-----	203-339-7100	3065 High Ridge Rd., Stamford, CT 06903.
RDA	Rhone-Poulenc, Inc-----	201-846-7700	120 Jersey Ave., New Brunswick, NJ 08903.
RCD	Richardson Polymer Corp-----	203-245-0441	15 Meigs Ave., Madison, CT 06443.
AMS	Ridgway Color Co-----	814-776-2151	75 Front St., Ridgway, PA 15853.
RTC	Riegel Textile Corp., Riechem Div-----	803-242-6050	Sparks Ave., Wave Shoals, SC 29692.
RIK	Riker Laboratories, Inc. Sub. of 3M Co.	813-341-1300	19901 Nordhoff St., Northridge, CA 91324.
RSN	Rilsan Corp-----	201-447-3300	139 Harristown Rd., Glen Rock, NJ 07452.
RT	Ritter International-----	213-245-6886	4001 Goodwin Ave., Los Angeles, CA 90039.
RIV	Riverdale Chemical Co-----	312-756-2110	220 E. 17th St., Chicago Heights, IL 60411.
ROB	Robeco Chemicals, Inc-----	212-986-6410	99 Park Ave., New York, NY 10016.
ORT	Roehr Chemicals, Inc-----	212-784-8473	52-20 - 37th St., Long Island City, NY 11101.
RH	Rohm & Haas Co-----	215-592-3000	Independence Mall West., Philadelphia, PA 19105.
ROM	Roma Chemical, Inc-----	617-676-3481	749 Quequechan St., 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 11802.
NES	Ruetgers-Nease Chemical Co-----	814-238-2424	201 Struble Rd., College, PA 16801.
SCM	SCM Corp.: Coatings & Resins Div----- Organic Chemicals Div----- PCR, Inc-----	216-344-8000 904-764-1711 904-754-1711	825 Euclid Ave., Cleveland, OH 44115. P. O. Box 389, Jacksonville, FL 32201. P. O. Box 389, Jacksonville, FL 32201.
SOS	SSC Industries, Inc-----	404-762-9651	1550 E. Taylor Ave., East Point, GA 30344.
NPR	Safeway Stores, Inc-----	415-944-4400	2800 Ygnacio Valley Rd., Walnut Creek, CA 94621.
STX	St. Croix Petrochemical Corp-----	809-773-6400	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.
SDG	Samuel Bingham Co-----	312-298-6777	11101 W. Franklin Ave., Franklin Park, IL 60131.
S	Sandoz, Inc.: Colors & Chemicals Div-----	704-372-0210	Route #10, East Hanover, NJ 07936.
SCN	Schenectady Chemicals, Inc-----	518-370-4200	P. O. Box 1046, Schenectady, NY 12306.
SBC	Scher Chemicals, Inc-----	201-471-1300	1 Styertowne Rd., P. O. Box 1236, Clifton, NJ 07012.
SCH	The Schering-Plough Corp-----	201-558-4000	1011 Morris Ave., Union, NJ 07083.
SCO	Scholler, Inc-----	215-739-0900	P. O. Box 4708, Philadelphia, PA 19134.
SPR	Scientific Protein Laboratories, Inc-----	608-849-5944	P. O. Box 158, Waunakee, WI 53597.

TABLE 1.--SYNTHETIC ORGANIC CHEMICALS: ALPHABETICAL DIRECTORY OF MANUFACTURERS, BY COMPANY, 1983--CONTINUED

IDENTIFICATION CODE	NAME OF COMPANY	TELEPHONE NUMBER	OFFICE ADDRESS
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.
SFR	Searle Food Resources, Inc-----	312-982-7000	4711 Golf Rd., Skokie, IL 60076.
SKP	Shakespeare Co., Monofilament Div-----	803-754-7011	P. O. Box 246, Columbia, SC 29204.
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.
	The Sherwin-Williams Co.:		
SW	Chemical Div-----	216-566-2000	101 Prospect Ave. NW., Cleveland, OH 44115.
BAL	Dutch Boy Paints, 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 77098.
SID	George F. Siddall Co., Inc-----	803-576-1556	P. O. Box 335, Roebuck, SC 29376.
SMP	J. R. Simplot Co-----	208-336-2110	P. O. Box 912, Pocatello, ID 83204.
VLN	M & C Div., Western Region-----	209-858-2511	999 Main St., Boise, ID 83707
SIM	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--	215-278-7000	P. O. Box 900, 900 River Rd., Conchohocken, PA 19428.
	Chemicals Div.		
SDC	Sodyeco, Inc-----	704-827-9651	P. O. Box 669246, Charlotte, NC 28266.
SOH	Sohio Chemical Co-----	216-575-6293	1899 Guildall Bldg., Cleveland, OH 44115.
SIC	Silmar Div-----	213-757-5141	12333 S. Van Ness Ave., Hawthorne, CA 90250.
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
SAC	Southeastern Adhevises Co-----	704-754-3493	P. O. Box 2070, 8150 Virginia St. SW., Lenoir, NC 28645.
SOP	Southern Chemical Products Co-----	912-746-5147	430 Lower Boundary St., Macon, GA 31202.
	Southland Corp.:		
ACT	Chemical Div-----	312-458-8450	7666 W. 63d St., Summit, IL 60501.
SOL	Fine Chemical Div-----	214-331-8391	5801 Marvin D. Love Freeway, Dallas, TX 75237.
SWR	Southwestern Refining Co., Inc-----	512-884-8863	P. O. Box 9217, Corpus Christi, TX 78408.
SPL	Spaulding Fibre Co., Inc., Industrial	716-692-2000	310 Wheeler St., Tonawanda, NY 14150.
	Plastics Div.		
ASL	Specialty Chemical Products Corp-----	715-735-9033	2 Stanton St., Marinette, WI 54143.
SOI	Specialty Organics, Inc-----	212-962-2008	5623 N. 4th St., Irwindale, CA 91706.
OMS	E. R. Squibb & Sons, Inc-----	609-921-4000	P. O. Box 4000, Route 206 & Providence Rd., Princeton, NJ 08540.
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.
SQC	Standard Oil Co. of California,	415-894-7700	575 Market St., San Francisco, CA 94105.
	Chevron Chemical Co.		
AMO	Standard Oil Company (Indiana)-----	312-856-6111	P. O. Box 5910-A, Mail Code 1201, Chicago, IL 60680.
SIO	Standard Oil (Ohio)-----	216-575-5419	101 Prospect Ave., Cleveland, OH 44115.
STT	Standard T Chemical, Inc-----	312-755-1223	10th & Washington Sts., Chicago Heights, IL 60411.
	Stauffer Chemical Co.:		
SFA	Agricultural Div-----	415-544-9000	636 California St., San Francisco, CA 94108.
SFC	Calhio Chemicals, Inc-----	415-544-9000	636 California St., San Francisco, CA 94108.
SFI	Chlor Alkali Products-----	415-544-9000	636 California St., San Francisco, CA 94108.
SFF	Food Ingredients Div-----	415-544-9000	636 California St., San Francisco, CA 94108.

TABLE 1.-- SYNTHETIC ORGANIC CHEMICALS: ALPHABETICAL DIRECTORY OF MANUFACTURERS,
BY COMPANY, 1983--CONTINUED

IDENTIFICATION CODE	NAME OF COMPANY	TELEPHONE NUMBER	OFFICE ADDRESS
SFS	Specialty & Intermediates Div-----	415-544-9000	636 California St., San Francisco, CA 94108.
SWS	SWS Silicones Div-----	415-544-9000	636 California St., San Francisco, CA 94108.
STP	Stepan Chemical Co-----	312-273-3950 312-446-7500	RR #1, Elwood, IL 60421 and 100 W. Maywood, NJ 07607.
SD	Sterling Drug, Inc-----	215-907-2288	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.
CIN	Stockhausen, Inc-----	919-378-9393	P. O. Box 16025, Greensboro, NC 27406.
SDP	Sugar Beet Products Co-----	517-799-4941	302 Waller St., P. O. Box 1387, Saginaw, MI 48605.
SNW	Sun Chemical Corp.: Chemicals Div-----	201-224-4600	P. O. Box 70, Chester, SC 29706.
SNA	Synthetic Pigment Div-----	212-986-5500	411 Sun Ave., Cincinnati, OH 45232.
SUN	Sun Company, Inc-----	215-293-6618	100 Matsonford Rd., Radnor, PA 19087.
SKG	Sunkist Growers, Inc-----	213-986-4800	14130 Riverside Dr., Sherman Oaks, CA 91432.
SNO	SunOlin Chemical Co-----	302-792-3100	P. O. Box F, Claymont, DE 10703.
JSC, IOC & TCC	Sybron Corp., Sybron Chemical Div-----	609-893-1100	P. O. Box 66, Birmingham Rd., Birmingham, NJ 08011.
SYL	Sylvachem Corp-----	904-769-7651	2110-A W. 23d St., Panama City, FL 32401.
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, Spartanburg, SC 29304.
SRY	Synray Corp-----	201-245-2600	209 N. Michigan Ave., Kenilworth, NJ 07033.
HFT	Syntex Agribusiness, Inc-----	417-866-7192	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., Hillister, CA 95023.
HNT	Tenneco Polymers, Inc-----	713-475-5200	1145 Ellsworth Dr., Pasadena, TX 77501.
TOC	Tenneco Oil Co-----	713-757-2635	P. O. Box 2511, Houston, TX 77001.
TEN	Tennessee Chemical Co-----	615-496-3331	Copperhill, TN 37317.
TVA	Tennessee Valley Authority-----	205-386-2377	TVA, OACD, Div. of Chemical Operations, A-204 NFDC, Muscle Shoals, AL 35660.
TU	Tenn-USS Chemicals Co-----	713-884-4312	P. O. Box 600, Pasadena, TX 77501.
TER	Terra Chemicals International, Inc-----	712-277-1340	P. O. Box 1828, Sioux City, IA 51101.
TER	Terra Nitrogen, Inc-----	712-277-1340	P. O. Box 1828, Sioux City, IA 51101.
GOO	The Terrell Corp-----	616-658-3351	820 Woburn St., Wilmington, MA 01887.
TX	Texaco, Inc-----	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 77590.
TXS	Texstyrene Plastics, Inc-----	817-831-0533	3607 N. Sylvania Ave., Fort Worth, TX 76111.
SKT	Textron, Inc., Spencer Kellogg Div-----	716-852-5850	120 Delaware Ave., Buffalo, NY 14240.
TMH	Thompson Hayward Chemical Co-----	913-321-3131	5200 Speaker Rd., Kansas City, MO 66106.
NCW	Tomah Products, Inc-----	608-868-7694	P. O. Box 388, 1012 Terra Dr., Milton, WI 53563.
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	P. O. Box 411, Lockport, NY 14094.
UPM	UOP, Inc., UOP Process Div-----	312-391-2000	20 UOP Plaza, Des Plaines, IL 60016.

TABLE 1.--SYNTHETIC ORGANIC CHEMICALS: ALPHABETICAL DIRECTORY OF MANUFACTURERS,
BY COMPANY, 1983--CONTINUED

IDENTIFICATION CODE	NAME OF COMPANY	TELEPHONE NUMBER	OFFICE ADDRESS
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.
WTH	: Union Camp Corp-----	: 201-628-9000	: P. O. Box 220, Dover, OH 44622.
NCI	: Chemical Products Div-----	: 201-628-2000	: 1600 Valley Rd., Wayne, NJ 07470.
NCI	: Terpene & Aromatics Div-----	: 201-628-2000	: P. O. Box 60369, Jacksonville, FL 32236.
UCC	: Union Carbide Corp-----	: 304-747-0001	: P. O. Box 8004, S. Charleston, WV 25303.
UOC	: Union Oil Co. of California-----	: 213-977-7746	: 461 S. Boylston St., Los Angeles, CA 90017.
USR	: Uniroyal, Inc., Uniroyal Chemical Div--	: 203-723-3887	: Emic Bldg., Spencer St., Naugatuck, CT 06770
UNN	: United Chemical Corp. of Norwood-----	: 617-762-4057	: Endicott St., P. O. Box 367, Norwood, MA 02062.
UNO	: United Erie, Inc-----	: 814-456-7561	: 438 Huron St., Erie, PA 16502.
USB	: U.S. Borax & Chemical Corp., U.S-----	: 213-381-5311	: 3075 Wilshire Blvd., Los Angeles, CA 90010.
	: Borax Research Corp.		
USS	: U.S. Steel Corp.:		
	: Clairton Plant-----	: 412-433-1121	: 600 Grant St., Rm. 2316, Pittsburgh, PA 15230.
	: Fairfield Plant-----	: 412-433-1121	: 600 Grant St., Rm. 2316, Pittsburgh, PA 15230.
	: Gary Works-----	: 412-433-1121	: 1 North Broadway, Gary, IN 46401.
	: Genova Plant-----	: 412-433-1121	: 600 Grant St., Rm. 2316, 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.
CWN	: Fine Chemicals-----	: 203-281-2722	: 410 Sackett Point Rd., North Haven, CT 06473.
	: Polymer Chemical Div-----	: 713-479-1541	: P. O. Box 685, LaPorte, TX 77571.
VAL	: Valchem Div. of United Merchants & Manufacturers, Inc.	: 201-837-1700	: 1407 Broadway, New York, NY 10018.
VSV	: Valentine Sugars, Inc., Valite Div-----	: 504-943-2459	: Rt 2, Box 625, Lockport, LA 70374.
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., Bethel, CT 06801 and Rt. #2, Box 54, Murray, KY 42071.
VND	: Van Dyk & Co., Inc-----	: 201-759-3225	: Main & Williams 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 3, Vicksburg, MS 39180.
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	: 2555 Cumberland Pkwy., Suite 200, Atlanta, GA 30339.
VGC	: Virginia Chemicals, Inc-----	: 804-483-7000	: 3340 W. Norfolk Rd., Portsmouth, VA 23703.
VIM	: 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.
FRO	: Vulcan Materials Co., Chemicals Div-----	: 205-877-3000	: P. O. Box 7689, Birmingham, AL 35223.
WJ	: Warner-Jenkinson Co-----	: 314-658-7315	: 2526 Baldwin St., St. Louis, MO 63106.
WAG	: West Agro-Chemical, Inc-----	: 913-384-1660	: P. O. Box 1386, Shawnee Mission, KS 66222.
WCA	: West Coast Adhesives Co-----	: 503-286-3515	: 1111 NW Front Ave., Portland, OR 97231.
EW	: Westinghouse Electric Corp., Industrial Materials Div.	: 412-864-7960	: Manor, PA 15665.
WPG	: West Point-Pepperell, Inc., Griffitex Chemical Co. Sub.	: 205-745-5767	: 1900 Cunningham Dr., Opelika, AL 36803.

TABLE 1.--SYNTHETIC ORGANIC CHEMICALS: ALPHABETICAL DIRECTORY OF MANUFACTURERS,
BY COMPANY, 1983--CONTINUED

IDENTIFICATION CODE	NAME OF COMPANY	TELEPHONE NUMBER	OFFICE ADDRESS
WVA	Westvaco Corp., Chemical Div-----	212-688-5000	P. O. Box 70848, Charleston Heights, SC 29415.
WRD	Weyerhaeuser Co-----	715-384-2141	1401 E. 4th St., Marshfield, WI 54449.
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	Whitmoer Laboratories, Inc-----	717-866-2151	19 N. Railroad St., Myerstown, PA 17067.
WTK	Whittaker Corp., Heico Div-----	717-476-0353	Rt. #11, 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	P. O. Box 66, Wilmington, DE 19899.
WTC	Witco Chemical Corp-----	201-573-2800	155 Tice Blvd., Woodcliff Lake, NJ 07675.
WEC	World Ethanol Co-----	304-747-3154	Bldg. 82, Rm. 836, P.O. Box 836, S. Charleston, WV 25303.
WBC	Worthington Diagnostics Systems, Inc.	703-893-5925	7655 Old Springhouse, Rd., McLean, Va 22102.
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-----	307-634-5981	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-----	415-857-1130	P.O. Box 10975, 975 California Ave., Palo Alto, CA 94304.

U.S. IMPORTS OF BENZENOID CHEMICALS AND PRODUCTS

U.S. general imports of benzenoid chemicals and products entered under the Tariff Schedules of the United States (TSUS), schedule 4, part 1, subparts B and C are analyzed by the U.S. International Trade Commission annually and published in detail in a separate report. General imports of benzenoid items entered in parts 1B and 1C totaled 2,075.5 million pounds with an entered value of \$2,144.7 million in 1983, compared with 6,814 million pounds with an entered value of \$1,200.4 million in 1982. Details are shown in table 2.

Industrial organic chemicals that are entered under part 1B consist chiefly of benzenoid intermediates and small quantities of acyclic compounds which are derived in whole or in part from benzenoid compounds. Also included are mixtures and small quantities of finished products not specially provided for in part 1C (e.g., rubber-processing chemicals). In terms of value, 30.6 percent of all the benzenoid imports under part 1B in 1983 came from Venezuela; 15.9 percent from West Germany; 14.8 percent, from Japan; and 9.8 percent, from the United Kingdom.

Finished organic chemical products entered under part 1C include dyes, pigments, medicinals, flavor and perfume materials, pesticides, plastics materials, and certain other specified products. In terms of value 20.4 percent of all finished benzenoid imports under part 1C in 1983 came from Japan; 19.1 percent, from West Germany; 16.8 percent, from the United Kingdom; and 9.9 percent, from Switzerland.

As a result of a concession granted in the Tokyo round of the Multilateral Trade Negotiations (MTN), the Trade Agreement Act of 1979 changed the method of customs valuation of benzenoid chemicals and products. Despite the increased statistical data provided for in the tariff schedules by the act, the Commission decided subsequently that this report should be continued, in the short term, to monitor the effects of the MTN concession on the level of imports of benzenoid chemicals and products.

In 1983, the Commission conducted a study to assess the impact on domestic producers of, and trade in, benzenoid chemicals and products as a result of the implementation of duty modifications, including the valuation basis change, following the conclusion of the MTN and the passage of the Trade Agreements Act of 1979. This study provided a comprehensive analysis of the effects of the MTN concession, thus eliminating the need for continued monitoring of imports of these chemicals and products. Because of this and the present level of statistical detail on imports of these products provided in the Bureau of the Census published import data, the Commission has decided to discontinue this report after the publication of the current edition.

TABLE 2.--BENZENOID CHEMICALS AND PRODUCTS: SUMMARY OF U.S.
GENERAL IMPORTS ENTERED UNDER SCHEDULE 4,
PARTS 1B AND 1C, OF THE TSUS, 1983

PART	QUANTITY	PERCENT OF TOTAL QUANTITY	ENTERED VALUE	PERCENT OF ENTERED VALUE	UNIT ENTERED VALUE
	<u>1,000 pounds</u>		<u>1,000 pounds</u>		<u>Per pound</u>
Schedule 4, Part 1B and 1C, total-----	2,075,534	100.0	2,144,688	100.0	\$1.03
Schedule 4, Part 1B--	1,532,535	73.8	844,587	39.4	.55
Schedule 4, Part 1C--	542,999	26.2	1,300,101	60.6	2.39

Source: Compiled by the U.S. International Trade Commission from records of the U.S. Customs Service.

Note.--The totals shown in this table differ from those given in the official statistics of the U.S. Department of Commerce chiefly because of differences in coverage and in the methods used in compiling the data.

TABLE 3.--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-----	α,α -Dichlorotoluene.
Benzanthrone-----	7H-Benz[de]anthracen-7-one.
Benzotrichloride-----	α,α,α -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- δ^2,α -indolineacetaldehyde.
Fischer's base-----	1,3,3-Trimethyl-2-methyleneindoline.
Freund's acid-----	4-Amino-2,7-naphthalenedisulfonic acid.

TABLE 3.--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.
β -Naphthol-----	2-Naphthol, tech.
Naphthol AS-----	3-Hydroxy-2-naphthanilide.
α -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]pyrazol-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'-Tminobis[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 3.--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-----	Phenylacetoneitrile.
4-m-Tolylenediamine-----	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.

