

SYNTHETIC ORGANIC CHEMICALS

**United States Production
and Sales, 1982**

(Investigation No. 332-135)



USITC PUBLICATION 1422

United States International Trade Commission / Washington, D.C. 20436

RECENT REPORTS OF THE UNITED STATES INTERNATIONAL TRADE
COMMISSION ON SYNTHETIC ORGANIC CHEMICALS

- Synthetic Organic Chemicals, United States Production and Sales, 1974
(USITC Publication 776, 1976), \$3.20
- *Synthetic Organic Chemicals, United States Production and Sales, 1975
(USITC Publication 804, 1977), \$3.10
- *Synthetic Organic Chemicals, United States Production and Sales, 1976
(USITC Publication 833, 1977), \$5.25
- *Synthetic Organic Chemicals, United States Production and Sales, 1977
(USITC Publication 920, 1978), \$6.25
- *Synthetic Organic Chemicals, United States Production and Sales, 1978
(USITC Publication 1001, 1979), \$7.50
- *Synthetic Organic Chemicals, United States Production and Sales, 1979
(USITC Publication 1099, 1980), \$8.00
- Synthetic Organic Chemicals, United States Production and Sales, 1980
(USITC Publication 1183, 1981), \$8.00
- Synthetic Organic Chemicals, United States Production and Sales, 1981
(USITC Publication 1292, 1982), \$8.50

Note.--The reports preceded by an asterisk (*) are out of print. The other reports listed above may be purchased from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. All U.S. International Trade Commission reports reproduced by the Government Printing Office may be consulted in the official depository libraries throughout the United States.

UNITED STATES INTERNATIONAL TRADE COMMISSION

**SYNTHETIC
ORGANIC CHEMICALS**

**United States Production
and Sales, 1982**

**U.S. GOVERNMENT PRINTING OFFICE
WASHINGTON: 1983**

USITC PUBLICATION 1422

UNITED STATES INTERNATIONAL TRADE COMMISSION

COMMISSIONERS

Alfred E. Eckes, Chairman

Paula Stern

Veronica A. Haggart

Seeley G. Lodwick

Kenneth R. Mason, Secretary to the Commission

OFFICE OF INDUSTRIES

Norris A. Lynch, Director

This report was prepared principally by William Baker, Tedford C. Briggs, Edmund Cappuccilli, Kenneth Conant III, Cynthia B. Foreso, Jesse Lawrence Johnson, Eric Land, David G. Michels, Bonnie J. Noreen, James Raftery, and Edward J. Taylor.

Assistance in the preparation of the report was provided by Mildred C. Higgs, Frances Battle, Patricia Bentley, Russell Flynt, Sharon Greenfield, Kenneth Kozel, and Wanda Tolson. Automatic Data Processing input was provided by James Gill, Marie Jagannathan, and Peggy Verdine, Word Processing Unit input was provided by Shirley Royster.

Address all communications to
Office of the Secretary
United States International Trade Commission
Washington, D.C. 20436

C O N T E N T S

	<u>Page</u>
Introduction-----	1
Summary-----	3
General-----	4
Section I. Tar and tar crudes:	
Statistical highlights-----	7
Production and sales statistics-----	9
Section II. Primary products from petroleum and natural gas for chemical conversion:	
Statistical highlights-----	15
Production and sales statistics-----	17
Section III. Cyclic intermediates:	
Statistical highlights-----	25
Production and sales statistics-----	27
Section IV. Dyes:	
Statistical highlights-----	57
Production and sales statistics-----	59
Section V. Organic pigments:	
Statistical highlights-----	89
Production and sales statistics-----	91
Section VI. Medicinal chemicals:	
Statistical highlights-----	101
Production and sales statistics-----	103
Section VII. Flavor and perfume materials:	
Statistical highlights-----	123
Production and sales statistics-----	125
Section VIII. Plastics and resin materials:	
Statistical highlights-----	141
Production and sales statistics-----	143
Section IX. Rubber-processing chemicals:	
Statistical highlights-----	155
Production and sales statistics-----	157

CONTENTS

	<u>Page</u>
Section X. Elastomers:	
Statistical highlights-----	165
Production and sales statistics-----	167
Section XI. Plasticizers:	
Statistical highlights-----	171
Production and sales statistics-----	173
Section XII. Surface-active agents:	
Statistical highlights-----	181
Production and sales statistics-----	183
Section XIII. Pesticides and related products:	
Statistical highlights-----	223
Production and sales statistics-----	225
Section XIV. Miscellaneous end-use chemicals and chemical products:	
Statistical highlights-----	237
Production and sales statistics-----	239
Section XV. Miscellaneous cyclic and acyclic chemicals:	
Statistical highlights-----	255
Production and sales statistics-----	257

APPENDIX

Directory of manufacturers-----	307
U.S. imports of benzenoid chemicals and products-----	323
Cyclic intermediates: Glossary of synonymous names-----	327

INTRODUCTION

This is the 66th 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 780 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, analyzed, 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.

Combined production of all synthetic organic chemicals, tar, and primary products from petroleum and natural gas in 1982 was 299,125 million pounds--a decrease of 9.7 percent from the output in 1981 (table 1). Sales of these materials in 1982, which totaled 149,735 million pounds, valued at \$54,270 million, were 15.1 percent smaller than in 1981 in terms of quantity and 14.7 percent smaller 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 1982, production of all synthetic organic chemicals, including cyclic intermediates and finished products totaled 202,070 million pounds, or 7.0 percent less than the output in 1981. Fourteen sections showed a decrease in production in 1982 over 1981. Plasticizers (1,411 million pounds) decreased by 24.4 percent; pesticides and related products (1,113 million pounds) decreased by 22.2 percent; elastomers (synthetic rubber) (3,842 million pounds) decreased by 20.8 percent; rubber-processing chemicals (232 million pounds) decreased by 17.1 percent; cyclic intermediates (37,637 million pounds) decreased by 17.0 percent; miscellaneous cyclic and acyclic chemicals (81,467 million pounds) decreased by 14.3 percent; surface-active agents (4,367 million pounds) decreased by 14.0 percent; medicinal chemicals (227 million pounds) decreased by 7.3 percent; organic pigments (71 million pounds) decreased by 6.6 percent; plastics and resin materials (38,313 million pounds) decreased by 5.6 percent; flavor and perfume materials (156 million pounds) decreased by 5.5 percent; and dyes (222 million pounds) decreased by 3.5 percent. The remaining section, miscellaneous end-use chemicals and chemical products (33,012 million pounds), showed an increase of 49.0 percent in production in 1982 from that in 1981.

TABLE 1.--SYNTHETIC ORGANIC CHEMICALS AND THEIR RAW MATERIALS: U.S.
PRODUCTION AND SALES, 1981 AND 1982

CHEMICAL	PRODUCTION			SALES					
				QUANTITY		VALUE			
	1981	1982	INCREASE: OR DECREASE: (-), 1982: OVER 1981 ¹	1981	1982	INCREASE: OR DECREASE: (-), 1982: OVER 1981 ¹	1981	1982	INCREASE: OR DECREASE: (-), 1982: OVER 1981 ¹
	: Million	: Million	: Percent	: Million	: Million	: Percent	: Million	: Million	: Percent
Grand total ² -----	: 331,147	: 299,125	: -9.7	: 176,272	: 149,735	: -15.1	: 63,637	: 54,270	: -14.7
Tar ³ -----	: 4,290	: 4,003	: -6.7	: 2,749	: 2,093	: -23.9	: 555	: 278	: -49.9
Primary products from petroleum and natural gas-----	: 109,517	: 93,003	: -15.1	: 59,222	: 43,646	: -26.3	: 10,369	: 7,350	: -29.1
Synthetic organic chemicals, total-----	: 217,340	: 202,070	: -7.0	: 114,301	: 103,996	: -9.0	: 52,713	: 46,642	: -11.5
Cyclic intermediates-----	: 45,323	: 37,637	: -17.0	: 19,202	: 16,193	: -15.7	: 7,437	: 5,831	: -21.6
Dyes-----	: 230	: 222	: -3.5	: 219	: 214	: -2.3	: 773	: 685	: -11.4
Organic pigments-----	: 76	: 71	: -6.6	: 64	: 59	: -7.8	: 415	: 374	: -9.9
Medicinal chemicals-----	: 245	: 227	: -7.3	: 153	: 147	: -3.9	: 1,199	: 1,259	: 5.0
Flavor and perfume materials---	: 165	: 156	: -5.5	: 119	: 113	: -5.0	: 252	: 284	: 12.7
Plastics and resin materials---	: 40,601	: 38,313	: -5.6	: 36,107	: 32,002	: -11.4	: 17,092	: 15,313	: -10.4
Rubber-processing chemicals---	: 280	: 232	: -17.1	: 182	: 154	: -15.4	: 298	: 264	: -11.4
Elastomers (synthetic rubber)--	: 4,849	: 3,842	: -20.8	: 3,104	: 2,514	: -22.8	: 2,505	: 2,024	: -19.2
Plasticizers-----	: 1,866	: 1,411	: -24.4	: 1,567	: 1,316	: -16.0	: 894	: 741	: -17.1
Surface-active agents-----	: 5,078	: 4,367	: -14.0	: 3,567	: 2,595	: -16.4	: 1,477	: 1,248	: -15.5
Pesticides and related products	: 1,430	: 1,113	: -22.2	: 1,291	: 1,147	: -11.2	: 4,652	: 4,432	: -4.7
Miscellaneous end-use chemicals and chemical products-----	: 22,158	: 33,012	: 49.0	: 12,954	: 12,895	: -0.5	: 3,975	: 3,583	: -9.9
Miscellaneous cyclic and acyclic chemicals-----	: 95,039	: 81,467	: -14.3	: 36,083	: 34,647	: -4.0	: 11,744	: 10,604	: -9.7

¹Percentages 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.

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 1982 was 202,071 million pounds or 7.0 percent less than the output of 217,339 million pounds reported for 1981, and 93.0 percent more than the output of 104,711 million pounds reported in 1967 (see table 2). Sales of synthetic organic chemicals in 1982 amounted to 103,996 million pounds, valued at \$46,640 million, compared with 114,299 million pounds, valued at \$52,713 million, in 1981 and 55,177 million pounds, valued at \$10,438 million, in 1967. Production of all cyclic products (intermediates and finished products combined) in 1982 totaled 60,999 million pounds or 13.3 percent less than the 70,334 million pounds reported for 1981 and 82.2 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 1982 totaled 141,072 million pounds, or 4.0 percent less than the 147,006 million pounds reported for 1981 and 98.0 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, 1981, AND 1982

CHEMICAL	(Production and sales in thousands of pounds; sales value in thousands of dollars)					
	1967 ¹	1981	1982	INCREASE OR DECREASE (-)		
				1982 OVER 1967	1982 OVER 1981	
Organic chemicals, cyclic and acyclic, grand total:						
Production-----	104,711,357	217,339,092	202,070,687	93.0	-7.0	
Sales-----	55,176,823	114,298,750	103,996,315	88.5	-9.0	
Sales value-----	10,438,453	52,712,854	46,640,028	346.8	-11.5	
Cyclic, total:						
Production-----	33,479,469	70,333,502	60,998,643	82.2	-13.3	
Sales-----	19,328,628	36,546,767	31,506,178	63.0	-13.8	
Sales value-----	4,610,293	24,067,541	21,082,390	357.3	-12.4	
Acyclic, total:						
Production-----	71,231,888	147,005,590	141,072,044	98.0	-4.0	
Sales-----	35,848,195	77,751,983	72,490,137	102.2	-6.8	
Sales value-----	5,828,160	28,645,313	35,357,638	338.5	-10.8	
1. Cyclic Intermediates						
Production-----	20,793,132	45,323,048	77,637,336	81.0	-17.0	
Sales-----	9,461,180	19,201,715	16,192,629	71.1	-15.7	
Sales value-----	1,000,359	7,436,562	5,830,550	422.8	-21.6	
2. Dyes						
Production-----	206,240	229,670	221,735	7.5	-3.5	
Sales-----	198,592	218,848	214,183	7.9	-2.1	
Sales value-----	332,049	772,837	684,736	106.2	-11.4	
3. Organic Pigments						
Production-----	53,322	75,795	71,269	23.7	-6.0	
Sales-----	42,867	64,067	58,674	36.9	-8.4	
Sales value-----	108,354	415,320	374,124	245.3	-9.9	
4. Medicinal Chemicals						
Cyclic:						
Production-----	110,129	180,260	163,220	48.2	-9.5	
Sales-----	70,120	100,204	92,050	31.3	-8.1	
Sales value-----	348,873	1,144,400	1,175,416	236.9	2.7	
Acyclic:						
Production-----	69,941	64,422	63,527	-9.2	-1.4	
Sales-----	56,804	53,226	55,201	-2.8	3.7	
Sales value-----	35,402	54,292	83,405	129.1	53.6	

See footnotes at end of table.

TABLE 2.--SYNTHETIC ORGANIC CHEMICALS: SUMMARY OF U.S. PRODUCTION AND SALES OF INTERMEDIATES AND FINISHED PRODUCTS, 1967, 1981, AND 1982--CONTINUED

(Production and sales in thousands of pounds; sales value in thousands of dollars)						
CHEMICALS	1967 ¹	1981	1982	INCREASE OR DECREASE (-)		
				1982 OVER 1967	1982 OVER 1981	
<i>5. Flavor and Perfume Materials</i>						
Cyclic:						
Production-----	57,978	93,136	84,710	46.1	-9.0	
Sales-----	47,285	68,673	65,489	38.5	-4.6	
Sales value-----	52,866	157,708	210,657	298.5	33.6	
Acyclic:						
Production-----	53,558	71,427	71,667	33.8	0.3	
Sales-----	49,311	49,879	47,313	-4.1	-5.1	
Sales value-----	40,495	93,887	72,888	80.0	-22.4	
<i>6. Plastics and Resin Materials</i>						
Cyclic:						
Production-----	5,033,497	11,729,680	11,110,845	120.7	-5.3	
Sales-----	4,224,121	10,470,900	9,280,603	119.7	-11.4	
Sales value-----	1,036,940	6,836,908	6,125,081	490.7	-10.4	
Acyclic:						
Production-----	8,759,452	28,871,340	27,202,413	210.5	-5.8	
Sales-----	7,753,242	25,635,651	22,721,477	193.1	-11.4	
Sales value-----	1,635,690	10,255,361	9,187,621	461.7	-10.4	
<i>7. Rubber-Processing Chemicals</i>						
Cyclic:						
Production-----	220,139	246,268	207,740	-5.6	-15.6	
Sales-----	169,970	157,591	134,625	-20.8	-14.6	
Sales value-----	116,318	270,934	240,717	106.9	-11.2	
Acyclic:						
Production-----	43,994	33,360	24,207	-45.0	-27.4	
Sales-----	30,878	23,949	18,888	-38.8	-21.1	
Sales value-----	15,477	27,419	22,937	48.2	-16.3	
<i>8. Elastomers (Synthetic Rubber)</i>						
Cyclic:						
Production-----	2,297,637	2,487,145	2,152,098	-6.3	-13.5	
Sales-----	1,940,099	1,552,530	1,208,899	-37.7	-22.1	
Sales value-----	439,580	848,554	683,784	55.6	-19.4	
Acyclic:						
Production-----	1,524,908	2,362,312	1,690,080	10.8	-28.5	
Sales-----	1,321,945	1,703,302	1,305,450	-1.2	-23.4	
Sales value-----	434,657	1,656,542	1,340,284	208.4	-19.1	
<i>9. Plasticizers</i>						
Cyclic:						
Production-----	929,871	1,458,323	1,072,260	15.3	-26.5	
Sales-----	865,084	1,208,976	1,014,907	17.3	-16.1	
Sales value-----	167,827	622,474	509,562	203.6	-18.1	
Acyclic:						
Production-----	332,908	407,216	338,272	1.6	-16.9	
Sales-----	296,767	357,527	301,590	1.6	-15.6	
Sales value-----	93,142	271,159	231,287	148.3	-14.7	
<i>10. Surface-Active Agents</i>						
Cyclic: ²						
Production-----	1,418,444	1,229,201	1,500,000	(3)	(3)	
Sales-----	852,238	665,700	622,950	(3)	(3)	
Sales value-----	95,810	366,860	230,490	(3)	(3)	
Acyclic:						
Production-----	2,060,851	3,849,007	2,867,126	(3)	(3)	
Sales-----	897,786	2,438,593	1,972,060	(3)	(3)	
Sales value-----	220,877	1,109,659	1,017,776	(3)	(3)	

See footnotes at end of table.

SYNTHETIC ORGANIC CHEMICALS, 1982

TABLE 2.--SYNTHETIC ORGANIC CHEMICALS: SUMMARY OF U.S. PRODUCTION AND SALES OF INTERMEDIATES AND FINISHED PRODUCTS, 1967, 1981, AND 1982--CONTINUED

(Production and sales in thousands of pounds; sales value in thousands of dollars)						
CHEMICAL	1967 ¹	1981	1982	INCREASE OR DECREASE (-)		
				1982 OVER 1967	1982 OVER 1981	
<i>11. Pesticides and Related Products</i>						
Cyclic:						
Production-----	823,158	1,012,429	765,585	-7.0	-24.4	
Sales-----	681,532	907,365	765,695	12.3	15.6	
Sales value-----	627,742	3,503,886	3,294,999	424.9	-6.0	
Acyclic:						
Production-----	226,505	417,646	347,213	53.3	-16.9	
Sales-----	215,831	383,276	381,056	76.6	-6	
Sales value-----	159,301	1,148,496	1,136,668	613.5	-1.0	
<i>12. Miscellaneous End-Use Chemicals and Chemical Products³</i>						
Cyclic:						
Production-----	(1,535,922)	3,887,814	3,929,771	155.9	1.1	
Sales-----	(775,540)	867,742	900,182	16.1	3.7	
Sales value-----	(283,575)	701,512	846,835	198.6	20.7	
Acyclic:						
Production-----	(58,159,771)	18,270,464	29,082,729	-50.0	59.2	
Sales-----	(25,225,631)	12,086,173	11,995,261	-52.4	-8	
Sales value-----	(3,192,119)	3,273,682	2,736,354	-14.3	-16.4	
<i>13. Miscellaneous Cyclic and Acyclic Chemicals⁴</i>						
Cyclic:						
Production-----	...	2,380,733	2,082,074	...	-12.5	
Sales-----	...	1,062,456	955,292	...	-10.1	
Sales value-----	...	989,586	875,439	...	-11.5	
Acyclic:						
Production-----	...	92,658,396	79,384,810	...	-14.3	
Sales-----	...	35,020,407	33,691,841	...	-3.8	
Sales value-----	...	10,754,816	9,728,418	...	-9.5	

¹Standard reference base period for Federal Government general-purpose index numbers.

²Includes ligninsulfonates.

³Items in these two sections were previously included in the section named miscellaneous chemicals.

⁴The data for 1982 are not comparable with previous data as a result of a change in accounting procedures.

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-----	185	Elastomers (synthetic rubber)-----	28
Dyes-----	38	Plasticizers-----	50
Organic pigments-----	34	Surface-active agents-----	180
Medicinal chemicals-----	93	Pesticides and related products-----	81
Flavor and perfume materials-----	41	Miscellaneous end-use chemicals and chemical products-----	169
Plastics and resin materials-----	265	Miscellaneous cyclic and acyclic chemicals-----	273
Rubber-processing chemicals-----	26		

SECTION 1 -- TAR AND TAR CRUDES

7

STATISTICAL HIGHLIGHTS

Cynthia B. Foreso
202-523-1230

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 1982 amounted to 316 million gallons (table 1). Production in 1982 was 33 percent less than the 472 million gallons of coal tar produced in 1981. Sales of coal tar in 1982 amounted to 231 million gallons, compared with 362 million gallons in 1981. U.S. production of water-gas and oil-gas tars was not reported to the Commission for 1981 and 1982; 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 1B.

Domestic production of industrial and specification grades of benzene reported by coke-oven operators and petroleum refiners in 1982 amounted to 1,069 million gallons--20 percent less than the 1,339 million gallons reported for 1981. These statistics include data for benzene produced from light oil and petroleum. In 1982, the output of toluene (including material produced for use in blending in aviation fuel) amounted to 715 million gallons--16 percent less than the 856 million gallons reported for 1981. Sales of toluene (Nitration grade 1°) in 1982 were 471 million gallons, compared with 608 million gallons in 1981. The output of xylene in 1982 (including that produced for blending in motor fuels) was 658 million gallons, compared with 882 million gallons in 1981. Sales of xylene increased slightly to 404 million gallons in 1982, compared with 381 million gallons in 1981.

Production of crude naphthalene from coal-tar oils in 1982 amounted to 233 million pounds, while sales were 124 million pounds. Production of petroleum

7

derived naphthalene in 1982 amounted to 126 million pounds, compared with 142 million pounds in 1981. Production figures on road tar for 1982 cannot be published; in 1972 production amounted to 30 million gallons.

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 1982 tar crudes were supplied by 22 companies and company divisions.

TABLE 1.--TAR AND TAR CRUDES; U.S. PRODUCTION AND SALES, 1982

[Listed below are all tar crudes 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]

TAR AND TAR CRUDES	UNIT OF QUANTITY	PRODUCTION	SALES		
			QUANTITY	VALUE	UNIT VALUE ¹
				1,000 dollars	
Coal tar: ² Coke-oven operators-----	1,000 gal--	316,426	230,553	165,998	\$0.72
Crude light oil: ³ Coke-oven operators	1,000 gal--	94,546	70,620	61,439	.87
Intermediate light oil: ² Coke-oven operators-----	1,000 gal--	3,277	265	180	.68
Light-oil distillates:					
Benzene, all grades, total ⁴ -----	1,000 gal--	1,068,655	...	...	...
Coke-oven operators-----	1,000 gal--	16,781	...	...	...
Petroleum refiners ⁵ -----	1,000 gal--	1,051,874	546,367	828,043	1.52
Toluene, all grades, total ⁴ -----	1,000 gal--	715,485	470,619	594,002	1.26
Coke-oven operators-----	1,000 gal--	1,413	1,145	1,429	1.25
Petroleum refiners-----	1,000 gal--	714,072	469,474	592,573	1.26
Xylene, all grades, total ⁴ -----	1,000 gal--	657,964	404,272	530,437	1.31
Coke-oven operators-----	1,000 gal--	254	204	257	1.26
Petroleum refiners-----	1,000 gal--	657,710	404,068	530,180	1.31
Naphthalene, crude, total-----	1,000 lb---	232,857	123,500	20,423	.17
Solidifying at:					
Less than 74° C-----	1,000 lb---	2,800	2,382	233	.10
74° to less than 79° C-----	1,000 lb---	230,057	121,118	20,190	.16
Creosote oil (Dead oil) (100% creosote basis):					
Distillate as such (100% creosote basis)-----	1,000 gal--	36,309	21,370	19,258	.90
Creosote in coal tar solution (100% solution basis)-----	1,000 gal--	44,334	32,174	32,842	1.02
Tar, refined, for uses other than road tar-----	1,000 gal--	11,714	6,384	8,173	1.28
Pitch of tar ⁶ -----	1,000 tons-	3,055	3,057	73,928	24.18

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 1983). 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.

⁵Benzene, specification grades (1°, 2°).

⁶Includes 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 1982 report because publication would disclose the operations of individual companies.

TABLE 1A.--TAR: U.S. PRODUCTION AND CONSUMPTION, 1981 AND 1982

(In thousands of gallons)			
TAR	1981	1982	
PRODUCTION			
Coal tar from coke-oven byproduct plants, total ¹ -----	472,181	316,426	
CONSUMPTION			
Total-----	(²)	(²)	
Tar consumed by distillation, total-----			
Coal tar distilled or topped by coke-oven operators ¹ -----	(²)	(²)	
Coal tar and oil-gas tar distilled by tar distillers ³ -----	439,440	306,242	
Tar consumed by the producers chiefly as fuel ¹ -----			
Coal tar consumed at coke-oven plants in miscellaneous uses ¹ -----	(²)	(²)	

¹Reported to the Energy Information Administration, U.S. Department of Energy.

²Data were not available at time of publication.

³Reported to the U.S. International Trade Commission. Represents tar purchased from companies operating coke-ovens and gas retort plants and distilled by companies operating tar-distillation plants. Statistics also include tar consumed other than by distillation by tar distillers.

TABLE 1B.--TAR AND TAR CRUDES: SUMMARY OF U.S. PRODUCTION OF SPECIFIED PRODUCTS, 1967, 1981, AND 1982

TAR AND TAR CRUDES	UNIT OF QUANTITY	1967 ¹	1981	1982	INCREASE, OR DECREASE (-)	
					1982 OVER 1967	1982 OVER 1981
					Percent	Percent
Coal tar ² -----	1,000 gal--	780,334	472,181	316,426	-59	-33
Benzene: ³						
Coke-oven operators-----	1,000 gal--	90,642	31,429	16,781	-81	-47
Petroleum refiners-----	1,000 gal--	878,704	1,307,731	1,051,874	20	-20
Total-----	1,000 gal--	969,346	1,339,160	1,068,655	10	-20
Toluene: ³						
Coke-oven operators-----	1,000 gal--	19,357	4,829	1,413	-93	-71
Petroleum refiners-----	1,000 gal--	624,454	851,636	714,072	14	-16
Total-----	1,000 gal--	643,811	856,465	715,485	11	-16
Xylene: ³						
Coke-oven operators-----	1,000 gal--	5,488	657	254	-95	-61
Petroleum refiners-----	1,000 gal--	449,349	881,751	657,710	46	-25
Total-----	1,000 gal--	454,837	882,408	657,964	45	-25
Naphthalene:						
Crude-----	1,000 lb--	520,991	358,334	232,857	-55	-35
Petroleum naphthalenes, all grades-----	1,000 lb--	376,679	142,164	126,465	-66	-11
Total-----	1,000 lb--	879,670	500,498	359,322	-59	-28
Creosote oil (Dead oil): ⁶						
Distillate as such (100% creosote basis)-----	1,000 gal--	108,832	81,902	36,309	-67	-56
Creosote in coal tar solution (100% solution basis)-----	1,000 gal--	27,420	61,120	44,334	62	-27
Creosote content of coal tar solution (100% creosote basis)-----	1,000 gal--	17,402	(⁷)	(⁷)	(⁷)	(⁷)
Total-----	1,000 gal--	153,654	(⁷)	(⁷)	(⁷)	(⁷)

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 indi-

Footnotes--Continued

vidual companies.

⁴Includes data for material produced for use in blending motor fuels. Statistics are not comparable with monthly figures which include some o-xylene.

⁵Naphthalene 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."

⁶Includes data for creosote oil produced by tar distillers and coke-oven operators and used only in wood preservatives.

⁷Statistics cannot be published; to do so would disclose the operations of individual companies.

TABLE 2.---TAR AND TAR CRUDES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982

[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]

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

TABLE 2.--TAR AND TAR CRUDES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982.--CONTINUED

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

TABLE 3.--TAR AND TAR CRUDES: DIRECTORY OF MANUFACTURERS, 1982

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 1982 are listed below in the order of their identification codes as used in table 2]

CODE	NAME OF COMPANY	CODE	NAME OF COMPANY
ABP	Alabama By-Products Corp.	KPT	Koppers Co., Inc.
ACS	Allied Corp., Allied Chemicals Co.	NEV	Neville Chemical Co.
ALS	Armco, Inc.	NTS	National Steel Corp.:
BTS	Bethlehem Steel Corp.		Great Lakes Plant
CLF	C. F. & I. Steel Corp., Pueblo Plant		Weirton Steel Div.
COP	Coopers Creek Chemical Corp.	RIL	Reilly Tar & Chemical Corp.
DHC	Donner-Hanna Coke Joint Venture	RSC	Republic Steel Corp.
HUS	Husky Industries, Inc.	SGO	Shenango, Inc.
IGC	Indiana Gas & Chemical Corp.	USS	U.S. Steel Corp.:
ILI	Interlake, Inc.		Clairton Plant
INL	Inland Steel Co.		Fairfield Plant
JEN	Jennison-Wright Corp.		Gary Plant
JLS	Jones & Laughlin Steel Corp.		Geneva Plant
		WTC	Witco Chemical Corp.

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

SECTION II -- PRIMARY PRODUCTS FROM PETROLEUM AND NATURAL GAS 15 FOR CHEMICAL CONVERSION

STATISTICAL HIGHLIGHTS

James Raftery
202-523-0453

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 93,052 million pounds in 1982. Production in 1981 was 109,517 million pounds. The output of aromatic and naphthenic products from petroleum amounted to 20,891 million pounds in 1982, compared with 26,261 million pounds in 1981. Sales amounted to \$2,194 million in 1982 and \$2,758 million in 1981. In 1982, production of benzene was 7,700 million pounds; production of toluene was 5,148 million pounds; and production of mixed xylenes were 4,999 million pounds (table 1).

Production of all aliphatic hydrocarbons and derivatives from petroleum and natural gas was 72,161 million pounds in 1982, compared with 83,257 million pounds in 1981. Sales of these products were valued at \$5,156 million in 1982, compared with \$7,611 million in 1981. Production of ethylene was 24,501 million pounds in 1982. The output of 1,3-butadiene in 1982 was 1,915 million pounds. Production of propylene in 1982 was 12,535 million pounds (table 1).

Data for 1982 primary products from petroleum and natural gas for chemical conversion were supplied by 76 companies or company divisions.

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

TABLE 1.--PRIMARY PRODUCTS FROM PETROLEUM AND NATURAL GAS FOR CHEMICAL
 CONVERSION: U.S. PRODUCTION AND SALES, 1982

[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-----	93,051,656	43,646,347	7,349,989	\$0.17
AROMATICS AND NAPHTHENES ²				
Total-----	20,891,127	12,964,916	2,193,898	.17
Benzene, all grades-----	7,699,721	3,999,410	828,043	.21
Naphthalene, all grades-----	126,465	127,696	30,117	.24
Naphthenic acid-----	24,178	23,546	4,731	.20
Toluene, all grades, total-----	5,148,456	...	....	...
High purity (98-100%)-----	4,162,282	3,217,812	564,552	.18
Other (90-97.9%) ³ *-----	986,174	...	...	...
Xylenes, mixed, total-----	4,998,598	3,070,913	530,180	.17
High purity (98-100%)-----	4,033,450	2,410,115	417,428	.17
Other (90-97.9%) ⁴ -----	965,148	660,798	112,752	.17
All other aromatics and naphthenes ⁵ -----	2,893,709	2,525,539	236,275	.09
ALIPHATIC HYDROCARBONS				
Total-----	72,160,529	30,681,431	5,156,091	.17
C ₂ Hydrocarbons, total-----	30,161,077	8,111,317	1,332,220	.16
Acetylene ⁶ (For chemical use only)-----	888,997	98,110	39,567	.40
Ethane-----	4,770,734	1,240,603	88,262	.07
Ethylene-----	24,501,346	6,772,604	1,204,391	.18
C ₃ Hydrocarbons, total-----	22,442,909	12,350,257	1,766,858	.14
Propane-----	9,907,937	7,113,725	762,651	.11
Propylene ⁷ -----	12,534,972	5,236,532	1,004,207	.19
C ₄ Hydrocarbons, total-----	10,470,985	5,300,289	1,198,230	.23
Butadiene and butylene fractions-----	843,691	856,281	159,120	.19
1,3-Butadiene, grade for rubber (elastomers)-----	1,915,094	1,655,494	583,269	.35
n-Butane-----	2,891,131	1,056,153	126,781	.12
Butanes, mixed-----	347,663	221,018	29,205	.13
1-Butene-----	114,204	74,920	17,848	.24
1-Butene and 2-Butene, mixed ⁸ -----	405,482	174,444	34,818	.20
Isobutane-----	1,488,228	391,894	58,872	.15
Isobutylene-----	740,692	354,046	86,287	.24
All other ⁹ -----	1,724,800	516,039	102,030	.20
C ₅ Hydrocarbons, total-----	1,865,032	460,737	92,268	.20
Isopentane (2-Methylbutane)-----	110,964	...	...	...
Isoprene (2-Methyl-1,3-butadiene)-----	187,330	83,197	19,843	.24
n-Pentane-----	91,811	...	...	...
Pentenes, mixed-----	505,719	106,146	21,124	.20
Piperylene (1,3-Pentadiene)-----	71,722	71,635	14,137	.20
All other ¹⁰ ¹¹ -----	897,486	199,759	37,164	.19
All other aliphatic hydrocarbons, derivatives and mixtures, total-----	7,220,526	4,458,831	766,515	.17
Alpha olefins, C ₆ -C ₁₀ -----	444,218	260,344	82,873	.32

See footnotes at end of table.

TABLE 1.--PRIMARY PRODUCTS FROM PETROLEUM AND NATURAL GAS FOR CHEMICAL
CONVERSION: U.S. PRODUCTION AND SALES, 1982--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-----	577,456	259,315	95,781	\$0.37
Dodecene (Tetrapropylene)-----	396,149	81,769	44,928	.55
n-Heptane-----	107,160	103,103	23,450	.23
Heptenes, mixed-----	93,943	81,688	17,869	.22
Hexane-----	423,301	324,516	75,222	.23
Nonene (Tripropylene)-----	350,733	257,615	52,338	.20
n-Paraffins ¹² -----	1,130,675	758,490	134,224	.18
All other ¹³ -----	3,696,891	2,331,991	239,830	.10

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, polyethylbenzene, distillates, solvents and miscellaneous cyclic hydrocarbons. Includes sales data only for 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, 2-butene, and mixed butylenes.

¹⁰Includes data for amylenes and dibutanized aromatic concentrate.

¹¹Includes sales data only for isopentane and n-pentane.

¹²Includes data for the following chain lengths: C₆-C₉; C₆-C₁₆; 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, C₆ and C₇ hydrocarbons, hydrocarbon derivatives, and other hydrocarbons.

TABLE 2.--CRUDE PRODUCTS FROM PETROLEUM AND NATURAL GAS FOR CHEMICAL CONVERSION FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982

[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]

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

TABLE 2.--CRUDE PRODUCTS FROM PETROLEUM AND NATURAL GAS FOR CHEMICAL CONVERSION FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

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

TABLE 2.--CRUDE PRODUCTS FROM PETROLEUM AND NATURAL GAS FOR CHEMICAL CONVERSION FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

CRUDE PRODUCTS FROM PETROLEUM AND NATURAL GAS FOR CHEMICAL CONVERSION	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ALIPHATIC HYDROCARBONS--Continued	
*n-Pentane	APR, GOC, PLC, SHO.
1-Pentene	PLC, SOC.
*Pentenes, mixed	DOM, ENJ, KHI, SHC, SHO, TUS, USS.
*Piperylene (1,3-Pentadiene)	CO, CXI, DOM.
*Hydrocarbons, C5, all other	CSO, QH, SHC, TX.
ALL OTHER ALIPHATIC HYDROCARBONS, DERIVATIVES, AND MIXTURES:	
C/6 HYDROCARBONS:	
ALPHA OLEFINS:	
*Alpha olefins, C6-C10	CXI, GOC, SHC, SOC, TMA.
*Alpha olefins, C11 and higher	CXI, FER, GOC, SHC, SOC, TMA.
Di-isopropane (2,3-Dimethylbutane)	PLC.
*Hexane	APR, ENJ, HMY, PLC, SHO, SOG, UOC.
Hexenes, mixed	ENJ.
Hydrocarbons, C5-C7, mixtures	ENJ, GOC.
Hydrocarbons, C6-C8, mixtures	FRS, TUS.
Isohexane	PLC.
Methylcyclopentadiene	ENJ.
Meohexane (2,2-Dimethylbutane)	PLC.
Hydrocarbons, C6, all other	PLC, SM.
C/7 HYDROCARBONS:	
*n-Heptane	EKX, ENJ, PLC, UOC.
*Heptenes, mixed	AIP, AMO, ENJ, SOG, TID.
Isoheptanes	PLC.
Hydrocarbons, C7, all other	KHI.
C/8 HYDROCARBONS:	
Di-isobutylene (Di-isobutene)	EKT, FRS, PTT.
n-Octane	SOG.
Octenes, mixed	AIP, ENJ, PTT, TID.
2,2,4-Trimethylpentane (Iso-octane)	PLC.
C/9 AND ABOVE HYDROCARBONS (EXCEPT ALPHA OLEFINS):	
*Dodecene	ATR, ENJ, SOC, SUN, UOC.
Eicosane	HMY.
*Nonene (Tripropylene)	AIP, ATR, CSP, ENJ, TID, UOC.
*N-PARAFFINS - CARBON CHAIN LENGTH:	
n-Paraffins, C6-C9	CPX, SOG, UCC.
n-Paraffins, C9-C15	SHC, SOG.
n-Paraffins, C10-C14	ENJ, SOG, TSO.
n-Paraffins, C10-C16	CO.
n-Paraffins, C12-C18	CO.
n-Paraffins, C15-C17	ENJ.
n-Paraffins, other	SOG.

TABLE 2.--CRUDE PRODUCTS FROM PETROLEUM AND NATURAL GAS FOR CHEMICAL CONVERSION FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

CRUDE PRODUCTS FROM PETROLEUM AND NATURAL GAS FOR CHEMICAL CONVERSION	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ALIPHATIC HYDROCARBONS--Continued	
Hydrocarbons, C5-C9, mixtures	CRP, PPR.
Polybutene	AMO, CSD, SOC.
HYDROCARBON DERIVATIVES:	
tert-Amyl mercaptan (2-Methyl-2-butanethiol)	HAP.
n-Butyl mercaptan (1-Butanethiol)	PAS, PLC.
sec-Butyl mercaptan (2-Butanethiol)	HAP, PLC.
tert-Butyl mercaptan (2-Methyl-2-propanethiol)	PAS, PLC.
Di-tert-butyl disulfide	PLC.
Diethyl sulfide (Ethyl sulfide)	HAP, PAS.
Diisopropyl sulfide	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	AMO, CSP, GOC, NES, PLC, SHC, SOC, TNA.

TABLE 3.--PRIMARY PRODUCTS FROM PETROLEUM AND NATURAL GAS FOR CHEMICAL CONVERSION: DIRECTORY OF MANUFACTURERS, 1982

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 1982 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 Chemical Corp., Union Texas Petroleum Corp.	KHI	Koch Industries, Inc., Koch Refining Co.
AIP	Air Products & Chemicals, Inc.	KLM	Kalama Chemical, Inc.
AMO	Standard Oil Co. (Indiana)	MCB	Borg-Warner Corp., Borg-Warner Chemicals
APR	Atlas Processing Co.	MOC	Marathon Petroleum Co., Texas Refining Div.
ASH	Ashland Oil, Inc., Ashland Petroleum Co.	MON	Monsanto Co.
ATR	Atlantic Richfield Co., Arco Chemical Co.	NES	Ruetger-Nease Chemical Co.
BAS	BASF Wyandotte Corp.	NWP	Northern Petrochemical Co.
BFG	B. F. Goodrich Co., B. F. Goodrich Chemical Group	OMC	Olin Corp.
BOR	Borden, Inc., Borden Chemical Div.	PAS	Pennwalt Corp.
CBN	Cities Service Co., Petrochemicals Div.	PLC	Phillips Petroleum Co.
CCP	Crown Central Petroleum Corp.	PPR	Phillips Puerto Rico Core, Inc.
CLK	Clark Oil & Refining Corp.	PPX	Phillips Paraxylene, Inc.
CO	Conoco, Inc.	PTT	Petro-Tex Chemical Corp.
COR	Commonwealth Oil & Refining Co., Inc.	QH	Quintana Petrochemical Co.
CPX	Chemplex Co.	RH	Rohm & Haas Co.
CPY	Copolymer Rubber & Chemical Corp.	SHC	Shell Oil Co., Shell Chemical Co. Div.
CRP	Corpus Christi Petrochemical Co.	SHO	Shell Oil Co.
CSD	Cosden Oil & Chemical Corp.	SIO	Standard Oil Co. (Ohio)
CSO	Cities Service Co., Petroleum Products Group	SKO	Getty Refining & Marketing Co.
CSP	Coastal Corp., Coastal States Petroleum Co.	SM	Mobil Oil Corp.: Gas Liquids Dept.
CXI	Chemical Exchange Industries, Inc.		Mobil Chemical Co., Petrochemicals Div.
DOW	Dow Chemical Co.	SNO	SunOlin Chemical Co.
DUP	E. I. duPont de Nemours & Co., Inc.	SOC	Standard Oil Co. of California, Chevron Chemical Co.
	Eastman Kodak Co.:	SOG	Charter International Oil Co.
EKT	Tennessee Eastman Co. Div.	SUN	Sun Company, Inc.
EKX	Texas Eastman Co. Div.	SWR	Southwestern Refining Co.
ELP	El Paso Products Co.	TCR	Texas City Refining, Inc.
ENJ	Exxon Chemical Americas	TID	Getty Refining & Marketing Co., Delaware Refinery
EPC	Enterprise Products Co., Enterprise Petrochemicals Co. Sub.	TNA	Ethyl Corp.
		TOC	Tenneco Oil Co.
FER	Ferro Corp., Productol Chemical Div.	TSO	Tosco Corporation
FKE	Frank Enterprises, Inc.	TUS	Texaco Butadiene Co.
FRS	Firestone Tire & Rubber Co., Firestone Synthetic Rubber & Latex Co. Div.	TX	Texaco, Inc.
		UCC	Union Carbide Corp.
GOC	Gulf Oil Corp., Gulf Oil Chemicals Co.-U.S.	UOC	Union Oil Co. of California
GRS	Champlin Petroleum Co.	USI	National Distillers & Chemicals Corp., U.S. Industrial Chemicals Co.
		USS	U.S. Steel Corp., USS Chemicals Div.
HAP	Helmerich & Payne, Inc., National Gas Odorizing Div.		
HCF	Hercofina		
HCC	Hewchem		
HES	Amerada Hess Corp. (Hess Oil Virgin Islands Corp.)		
HMY	Humphrey Chemical Co.		
HST	American Hoeshst Corp., Petrochemical Div.		

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 1982, 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 1982 amounted to 37,637 million pounds, a decline of 17.0 percent from the 45,323 million pounds produced in 1981. Sales of cyclic intermediates in 1982 were 16,193 million pounds, valued at \$5,831 million, compared with 19,202 million pounds, valued at \$7,437 million, in 1981.

Intermediates which were produced in excess of 2 billion pounds in 1982 were ethylbenzene (6,656 million pounds), styrene (5,942 million pounds), dimethyl terephthalate (4,843 million pounds), p-xylene (3,391 million pounds), cumene (2,743 million pounds), and phenol (2,175 million pounds). Other large-volume intermediates produced in 1982 were cyclohexane (1,275 million pounds), isocyanates (1,077 million pounds), o-xylene (802 million pounds), nitrobenzene (775 million pounds), phthalic anhydride (684 million pounds), cyclohexanone (602 million pounds), aniline (557 million pounds), alkylbenzenes (509 million pounds), bisphenol A (480 million pounds), monochlorobenzene (237 million pounds), and toluene-2,4-diamine (162 million pounds). The chemicals noted above accounted for 87 percent of the total output of the intermediates in 1982.

TABLE 1.--CYCLIC INTERMEDIATES: U.S. PRODUCTION AND SALES, 1982

[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-----	37,637,336	16,192,629	5,830,556	\$0.36
Acetoacetanilide-----	11,665	9,989	10,680	1.07
o-Acetoacetanisidide-----	650	670	1,720	2.57
o-Acetoacetotoluidide-----	1,720	1,731	2,520	1.46
Alkylbenzenes ² -----	508,926	503,233	202,368	.40
6-Aminopenicillanic acid-----	1,051	...	...	...
p-[(p-Aminophenyl)azo]benzenesulfonic acid-----	205	...	...	...
Aniline (Aniline oil)-----	557,429	182,831	60,624	.33
Anilinomethanesulfonic acid and salt-----	223	...	...	...
Benzoic acid, tech-----	62,115	22,491	9,809	.44
2-Benzothiazolethiol, sodium salt-----	7,259	...	...	...
Biphenyl-----	48,551	13,163	8,249	.63
Butylphenols, mixed-----	13,416	...	...	...
Chlorobenzene, mono-----	237,206	63,799	20,181	.32
Cresols and cresylic acid, total ³ -----	109,773	91,208	56,599	.62
(m, p)-Cresol-----	23,528	21,989	12,673	.58
o-Cresol-----	38,792	27,420	16,284	.59
All other ⁴ -----	47,453	41,799	27,642	.66
Cumene-----	2,743,496	1,223,288	285,245	.23
Cyclohexane-----	1,274,773	1,114,425	260,446	.23
Cyclohexanone-----	601,893	29,284	15,099	.52
o-Dichlorobenzene-----	45,806	35,159	13,516	.38
p-Dichlorobenzene-----	72,673	49,468	17,926	.36
Dicyclopentadiene (including cyclopentadiene)-----	60,351	59,941	16,215	.27
1,4-Dihydroxyanthraquinone (Quinizarin)-----	586	...	...	...
p-(Dimethylamino)benzaldehyde-----	15	...	...	...
N,N-Dimethylbenzylamine-----	249	214	509	2.38
2,4(and 2,6)-Dinitrotoluene-----	719,889	...	...	...
p-Dodecylphenol-----	22,512	17,675	8,267	.47
Ethylbenzene-----	6,656,241	365,924	77,154	.21
Isocyanic acid derivatives, total-----	1,077,386	949,864	587,490	.62
Polymethylene polyphenylisocyanate-----	433,898	345,488	238,969	.69
Toluene-2,4- and 2,6-diisocyanate (80/20 mixture)---	555,994	524,972	268,354	.51
Other isocyanic acid derivatives-----	87,494	79,404	80,167	1.01
4,4'-Isopropylidenediphenol (Bisphenol A)-----	479,755	175,255	86,353	.49
α-Methylstyrene-----	10,068	8,359	2,703	.32
ar-Methylstyrene (Vinyltoluene)-----	54,174	...	...	...
Nitrobenzene-----	774,814	18,731	4,711	.25
Nonylphenol-----	137,612	58,366	25,462	.44
Phenol, total ³ -----	2,174,771	1,048,926	268,358	.26
From cumene-----	2,023,224	897,324	229,984	.26
All other-----	151,547	151,602	38,374	.25
2,2'-[(Phenyl)imino]diphenol (N-Phenyldiethanol-amine)-----	321	...	...	...
Phthalic anhydride-----	684,391	398,987	124,197	.31
Piperidine-----	2,840	966	1,288	1.33
Propiophenone-----	770	504	952	1.89
Salicylic acid, tech-----	26,989	...	...	...

See footnotes at end of table.

TABLE 1.--CYCLIC INTERMEDIATES: U.S. PRODUCTION AND SALES, 1982--CONTINUED

CYCLIC INTERMEDIATES	PRODUCTION	SALES		
		QUANTITY	VALUE	UNIT VALUE ¹
	1,000 pounds	1,000 pounds	1,000 dollars	Per pound
Styrene-----	5,942,037	2,534,721	713,918	\$0.28
Terephthalic acid, dimethyl ester ⁵ -----	4,842,720	...	...	...
Tetrahydrofuran-----	106,866	...	...	...
Toluene-2,4-diamine (4-m-Tolylenediamine)-----	162,173	...	...	...
o-Xylene-----	802,442	689,271	153,412	.22
p-Xylene-----	3,391,366	2,604,764	715,827	.27
All other cyclic intermediates-----	3,207,168	3,919,422	2,078,758	.53

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 (BMT) includes both the acid itself and the dimethyl ester without double counting. The acid production figure was multiplied by the factor 1.16 to convert it to equivalent DMT.

TABLE 2. --CYCLIC INTERMEDIATES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, INDENTIFIED BY MANUFACTURER, 1982

[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-[(2-Acetamido-4-aminophenyl)azo]-1,5-naphthalenedisulfonic acid	CGY.
3-Acetamido-N-(2-succinimidoethyl)-N-ethylaniline	EKT.
Acetanilide, tech.	SAL.
p-Acetanilide	SDC.
Acetic acid, phenyl ester	BKM.
*O-Acetoacetanilide	BRD, EKT, HST.
*O-Acetoacetanilide	BRD, EKT, HST.
*O-Acetoacetotoluidide	BRD, EKT, HST.
2',4'-Acetoacetoxylidide	HST.
Acetoacet-m-xylylidide	BRD.
1'-Acetonaphthone	GIV.
Acetophenone, tech.	CLK, SKO, UCC.
p-Acetotoluidide	EK.
α-Acetylamino-p-toluenesulfonamide	SDM.
2-Acetylpyridine	RIL.
3-Acetylpyridine	RIL.
4-Acetylpyridine	RIL.
* ALKYL BENZENES:	
Alkylbenzene straight-chain (Except dodecyl and tridecyl)	MON, WTC.
DODECYLBENZENE (INCLUDING TRIDECYLBENZENE):	
Dodecylbenzene, straight-chain	CO, MOX, UCC, WTC.
Dodecylbenzene, other	CO, SOC, WTC.
Alkylphenols, mixed	FER, SW.
Alkylpyridines, mixed	RIL.
alpha-Phenethylamine	HXL.
1-Amino-4-(3-acetaminoanilino)-9,10-dihydro-9,10-dioxo-	VPC.
1-Amino-4-(4-acetaminoanilino)-9,10-dihydro-9,10-dioxo-	VPC.
2-anthracenesulfonic acid	VPC.
3'-Aminoacetanilide	CGY.
4-Aminoacetanilide (Acetyl-p-phenylenediamine)	CGY, HST.
3'-Amino-p-acetanilide	HST, SDC.
5-Amino-2-(p-aminoanilino)benzenesulfonic acid	CGY.
1-Amino-4-anilino-9,10-dihydro-9,10-dioxo-2-anth	VPC.

TABLE 2.--CYCLIC INTERMEDIATES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

CYCLIC INTERMEDIATES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
2-(p-Aminoanilino)-5-nitrobenzenesulfonic acid	CGY.
3-Amino-p-anisamide	PCM.
1-Aminoanthraquinone and salt	CGY.
6-Amino-3,4'-azodibenzenesulfonic acid (C.I. Acid Yellow 9)	CGY.
p-Aminobenzamide	LEL.
o-Aminobenzenethiol	FMT.
p-Aminobenzoic acid, tech.	LEL.
2-Amino-6-benzothiazolecarboxylic acid, monosodium salt	X.
2-Amino-6-benzothiazolesulfonic acid	VPC.
1-Amino-4-bromo-9,10-dihydro-9,10-dioxo-2-anthracenesulfonic acid and sodium salt	CGY, VPC.
1-Amino-2-bromo-4-hydroxyanthraquinone	VPC.
7-Aminocephalosporanic acid	BRS.
2-Amino-1-chloroanthraquinone	VPC.
2-Amino-5-chlorobenzophenone	GNM.
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.
1-Amino-2,4-dichloroanthraquinone	CGY.
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.
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	SDM.
3-Amino-4-methoxyacetanilide	CGY.
2-Amino-5-methoxybenzenesulfonic acid	CGY.

TABLE 2.--CYCLIC INTERMEDIATES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

CYCLIC INTERMEDIATES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
4-Amino-5-methoxy-2-methylbenzenesulfonic acid	VPC, X.
m-[(4-Amino-3-methoxyphenyl)azo]benzenesulfonic acid	CGY, VPC.
3-[(4-Amino-3-methoxyphenyl)azo]-1,5-naphthalenedisulfonic acid	CGY.
4-[(4-Amino-5-methoxy-o-tolyl)azo]-4-hydroxy-2,7-naphthalenedisulfonic acid	CGY.
3-Amino-4-methylbenzamide	CGY.
2-Amino-4-methylbenzothiazole	ARS, HST.
2-Amino-4-methylidiphenylsulfone-4-sulfonic acid	MRT.
2,2'-[[4-(Aminomethyl)-3-nitrophenyl]imino]diethanol	CGY.
2-Amino-2-methylpropyl 8-bromothioephyllylinate	SOL.
2-Amino-3-methylpyridine	CHI.
2-Amino-5-methylpyridine	RII.
2-Amino-6-methylpyridine	RII.
2-Amino-4-(methylsulfonyl)phenol	CGY.
2-Amino-1,5-naphthalenedisulfonic acid	ACI.
3-Amino-1,5-naphthalenedisulfonic acid (C Acid)	CGY.
6-Amino-1,3-naphthalenedisulfonic acid (Amino I acid)	CGY.
7-Amino-1,3-naphthalenedisulfonic acid (Amino G acid)	CGY.
2-Amino-1-naphthalenesulfonic acid (Tobias acid)	ACI.
5-(and 8)-Amino-2-naphthalenesulfonic acid (Cleve's acid, mixed)	CGY.
6-Amino-2-naphthalenesulfonic acid (Broenner's acid)	CGY.
7-Amino-1,3,5-naphthalenetrisulfonic acid	CGY.
1-Amino-5-naphthol	BUC.
5-(and 8)-Amino-2-naphthol	BUC.
8-Amino-2-naphthol	BUC.
2-Amino-4-nitroacetanilide	SDC.
2-(4-Amino-2-nitroanilino)ethanol	SOL.
2-Amino-6-nitrobenzothiazole	HST, SAL.
2-Amino-4-nitrophenol	SOL, VPC.
2-[(2-Amino-4nitrophenyl)amino]-2-hydroxymethyl-1,3-propanediol	SOL.
4-Amino-4'-nitro-2,2'-stilbenedisulfonic acid	CGY.
2-Amino-5-nitrothiazole	PCW.
2-Amino-4-nitrotoluene hydrochloride	PCM.
3-Amino-2-oxazolidinone	NOR.
*6-Amjropenicillanic acid	BRS, PFZ, MYT.
p-Amthophenol	MAI, SCN.
*p-[(p-Aminophenyl)azo]benzenesulfonic acid	ACI, CGY, VPC.
2-(4-Aminophenylazo)-4-methylphenol	VPC.

TABLE 2.--CYCLIC INTERMEDIATES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

CYCLIC INTERMEDIATES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
7-[(4-Aminophenyl)azo]-1,3-naphthalenedisulfonic acid	CGY.
2,2'-(m-Aminophenylimino)diethanol, diacetate ester	CGY.
2-(p-Aminophenyl)-6-methyl-7-benzothiazolesulfonic acid and salt	CGY.
3-Aminophenylphosphonic acid	ICI.
2-Aminopyridine	RIL.
3-Aminopyridine	RIL.
4-Aminopyridine	RIL.
2-Aminothiazole nitrate	PCM.
4-Amino-m-toluenesulfonic acid [SO ₂ H=1]	DUP.
6-Amino-m-toluenesulfonic acid [SO ₂ H=1]	DUP.
7-[(4-Amino-o-tolyl)azo]-1,3-naphthalenedisulfonic acid	CGY.
*Aniline (Aniline oil)	ACY, DUP, FST, ICI, MAL, MOB, RUC, USR.
2-Anilinoethanol	EKT, 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)	EK, WTC.
p-Anilinophenol	SDC.
o-Anisidinomethanesulfonic acid	ATL, CGY, VPC.
Anisole, tech.	OPC.
Anthra[1,9]pyrazol-6(2H)-one (Pyrazoleanthrone)	CGY, SM.
Anthraquinone, 100%	CGY.
N,N'-(1,5-Anthraquinonylene)dianthranilic acid	CGY.
Benzaldehyde, tech.	HN, KLM.
Benzamide hydrochloride	EK.
7-Benzamido-4-hydroxy-2-naphthalenesulfonic acid	CGY.
7H-Benz[de]anthracen-7-one (Benzanthrone)	CGY.
Benzenesulfonic acid	UPF.
Benzenesulfonyl chloride	UPF.
1,2,4-Benzenetricarboxylic acid 1,2-anhydride (Trimellitic anhydride)	AMO.
Benzhydrol (Diphenylmethanol)	PD.
Benzil	LEM.
Benzimidazole	EK.
Benzoic acid, methyl ester	HCF.
Benzoic acid, tech.	HN, KLM, PFZ, VEL.
Benzooin	SFS.
Benzooin isobutyl ether	SFS.
Benzoinoxime	RSA.
Benzophenone	UPJ.

TABLE 2.--CYCLIC INTERMEDIATES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

CYCLIC INTERMEDIATES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
Benzophenone hydrazone	PD.
p-Benzoquinone, dioxime	LC.
*2-Benzothiazolethiol, sodium salt	BKM, GYR, USR.
1H-Benzotriazole	SM.
2-Benzoxazolethiol	EK.
Benzoyl chloride	HK, VEL.
2-Benzoyl pyridine	GNM.
N-Benzylacetamide	SDM.
Benzylamine	HXL.
2-(Benzylamino)ethanol	HXL.
4-Benzyl-6-chloro-3-keto-7-sulfamyl-1,2,4-benzylthiadiazine-1,1-dioxide	ABB.
N-Benzyl-N-ethyl-m-toluidine	CGY.
p-(Benzoyloxy)phenol	FKE.
1-Benzyl-4-phenylisonipecotic acid, ethyl ester	SDM.
Benzyltriethylammonium chlorotriole	SDM.
Benzyltriethylammonium chloride	HXL.
Benzyltrimethylammonium hydroxide	HXL.
Benzyltrimethylammonium methoxide	HXL.
[3,3'-Bianthraz[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	CHL, DOM, GOC, KHI, MON, TCC.
3'-[Bis(2-acetoxyethyl)amino]-p-acetoanilide	ATL.
N,N-Bis-(2-acetoxyethyl)-aniline	VPC.
Bis(p-aminocyclohexyl)methane	CGY, DUP.
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.
2,5-Bis(2-benzoxazol)thiophene	CGY.
4,5'-Bis-benzoylamino-1,1'-anthrimid-2,2'-carbazole	VPC.
5,5'-Bis-benzoylamino-1,1'-anthrimid-2,2'-carbazole	VPC.
4,4'-Bis-benzoylamino-1,1'-anthrimide-2,2'-carbazole	VPC.
Bis(chlorosulfonyl)phthalocyaninedisulfonic acid, copper derivative	CGY.
4,4'-Bis(dimethylamino)benzhydrol (Michler's hydrol)	EKI, X.
Bis[6-dimethylaminoethyl]phenylacetoneitrile	MYT.
1,5-Bis[2,4-dinitrophenoxy]-4,8-dinitroanthraquinone	VPC.
Bis(2,4-dinitrophenyl)acetic acid, ethyl ester	ATL.
3'-[Bis(2-hydroxyethyl)amino]benzanilide, diacetate	

TABLE 2.--CYCLIC INTERMEDIATES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

CYCLIC INTERMEDIATES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ester	TCH.
N,N-Bis(2-hydroxyethyl)-p-phenylenediamine sulfate	SOL.
4,4'-Bis[(p-hydroxyphenyl)azo]-2,2'-stilbenedisulfonic acid (C.I. Direct Yellow 4)	VPC.
1,2-Bis(tribromophenoxy)ethane	GIL.
Bromobenzene, mono-	GIL.
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.
6-Bromo-5-methyl-4-azabenzylimidazole	AMD.
α-Bromo-p-nitrotoluene (p-Nitrobenzyl bromide)	SDM.
p-Bromophenylacetoneitrile	SFS.
2-Bromopyridine	OMC, RIL.
α-Bromotoluene	MCC.
p-Butylaniline	TNA.
2-tert-Butylanthraquinone	DUP.
p-tert-Butylbenzaldehyde	GIV.
tert-Butylbenzene	PLC.
p-tert-Butylbenzoic acid	SHC.
o-(p-tert-Butylbenzoyl)benzoic acid	DUP.
Butyl-1,1'-biphenyl	TCC.
2-tert-Butyl-p-cresol	FER.
6-tert-Butyl-m-cresol	KPT.
2'-tert-Butyl-4',6'-dimethylacetophenone	GIV.
tert-Butylhydroquinone	UPJ.
2-[(1-Butyl-2-methylindol-3-yl)carbonyl]benzoic acid	X.
o-sec-Butylphenol	SCN, TNA.
o-tert-Butylphenol	TNA.
p-sec-Butylphenol	SCN.
p-tert-Butylphenol	SCN.
* Butylphenols, mixed	FER, SCN, TNA, X.
p-tert-Butyltoluene	GIV, SHC.
5-tert-Butyl-1,2,3-trimethylbenzene	GIV.
5-tert-Butyl-m-xylene	GIV, KHI.
6-tert-Butyl-2,4-xyleneol	GIV, PIT.
d-10-Camphorsulfonic acid	FER, PIT.
3'-Carboxy-2-chloro-4'-nitro-4-(trifluoromethyl)-	KF.

TABLE 2.--CYCLIC INTERMEDIATES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

CYCLIC INTERMEDIATES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
diphenyl ether	BRS.
3-Carboxy-1,4-dimethylpyrrole-2-acetic acid	SDM, X.
N-Carboxy-N-methylanthranilic anhydride	SM.
3-Carboxy-1-methylpyrrole-2-acetic acid	SDC, X.
2-Chloroacetamido-5-chlorobenzophenone	MYT.
2'-Chloroacetacetanilide	EKT, HST.
4'-Chloroacetophenone	LIL.
o-Chloroaniline	CMN, DUP.
m-Chloroaniline	DUP.
p-Chloroaniline	DUP, MON.
3-(o-Chloroanilino)propionitrile	TCH.
5-Chloro-o-anisidine [NH ₂ =1] (4-Chloro-o-anisidine[OCH ₃ =1])	ALL.
1-Chloroanthraquinone	CGY.
2-Chloroanthraquinone	ACY.
o-Chlorobenzamide	PD.
*Chloro-7H-benz[de]anthracen-7-one (Chlorobenzanthrone)	CGY, MON, MTO, PPG, SCC.
p-Chlorobenzene sulfonic acid	CGY, UPF.
p-Chlorobenzene thiol	SFA.
o-Chlorobenzonitrile	PD.
p-Chlorobenzophenone	PD.
Chloro(p-chlorophenyl)phenylmethane	OPC.
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.
7-Chloro-1,3-dihydro-3-hydroxy-5-phenyl-2H-1,4-benzodiazepin-2-one, acetate ester	MYT.
7-Chloro-1,3-dihydro-5-phenyl-2H-1,4-benzodiazepin-2-one-4-oxide	MYT.
4'-Chloro-2',5'-dimethoxyacetacetanilide	PCW.
5-Chloro-2,4-dimethoxyaniline	ALL.
2-Chloro-1,4-dimethoxybenzene	PCW.
4-Chloro-2,5-dimethoxynitrobenzene	PCW.
2-[p-Chloro-α-(2-dimethylaminoethyl)benzyl]pyridine	SK.
1-Chloro-10-[3-(dimethylamino)propyl]phenothiazine	SK.
1-Chloro-2,4-dinitrobenzene (Dinitrochlorobenzene)	SDC.
4-Chloro-3,5-dinitrobenzenesulfonic acid, potassium salt	SDC.
4-Chloro-5'-ethyl-2'-hydroxybenzaniilide	LIL.

TABLE 2.--CYCLIC INTERMEDIATES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

CYCLIC INTERMEDIATES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
2-Chloroethyl-p-toluenesulfonic acid	CGY.
2-Chloro-6-fluorotoluene	OMC.
1-Chloro-2-methylanthraquinone	CGY.
4-Chloro-N-methyl-3-nitrobenzenesulfonamide	CGY.
az-Chloromethylstyrene	DOW.
2-[(Chloromethyl)thiol]benzothiazole	BKM.
4-Chloro-3-nitrobenzamide	PCM.
1-Chloro-2-nitrobenzene (Chloro-o-nitrobenzene)	DUP, MON.
1-Chloro-3-nitrobenzene (Chloro-m-nitrobenzene)	SCC.
1-Chloro-4-nitrobenzene (Chloro-p-nitrobenzene)	DUP, MON.
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.
4-Chloro-3-nitrophenylmethyl sulfone	CGY.
α-Chloro-4-nitrotoluene	EK.
2-Chloro-4-nitrotoluene	DUP.
o-Chlorophenol	MON.
m-Chlorophenol	HEX.
p-Chlorophenol	MON.
4-Chloro-α-phenyl-o-cresol	MON.
o-Chlorophenylcyclopentyl ketone	PD.
(m-Chlorophenyl)diethanolamine	HST.
4-Chloro-o-phenylenediamine	FMT.
o-Chlorophenyl-1-hydroxycyclopentyl-N-methylketamine	PD.
4,4'-[(2-Chlorophenyl)methylene]bis[N,N-dimethyl]aniline	X.
p-Chlorophenyl methyl sulfone	CGY.
4-Chlorophthalic acid	SM.
(3-Chloropropenyl)benzene	SDM.
3-Chloropropyl-2,5-xylol ether	PD.
2-Chloropyridine	NES, OMC.
2-[[4-(7-Chloro-4-quinolyl)-amino]pentyl]ethylamino]ethanol	SDM.
4-Chlororesorcinol	PCM.
o-Chlorotoluene	HK.
α-Chlorotoluene (Benzyl chloride)	MON, SFS, VEL.

TABLE 2.--CYCLIC INTERMEDIATES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

CYCLIC INTERMEDIATES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
3-Chloro-p-toluidine [NH ₂ =1]	DUP.
p-Chloro- α,α,α -trifluorotoluene	HK.
4-Chloro-3,5-xylene	FER.
Copper, [2,2',2'',2''',2''''-[29H,31H-phthalocyanine]pentakis(methylene)]pentakis[1H-isoindole-1,3(2H)-dionato]]	X.
*CRESOLS:	
m-Cresol	KPT, MER.
* O-CRESOL:	
o-Cresol, from petroleum	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 coal tar	KPT.
Cresylic acid, refined from petroleum	DA, FER, MER, PIT.
Cumene (Isopropyl benzene)	ASH, CLK, GOC, GP, GRS, KHI, MON, SHC, SKO, SOC, TX.
p-Cumylphenol	MON.
4-(Cyanooethyl)morpholine	DUP.
N-[3-[(2-Cyanoethyl)ethylamino]phenyl]acetamide	SDC.
p-[(2-Cyanoethyl)methylamino]benzaldehyde	ATL.
N-Cyano-s-methyl-N-2(4-methyl-5-imidazolyl)-methylthioethylisothiourea	SK.
2,5-Cyclohexadiene-1,4-dione, dioxime	SDC.
*Cyclohexane-	COR, CSD, ENJ, GOC, GRS, PLC, PPR, SHC, SUN, SWR, TX, UOC.
1,2-Cyclohexanedicarboxylic acid anhydride	BCC.
Cyclohexanol	APP, DBC, DUP, MON.
*Cyclohexanone-	APP, CNP, DBC, DUP, MON, UCC.
Cyclohexanone oxime	CNP.
Cyclohexene	USR.
1-Cyclohexeneacetone	ABB.
3-Cyclohexene-1-carboxaldehyde	UCC.
4-Cyclohexene-1,2-dicarboximide	SFC.
4-Cyclohexene-1,2-dicarboxylic anhydride	DKA.
Cyclohexene oxide	USR.
β -(1-Cyclohexenyl)ethylamine	HXL.

TABLE 2.--CYCLIC INTERMEDIATES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

CYCLIC INTERMEDIATES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
Cyclohexylamine	ABB, VGC.
Cyclohexyl-2-propanone	GIV.
N-Cyclohexyltaurine, sodium salt	GAF.
Cyclooctadiene	DUP.
Cyclopentene	ALD.
2-Cyclopropylmethylamino-5-chlorobenzophenone	PD.
2-(N-Cyclopropylmethyl-N-phthalimidoacetyl)-amino-5-chlorobenzophenone	PD.
p-Cymene	HPC.
Diacenaphtho[1,2-j:1',2'-l]fluoranthene (Decacyclene)	SDC.
3,5-Diacetamido-2,4,6-triiodobenzoic acid	SDM.
2,4-Diaminobenzenesulfonic acid [SO ₃ H=1]	CGY.
1,3-Diaminocyclohexane	DUP, MIL.
1,4-Diamino-2,3-dihydroanthraquinone	DUP, MIL.
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.
1,5-Diamino-4,8-dihydroxyanthraquinone	VPC.
4,11-Diamino-1H-naphth[2.3.f]isoindole-1,3,5,10-	VPC.
2,6-Diaminopyridine	RLI.
4,4'-Diamino-2,2'-stilbenedisulfonic acid	ATL, CGY, SDH.
3,5-Diamino-2,4,6-triiodobenzoic acid	SDM.
2,5-Dianilino-3,6-dihydroterephthalic acid, dimethyl ester	VPC.
2,5-Dianilino-terephthalic acid	VPC.
2-Diazo-1-naphthol-5-sulfonic acid, sodium salt	HST.
Dibenzo(b,def)chrysene-7,14-dione	CGY.
1,5-Dibenzoylnaphthalene	CGY, VPC.
M,N'-Dibenzylethylenediamine	WYT.
M,N'-Dibenzylethylenediamine diacetate	WYT.
2,4'-Dibromoacetophenone	ALD.
3,9-Dibromo-7H-benz[de]anthracen-7-one	CGY.
x,y-Dibromo-dibenzo<b,d,e,f>chrysene-7,14-dione	VPC.
2,6-Dibromo-4-nitroaniline	SDC.
2,6-Dibromophenol	EK.
p-Dibutoxybenzene (DBB)	ALL.
2,5-Dibutoxy-4-morpholinobenzenediazonium sulfate salt (DBB Sulfate)	ALL.
2,6-Di-tert-butyl-alpha-dimethylamino-p-cresol	TMA.
2,6-Di-tert-butyl-4-nonylphenol	GAF.
2,4-Di-tert-butylphenol	FER.

TABLE 2.---CYCLIC INTERMEDIATES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

CYCLIC INTERMEDIATES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
2,6-Di-sec-butylphenol	TNA.
3,4-Dichloroaniline	DUP, MON.
1,5-Dichloroanthraquinone	CGY.
1,8-Dichloroanthraquinone	CGY.
o (and p)-Dichlorobenzene	MTO.
*o-Dichlorobenzene	DOM, MON, PPG, SCC, SOI.
m-Dichlorobenzene	MON.
*p-Dichlorobenzene	DOM, MON, PPG, SCC, SOI.
3,3'-Dichlorobenzidine base and salts	MON, LAK.
4,4'-Dichlorobenzil	MTO.
Dichlorobenzyl chloride	SFS.
7,16-Dichloro-6,15-dihydro-5,9,14,18-anthrazinetetrone	CGY.
Dichlorodiphenylsilane	DCC.
2,6-Dichloro-3-methylaniline	SDC.
2,5-Dichloro-4-(3-methyl-5-oxo-2-pyrazolin-1-yl)-benzenesulfonic acid	CGY.
Dichloromethylphenylsilane	DCC.
2,6-Dichloro-4-nitroaniline	CMN.
1,2-Dichloro-4-nitrobenzene	DUP, MON.
1,4-Dichloro-2-nitrobenzene (Nitro-p-dichlorobenzene)	DUP, PCW.
2,4-Dichlorophenol	DOM, MON.
3,6-Dichloropyridazine	ACY.
2,5-Dichlorosulfanilic acid [SO ₂ H=1]	VPC.
2,5-Dichloro-4-sulfobenzenediazonium sulfate	CGY.
p,a-Dichlorotoluene	HK.
α,α-Dichlorotoluene (Benzal chloride)	SFS.
Dicyclohexylamine	ABB, VGC.
Dicyclohexylamine, nitrate salt	ONC.
*Dicyclopentadiene (includes Cyclopentadiene)	CO, CXI, DOM, ENJ, GOC, VEL, VIK.
Didodecylbenzene	CO.
α,α-Diethoxyacetophenone	CMN.
p-Diethoxybenzene	ALI.
p-(Diethylamino)benzaldehyde	VPC.
3'-[2-(Diethylamino)ethyl]-4'-hydroxyacetanilide	PD.
2[4-Diethylamino-2-hydroxybenzylbenzoic acid]	X.
N-(3-Diethylamino-1,4-methoxyphenyl)acetamide	SDC.
7-Diethylamino-4-methylcoumarin, crude	PCW.
3-Diethylaminophenetole	CGY.
3-[4',-N,N-Diethylamino]phenylazo]-1H-1,2,4-triazole	CGY.
N,N-Diethylaniline	BCC, DUP.
2,6-Diethylaniline	TNA.

TABLE 2.--CYCLIC INTERMEDIATES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

CYCLIC INTERMEDIATES		MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
Diethylbenzene		DOM.
N,N-Diethylcyclohexylamine		ABB.
N,N-Diethyl-3-ethoxyaniline		X.
N',N'-Diethyl-4-methoxymetanilamide		PCM.
N,N-Diethyl-m-phenetidine		CGY.
N,N-Diethyl-m-toluidine		DUP.
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.
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.
2-[2-(2,3-Dihydro-1,3-dioxo-1H-inden-2-yl)-(quin/linyl)]-6-methylbenzothiazole-7-sulfonic acid		VPC.
2,3-Dihydro-2-[6-methyl-7-sulfo-2-benzothiazolyl]-2-quinoliny-1,3-dioxo-1H-indene-5-carboxylic acid		VPC.
Dihydrophenylglycine diane salt		SK.
1,2-Dihydro-2,4,7-tetramethylquinoline		EKT.
1,2-Dihydrotriamicinone		X.
*1,4-Dihydroxyanthraquinone		CGY, EKT, HSH.
1,8-Dihydroxyanthraquinone		CGY.
2,5-Dihydroxy-p-benzenedisulfonic acid, dipotassium salt		CGY.
3,4-Dihydroxybenzoic acid, methyl ester		EK.
2,4-Dihydroxybenzophenone		PCM.
4,4'-Dihydroxybiphenyl		ACY.
1,5-Dihydroxy-4,8-dinitroanthraquinone		X.
1,8-Dihydroxy-4,5-dinitroanthraquinone		VPC.
Dihydroxydiphenyl sulfone		EKT, VPC.
N,N-Di(6-hydroxyethyl)-m-chloroaniline		CRZ.
3,5-Dihydroxy-N-(2-hydroxyethyl)benzamide		MIL.
4,5-Dihydroxy-2,7-naphthalenedisulfonic acid (Chromotropic acid)		PCM.
3-[(2,4-Dihydroxyphenyl)azo]-4-hydroxybenzenesulfonic acid, sodium salt-copper complex		CGY.
7-[(2,5-Dihydroxy-7-sulfo-1-naphthalenyl)azo]-8-hydroxy-		ATL.

TABLE 2.--CYCLIC INTERMEDIATES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

CYCLIC INTERMEDIATES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
1,3,5-naphthalenetrisulfonic acid cuperate	: CGY.
16,17-Dihydroxyviolanthrone (Dihydroxydibenzanthrone)	: CGY.
Diisopropylbenzene	: GP, MON.
2,5-Dimethoxyaniline	: ALL, EKT.
2,5-Dimethoxybenzaldehyde	: CMN, UPJ.
m-Dimethoxybenzene	: ACY.
2,5-Dimethoxy-4'-nitrostilbene	: EKT.
2,5-Dimethoxytetrahydrofuran	: HEX.
m-(Dimethylamino)benzaldehyde	: ATL, CGY, X.
m-(Dimethylamino)benzoic acid	: X.
2-[4-(Dimethylamino)benzoyl]benzoic acid	: X.
m-Dimethylaminophenol	: ACY.
11-[3(Dimethylamino)propyl]-6H-hydroxydibenz(b,e)oxepin	: PFZ, SK.
N,N-Dimethylaniline	: BCC.
3,3'-Dimethylbenzidine hydrochloride	: EK.
*N,N-Dimethylbenzylamine	: ARS, HXL, RH, SM.
2,2'-Dimethyl-1,1'-bianthraquinone	: CGY.
Dimethyl-1,4-cyclohexanedicarboxylate	: EKT.
N,N-Dimethylcyclohexylamine	: ABB.
Dimethyldichlorobiothianthrene	: X.
1,1-Dimethyl-3-(m-hydroxyphenyl)urea	: GLY.
2,5-Dimethyl-4(2)-morpholinylmethylphenol, hydrochloride	: CGY, PCW, WAY.
N,N-Dimethyl-o-toluidine	: RSA.
N,N-Dimethyl-p-toluidine	: 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-benzide]anthracene]-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, RUC.

TABLE 2.--CYCLIC INTERMEDIATES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

CYCLIC INTERMEDIATES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
*2,4(and 2,6)-Dinitrotoluene	DUP, MOB, OMC, X.
3,5-Dinitro-o-toluic acid	SAL.
Dinonyldihydroxybenzenesulfonic acid	X.
Dinonylphenol	GAF, TX.
Di-para-benzoquinone dioxime	IC.
2,4-Di-tert-pentylphenol	FER, PAS.
1,5-Diphenoxanthraquinone	VPC.
1,8-Diphenoxanthraquinone	CGY.
Diphenylacetone trile, tech.	SOL.
Diphenylamine	RUC, USR.
1,3-Di-4-piperidylpropane	RII.
1,4-Di-p-toluidinoanthraquinone	CGY.
2,5-Di-p-toluidinoterephthalic acid	EKT.
1,5-diureidonaphthalene	SOL.
Divinylbenzene	DOM, HST.
Dodecahydro-1,4a-dimethyl-7-(1-methylethyl)-1-phenanthrenemethanol	HPC.
Dodecylaniline	MON.
Dodecylmethylbenzyl chloride	RH.
*p-Dodecylphenol	GAF, MCB, MON, SCN, SOC.
Doxepin base	SK.
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, TNA.
2-(N-Ethylanilino)ethanol	MIL, TCH.
3-(N-Ethylanilino)propionitrile	MIL, TCH.
alpha-(N-Ethylanilino)-m-toluenesulfonic acid	X.
*Ethylbenzene	AMO, ATR, CO, CSD, DOM, ELP, GOC, HST, KHI, KPT, MCB, MON, PIC, SOG, TOC.
p-Ethylbenzenesulfonic acid	TEN.
Ethylbenzyl chloride	KPT, SFS.
d(-)Ethyl-3-(alpha-carboxybenzyl)amino crotonate, potassium salt	KF.

TABLE 2.--CYCLIC INTERMEDIATES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

CYCLIC INTERMEDIATES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
2-(N-Ethyl-N,β-cyanoethyl)-4-acetaminoanisole	CGY, SDC, TCH.
N-Ethylcyclohexylamine (Herbicide intermediate)	ABB.
N-Ethyl-N-(2,3-dihydroxypropyl)-m-toluidine	EKT.
Ethylene-bis-tetrabromophthalimide	TNA.
3,3'-Ethylene-dioxidiphenol	WAY.
N-Ethylmaleimide	REG.
2-[N-Ethyl-p-(6-methoxy-2-benzothiazoyl)azolanilino]-ethanol	CGY.
dl-138-Ethyl-3-methoxy-8,14-secogona-1,3,5(10),9(11)-tetraene-14,17-dione	MYT.
6-Ethyl-2-methylaniline	TNA.
6-Ethyl-2-methylformanilide	MYT.
1-Ethyl-2-methylindole	X.
N-Ethyl-N-(2-methylsulfonamidoethyl)-m-toluidine	X.
α-Ethyl-3-nitrocinnamic acid	SDM.
N-Ethyl-N-phenylbenzylamine	X.
4-Ethylpiperidine	RIL.
N-Ethyl-N-(3'-sulfobenzyl)aniline	VPC.
Ethyl toluene	HST.
N-Ethyl-m-toluidine	DUP.
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.
Furfurylamine	HXL.
1-(2-Furoyl)piperazine	PFZ.
Heptadecylmethyl benzimidazolium-methyl) sulfate	CGY.
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	MYT.
Hexahydro-1-methyl-4-phenyl-4-azepinecarboxylic acid, diethyl ester	MYT.
Hexamethyleneimine	CXI, DUP.
Hydroquinone, tech.	EKT, GYR.
p-Hydroxybenzaldehyde	DOM.

TABLE 2.--CYCLIC INTERMEDIATES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

CYCLIC INTERMEDIATES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
p-Hydroxybenzenesulfonic acid-	FER, UPF.
2,2'-[[4-(2-Hydroxyethylamino)-3-nitrophenyl]imino]-	
diethanol-	SOL.
3-[N-(2-Hydroxyethyl)anilino]propionitrile	MIL.
3-[N-(2-Hydroxyethyl)anilino]propionitrile acetate	MIL, TCH.
N-(2-Hydroxyethyl)-o-chloroaniline	EKT.
N-β-Hydroxyethyl-2,4-dihydroxybenzamide	PCM.
N-Hydroxyethylpyrrolidone (stripped)	GAF.
4-Hydroxymetanilamide-	CGY, DUP.
4-Hydroxymetanilamide-	CGY.
3-Hydroxy-2-methylcinchoninic acid	CGY.
4-Hydroxy-N ¹ -methylnetanilamide-	CGY.
4(5)-Hydroxymethyl-5(4)-methylimidazole hydrochloride	SK.
4-Hydroxy-7-methyl-1,8-naphthyridine-3-carboxylic acid,	
ethyl ester-	X.
3-Hydroxy-N-(3-N-morpholino-7-propyl)-2-naphthimide-	PCM, WAY.
7-Hydroxy-1,3-naphthalenedisulfonic acid	CGY.
3-Hydroxy-2,7-naphthalenedisulfonic acid, disodium salt	ACY, CGY.
6-Hydroxy-2-naphthalenesulfonic acid, sodium salt-	ACY, CGY, SDH.
8-Hydroxy-1-naphthalenesulfonic acid, 7-sultone-	CGY.
1-Hydroxy-2-naphthoic acid	PCM.
3-Hydroxy-2-naphthoic acid (B.O.N.)-	PCM.
3-Hydroxy-2-naphthoic acid, aminopropylmorpholide-	HST.
3-Hydroxy-2-naphthoic acid, ethanalamide	PCM.
1-Hydroxynaphthoic acid, methyl ester-	PCM.
3-Hydroxy-2-naphthoic acid, methyl ester	PCM.
3-Hydroxy-2-naphthoic acid, sodium salt-	PCM.
2-Hydroxy-1,4-naphthoquinone	SAL.
1-(2-Hydroxy-1-naphthylazo)-6-nitro-2-	
hydroxynaphthalene-4-sulfonic acid	CGY.
2-Hydroxy-6-nitro-4-sulfohydroxide-1-naphthalene	VPC.
2-Hydroxy-4-n-octoxybenzophenone	CCM.
p-Hydroxyphenyl-3-methylbutyric acid	HEX.
11 α-Hydroxyprogesterone	UPJ.
3-Hydroxy-5'-quinophthalonecarboxylic acid	CGY.
1-Hydroxy-4-p-toluidinoanthraquinone	HSB.
Indole-2,4-dione	CGY.
2-Iodoacetamido-5-chlorobenzophenone	MYT.
10-(p-Iodophenyl)undecanoic acid, ethyl ester	X.
p-Iodotoluene-	EK.
Isatoic anhydride-	SM.

TABLE 2.--CYCLIC INTERMEDIATES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

CYCLIC INTERMEDIATES		MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
Isobutylbenzene		PLC, TNA.
*ISOCYANIC ACID DERIVATIVES:		
Bitylene diisocyanate (TODI)		CWN.
Diphenylmethane-4,4'-diisocyanate (MDI)		BAS, ICI, MOB, RUC, UPJ.
Isocyanic acid, p-chlorophenyl ester		MOB.
Isocyanic acid, cyclohexyl ester		MOB.
Isonicotinamide		RIL.
Isonicotinic acid		RIL.
Phenylisocyanate		MOB.
*Polymethylene polyphenylisocyanate		ICI, MOB, RUC, UPJ, WTC.
Toluene 2,4-diisocyanate		DUP, MOB.
*Toluene 2,4-and 2,6-diisocyanate (80/20 Mixture)		BAS, DOM, ICI, 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.
2-Isonitrosoacetanilide		CGY.
Isophthalic acid (Benzene-1,3-dicarboxylic acid)		AMO.
Isophthalic acid, diphenyl ester		PD.
Isophthalonitrile		SM.
Isophthaloyl chloride		DUP.
N-Isopropylaniline		USR.
Isopropylbiphenyl		TCC.
4,4'-Isopropylidenebis[2,6-dibromophenol]		
(Tetrabromobisphenol A)		SHC.
5,5'-Isopropylidenebis(2-hydroxy-m-xylene- α,α' -diol)		ARK.
4,4'-Isopropylidenediphenol (Bisphenol A)		DOM, GE, SHC, UCC, USS.
4,4'-Isopropylidenediphenol, ethoxylated		ICI.
4,4'-Isopropylidenediphenol, propoxylated		ICI.
o-Isopropylphenol		FER, TNA.
p-Isopropylphenol		FER.
Isopropylphenol, mixed		FER, FMP.
Isothiocyanic acid, phenyl ester		EK.
Leuco quinizarin (1,4,9,10-Anthratrol)		CGY, HSH.
3,5-Lutidine		RIL.
Malonanilide		PCW.
Mandelonitrile		KF.
Melamine		ACY, MLC.
p-Mentha-1,4(8)-diene		GIV.
dy-p-Mentha-1,8-diene (Limonene)		ARZ.
Metanilic acid (m-Aminobenzenesulfonic acid)		CGY.
4-Methoxyacetanilide		CGY.

TABLE 2.--CYCLIC INTERMEDIATES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

CYCLIC INTERMEDIATES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
2-Methoxyethylpiperidine	RIL.
N-(4-Methoxy-3-nitrophenyl)acetamide	SDC.
(p-Methoxyphenyl)acetic acid	HEX.
N[4-[1-[(2-Methoxyphenylamino)carbonyl]-2-oxopropylazophenyl]-4-[[[(2-methoxyphenylamino)carbonyl]-2-oxopropylazo]benzamide]]	X.
4-Methylacetophenone	UPJ.
2-(N-Methylanilino)ethanol	TCH.
3-(N-Methylanilino)propionitrile	MIL, TCH.
5-Methyl-o-anisidinesulfonic acid	SM.
2-Methylanthraquinone	ACY.
2-Methylbenzothiazole	FMT.
4-Methylbenzothiazolone, hydrazone	LIL.
N-Methylbenzylamine	HXL.
N-Methyl-N-butylnicotinium methosulfate	HXL.
Methyl N-(α -carboxydihydrobenzyl)- β -aminocrotonate, sodium salt	TRD.
4-(N-Methyl-N-cyanoethyl-amino)-benzaldehyde	VPC.
Methylcyclohexane	PLC.
N-Methylcyclohexylamine	ABB.
2-Methylcyclohexylamine	ABB.
N-Methyl-N-cyclohexyl-m-nitrobenzenesulfonamide	VPC.
N-Methyldicyclohexylamine	ABB.
2-Methyl-4,6-dinitrophenol	CPS.
4-Methyl-2,6-dinitrophenol	SM.
4,4'-Methylenebis[N,N-diethylaniline]	ACY. X.
4,4'-Methylenebis[N,N-dimethylaniline] (Methane base)	ACY. X.
4,4'-Methylenebis[3-hydroxy-2-naphthoic acid], disodium salt	EK.
4,4'-Methylenedianiline	DUP, OMC, RUC, USR.
1,2-Methylenedioxybenzene	CRZ.
1,2-Methylenedioxy-4-nitrobenzene	PD.
5,5'-Methylenedisalicylic acid	HN.
Methylhydroquinone	EKT.
N-Methyl-p-nitroaniline	ACY.
4-Methyl-2-nitroanisole	SM.
Methylnorbornene-2,3-dicarboxylic anhydride, isomers	BCC.
m-(3-Methyl-5-oxo-2-pyrazolin-1-yl)benzenesulfonamide	VPC.
p-(3-Methyl-5-oxo-2-pyrazolin-1-yl)benzenesulfonic acid	CGY.
N-(3-Methylphenyl)acetamide	SDC.
2-Methyl-5-phenylbenzoxazole	EK.

TABLE 2. --CYCLIC INTERMEDIATES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

CYCLIC INTERMEDIATES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
1-Methyl-4-phenylisonipecotic acid	WYT.
1-Methyl-4-phenylisonipecotonitrile	WYT.
4-Methylphthalic acid	EK.
[(6-Methyl-2-pyridinyl)amino]methylenepropanedioic acid, diethyl ester	X.
* α -Methylstyrene	CIK, GP, SKO, UCC.
* <i>ar</i> -Methylstyrene (Vinyltoluene)	DOM, HST, USS.
1-Morpholino-2,5-dibutoxy-4-nitrobenzene	ALL.
1-Morpholino-2,5-dithoxy-4-nitrobenzene	ALL.
1-Naphthaldehyde	GNM.
1-Naphthalenesulfonic acid	CGY.
2-Naphthalenesulfonic acid	SDC.
1-Naphthalenesulfonic acid, 5-<(4-hydroxyphenyl)	SDC.
1-Naphthalenesulfonic acid, sodium salt	CGY.
2-Naphthalenesulfonic acid, sodium salt	GNM.
1,4,5,8-Naphthalenetetracarboxylic acid	CGY.
Naphthalimide	SDC, VPC.
1-Naphthol (α -Naphthol)	UCC.
2-Naphthol, tech. (β -Naphthol)	ACY, TX.
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, RII.
3'-Nitroacetanilide	EKT.
4'-Nitroacetanilide	CGY.
o-Nitroaniline	DUP, MON, X.
p-Nitroaniline	AC, DUP, MON.
5-Nitroanthranilic acid	CGY.
1-Nitroanthraquinone	CGY.
*Nitrobenzene	SDH.
m-Nitrobenzenesulfonic acid	ACY, DUP, FST, MOB, RUC.
m-Nitrobenzenesulfonic acid, sodium salt	CGY.
o-Nitrobenzoic acid	USM.
m-Nitrobenzoic acid	SAL.
p-Nitrobenzoic acid	SAL, X.
m-Nitrobenzoic acid, sodium salt	DUP.
p-Nitrobenzoic acid, sodium salt	SAL.
2-Nitro-p-cresol	SM.
p-Nitro-N-(2-diethylamino)ethylbenzamide	PD.
Nitrodiphenylamine	ACY, MON.

TABLE 2.--CYCLIC INTERMEDIATES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

CYCLIC INTERMEDIATES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
5-Nitro-2-furamethanediol, diacetate	MOR.
5-Nitroisophthalic acid	LAK, SAL.
3-Nitro-4-methoxyacetanilide	CGY, HST.
4-Nitro-N-methylphthalimide	LAK.
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	PCM.
o-Nitrophenol	MON.
p-Nitrophenol	DUP, MON.
p-Nitrophenol, sodium salt	DUP.
2-(o-Nitrophenylazo)-4,6-di-tert-pentylphenol (OH=1)	CGY.
2-Nitro-p-phenylenediamine	SOL.
2-Nitro-N-phenyl-p-phenylenediamine	SOL.
2-Nitro-5-(phenylthio)aniline	X.
4-Nitroso-N-ethyl-N-(β -methylsulfonamidoethyl)-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.
Nitrotoluene mixtures	FST.
p-Nitrotoluene-o-sulfonic acid	CGY, X.
5-Nitro-o-toluidine [NH ₂ =1]	PCM.
Nonyl-dinonylphenol, mixture	USR.
* Nonylphenol	GAF, KLM, MCB, MON, RH, SCN, TX.
Octylphenol	RH, SCN.
Octylphenoxydiethoxy chloride	RH.
1-[(7-Oxo-7H-benz[de]lanthracene-3-yl)amino]anthraquinone	CGY.
4,4'-Oxydianiline	DUP.
para-Phenoxybenzoic acid	EDA.
Pentabromochlorocyclohexane	DOM.
Pentabromoethylbenzene	TNA.
1,1,3,3,5-Pentamethylindan	PIC.
o-Pentylphenol (o-Amylphenol)	PAS, X.
p-tert-Pentylphenol	PAS.

TABLE 2. --CYCLIC INTERMEDIATES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

CYCLIC INTERMEDIATES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
3,4,9,10-Perylene tetracarboxylic-3,4:9,10-dianhydride	VPC.
3,4,9,10-Perylene tetracarboxylic-3,4:9,10-dilimide	SDC, VPC.
Perylo[3,4-cd:9,10-c'd']dipyrans-1,3,8,10-tetrone	SDC.
1,10-Phenanthroline	VNC.
2-Phenethylamine	HXL.
p-Phenetidine	MON.
*PHENOL:	
NATURAL:	
FROM COAL TAR:	
Phenol, natural, from coal tar, all other	KPT.
FROM PETROLEUM:	
Phenol, natural, from petroleum, U.S.P.	MER.
Phenol, natural, from petroleum, all other	DA, FER, NPC.
SYNTHETIC:	
BY CAUSTIC FUSION:	
Phenol, synthetic, by caustic fusion, U.S.P.	RCI.
Phenol, benzylated	MIL.
Phenol, styrenated	MIL.
Phenol, synthetic, from chlorobenzene by vapor-phase hydrolysis, U.S.P.	SKO.
*Phenol, synthetic, from cumene by oxidation, U.S.P.	AFP, CLK, DOW, JE, GP, MON, SHC, SOC, USS.
Phenol, synthetic, from toluene by oxidation, U.S.P.	KIM.
Phenol, synthetic, all other	SHC.
Phenolsulfonaphthalein, sodium salt	EK.
Phenolsulfonic acid, sodium salt	SAL, USS.
Phenoxyacetic acid, sodium salt	NCC.
3-Phenoxybenzaldehyde	GTL, TNA.
3-Phenoxybenzenemethanol	TNA.
p-Phenoxybenzoic acid	RDA.
Phenylacetic acid, ethyl ester, tech.	OPC.
Phenylacetic acid, methyl ester	OPC.
Phenylacetic acid, potassium salt	OPC, SFS.
Phenylacetic acid, sodium salt	OPC.
Phenylacetone trile (α-Tolunitrile)	OPC.
Phenylacetyl chloride	OPC.
2,2'-[(Phenylamino)diethanol, diacetic ester]	CGY.
p-Phenylazoaniline (C.I. Solvent Yellow 1) and hydrochloride	CGY.
4-Phenylazodiphenylamine	EK.
Phenyl-1,2,3-butanetrione-2-oxime	EK.
1-Phenyl-4,4-dimethyl-3-pyrazolidinone	EK.

TABLE 2.--CYCLIC INTERMEDIATES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

CYCLIC INTERMEDIATES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
o-Phenylenediamine	: CGY, DUP, SM.
m-Phenylenediamine	: DUP.
p-Phenylenediamine	: DUP, SDC.
N,N-(m-Phenylene)dimaleimide	: NES.
d-Phenylephrine	: SDM.
Phenyl ether (Diphenyl oxide)	: DOM, MON.
d(+)-α-Phenylethylamine	: HXL.
dl-2-Phenylglycine (racemic)	: KF.
d(-)-2-Phenylglycine	: KF.
Phenylglycine, potassium salt	: BCC.
Phenylglycine, sodium salt	: BCC.
d(-)-2-Phenylglycyl chloride hydrochloride	: KF, UPJ.
5-Phenylhydantoin	: ABB.
*2,2'-[(Phenylimino)diethanol (N-Phenyldiethanolamine)]	: EKT, MIL, TCH.
2,2'-[(Phenylimino)diethanol, diacetate ester	: TCH.
Phenylmercuric carboxylate	: COS.
Phenyl-α-naphthylamine	: UCC, USR.
o-Phenylphenol	: DOM.
p-Phenylphenol	: DOM.
o-Phenylphenol, sodium salt	: DOM.
N-Phenyl-p-phenylenediamine	: USR.
Phenylphosphinic acid	: FER, SFS.
Phenylphosphonoethic dichloride	: SFA.
Phenylphosphorous dichloride	: SFA.
1-Phenyl-1,2-propanedione, 2-oxime	: ORT.
4-Phenylpropylpyridine	: NEP, IL.
1-Phenyl-2-tetrazoline-5-thione	: EK.
4-Phenylthiomorpholine-1,1-dioxide	: EKT.
Phthalic acid	: ALD, EK.
*Phthalic anhydride	: ACS, ACY, DBC, ENJ, KPT, MON, SOC, STP, USS.
Phthalimide	: SW.
Phthalimidoacetic acid	: PD.
[Phthalocyaninato(2-)]copper	: DUP, PHC.
[Phthalocyaninetetramethanaminato]copper	: X.
Phthalocyaninetetrasulfonyl chloride, copper derivative	: VPC.
Phthaloyl chloride (Phthalyl chloride)	: TIC.
PICOLINES:	
Picoline (3,4-mixture)	: RIL.
2-Picoline (α-Picoline)	: RIL.
3-Picoline (β-Picoline)	: NEP, RIL.
4-Picoline (γ-Picoline)	: RIL.

TABLE 2.--CYCLIC INTERMEDIATES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

CYCLIC INTERMEDIATES		MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
Picolinic acid		NEP.
Picolonitrile (2-Cyanopyridine)		KPT, NEP.
2-Picolylamine		RIL.
3-Picolylamine		RIL.
Picric acid (Trinitrophenol)		SDC.
*Piperidine		ABB, RIL, TX.
Polychlorobenzene		DOM, SCC.
Polyethylbenzene (80 percent diethylbenzene)		ELP.
*Propiophenone		HEX, ORT, UCC.
8,16-Pyranthredione		CGY.
1,3,6,8-Pyrenetetrasulfonic acid		X.
PYRIDINE, REFINED:		
20 Pyridine, refined		KPT, NEP, RIL.
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		GAF.
Quinaldine		ACY.
QUINOLINE:		
Quinoline, 10 and 20		KPT.
2,4-Quinolinediol		PCM.
Resorcinol, mono-beta-hydroxyethyl ether		BJL.
Resorcinol, tech.		KPT, LEM.
6-Resorcylic acid, lead salt		KPT.
Salicylaldehyde		DOM, RDA.
Salicylaldehyde oxime		EK.
Salicylanilide		LEM, PCW.
Salicylic acid, phenyl ester		DOM.
*Salicylic acid, tech.		DOM, HN, MON, SDH.
*styrene (Vinylbenzene)		AMO, ATR, CRP, CSD, DOM, ELP, GOC, HST, MCB, MON, SHC, USS.
Sulfaethoxypyridazine		ACY.
Sulfanilic acid (p-Aminobenzenesulfonic acid) and salt		ACY.
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-Sulfolphthalic acid		CWN.

TABLE 2.--CYCLIC INTERMEDIATES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

CYCLIC INTERMEDIATES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
Terephthalic acid	AMO, HCF.
*Terephthalic acid, dimethyl ester	DUP, EKT, HCF.
Terephthaloyl chloride	DUP, TIC.
Terphenyl (Phenylbiphenyl) (m-, o-, and p-isomers)	MON.
Tetrabromophthalic anhydride	GIL, TNA.
Tetrabromophthalic anhydride, diester	VEL.
1,2,4,5-Tetrachlorobenzene	DOW.
1,2,4,5-Tetrachloro-1,4-benzoquinone	UPJ.
1,2,4,5-Tetrachloro-3-nitrobenzene	MON, SDH.
2,3,5,6-Tetrachloropyridine	DOW.
Tetrahydrobenzyl alcohol	UCC.
*Tetrahydrofuran	BAS, DUP, QKO.
Tetrahydrofurfuryl methacrylate	GAF.
1,2,3,4-Tetrahydronaphthalene	UCC.
1,4,5,8-Tetrahydroxyanthraquinone, leuco derivative	CGY.
1,2,4,5-Tetramethylbenzene (Durene)	KHI.
p-(1,3,3-Tetramethylbutyl)phenol	GAF.
1,3,6,8-Tetranitro-9H-carbazole	SDC.
Tetrazolethiol	MRT.
Thiodiphenol	CRZ.
2-Thiophenecarboxaldehyde	EKT, 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, X.
Toluene-2,4-(and 2,6)-diamine (80/20 Mixture)	OMC.
Toluene-3,4-diamine	X.
p-Toluenesulfonic acid	CGY.
p-Toluenesulfonic acid, sodium salt	X.
p-Toluenesulfonic acid, sodium salt	NES.
o-(and p)-Toluenesulfonic acid	UPF.
p-Toluenesulfonic acid	SW, TEN, UPF.
p-Toluenesulfonic acid, aniline salt	NES.
p-Toluenesulfonic acid, copper salt	NES.
p-Toluenesulfonic acid monohydrate	NES.
p-Toluenesulfonyl chloride	MON.
o-Toluidic acid	WTC.
m-Toluidic acid	WTC.
o-Toluidic acid, methyl ester	HCF.
o-Toluidine	DUP, FST.
m-Toluidine	DUP.

TABLE 2. --CYCLIC INTERMEDIATES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

CYCLIC INTERMEDIATES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
P-Toluidine	DUP, FST.
Toluidines, mixed	DUP.
2-o-Toluidinoethanol	TCH.
P-Toluoyl chloride	KF.
1-p-Tolyldecane	RH.
2,2'-(m-Tolylimino)diethanol	MIL, TCH.
2,2'-(m-Tolylimino)diethanol, diacetate ester	SDC.
Tolyltriazole	SM, WAY.
2,4,6-Triamino-5-nitrosopyrimidine	SK.
2,4,6-Tribromophenol	GTL.
3,4',5-Tribromosalicylanilide	PCW.
1,2,3(and 1,2,4)-Trichlorobenzene	PPG, SCC.
1,2,4-Trichlorobenzene	DOM, SCC.
1,1,1-Trichloro-2,2-diphenylethane	CWN.
α,α,α-Trichloro-o-fluorotoluene	OMC.
1,2,4-Trichloro-5-nitrobenzene	PCW.
Trichlorophenylsilane	DCC.
α,α,α-Trichlorotoluene (Benzotrichloride)	HK, VEL.
2,4,6-Trichloro-s-triazine	CGY, DGC, NIL.
2-(Trifluoromethyl)phenothiazine	AND.
3-(Trifluoromethyl)phenylacetone trile	TLI.
α,α,α-Trifluoro-m-toluidine	OMC.
2,4,3'-Trihydroxydiphenyl	PCM, PIT.
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-6', α-indolineacetaldehyde	VPC.
1,3,3-Trimethyl-2-methyleneindoline	VPC.
2,3,6-Trimethylphenol	PIT.
Trimethylphenylammonium chloride	CGY, X.
2,4,6-Trimethylpyridine	KPT.
Triphenylphosphine	X.
Triphenylsulfonium chloride	SOL.
Triphenylsulfonium hexafluorophosphate	SOL.
α,α',α''-Tris(dimethylamino)mesitol	RH.
Tris(2-methyl-1-aziridinyl)phosphine oxide	ARS.
2-(2-Ureido-4-aminophenylazo)-3,6,8-naphthalenetrilsulfonic acid	CGY.

TABLE 2.--CYCLIC INTERMEDIATES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

CYCLIC INTERMEDIATES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
7,7'-Ureylenebis[4-hydroxy-2-naphthalenesulfonic acid] (J-Acid urea)	: CGY.
Vinylcyclohexane	: DUP.
Vinylcyclohexene monoxide	: UCC.
2-Vinylpyridine	: RIL.
4-Vinylpyridine	: RIL.
Violanthrone (Dibenzanthrone)	: CGY.
*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, HCR, KHI, PPX, SOC, STX, TOC.
2,4-Xylenesulfonic acid	: UPF.
2,5-Xylenesulfonic acid	: NES.
2,6-Xylenol	: GE, PIT.
3,5-Xylenol	: FER.
XYLIDINES:	
2,4-Xylidine (m-4-Xylidine)	: DUP.
2,6-Xylidine	: DUP, TNA.
Xylidine, original mixture	: DUP.
Cyclic intermediates, all other	: ABB, ACY, ALD, ARA, CGY, CLK, DRC, EKT, FER, GAF, HCF, HK, HST, KPT, LIL, MIL, NEP, NES, OMC, PCW, PD, PFZ, REG, RIL, RSA, SDH, SDW, SOL, STC, SW, TCH, TNA, UCC, UPF, UPJ, UPV, UPJ, UPJ, UPJ, WTC, X, X, X, X, X, X.

TABLE 3.--CYCLIC INTERMEDIATES: DIRECTORY OF MANUFACTURERS, 1982

ALPHABETICAL DIRECTORY BY CODE

[Names of manufacturers that reported production and/or sales of cyclic intermediates to the U.S. International Trade Commission for 1982 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	FKE	Frank Enterprises, Inc.
AC	American Color & Chemical Corp.	FMP	FMC Corp., Industrial Chemical Group
ACS	Allied Corp., Allied Chemicals Co.	FMT	Fairmount Chemical Co., Inc.
ACY	American Cyanamid Co.	FST	First Chemical Corp.
AFP	Allied Corp., Fibers & Plastics Co. Div.		
ALD	Aldrich Chemical Co., Inc.	GAF	GAF Corp.
ALL	Alliance Chemical Corp.	GE	General Electric Co.
AMB	American Bio-Synthetics Corp.	GIV	Givaudan Corp.
AMD	Cyclo Chemical Corp.	GLY	Glyco, Inc.
AMO	Standard Oil Co. (Indiana)	GNW	Greenwood Chemical Co.
ARA	Syntex Chemicals, Inc.	GOC	Gulf Oil Corp., Gulf Oil Chemical Co.-U.S.
ARK	Armstrong World Industries, Inc.	GP	Georgia-Pacific Corp.: Houston Div.
ARS	Arsynco, Inc.		Plaquemine Div.
ARZ	Arizona Chemical Co.	GRS	Champlin Petroleum Co.
ASH	Ashland Oil, Inc., Ashland Petroleum Co.	GTL	Great Lakes Chemical Corp.
ATL	Atlantic Chemical Corp.	GYR	Goodyear Tire & Rubber Co.
ATR	Atlantic Richfield Co., Arco Chemical Co.		
		HCF	Hercofina
BAS	BASF Wyandotte Corp.	HCR	Hercor Chemical Corp.
BCC	Buffalo Color Corp.	HEX	Hexagon Laboratories, Inc.
BJL	Burdick & Jackson Laboratories, Inc.	HK	Occidental Chemical Corp., Hooker Industrial & Specialty Chemicals Div.
BKM	Buckman Laboratories, Inc.	HML	Hummel Chemical Co.
BRD	Lonza, Inc.	HN	Tenneco, Inc. Tenneco Chemicals, Inc.
BRS	Bristol-Myers Co.	HPC	Hercules, Inc.
BUC	Synalloy Corp., Blackman-Uhler Chemical Div.	HSH	Harshaw Chemical Co.
		HST	American Hoechst Corp.: Petrochemicals Div.
CCW	Carstab Corp.		Specialty Products Div.
CGY	Ciba-Geigy Corp.	HXL	Hexcel Corp., Hexcel Chemical Products
CHL	Chemol, Inc.		
CHT	Chattem, Inc.	ICI	ICI Americas, Inc., Chemicals Specialties Co.
CLK	Clark Oil & Refining Corp.		
CNP	Nipro, Inc.	KF	Kay-Fries, Inc., Chemical Div., Dynamit Nobel of America, Inc.
CO	Conoco, Inc.		
COR	Commonwealth Oil & Refining Co., Inc.	KHI	Koch Industries, Inc., Koch Refining Co.
COS	Cosan Chemical Corp.	KLM	Kalama Chemical, Inc.
CPS	CPS Chemical Co., Inc.	KPT	Koppers Co., Inc.
CRP	Corpus Christi Petrochemicals Co.		
CRZ	Crown Zellenbach Corp.	LAK	Bofors Nobel, Inc. & Lakeway, Inc.
CSD	Cosden Oil & Chemical Co.	LC	Lord Corp., Chemicals Products Group
CWN	Upjohn Co., Fine Chemical Div.	LEL	Leland Chemical Co.
CXI	Chemical Exchange Industries, Inc.	LEM	Napp Chemicals, Inc.
DA	Diamond Shamrock Corp., Diamond Shamrock Agricultural Chemicals, Inc., Cresylic Plant	LIL	Eli Lilly & Co., U.S. and Puerto Rico
DBC	Badische Co.	MAL	Mallinckrodt, Inc.
DCC	Dow Corning Corp.	MCB	Borg-Warner Corp., Borg-Warner Chemicals
DGC	Degussa Corp.	MER	Merichem Co.
DKA	Denka Chemical Corp.	MIL	Milliken & Co., Milliken Chemical Co.
DOW	Dow Chemical Co.	MLC	Melamine Chemicals, Inc.
DEC	Dock Resins Corp.	MOB	Mobay Chemical Co., Pittsburgh Div.
DUP	E. I. duPont de Nemours & Co., Inc.	MON	Monsanto Co.
		MRT	Morton-Thiokol, Inc., Morton Chemical Co. Div.
EK	Eastman Kodak Co.:		
EKT	Tennessee Eastman Co. Div.	MTO	Montrose Chemical Corp. of California
ELP	El Paso Products Co.		
ENJ	Exxon Chemical Americas	NCC	Niacet, Inc.
		NCI	Union Carbide Corp., Terpene & Aromatics Div.
FER	Ferro Corp.:	NEP	Nepera Chemical Co., Inc.
	Grant Chemical Div.		
	Ottawa Chemical Div.		
	Productol Chemical Div.		

TABLE 3.--CYCLIC INTERMEDIATES: DIRECTORY OF MANUFACTURERS, 1982--CONTINUED

CODE	NAME OF COMPANY	CODE	NAME OF COMPANY
NES	Ruetgers-Nease Chemical Co.	SK	SmithKline Beckman Corp., SmithKline Chemicals Div.
NIL	Nilok Chemical, Inc.	SKO	Getty Refining & Marketing Co.
NOR	Norwich Eaton Pharmaceutical, Inc.	SOC	Standard Oil Co. of California, Chevron Chemical Co.
NPC	Northwest Petrochemical Corp. Div. of Stimson Lumber Co.	SOG	Charter International Oil Co.
OMC	Olin Corp.	SOI	Specialty Organics, Inc.
OPC	Orbis Products Corp.	SOL	Southland Corp., Fine Chemical Div.
ORT	Roehr Chemicals, Inc.	STC	American Hoechst Corp., Sou-Tex Works
PAS	Pennwalt Corp.	STP	Stepan Chemical Co.
PCW	Pfister Chemical, Inc.	STX	St. Croix Petrochemical Corp.
PD	Parke-Davis & Co.	SUN	Sun Company, Inc.
PEL	Pelron Corp.	SW	Sherwin-Williams Co.
PFZ	Pfizer, Inc. and Pfizer Pharmaceuticals, Inc.	SWR	Southwestern Refining Co., Inc.
PHC	Phthalchem, Inc.	TCC	Sybron Corp., Sybron Chemical Div.
PIT	Pitt-Consol Chemical Co.	TCH	Emery Industries, Inc., Trylon Div.
PLC	Phillips Petroleum Co.	TEN	Tennessee Chemical Co.
PPG	PPG Industries, Inc.	TLC	Twin Lake Chemical, Inc.
PPR	Phillips Puerto Rico Core, Inc.	TNA	Ethyl Corp.
PPX	Phillips Paraxylene, Inc.	TOC	Tenneco Oil Co.
QKO	Quaker Oats Co.	TRD	Squibb Manufacturing, Inc.
RCI	Reichhold Chemicals, Inc.	TX	Texaco, Inc.
RDA	Rhone-Poulenc, Inc.	UCC	Union Carbide Corp.
REG	Regis Chemical Co.	UOC	Union Oil Co. of California
RH	Rohm & Haas Co.	UPF	Jim Walter Resources, Inc.
RIL	Reilly Tar & Chemical Corp.	UPJ	Upjohn Co. & Polymer Chemical Div.
RSA	R.S.A. Corp.	USM	Crown Metro, Inc.
RUC	Rubicon, Inc.	USR	Uniroyal, Inc., Uniroyal Chemical Div.
SAL	Salsbury Laboratories, Inc.	USS	U.S. Steel Corp., USS Chemicals Div.
SCC	Standard Chlorine of Delaware, Inc.	VEL	Velsicol Chemical Corp.
SCN	Schenectady Chemicals, Inc.	VGC	Virginia Chemicals, Inc.
SDC	Martin-Marietta Corp., Sodyeco Div.	VIK	Viking Chemical Co.
SDH	Sterling Drug, Inc. Hilton Davis Chemical Co. Div.	VNC	Vanderbilt Chemical Corp.
SDW	Sterling Organics Div. Stauffer Chemical Co.:	VPC	Mobay Chemical Corp., Dye & Pigment & Div.
SFA	Agricultural Div.	WAY	Philip A. Hunt Chemical Corp., Organic Chemical Div.
SFC	Calhio Chemicals, Inc.	WCC	White Chemical Corp.
SFS	Specialty Div.	WTC	Witco Chemical Corp.
SHC	Shell Oil Co., Shell Chemical Co. Div.	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 185 reporting companies and company divisions for which permission to publish was not restricted.

SECTION IV -- DYES

57

STATISTICAL HIGHLIGHTS

William Baker
202-523-1255

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 1982 amounted to 222 million pounds, or 3.5 percent less than the 230 million pounds produced in 1981 (table 1). Sales of dyes in 1982 amounted to 214 million pounds, valued at \$685 million, compared with 219 million pounds, valued at \$773 million, in 1981. In terms of quantity, sales of dyes in 1982 were 2.4 percent less than in 1981 and in terms of value, 11.4 percent less. The average unit value of sales of all dyes in 1982 was \$3.20 per pound, compared with \$3.53 per pound in 1981.

Production of two classes of dyes increased in 1982, while the remaining eight major classes registered slight to moderate declines in their production. Fluorescent brightening agents increased by 21.5 percent from 38.3 million pounds in 1981 to 46.6 million pounds in 1982; vat dyes increased by 5.6 percent from 35.3 million pounds in 1981 to 37.2 million pounds in 1982.

TABLE 1.--DYES: U.S. PRODUCTION AND SALES, 1982

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

DYES	PRODUCTION	SALES		
		QUANTITY	VALUE	UNIT VALUE ¹
	1,000 pounds	1,000 pounds	1,000 dollars	Per pound
Grand total-----	221,735	214,183	684,736	\$3.20
ACID DYES				
Total-----	23,325	21,658	92,490	4.27
Acid yellow dyes, total-----	5,266	4,844	14,723	3.04
Acid Yellow 17-----	143	126	618	4.89
Acid Yellow 19-----	93	64	219	3.45
Acid Yellow 23-----	107	75	343	4.58
Acid Yellow 49-----	306	387	1,086	2.81
Acid Yellow 151-----	1,688	1,535	3,098	2.02
Acid Yellow 174-----	...	8	48	5.79
All other-----	2,929	2,649	9,311	3.51
Acid orange dyes, total-----	4,503	4,592	11,924	2.60
Acid Orange 7-----	119	112	292	2.61
Acid Orange 8-----	118	104	322	3.09
Acid Orange 10-----	157	160	666	4.17
Acid Orange 156-----	1,936	1,962	5,032	2.56
All other-----	2,173	2,254	5,612	2.49
Acid red dyes, total-----	4,314	4,089	24,297	5.94
Acid Red 1-----	227	171	617	3.61
Acid Red 4-----	43	26	128	4.84
Acid Red 73-----	98	83	468	5.65
Acid Red 88-----	...	48	243	5.01
Acid Red 137-----	...	72	481	6.70
Acid Red 266-----	443	...	...	...
Acid Red 337-----	522	568	2,495	4.39
All other-----	2,981	3,121	19,865	6.37
Acid violet dyes-----	106	89	564	6.33
Acid blue dyes, total-----	5,391	4,811	26,704	5.55
Acid Blue 40-----	196	312	1,414	4.53
All other-----	5,195	4,499	25,290	5.62
Acid green dyes-----	224	220	1,943	8.82
Acid brown dyes, total-----	1,026	896	3,977	4.44
Acid Brown 14-----	155	154	538	3.49
All other-----	871	742	3,439	4.64
Acid black dyes, total-----	2,495	2,117	8,358	3.95
Acid Black 1-----	203	214	994	4.64
Acid Black 52-----	691	433	1,468	3.39
Acid Black 172-----	148	127	787	6.22
All other-----	1,453	1,343	5,109	3.80
BASIC DYES (CLASSICAL AND MODIFIED)				
Total-----	10,888	11,266	60,522	5.37
Basic yellow dyes, total-----	2,693	2,822	10,220	3.62
Basic Yellow 11-----	294	319	935	2.93
Basic Yellow 13-----	137	105	321	3.04
All other-----	2,262	2,398	8,964	3.74

See footnotes at end of table.

TABLE 1.--DYES: U.S. PRODUCTION AND SALES, 1982--CONTINUED

DYES	PRODUCTION	SALES		
		QUANTITY	VALUE	UNIT VALUE ¹
	1,000 pounds	1,000 pounds	1,000 dollars	Per pound
BASIC DYES (CLASSICAL AND MODIFIED)--Continued				
Basic orange dyes, total-----	729	735	2,604	\$3.54
Basic Orange 2-----	300	242	692	2.86
All other-----	429	493	1,912	3.88
Basic red dyes, total-----	1,505	1,660	7,807	4.70
Basic Red 12-----	141	137	925	6.77
Basic Red 14-----	467	458	1,022	2.23
Basic Red 15-----	318	343	1,114	3.25
Basic Red 49-----	44	48	215	4.48
All other-----	535	674	4,531	6.72
Basic violet dyes, total-----	2,765	2,998	10,355	3.45
Basic Violet 1-----	1,660	1,550	4,087	2.64
Basic Violet 16-----	708	1,001	3,509	3.51
All other-----	397	447	2,759	6.18
Basic blue dyes, total-----	2,022	2,062	18,212	8.83
Basic Blue 41-----	272	250	927	3.71
All other-----	1,750	1,812	17,285	9.54
All other basic dyes-----	1,174	989	11,324	11.46
DIRECT DYES				
Total-----	32,747	30,215	81,398	2.69
Direct yellow dyes, total-----	13,637	14,032	24,915	1.78
Direct Yellow 4-----	927	998	2,140	2.15
Direct Yellow 127-----	553	628	1,545	2.46
All other-----	12,157	12,406	21,230	1.71
Direct orange dyes, total-----	1,760	1,320	3,733	2.83
Direct Orange 39-----	196	120	437	3.65
Direct Orange 72-----	...	33	150	4.62
Direct Orange 102-----	862	552	1,506	2.73
All other-----	702	615	1,640	2.66
Direct red dyes, total-----	6,515	4,797	14,955	3.12
Direct Red 2-----	73	53	247	4.63
Direct Red 23-----	84	48	244	5.02
Direct Red 24-----	68	59	389	6.64
Direct Red 72-----	343	349	1,783	5.11
Direct Red 80-----	523	332	1,691	5.10
Direct Red 81-----	984	919	3,070	3.34
Direct Red 83-----	...	100	417	4.18
Direct Red 236-----	763	727	1,426	1.96
All other-----	3,677	2,210	5,688	2.57
Direct violet and green dyes-----	426	396	2,144	5.41
Direct blue dyes, total-----	6,500	5,886	26,019	4.42
Direct Blue 15-----	270	202	264	1.31
Direct Blue 76-----	50	19	67	3.52
Direct Blue 80-----	...	244	908	3.72

See footnotes at end of table.

TABLE 1.--Dyes: U.S. PRODUCTION AND SALES, 1982--CONTINUED

DYES	PRODUCTION	SALES		
		QUANTITY	VALUE	UNIT VALUE ¹
	1,000 pounds	1,000 pounds	1,000 dollars	Per pound
DIRECT DYES--Continued				
Direct blue dyes--Continued				
Direct Blue 86-----	1,497	1,236	3,221	\$2.61
All other-----	4,683	4,185	21,559	5.15
Direct brown dyes-----	420	461	1,634	3.54
Direct black dyes, total-----	3,489	3,323	7,998	2.41
Direct Black 22-----	1,515	1,448	2,064	1.43
Direct Black 80-----	382	297	1,042	3.50
All other-----	1,592	1,578	4,892	3.10
DISPERSE DYES				
Total-----	30,604	28,876	123,490	4.28
Disperse yellow dyes, total-----	3,163	3,183	11,989	3.77
Disperse Yellow 23-----	229	...	...	...
Disperse Yellow 54-----	109	...	...	...
All other-----	2,825	3,183	11,989	3.77
Disperse orange dyes, total-----	4,194	3,639	9,720	2.67
Disperse Orange 3-----	70	46	151	3.31
Disperse Orange 25 and 25:1-----	272	270	697	2.58
Disperse Orange 37-----	143	130	369	2.84
Disperse Orange 44 and 44:1-----	...	393	1,293	3.29
All other-----	3,709	2,800	7,210	2.57
Disperse red dyes, total-----	8,061	7,604	37,556	4.94
Disperse Red 1-----	232	217	751	3.47
Disperse Red 5-----	155	95	289	3.03
Disperse Red 17-----	249	177	532	3.00
Disperse Red 167 and 167:1-----	640	479	1,836	3.84
Disperse Red 177-----	647	744	2,940	3.95
Disperse Red 179-----	278	229	983	4.28
All other-----	5,860	5,663	30,225	5.34
Disperse violet dyes-----	266	370	2,117	5.72
Disperse blue dyes, total-----	12,697	11,900	53,491	4.50
Disperse Blue 60-----	447	467	4,301	9.20
Disperse Blue 79-----	5,423	4,791	11,230	2.34
All other-----	6,827	6,642	37,960	5.71
Disperse black, brown, and green dyes, total-----	2,223	2,180	8,617	3.95
Disperse Brown 1-----	951	876	2,505	2.86
All other-----	1,272	1,304	6,112	4.69
FIBER-REACTIVE DYES				
Total-----	...	6,379	48,184	7.55
FLUORESCENT BRIGHTENING AGENTS				
Total-----	46,638	48,774	61,047	1.25

See footnotes at end of table.

TABLE 1.--Dyes: U.S. PRODUCTION AND SALES, 1982--CONTINUED

DYES	PRODUCTION	SALES		
		QUANTITY	VALUE	UNIT VALUE ¹
	1,000	1,000	1,000	Per
	pounds	pounds	dollars	pound
FOOD, DRUG, AND COSMETIC COLORS				
Total-----	4,970	5,253	53,708	\$10.22
<i>Food, Drug, and Cosmetic Dyes</i>				
Total-----	4,595	4,873	47,049	9.66
FD&C Blue No. 1-----	213	237	3,603	15.22
FD&C Red No. 3-----	518	556	7,826	14.07
FD&C Yellow No. 5-----	1,207	1,277	7,387	5.79
All other food, drug, and cosmetic dyes-----	2,657	2,803	28,233	10.07
<i>Drug and Cosmetic and External Drug and Cosmetic Dyes</i>				
Total-----	375	380	6,659	17.52
D&C Orange 4-----	8	8	155	19.53
D&C Red No. 6-----	66	45	508	11.22
D&C Red No. 7-----	97	...	...	...
D&C Yellow No. 10-----	79	79	2,459	31.22
All other drug and cosmetic and external drug and cosmetic dyes-----	125	248	3,537	14.23
MORDANT DYES				
Total-----	258	259	1,520	5.87
Mordant Brown 1-----	18	16	122	7.52
All other mordant dyes-----	240	243	1,398	5.75
SOLVENT DYES				
Total-----	9,122	6,809	29,902	4.39
Solvent yellow dyes-----	1,169	1,054	5,534	5.26
Solvent orange dyes-----	422	474	1,962	4.15
Solvent blue dyes-----	2,488	825	5,482	6.66
Solvent Red 24-----	...	33	192	6.04
All other solvent dyes-----	5,043	4,423	16,732	3.78
VAT DYES				
Total-----	37,244	36,018	94,195	2.62
Vat Orange 1, 20%-----	163	139	710	5.09
Vat Orange 2, 12%-----	...	170	1,095	6.45
Vat red dyes-----	415	413	6,263	15.16
Vat blue dyes, total-----	29,499	28,778	55,581	1.93
Vat Blue 6, 8-1/3%-----	669	418	1,601	3.83
All other vat blue dyes-----	28,830	28,360	53,980	1.90
Vat green dyes-----	1,732	1,657	5,031	3.04
All other vat dyes-----	5,435	4,861	25,515	5.25
All other dyes ² -----	25,939	18,676	38,280	2.05

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 1A.--DYES: U.S. PRODUCTION AND SALES, BY CLASS OF APPLICATION, 1982

CLASS OF APPLICATION	PRODUCTION	SALES		
		QUANTITY	VALUE	UNIT VALUE ¹
	1,000 pounds	1,000 pounds	1,000 dollars	Per pound
Total-----	221,735	214,183	684,736	\$3.20
Acid-----	23,325	21,658	92,490	4.27
Basic (Classical and modified)-----	10,888	11,266	60,522	5.37
Direct-----	32,747	30,215	81,398	2.69
Disperse-----	30,604	28,876	123,490	4.28
Fiber-reactive-----	...	6,379	48,184	7.55
Fluorescent brightening agents-----	46,638	48,774	61,047	1.25
Food, drug, and cosmetic colors-----	4,970	5,253	53,708	10.22
Mordant-----	258	259	1,520	5.86
Solvent-----	9,122	6,809	29,902	4.39
Vat-----	37,244	36,018	94,195	2.62
All other ² -----	25,939	18,676	38,280	2.05

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, 1982

[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	AC, ATL, CK.
*Acid Yellow 23	AC, BAS, CK, LVR, MRX, MJ.
Acid Yellow 34	ATL, FAB.
Acid Yellow 36	AC, ATL, VPC.
Acid Yellow 40	CGY, CK.
Acid Yellow 42	AC.
*Acid Yellow 49	CK, S, VPC.
Acid Yellow 54	AC.
Acid Yellow 59	BAS.
Acid Yellow 65	ATL, CGY.
Acid Yellow 73	SDH.
Acid Yellow 87	CK.
Acid Yellow 99	CGY.
Acid Yellow 119	BAS.
Acid Yellow 127	CGY, CK.
Acid Yellow 129	CGY, CK.
Acid Yellow 135	ICI.
Acid Yellow 144	VPC.
*Acid Yellow 151	AC, CGY, CK, S, VPC.
Acid Yellow 159	CGY, CK.
*Acid Yellow 174	AC, FAB, VPC.
Acid Yellow 198	CK, ICI.
Acid Yellow 200	CK.
Acid Yellow 216	VPC.
Acid Yellow 219	CGY, CK, S.
Acid Yellow 221	BAS.
Acid Yellow 239	DGO.
Acid yellow dyes, all other-	AC, CK, VPC.
*ACID ORANGE DYES:	
*Acid Orange 7-	AC, ATL, BAS, CGY, VPC.
*Acid Orange 8-	AC, ATL, CGY, CK.
*Acid Orange 10	AC, ATL, BAS, CGY, CK, FAB.
Acid Orange 24	CGY, S.

TABLE 2.--DYES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

DYES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACID ORANGE DYES--Continued	
Acid Orange 33	VPC.
Acid Orange 47	CGY.
Acid Orange 51	CGY.
Acid Orange 60	AC, CGY, CK, VPC.
Acid Orange 64	ATL.
Acid Orange 74	CGY.
Acid Orange 86	CGY.
Acid Orange 89	BAS.
Acid Orange 116	AC, CK.
Acid Orange 128	CK.
Acid Orange 152	CK.
*Acid Orange 156	CGY, CK, S.
Acid Orange 161	ATL.
Acid orange dyes, all other-	CGY, CK.
*ACID RED DYES:	
*Acid Red 1	AC, ATL, BAS, CGY, CK, FAB.
*Acid Red 4	AC, ATL, FAB.
Acid Red 14	ATL, BAS.
Acid Red 18	ATL.
Acid Red 57	CGY, CK.
*Acid Red 73	ATL, BAS, CGY, 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	AC, CGY, CK, VPC.
Acid Red 119	CK.
*Acid Red 137	BAS, CK, VPC.
Acid Red 151	AC, ATL, CGY, CK.
Acid Red 167	ATL, CGY.
Acid Red 174	AC.
Acid Red 182	AC, VPC.
Acid Red 183	AC.
Acid Red 186	AC.
Acid Red 194	CGY.
Acid Red 211	CGY.
Acid Red 213	CGY.
Acid Red 226	BAS.
Acid Red 227	BAS.
Acid Red 257	CGY.
Acid Red 266	ATL, CGY, CK, ICI, VPC.

TABLE 2.--DYES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

DYES		MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACID RED DYES--Continued		
Acid Red 278	- - - - -	VPC.
Acid Red 296	- - - - -	BAS.
Acid Red 299	- - - - -	CK.
*Acid Red 337	- - - - -	ATL, CGY, CK, S, VPC.
Acid Red 361	- - - - -	CGY.
Acid Red 364	- - - - -	CK.
Acid Red 384	- - - - -	CK.
Acid Red 385	- - - - -	AC.
Acid Red 392	- - - - -	VPC.
Acid Red 396	- - - - -	ICI.
Acid Red 410	- - - - -	ATL.
Acid red dyes, all other	- - - - -	AC, ATL, CGY, CK, EKT, VPC.
*ACID VIOLET DYES:		
Acid Violet 3-	- - - - -	ATL.
Acid Violet 7-	- - - - -	ATL, FAB.
Acid Violet 12	- - - - -	AC.
Acid Violet 17	- - - - -	SDH.
Acid Violet 43	- - - - -	SHH.
Acid Violet 49	- - - - -	SDH.
*ACID BLUE DYES:		
Acid Blue 9-	- - - - -	BAS, SDH, MJ.
Acid Blue 15	- - - - -	BAS.
Acid Blue 25	- - - - -	ATL, CGY, ICI, VPC.
Acid Blue 27	- - - - -	ATL.
Acid Blue 29	- - - - -	FAB.
*Acid Blue 40	- - - - -	CGY, S, VPC.
Acid Blue 45	- - - - -	BAS, CGY.
Acid Blue 80	- - - - -	CGY.
Acid Blue 92	- - - - -	FAB.
Acid Blue 113-	- - - - -	AC, CK.
Acid Blue 118-	- - - - -	AC.
Acid Blue 145-	- - - - -	ATL.
Acid Blue 158, 158:1, and 158:2-	- - - - -	AC, CGY.
Acid Blue 277-	- - - - -	CGY.
Acid Blue 283-	- - - - -	S.
Acid Blue 288-	- - - - -	S.
Acid Blue 298-	- - - - -	CK.
Acid Blue 324-	- - - - -	VPC.
Acid Blue 330-	- - - - -	ATL.
Acid blue dyes, all other-	- - - - -	AC, ATL, BAS, CGY, CK, VPC.
*ACID GREEN DYES:		
Acid Green 5	- - - - -	MJ.

TABLE 2.---DYES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

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

ACID DYES-- CONTINUED

ACID GREEN DYES--Continued

Acid Green 20- - - - - : ATL, FAB.
 Acid Green 25- - - - - : CGY, CK.
 Acid Green 35- - - - - : CGY, FAB.
 Acid Green 70- - - - - : CGY.

*ACID BROWN DYES:

*Acid Brown 14- - - - - : ATL, CGY, CK, S.
 Acid Brown 19- - - - - : CGY, CK.
 Acid Brown 24- - - - - : FAB.
 Acid Brown 45- - - - - : CGY.
 Acid Brown 50- - - - - : BAS.
 Acid Brown 96- - - - - : FAB.
 Acid Brown 97- - - - - : ATL, FAB.
 Acid Brown 98- - - - - : CGY, CK.
 Acid Brown 147- - - - - : CK.
 Acid Brown 165- - - - - : BAS.
 Acid Brown 239- - - - - : CK.
 Acid Brown 264- - - - - : BAS.
 Acid brown dyes, all other - - - - - : BAS, CK.

*ACID BLACK DYES:

*Acid Black 1 - - - - - : AC, ATL, BAS, CGY, CK, FAB.
 Acid Black 2 - - - - - : ACY.
 Acid Black 24- - - - - : AC.
 *Acid Black 52- - - - - : AC, ATL, 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.
 *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 RED COMPOSITIONS:

Azoic Red 1- - - - - : BUC.
 Azoic Red 2- - - - - : BUC.
 Azoic Red 6- - - - - : BUC.
 Azoic red compositions, all other - - - - - : ALL, BUC.

TABLE 2.--DYES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

DYES		MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
AZOIC DYES AND COMPONENTS--CONTINUED		
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 DIAZO COMPONENTS, BASES:		
Azoic Diazo Component 4, base		ALL, BUC.
Azoic Diazo Component 5, base		ALL.
Azoic Diazo Component 8, base		ALL, BUC.
Azoic Diazo Component 13, base		ALL.
Azoic Diazo Component 14, base		ALL.
Azoic Diazo Component 32, base		ALL.
Azoic Diazo Component 34, base		ALL.
Azoic diazo components, base, all other		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 6, salt		ALL.
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.
Azoic Diazo Component 34, salt		ALL.
Azoic Diazo Component 35, salt		ALL.
Azoic Diazo Component 41, salt		ALL.
Azoic Diazo Component 42, salt		ALL.
Azoic Diazo Component 49, salt		BUC.
Azoic diazo components, salt, all other		ATL.
AZOIC COUPLING COMPONENTS:		
Azoic Coupling Component 2		PCM.

TABLE 2.--DYES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

DYES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
AZOIC DYES AND COMPONENTS--CONTINUED	
AZOIC COUPLING COMPONENTS--Continued	
Azoic Coupling Component 3	PCM.
Azoic Coupling Component 7	PCM.
Azoic Coupling Component 11	PCM.
Azoic Coupling Component 12	PCM.
Azoic Coupling Component 14	PCM.
Azoic Coupling Component 17	PCM.
Azoic Coupling Component 18	PCM.
Azoic Coupling Component 19	PCM.
Azoic Coupling Component 20	PCM.
Azoic Coupling Component 21	PCM.
Azoic Coupling Component 24	PCM.
Azoic Coupling Component 29	PCM.
Azoic Coupling Component 34	PCM.
Azoic Coupling Component 35	PCM.
Azoic coupling components, all other	ATL.
BASIC DYES (CLASSICAL AND MODIFIED)	
*BASIC YELLOW DYES:	
Basic Yellow 2	ACY.
*Basic Yellow 11	ATL, CK, VPC.
*Basic Yellow 13	ATL, CGY, VPC.
Basic Yellow 15	CK.
Basic Yellow 21	VPC.
Basic Yellow 25	BAS.
Basic Yellow 28	VPC.
Basic Yellow 29	BAS, CK.
Basic Yellow 37	ACY.
Basic Yellow 49	BAS.
Basic Yellow 53	CK.
Basic Yellow 58	VPC.
Basic Yellow 65	BAS.
Basic Yellow 78	ACY.
Basic Yellow 79	BAS, CK.
Basic Yellow 83	CK.
Basic yellow dyes, all other	CGY, CK, SDH, VPC.
*BASIC ORANGE DYES:	
Basic Orange 1	BAS, PSC.
**Basic Orange 2	ATL, BAS, CGY, CK, PSC, VPC.
Basic Orange 21	ATL, VPC.
Basic Orange 28	VPC.
Basic orange dyes, all other	SDH.

TABLE 2.---DYES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

DYES		MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
BASIC DYES (CLASSICAL AND MODIFIED)--CONTINUED		
*BASIC RED DYES:		
*Basic Red 12		: ACY, ATL, VPC.
*Basic Red 14		: ATL, BAS, CK, 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.
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		: BAS, SDH, VPC.
*BASIC VIOLET DYES:		
*Basic Violet 1		: ACY, BAS, BCC, DSC.
Basic Violet 3		: ACY, BAS, CK, DSC, DUP.
Basic Violet 4		: DSC.
Basic Violet 10		: ACY, BAS, VPC.
*Basic Violet 16		: CK, VPC.
Basic Violet 35		: BAS.
Basic violet dyes, all other		: SDH.
*BASIC BLUE DYES:		
Basic Blue 1		: SDH, VPC.
Basic Blue 2		: DSC.
Basic Blue 3		: BAS, CGY, CK.
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 45		: VPC.
Basic Blue 47		: 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		: CK, SDH, VPC.

TABLE 2.--DYES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

DYES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
BASIC GREEN DYES:	
Basic Green 1-	DSC, VPC.
Basic Green 4-	ACY, BAS, DSC.
Basic green dyes, all other-	SDH.
BASIC BROWN DYES:	
Basic Brown 1-	PSC.
Basic Brown 4-	ATL, CGY, PSC.
Basic brown dyes, all types, modified-	CK.
BASIC BLACK DYES:	
Basic Black 1-	CK, SDH.
Basic black dyes, all other, modified-	VPC.
DIRECT DYES	
*DIRECT YELLOW DYES:	
*Direct Yellow 4-	ATL, BAS, CGY, CK, VPC.
Direct Yellow 5-	ACY, BAS.
Direct Yellow 6-	AC, VPC.
Direct Yellow 11-	AC, BAS, VPC.
Direct Yellow 12-	CK.
Direct Yellow 14-	VPC.
Direct Yellow 28-	CK.
Direct Yellow 34-	CK.
Direct Yellow 39-	CGY, CK.
Direct Yellow 44-	AC, CGY, CK.
Direct Yellow 50-	AC, CGY.
Direct Yellow 51-	CGY, FAB.
Direct Yellow 81-	BAS.
Direct Yellow 84-	AC.
Direct Yellow 103-	ATL.
Direct Yellow 105-	AC.
Direct Yellow 106-	AC, CGY, CK.
Direct Yellow 107-	CGY, CK.
Direct Yellow 118-	CGY, CK.
Direct Yellow 119-	VPC.
Direct Yellow 120-	AC.
*Direct Yellow 127-	BAS, CGY, CK, VPC.
Direct Yellow 131-	VPC.
Direct Yellow 132-	S.
Direct Yellow 133-	S.
Direct Yellow 137-	VPC.
Direct Yellow 147-	BAS, VPC.
Direct Yellow 148-	S.

TABLE 2.--DYES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

DYES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
DIRECT DYES--CONTINUED	
*DIRECT YELLOW DYES--Continued	
Direct Yellow 150-	S.
Direct Yellow 155-	AC.
Direct yellow dyes, all other-	AC, ATL, BAS, CGY, CK, VPC.
*DIRECT ORANGE DYES:	
Direct Orange 6-	ATL.
Direct Orange 15-	AC, BAS, CGY, VPC.
Direct Orange 26-	CK.
Direct Orange 29-	CGY.
Direct Orange 34-	ATL, FAB.
*Direct Orange 39-	AC, CK, FAB.
*Direct Orange 72-	AC, CK, FAB.
Direct Orange 73-	CGY.
Direct Orange 80-	ATL.
*Direct Orange 102-	AC, ATL, BAS, CGY, FAB, VPC.
Direct Orange 105-	CK.
Direct orange dyes, all other-	AC, ATL, CK, VPC.
*DIRECT RED DYES:	
*Direct Red 2-	AC, ATL, FAB.
Direct Red 4-	CGY.
Direct Red 16-	ATL, CGY.
*Direct Red 23-	AC, ATL, BAS, CGY, CK.
*Direct Red 24-	ATL, CGY, FAB.
Direct Red 26-	AC, ATL.
Direct Red 31-	ATL.
Direct Red 62-	CGY.
*Direct Red 72-	AC, ATL, BAS, CGY, CK.
Direct Red 73-	AC, ATL.
Direct Red 79-	CK.
*Direct Red 80-	AC, ATL, CGY, CK.
*Direct Red 81-	AC, ACY, ATL, CGY, CK, LVR, VPC.
*Direct Red 83-	AC, ATL, CGY, CK, FAB.
*Direct Red 236-	AC, BAS, VPC.
Direct Red 238-	VPC.
Direct Red 239-	CGY, S.
Direct Red 254-	BAS, VPC.
Direct red dyes, all other-	AC, ATL, CK, FAB, VPC.
*DIRECT VIOLET DYES:	
Direct Violet 1-	VPC.
Direct Violet 3-	VPC.
Direct Violet 9-	CGY.
Direct Violet 66-	ATL.
Direct Violet 99-	VPC.
Direct violet dyes, all other-	VPC.

TABLE 2.--DYES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

DYES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
DIRECT DYES--CONTINUED	
*DIRECT BLUE DYES:	
Direct Blue 1-	AC, ATL, CGY.
Direct Blue 2-	FAB.
Direct Blue 6-	VPC.
Direct Blue 8-	ATL.
Direct Blue 14-	VPC.
*Direct Blue 15-	AC, ATL, S, VPC.
Direct Blue 25-	CK.
Direct Blue 71-	CK.
Direct Blue 75-	CGY, CK.
*Direct Blue 76-	AC, BAS, CK.
Direct Blue 78-	CK.
*Direct Blue 80-	AC, ATL, CGY, CK, FAB.
*Direct Blue 86-	AC, ATL, BAS, CGY, CK, VPC.
Direct Blue 91-	CGY.
Direct Blue 98-	ATL, CK, FAB.
Direct Blue 100-	CK.
Direct Blue 108-	ATL.
Direct Blue 120, 120:1, 120:2, and 120:3-	AC, CGY, CK.
Direct Blue 160-	CGY, CK.
Direct Blue 189-	CK.
Direct Blue 191-	CK.
Direct Blue 199-	BAS, VPC.
Direct Blue 218-	AC, CGY, CK.
Direct Blue 261-	S.
Direct Blue 262-	S.
Direct Blue 263-	S.
Direct Blue 267-	CGY.
Direct Blue 269-	VPC.
Direct Blue 279-	VPC.
Direct Blue 280-	ATL.
Direct Blue 281-	AC.
Direct Blue 283-	ATL.
Direct Blue 286-	ATL.
Direct blue dyes, all other-	AC, ATL, BAS, CGY, CK, FAB, VPC.
DIRECT GREEN DYES:	
Direct Green 1-	FAB.
Direct Green 6-	FAB.
Direct Green 26-	CGY, CK.
Direct Green 27-	CGY.
Direct Green 47-	FAB.

TABLE 2.--DYES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

DYES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
DIRECT GREEN DYES--Continued	
Direct Green 92-	ATL.
Direct green dyes, all other	FAB.
*DIRECT BROWN DYES:	
Direct Brown 2-	FAB.
Direct Brown 31-	FAB.
Direct Brown 44-	FAB.
Direct Brown 74-	FAB.
Direct Brown 154-	FAB.
Direct Brown 230-	ATL.
Direct Brown 231-	ATL.
Direct Brown 238-	ATL.
Direct brown dyes, all other	AC, CK, FAB, VPC.
*DIRECT BLACK DYES:	
Direct Black 19-	CGY.
Direct Black 22-	AC, ATL, CGY, CK, VPC.
Direct Black 78-	AC.
Direct Black 80-	AC, ATL, CK, FAB.
Direct Black 165-	ATL.
Direct Black 170-	ATL.
Direct black dyes, all other	AC, ATL, CK, FAB, VPC.
DISPERSE DYES	
*DISPERSE YELLOW DYES:	
Disperse Yellow 3-	AC, CGY, CK, FAB.
Disperse Yellow 23-	CGY, CK, S.
Disperse Yellow 33-	AC.
Disperse Yellow 34-	AC, EKT.
Disperse Yellow 36-	VPC.
Disperse Yellow 42-	AC, CGY, SDC.
Disperse Yellow 54-	BAS, CGY, CK, VPC.
Disperse Yellow 58-	VPC.
Disperse Yellow 64-	BAS, CGY.
Disperse Yellow 67-	CGY, VPC.
Disperse Yellow 74-	VPC.
Disperse Yellow 77-	VPC.
Disperse Yellow 86-	AC, EKT.
Disperse Yellow 88-	EKT.
Disperse Yellow 93-	VPC.
Disperse Yellow 99-	EKT.
Disperse Yellow 108-	EKT.
Disperse Yellow 114-	HST.
Disperse Yellow 125-	SDC.
Disperse Yellow 126-	ICI.

TABLE 2.--DYES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

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

DISPERSE DYES--CONTINUED

*DISPERSE YELLOW DYES--Continued

Disperse Yellow 183 - - - - - ICI.
 Disperse Yellow 198 - - - - - BAS.
 Disperse Yellow 200 - - - - - EKT.
 Disperse Yellow 210 - - - - - S.
 Disperse Yellow 218 - - - - - ICI.
 Disperse Yellow 219 - - - - - SDC.
 Disperse Yellow 223 - - - - - CK.
 Disperse yellow dyes, all other- - - - - BAS, CK, EKT, HST, ICI, VPC.

*DISPERSE ORANGE DYES:

*Disperse Orange 3- - - - - AC, ATL, CK, FAB.
 Disperse Orange 5- - - - - ATL.
 Disperse Orange 17 - - - - - AC, ATL.
 *Disperse Orange 25 and 25:1 - - - - - ATL, CGY, CK, EKT, ICI, VPC.
 Disperse Orange 29 - - - - - AC, ATL, BAS, CK, SDC, VPC.
 Disperse Orange 30 - - - - - AC, BUC, CGY, S, VPC.
 Disperse Orange 31 - - - - - BAS.
 *Disperse Orange 37 - - - - - AC, ATL, CGY, CK, EKT.
 Disperse Orange 41 - - - - - AC, CGY, S.
 *Disperse Orange 44 and 44:1 - - - - - AC, CGY, CK, S, SDC.
 Disperse Orange 55 - - - - - BAS.
 Disperse Orange 57 - - - - - EKT.
 Disperse Orange 66 - - - - - VPC.
 Disperse Orange 73 - - - - - AC, BAS.
 Disperse Orange 79 - - - - - CGY.
 Disperse Orange 88 - - - - - SDC.
 Disperse Orange 89 - - - - - AC.
 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 - - - - - AC, ATL, CGY, CK, EKT.
 Disperse Red 4 - - - - - CGY.
 *Disperse Red 5 - - - - - AC, ATL, CK.
 Disperse Red 13- - - - - ATL, BAS.
 Disperse Red 15- - - - - CGY, HSH.
 *Disperse Red 17- - - - - AC, ATL, CGY, CK.
 Disperse Red 30- - - - - EKT.
 Disperse Red 35- - - - - EKT.
 Disperse Red 50- - - - - CGY, CK, FAB.

TABLE 2.--DYES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

DYES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
DISPERSE DYES--CONTINUED	
*DISPERSE RED DYES--Continued	
Disperse Red 55-	BAS, CGY, CK, VPC.
Disperse Red 60-	AC, BAS, CGY, CK, VPC.
Disperse Red 65-	AC, CGY, CK, EKT.
Disperse Red 73-	BAS, FAB, ICI, S.
Disperse Red 82-	CGY, VPC.
Disperse Red 88-	EKT.
Disperse Red 90-	VPC.
Disperse Red 91-	BAS.
Disperse Red 105-	VPC.
Disperse Red 106-	VPC.
Disperse Red 108-	VPC.
Disperse Red 117-	EKT.
Disperse Red 118-	BAS.
Disperse Red 128-	CGY.
Disperse Red 133-	VPC.
Disperse Red 135-	AC, CK.
Disperse Red 136-	EKT.
Disperse Red 137-	EKT.
Disperse Red 151-	CGY.
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-	AC, BUC, CK, ICI, S, SDC, VPC.
*Disperse Red 179-	AC, BAS, CK, S.
Disperse Red 184-	HST.
Disperse Red 195-	SDC.
Disperse Red 207-	AC.
Disperse Red 214-	BAS.
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-	AC, CK.
Disperse Red 333-	SDC.

TABLE 2.--DYES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

DYES		MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
DISPERSE DYES--CONTINUED		
*DISPERSE RED DYES--Continued		
Disperse Red 338	-	EKT.
Disperse Red 339	-	EKT.
Disperse Red 340	-	EKT.
Disperse Red 341	-	EKT.
Disperse Red 345	-	CK.
Disperse Red 350	-	AC.
Disperse Red 351	-	AC.
Disperse red dyes, all other	-	BAS, BUC, CK, VPC.
*DISPERSE VIOLET DYES:		
Disperse Violet 1-	-	AC, CK, HSH, VPC.
Disperse Violet 17	-	VPC.
Disperse Violet 27	-	AC.
Disperse Violet 28	-	CGY, CK.
Disperse Violet 33	-	ICI.
Disperse Violet 36	-	SDC.
Disperse Violet 40	-	VPC.
Disperse Violet 48	-	HST.
Disperse Violet 60	-	SDC.
Disperse violet dyes, all other	-	CK.
*DISPERSE BLUE DYES:		
Disperse Blue 3-	-	AC, CGY, CK, EKT, FAB, HSH.
Disperse Blue 7-	-	AC, CGY.
Disperse Blue 19	-	CGY.
Disperse Blue 27	-	EKT.
Disperse Blue 55	-	CGY.
Disperse Blue 56	-	CK, VPC.
*Disperse Blue 60	-	BAS, CGY, VPC.
Disperse Blue 62	-	EKT.
Disperse Blue 64	-	AC, CGY, EKT.
Disperse Blue 72	-	BAS.
Disperse Blue 73	-	S.
Disperse Blue 77	-	EKT.
*Disperse Blue 79	-	AC, ATL, BUC, CGY, CK, EKT, HST, ICI, S, VPC.
Disperse Blue 81	-	VPC.
Disperse Blue 87	-	BAS.
Disperse Blue 94	-	BAS.
Disperse Blue 95	-	HST.
Disperse Blue 102	-	EKT.
Disperse Blue 109	-	AC.
Disperse Blue 112	-	EKT.
Disperse Blue 118	-	EKT.
Disperse Blue 122	-	ICI.

TABLE 2.--DYES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

DYES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
DISPERSE DYES--CONTINUED	
*DISPERSE BLUE DYES--Continued	
Disperse Blue 125-	CGY, VPC.
Disperse Blue 139-	BAS.
Disperse Blue 148-	CGY, HST, VPC.
Disperse Blue 165-	SDC.
Disperse Blue 177-	S.
Disperse Blue 183-	ICI.
Disperse Blue 200-	CGY, SDC.
Disperse Blue 281-	ICI.
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-	BAS, 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 -	AC, 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 1 -	AC.
Disperse Black 9 -	AC, EKT.
Disperse Black 33 -	AC.
Disperse black dyes, all other -	BAS, CK, VPC.
FIBER-REACTIVE DYES	
REACTIVE YELLOW DYES:	
Reactive Yellow 3-	CGY.
Reactive Yellow 6-	CGY.
Reactive Yellow 7-	ICI.
Reactive Yellow 15 -	HST.
Reactive Yellow 17 -	HST.
Reactive Yellow 18 -	ICI.
Reactive Yellow 22 -	ICI.
Reactive Yellow 25 -	VPC.
Reactive Yellow 27 -	VPC.
Reactive Yellow 37 -	HST.
Reactive Yellow 41 -	VPC.

TABLE 2.--DYES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

DYES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
FIBER-REACTIVE DYES--CONTINUED	
REACTIVE YELLOW DYES--Continued	
Reactive Yellow 42	HST.
Reactive Yellow 57	HST.
Reactive Yellow 86	ICI.
Reactive Yellow 133	ICI.
Reactive Yellow 135	ICI.
Reactive yellow dyes, all other	HST.
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 64	VPC.
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	ICI.
Reactive Red 29	ICI.
Reactive Red 31	ICI.
Reactive Red 33	ICI.
Reactive Red 43	CGY, CK.
Reactive Red 49	HST.
Reactive Red 94	HST.
Reactive Red 106	HST.
Reactive Red 120	CGY, CK, ICI.
Reactive Red 123	VPC.
Reactive Red 141	ICI.
Reactive Red 180	HST.
Reactive red dyes, all other	ICI, VPC.
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.

TABLE 2.--DYES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

DYES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
FIBER-REACTIVE DYES--CONTINUED	
REACTIVE BLUE DYES--Continued	
Reactive Blue 7-	CGY.
Reactive Blue 13	ICI.
Reactive Blue 19	HST.
Reactive Blue 21	HST, VPC.
Reactive Blue 29	VPC.
Reactive Blue 38	HST.
Reactive Blue 71	ICI.
Reactive Blue 89	HST.
Reactive Blue 109-	ICI.
Reactive Blue 137-	CGY.
Reactive Blue 171-	ICI.
Reactive Blue 173-	ICI.
Reactive Blue 174-	ICI.
Reactive Blue 189-	ICI.
Reactive blue dyes, all other	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-	CCM, CGY, SDH, VPC.
Fluorescent Brightener 33-	CGY.
Fluorescent Brightener 49-	S.
Fluorescent Brightener 52-	S.
Fluorescent Brightener 59-	CGY.
Fluorescent Brightener 61-	ACY, CCM, DGO.
Fluorescent Brightener 71-	CGY.
Fluorescent Brightener 102	CGY.
Fluorescent Brightener 126	SDH.
Fluorescent Brightener 128	SDH.
Fluorescent Brightener 134	CGY, S.
Fluorescent Brightener 135	CK.
Fluorescent Brightener 148	VPC.

TABLE 2.--DYES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

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

FLUORESCENT BRIGHTENERS--CONTINUED

Fluorescent Brightener 185 - - - - - CGY.
 Fluorescent Brightener 191 - - - - - VPC.
 Fluorescent Brightener 200 - - - - - VPC.
 Fluorescent Brightener 205 - - - - - VPC.
 Fluorescent brighteners, all other - - - - - ACY, BAS, CGY, S, SDH, VPC.

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 - - - - - KON, WJ.
 Food, Drug, and Cosmetic Red 3 - - - - - KON, SDH, STG, WJ.
 Food, Drug, and Cosmetic Red 40- - - - - KON, SDH, WJ.
 Food, Drug, and Cosmetic Yellow 5- - - - - CK, KON, SDH, STG, WJ.
 Food, Drug, and Cosmetic Yellow 6- - - - - CK, KON, SDH, WJ.
 Drug and Cosmetic Blue 1 - - - - - KON.
 Drug and Cosmetic Blue 6 - - - - - BCC.
 Drug and Cosmetic Green 5- - - - - CK, KON.
 Drug and Cosmetic Green 6- - - - - KON.
 Drug and Cosmetic Green 8- - - - - SDH.
 Drug and Cosmetic Orange 4 - - - - - CK, KON, MRX.
 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, TMS.
 Drug and Cosmetic Red 7- - - - - KON, MRX, SDH, SNA, TMS.
 Drug and Cosmetic Red 8- - - - - KON.
 Drug and Cosmetic Red 9- - - - - KON, MRX, SNA.
 Drug and Cosmetic Red 17 - - - - - KON.
 Drug and Cosmetic Red 19 - - - - - KON, MRX, SNA.
 Drug and Cosmetic Red 21 - - - - - SNA.
 Drug and Cosmetic Red 22 - - - - - SDH.
 Drug and Cosmetic Red 27 - - - - - MRX, SDH, TMS.
 Drug and Cosmetic Red 28 - - - - - SDH.
 Drug and Cosmetic Red 30 - - - - - KON, SNA.
 Drug and Cosmetic Red 33 - - - - - KON.
 Drug and Cosmetic Red 34 - - - - - KON, SNA.
 Drug and Cosmetic Red 36 - - - - - KON, SNA.
 Drug and Cosmetic Yellow 5 - - - - - KON.
 Drug and Cosmetic Yellow 6 - - - - - KON.
 Drug and Cosmetic Yellow 8 - - - - - KON, SDH.
 Drug and Cosmetic Yellow 10- - - - - CK, KON, WJ.
 Drug and Cosmetic Yellow 11- - - - - KON.

TABLE 2.--DYES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

DYES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
FOOD, DRUG, AND COSMETIC COLORS--CONTINUED	
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 16	ATL.
Mordant Yellow 20	FAB.
MORDANT ORANGE DYES:	
Mordant Orange 8	FAB.
MORDANT RED DYES:	
Mordant Red 7-	AC, ATL.
Mordant Red 9-	MRX.
Mordant Red 11	VPC.
MORDANT BROWN DYES:	
*Mordant Brown 1-	ATL, CGY, FAB.
Mordant Brown 18	FAB.
Mordant Brown 33	ATL, FAB.
Mordant Brown 70	FAB.
MORDANT BLACK DYES:	
Mordant Black 11	AC, CGY.
Mordant Black 17	ATL, 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 30	PSC.
Solvent Yellow 33	AC, ACY.
Solvent Yellow 40	CK.
Solvent Yellow 42	ATL.
Solvent Yellow 43	DGO.
Solvent Yellow 44	DGO.
Solvent Yellow 56	PSC.
Solvent Yellow 72	AC.
Solvent Yellow 77	AC.
Solvent Yellow 94	SDH.

TABLE 2.--DYES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

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

SOLVENT DYES--CONTINUED

*SOLVENT YELLOW DYES--Continued

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 ORANGE DYES:

Solvent Orange 3 - - - - - ATL, PSC.
 Solvent Orange 7 - - - - - ATL, BAS, PSC.
 Solvent Orange 20 - - - - - BAS.
 Solvent Orange 23 - - - - - ATL.
 Solvent Orange 25 - - - - - DUP.
 Solvent Orange 31 - - - - - PSC.
 Solvent Orange 60 - - - - - AC.
 Solvent Orange 73 - - - - - MRT.
 Solvent Orange 74 - - - - - MRT.
 Solvent Orange 76 - - - - - MRT.
 Solvent Orange 77 - - - - - MRT.
 Solvent Orange 97 - - - - - MRT.
 Solvent orange dyes, all other - - - - - CK, MRT, PSC.

SOLVENT RED DYES:

Solvent Red 1 - - - - - ATL, PSC.
 Solvent Red 23 - - - - - PSC.
 *Solvent Red 24 - - - - - AC, ATL, PSC.
 Solvent Red 26 - - - - - PSC.
 Solvent Red 27 - - - - - PSC.
 Solvent Red 30 - - - - - PSC.
 Solvent Red 49 - - - - - ACY.
 Solvent Red 68 - - - - - ATL, MRT.
 Solvent Red 74 - - - - - ATL.
 Solvent Red 111 - - - - - AC.
 Solvent Red 149 - - - - - GCA.
 Solvent Red 164 - - - - - MRT.
 Solvent Red 165 - - - - - MRT.
 Solvent Red 166 - - - - - MRT.
 Solvent Red 168 - - - - - MRT.
 Solvent Red 169 - - - - - 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 - - - - - ATL, CK.

TABLE 2.--DYES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

DYES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
SOLVENT DYES--CONTINUED	
SOLVENT VIOLET DYES:	
Solvent Violet 8	DSC, SDC.
Solvent Violet 9	DSC.
Solvent Violet 13	AC, HSH, MRT.
Solvent Violet 38	MRT.
**SOLVENT BLUE DYES:	
Solvent Blue 3	SM.
Solvent Blue 4	DSC, SDH.
Solvent Blue 5	DSC.
Solvent Blue 23	BAS.
Solvent Blue 35	MRT.
Solvent Blue 36	MRT.
Solvent Blue 37	DUP.
Solvent Blue 38	DUP, TNI, X.
Solvent Blue 58	MRT, VPC.
Solvent Blue 59	AC, 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 129	MRT.
Solvent blue dyes, all other	HSH.
SOLVENT GREEN DYES:	
Solvent Green 1	DSC.
Solvent Green 3	CGY, HSH.
SOLVENT BROWN DYES:	
Solvent Brown 12	PSC.
Solvent Brown 22	PSC.
Solvent Brown 38	FAB.
Solvent Brown 51	MRT.
Solvent Brown 52	MRT.
Solvent brown dyes, all other	PSC.
SOLVENT BLACK DYES:	
Solvent Black 5	ACY.
Solvent Black 7	ACY, OCC, PSC.
Solvent Black 26	FAB.
Solvent Black 46	MRT.
Solvent Black 48	MRT.
Solvent Black 49	MRT.
Solvent black dyes, all other	PSC.

TABLE 2.--DYES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

DYES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
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 BLUE DYES:	
Leuco Sulfur Blue 1-	VPC.
Leuco Sulfur Blue 7-	SDC, VPC.
Leuco Sulfur Blue 13	SDC, VPC.
Sulfur blue dyes, all other-	VPC.
SULFUR GREEN DYES:	
Leuco Sulfur Green 2	SDC.
Leuco Sulfur Green 3	SDC.
Leuco Sulfur Green 16-	SDC.
Leuco Sulfur Green 34-	SDC.
Leuco Sulfur Green 35-	SDC.
Leuco Sulfur Green 36-	SDC.
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.
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.

TABLE 2.--DYES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

DYES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
SULFUR DYES--CONTINUED	
SULFUR BLACK DYES--Continued	
Sulfur Black 2	SDC.
Sulfur Black 11, 11:1	SDC.
Sulfur black dyes, all other	VPC.
VAT DYES	
VAT YELLOW DYES:	
Vat Yellow 2, 8-1/2%	AC, CGY, VPC.
Vat Yellow 22, 10%	VPC.
Vat Yellow 33, 15%	CGY.
Vat yellow dyes, all other	VPC.
VAT ORANGE DYES:	
*Vat Orange 1, 20%	CGY, CK, VPC.
*Vat Orange 2, 12%	BAS, CGY, CK.
Vat Orange 5, 10%	HST.
Vat Orange 7, 11%	HST.
Vat Orange 15, 10%	VPC.
*VAT RED DYES:	
Vat Red 1, 13%	HST.
Vat Red 10, 18%	BAS.
Vat Red 13, 11%	CGY, CK.
Vat Red 14, 10%	HST.
Vat Red 15, 10%	CGY, HST.
Vat Red 29, 18%	SDC.
Vat Red 32, 20%	VPC.
Vat red dyes, all other	BAS.
VAT VIOLET DYES:	
Vat Violet 1, 11%	CGY.
Vat Violet 2, 20%	HST.
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, CK.
Vat Blue 16, 16%	BAS, CGY.
Vat Blue 18, 13%	AC, CGY, CK.
Vat Blue 19-	BAS.
Vat Blue 20, 14%	AC, CGY, CK.
Vat Blue 29-	BAS.
Vat Blue 43-	SDC.
Vat Blue 66-	BAS.
Vat blue dyes, all other	BAS, CK.

TABLE 2.--DYES FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

DYES	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
VAT DYES--CONTINUED	
*VAT GREEN DYES:	
Vat Green 1, 6%	CGY, CK.
Vat Green 3, 10%	BAS, CGY, CK.
Vat Green 7-	SDC.
Vat Green 9, 12-1/2%	CGY.
Vat Green 32	VPC.
Vat green dyes, all other-	CK.
VAT BROWN DYES:	
Vat Brown 1, 11%	CGY, CK, VPC.
Vat Brown 3, 11%	CGY, VPC.
Vat Brown 10	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%	CGY.
Vat black dyes, all other-	ALL.
MISCELLANEOUS DYES:	
All other dyes	MIL.

STATISTICAL HIGHLIGHTS

William Baker and Bonnie J. Noreen
202-523-1255

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 1982 are given in table 1.² For a few important pigments already reported in table 1, supplemental data on sales by commercial forms are reported in table 1A. 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 1982 was 71.3 million pounds--6.0 percent less than the 75.8 million pounds produced in 1981. Total sales of organic pigments in 1982 amounted to 58.7 million pounds, valued at \$374.1 million, compared with 64.1 million pounds, valued at \$415.3 million, in 1981. In terms of quantity, sales of organic pigments in 1982 were 8.4 percent lower than in 1981; in terms of value, sales in 1982 were 9.9 percent lower than in 1981.

Production of toners in 1982 amounted to 70.7 million pounds--5.8 percent less than the 75.0 million pounds reported in 1981. Sales in 1982 were 58.2 million pounds, valued at \$371.6 million, compared with 63.5 million pounds, valued at \$412.6 million, in 1981. Sales in 1982 were 8.4 percent lower than those of 1981 in terms of quantity, and 9.9 percent lower in terms of value. The individual toners listed in the report which were produced in the largest quantities in 1982 were Pigment Yellow 12, 11.9 million pounds; Pigment Blue 15:3, beta form, 7.3 million pounds; Pigment Red 49:1, barium toner, 6.5 million pounds; Pigment Red 57:1, calcium toner, 6.3 million pounds; Pigment Red 53:1, barium toner, 4.2 million pounds; and Pigment Yellow 14, 3.5 million pounds.

Production of lakes totaled 613,000 pounds in 1982--24.8 percent less than the 815,000 pounds reported for 1981. Sales of lakes in 1982 amounted to 482,000 pounds, valued at \$2.5 million. In terms of quantity, sales of lakes in 1982 were 12.7 percent less than the 1981; in terms of value, sales in 1982 were 9.9 percent lower than in 1981.

For each of 5 selected pigments, table 1A gives data on sales by commercial forms. Pigment Yellow 14, Pigment Red 3, Pigment Blue 15, alpha form, and Pigment Green 7 were sold principally in the dry full-strength form. Pigment Yellow 12, Pigment Red 53:1, barium toner, and Pigment Red 57:1, calcium toner, were sold principally in the flushed form.

¹Toners 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.

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

TABLE 1.--ORGANIC PIGMENTS: U.S. PRODUCTION AND SALES, 1982

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

ORGANIC 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-----	71,269	58,674	374,124	\$6.38
TONERS				
Total-----	70,656	58,192	371,639	6.39
Yellow toners, total-----	20,038	14,997	81,604	5.44
Acetoacetarylide yellows:				
Pigment Yellow 1, C.I. 11 680-----	228	221	1,210	5.47
Pigment Yellow 3, C.I. 11 710-----	...	109	605	5.55
Pigment Yellow 65, C.I. 11 740-----	188	138	1,151	8.36
Pigment Yellow 73, C.I. 11 738-----	421	294	1,464	4.98
Pigment Yellow 74, C.I. 11 741-----	847	909	7,669	8.44
Diarylide yellows:				
Pigment Yellow 12, C.I. 21 090-----	11,940	8,364	38,256	4.57
Pigment Yellow 13, C.I. 21 100-----	447	428	2,488	5.82
Pigment Yellow 14, C.I. 21 095-----	3,530	2,525	12,562	4.97
Pigment Yellow 17, C.I. 21 105-----	542	471	2,808	5.96
Pigment Yellow 83, C.I. 21 108-----	937	793	7,645	9.64
All other-----	958	745	5,746	7.70
Orange toners, total-----	2,246	2,162	12,664	5.86
Pigment Orange 5, C.I. 12 075-----	682	675	3,170	4.70
Pigment Orange 13, C.I. 21 110-----	151	126	1,034	8.18
Pigment Orange 16, C.I. 21 160-----	603	620	3,145	5.08
Pigment Orange 34, C.I. 21 115-----	...	53	374	7.12
Pigment Orange 46-----	650	...	...	...
All other-----	160	688	4,941	7.18
Red toners, total-----	27,453	21,962	137,341	6.25
Naphthol reds, total-----	1,086	1,045	10,501	10.05
Pigment Red 2, C.I. 12 310-----	76	58	415	7.11
Pigment Red 5, C.I. 12 490-----	44	43	525	12.12
Pigment Red 17, C.I. 12 390-----	44	17	173	10.49
Pigment Red 22, C.I. 12 315-----	65	63	722	11.55
Pigment Red 23, C.I. 12 355-----	77	81	1,063	13.20
Pigment Red 112, C.I. 12 370-----	60	...	...	...
All other naphthol reds-----	720	783	7,603	9.70
Pigment Red 3, C.I. 12 120-----	781	837	4,846	5.79
Pigment Red 4, C.I. 12 085-----	112	93	494	5.33
Pigment Red 6, C.I. 12 090-----	...	12	117	9.36
Pigment Red 38, C.I. 21 120-----	258	135	1,533	11.33
Pigment Red 48:1, barium toner, C.I. 15 865-----	444	446	2,970	6.66
Pigment Red 48:2, calcium toner, C.I. 15 865-----	1,229	1,234	8,080	6.55
Pigment Red 48:4, manganese toner, C.I. 15 865-----	230	169	1,269	7.51
Pigment Red 49:1, barium toner, C.I. 15 630-----	6,453	5,995	22,603	3.77
Pigment Red 49:2, calcium toner, C.I. 15 630-----	...	614	3,083	5.02
Pigment Red 52:1, calcium toner, C.I. 15 860-----	1,006	1,016	6,361	6.26
Pigment Red 52:2, manganese toner, C.I. 15 860-----	164	272	1,506	5.54
Pigment Red 53:1, barium toner, C.I. 15 585-----	4,230	3,460	14,666	4.24
Pigment Red 57:1, calcium toner, C.I. 15 850-----	6,275	4,906	29,342	5.98
Pigment Red 81, PMA, C.I. 45 160-----	344	330	4,893	14.84
Pigment Red 81, PTA, C.I. 45 160-----	26	25	454	18.18
All other-----	4,815	1,373	24,623	17.94

See footnotes at end of table.

TABLE 1.--ORGANIC PIGMENTS: U.S. PRODUCTION AND SALES, 1982--CONTINUED

ORGANIC PIGMENTS	PRODUCTION	SALES		
		QUANTITY	VALUE ¹	UNIT VALUE ²
TONERS--Continued	1,000 pounds dry basis ³	1,000 pounds dry basis ³	1,000 dollars	Per pound
Violet toners, total-----	2,157	1,639	28,165	\$17.18
Pigment Violet 1, PTA, C.I. 45 170-----	26	26	388	14.71
Pigment Violet 3, PTA, C.I. 42 535-----	...	13	197	15.55
Pigment Violet 19, C.I. 46 500-----	1,334	914	15,773	17.26
All other-----	797	686	11,807	17.21
Blue toners, total-----	16,834	15,452	93,595	6.06
Pigment Blue 15, alpha form, C.I. 74 160-----	944	761	5,359	7.04
Pigment Blue 15:1, alpha form, C.I. 74 160-----	720	648	6,543	10.09
Pigment Blue 15:2, alpha form, C.I. 74 160-----	608	627	6,570	10.48
Pigment Blue 15:3, beta form, C.I. 74 160-----	7,300	6,256	38,122	6.09
All other-----	7,262	7,160	37,001	5.17
Green toners, total-----	1,784	1,879	17,748	9.44
Pigment Green 1, PMA-----	8	8	140	17.10
Pigment Green 7, C.I. 74 260-----	1,538	1,682	14,947	8.89
Pigment Green 36, C.I. 74 265-----	177	130	1,633	12.56
All other-----	61	59	1,028	17.34
Brown and Black toners, total-----	144	101	522	5.17
Pigment Brown 5, C.I. 15 800:2-----	67	27	158	5.77
All other-----	77	74	364	4.97
LAKES				
Total-----	613	482	2,485	5.16
Yellow lakes-----	27	...	...	...
Pigment Red 60:1, C.I. 16 105-----	195	235	1,332	5.66
Pigment Red 83, C.I. 58 000-----	36	31	312	10.11
Pigment Violet 5:1, C.I. 58 055-----	44	46	364	7.88
All other lakes-----	311	170	477	2.81

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*) numbers 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 1A.--U.S. SALES OF SELECTED DRY FULL-STRENGTH TONERS, DRY EXTENDED TONERS, DRY DISPERSIONS, AQUEOUS DISPERSIONS, AND FLUSHED COLORS, 1982

[Listed below are supplemental sales data, by commercial forms, of selected pigments that have been reported in table 1]

SELECTED PIGMENTS BY COMMERCIAL FORMS	SALES ¹		
	QUANTITY	VALUE	UNIT VALUE ²
	1,000 pounds dry basis ³	1,000 dollars	Per pound
Pigment Yellow 12, C.I. 21 090, total-----	8,364	38,256	\$4.57
Dry full-strength toner-----	2,895	12,949	4.47
Flushed color-----	3,528	16,124	4.57
Dry extended toner and aqueous dispersions ⁴ ⁵ -----	1,941	9,183	4.73
Pigment Yellow 14, C.I. 21 095, total-----	2,525	12,562	4.97
Dry full-strength toner-----	1,704	8,618	5.06
Aqueous dispersions ⁴ -----	794	3,801	4.78
Dry extended toner, dry dispersions, and flushed color ⁵ -----	27	143	5.42
Pigment Red 3, C.I. 12 120, total-----	837	4,846	5.79
Dry full-strength toner-----	587	3,369	5.74
Aqueous dispersions ⁴ -----	54	323	5.94
Dry extended toner and flushed color ⁵ -----	196	1,154	5.91
Pigment Red 53:1, barium toner, C.I. 15 585, total-----	3,460	14,666	4.24
Aqueous dispersions ⁴ -----	339	1,141	3.37
Flushed color-----	2,308	9,784	4.24
Dry full-strength toner and dry dispersions ⁵ -----	813	3,741	4.60
Pigment Red 57:1, calcium toner, C.I. 15 850, total-----	4,906	29,342	5.98
Dry full-strength toner-----	632	4,088	6.47
Flushed color-----	4,068	24,169	5.94
Dry extended toner and aqueous dispersions ⁴ ⁵ -----	206	1,085	5.25
Pigment Blue 15, alpha form, C.I. 74 160, total-----	761	5,359	7.04
Dry full-strength toner-----	396	2,542	6.42
Dry extended toner and aqueous dispersions ⁴ ⁵ -----	365	2,817	7.71
Pigment Green 7, C.I. 74 260, total-----	1,682	14,947	8.89
Dry full-strength toner-----	840	7,837	9.33
Aqueous dispersions ⁴ -----	546	4,374	8.01
Flushed color-----	228	1,998	8.76
Dry extended toner and dry dispersions ⁵ -----	68	738	10.99

¹Sales quantities and value are identical in tables 1 and 1A.

²Calculated from unrounded figures.

³Quantity of the various commercial forms is given in terms of dry full-strength toner content.

⁴Includes presscake.

⁵Separate data on these commercial forms may not be published without revealing the operations of individual companies.

Note.--The C.I. (*Colour Index*) numbers shown in this report are the identifying numbers 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, 1982
 [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]

	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ORGANIC PIGMENTS	
TONERS	
*YELLOW TONERS:	
ACETOACETARYLIDE YELLOWS:	
*Pigment Yellow 1	AMS, BAS, CGY, DUP, GLX, HSH, HST, KCM, KON, SDH, SNA, VPC.
Pigment Yellow 2	KCM.
*Pigment Yellow 3	BNS, CGY, GLX, HSH, HST, KCM, KON, SNA, VPC.
Pigment Yellow 6	CGY.
Pigment Yellow 49	ROM.
Pigment Yellow 60	HSH, KON.
*Pigment Yellow 65	DUP, HSH, SNA, VPC.
*Pigment Yellow 73	CGY, HSH, HST, SNA, VPC.
*Pigment Yellow 74	BAS, CGY, DUP, HSH, HST, SDH, SNA, VPC.
Pigment Yellow 75	CGY.
Pigment Yellow 97	HST.
Pigment Yellow 98	HST.
Acetoacetarylide yellows, all others	CGY, KCM.
DIARYLIDE YELLOWS:	
*Pigment Yellow 12	AMS, APO, BAS, BOR, CGY, GLX, HSH, HST, ICC, IDC, IND, POP, ROM, SDH, SNA, VPC.
*Pigment Yellow 13	AMS, APO, BAS, CGY, GLX, HST, IDC, IND, ROM, SDH, SNA, VPC.
*Pigment Yellow 14	AMS, BAS, BNS, CGY, GLX, HSH, HST, ICC, IND, ROM, SDH, SNA, VPC.
*Pigment Yellow 17	AMS, APO, BAS, CGY, GLX, HSH, HST, ICC, IND, ROM, SDH, SNA, VPC.
Pigment Yellow 55	CGY, GLX.
*Pigment Yellow 83	BAS, GLX, HST, ICC, IND, ROM, SNA.
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 43	CGY.
Pigment Yellow 62	CGY.

TABLE 2.--ORGANIC PIGMENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ORGANIC PIGMENTS	
TONERS--CONTINUED	
*YELLOW TONERS--CONTINUED	
YELLOW PIGMENTS, OTHER--CONTINUED	
Pigment Yellow 110	CGY.
Pigment yellow toners, all other	VPC.
*ORANGE TONERS:	
Pigment Orange 1	KCW, MRX, VPC.
Pigment Orange 2	CGY, UHL.
Pigment Orange 5	CGY, HSH, HST, SDH, SNA.
Pigment Orange 13	AMS, BAS, CGY, HSH, IND, ROM, SNA, VPC.
Pigment Orange 15	BNS, CGY.
Pigment Orange 16	BNS, CGY, GLX, HSH, IND, ROM, SDH, USM, VPC.
Pigment Orange 34	BNS, CGY, IND, ROM, SDH, VPC.
Pigment Orange 36	HST.
Pigment Orange 43	HST.
Pigment Orange 46	ACY, BAS, SNA.
Pigment Orange 48	DUP.
Pigment Orange 49	DUP.
Pigment orange toners, all other	CGY, GLX.
*RED TONERS:	
*NAPHTHOL REDS:	
*Pigment Red 2	CGY, GLX, HSH, HST, KCW, VPC.
*Pigment Red 5	CGY, GLX, HSH, ROM.
Pigment Red 7	GLX, HST.
Pigment Red 9	HST, MRX.
Pigment Red 13	CGY, KCW.
*Pigment Red 17	ACY, BNS, CGY, IND, ROM, SNA, UHL.
Pigment Red 21	BNS.
*Pigment Red 22	CGY, DUP, MRX, ROM, SNA.
*Pigment Red 23	ACY, ALE, CGY, DUP, GLX, HSH, IND, KCW, SDH, UHL.
Pigment Red 31	ROM, SDH.
*Pigment Red 112	CGY, HST, VPC.
Pigment Red 119	VPC.
Pigment Red 147	HSH.
Pigment Red 170	GLX, HST.
Naphthol reds, all other	BUC, GLX, HSH, HST, IND, KCW, ROM, SDH, SNA, X.
RED PIGMENTS, OTHER:	
Pigment Red 1, (dark)	CGY, HSH, KCW.
Pigment Red 1, (light)	CGY, HSH.
*Pigment Red 3	ACY, BAS, CGY, CIK, DUP, HSH, KCW, KON, MRX, SDH, SNA, UHL.
*Pigment Red 4	ALE, AMS, CGY, HSH, KCW, KON, MRX, SDH, UHL.
*Pigment Red 6	DUP, HSH, KON.
*Pigment Red 38	GLX, HSH, HST, SNA, VPC.

TABLE 2.--ORGANIC PIGMENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

ORGANIC PIGMENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
TONERS--CONTINUED	
*RED TONERS--CONTINUED	
RED PIGMENTS, OTHER--CONTINUED	
Pigment Red 41	VPC.
Pigment Red 48	CGY, DUP.
*Pigment Red 48:1, (barium)	ACY, AMS, BAS, BOR, CIK, DUP, HSH, MGR, MRX, SNA, UHL.
*Pigment Red 48:2, (calcium)	ACY, AMS, BAS, CIK, DUP, HSH, MGR, MRX, SDH, SNA, UHL, VPC.
Pigment Red 48:3, (strontium)	CGY, HSH.
*Pigment Red 48:4, (manganese)	ACY, CGY, DUP, HSH, VPC.
Pigment Red 49, (sodium)	BNS.
*Pigment Red 49:1, (barium)	ACY, AMS, BAS, BNS, BOR, CIK, ICC, IDC, MGR, SDH, SNA, UHL.
*Pigment Red 49:2, (calcium)	ACY, AMS, BNS, BOR, CIK, IDC, SDH.
*Pigment Red 52:1, (calcium)	ACY, BAS, CGY, MGR, MRX, SNA, UHL.
*Pigment Red 52:2, (manganese)	ACY, BAS, CGY, HSH, UHL.
*Pigment Red 53:1, (barium)	ACY, AMS, APO, BAS, BOR, CIK, HSH, ICC, IDC, KON, MGR, MRX, SDH, SNA, UHL.
Pigment Red 57	BNS.
*Pigment Red 57:1, (calcium)	ACY, 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)	KON, LVR, MGR, MRX, SNA, UHL.
*Pigment Red 81, (PTA)	KON, MGR, MRX, UHL.
Pigment Red 88	VPC.
Pigment Red 90	BOR, SDH.
Pigment Red 122	SNA, VPC.
Pigment Red 123	VPC.
Pigment Red 149	VPC.
Pigment Red 166	CGY.
Pigment Red 168	VPC.
Pigment Red 179	VPC.
Pigment Red 181	HST.
Pigment Red 188	HST.
Pigment Red 190	BAS, VPC.
Pigment Red 202	DUP, VPC.
Pigment Red 206	DUP.
Pigment Red 207	DUP.
Pigment Red 224	VPC.
Pigment red toners, all other	BAS, CGY, DUP, HST.
*VIOLET TONERS:	
Pigment Violet 1, (fugitive)	KCM, UHL.
Pigment Violet 1, (PMA)	MGR, MRX, UHL.
*Pigment Violet 1, (PTA)	MGR, MRX, SNA, UHL.

TABLE 2.--ORGANIC PIGMENTS FOR WHICH U. S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER,
1982--CONTINUED

ORGANIC PIGMENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
TONERS--CONTINUED	
*VIOLET TONERS--CONTINUED	
Pigment Violet 3, (fugitive)	BAS, MGR, UHL.
Pigment Violet 3, (PMA)	BAS, KON, MGR, MRX, SDH, UHL.
*Pigment Violet 3, (PTA)	MGR, MRX, UHL.
Pigment Violet 4, (fugitive)	KCM.
*Pigment Violet 19-	DUP, SNA, VPC.
Pigment Violet 23-	ROM, SNA, VPC.
Pigment Violet 29-	HST, ROM, SNA, VPC.
Pigment Violet 39, (fugitive)	VPC.
Pigment Violet 39, (PMA)	X.
Pigment Violet 42-	X.
Pigment violet toners, all other	DUP.
	BUG.
*BLUE TONERS:	
Pigment Blue 1, (PMA)	BNS, KON, 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.
*Pigment Blue 15, (α form)	CGY, DUP, HSH, SDH, SNA, TMS, USM.
*Pigment Blue 15:1, (α form)	ALE, CGY, DUP, SDH, SNA, TMS, VPC.
*Pigment Blue 15:2, (α form)	ALE, BAS, CGY, DUP, SDH, SNA, TMS, VPC.
*Pigment Blue 15:3, (β form)	AMS, APO, BAS, BOR, BUC, CGY, CIK, CUS, DUP, ICC, IDC, IPP, MGR, POP, ROM, SDH, SNA, VPC.
Pigment Blue 15:4, (β form)	ALE, BAS, CGY, DUP, SNA.
Pigment Blue 19-	SM.
Pigment Blue 25-	GLX.
Pigment Blue 61-	BAS.
*GREEN TONERS:	
*Pigment Green 1, (PMA)	KON, LVR, MRX, UHL.
Pigment Green 2, (PMA)	MRX, UHL.
Pigment Green 2, (PTA)	MRX, UHL.
Pigment Green 4, (fugitive)	UHL.
Pigment Green 4, (PMA)	UHL.
*Pigment Green 7-	ALE, ALG, CGY, CIK, DUP, MGR, POP, SDH, SNA, VPC.
Pigment Green 8-	CGY, KCM.
Pigment Green 10	DUP.
*Pigment Green 36	ALG, DUP, HST, SNA, VPC.
Pigment green toners, all other	X.
*BROWN TONERS:	
Pigment Brown 1-	GLX, ROM.
Pigment Brown 2-	UHL.
Pigment Brown 3, (fugitive)	KON.

TABLE 2.--ORGANIC PIGMENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982 --CONTINUED

ORGANIC PIGMENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
TONERS--CONTINUED	
BROWN TONERS--CONTINUED	
Pigment Brown 3, (PMA)	KON.
*Pigment Brown 5-	GLX, ICC, ROM, VPC.
Pigment brown toners, all other-	X.
BLACK TONERS:	
Pigment Black 7-	VPC.
Pigment black toners, all other-	UHL.
LAKES	
*YELLOW LAKES:	
(Acid Yellow 1)-	KCM.
(Acid Yellow 23)	KON, MRX.
ORANGE LAKES:	
Pigment Orange 17-	KCM.
RED LAKES:	
(Acid Red 26)-	KCM.
(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	CGY, HSH, MRX, UHL, VPC.
BLUE LAKES:	
(Basic Blue 9)	BNS.
Pigment Blue 24-	BOR, SDH.
GREEN LAKES:	
(Acid Green 3)	KCM.

TABLE 3.--ORGANIC PIGMENTS: DIRECTORY OF MANUFACTURERS, 1982

ALPHABETICAL DIRECTORY BY CODE

[Names of manufacturers that reported production and/or sales of organic pigments to the U.S. International Trade Commission for 1982 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.	KCW	Keystone Color Works, Inc.
ALE	Alex Chemical Co.	KON	H. Kohnstamm & Co., Inc.
ALG	Allegheny Chemical Corp.		
AMS	Ridgway Color Co.	LVR	C. Lever Co., Inc.
APO	Apollo Colors, Inc.		
		MGR	Magruder Color Co., Inc.
BAS	BASF Wyandotte Corp.	MRX	Max Marx Color & Chemical Co.
BNS	Binney and Smith, Inc.		
BOR	Borden, Inc., Graphics Div., Specialty Products	POP	Pope Chemical Corp.
BUC	Synalloy Corp., Blackman Uhler Chemical Div.	ROM	Roma Chemical, Inc.
CGY	Ciba-Geigy Corp.	SDH	Sterling Drug, Inc., Hilton Davis Chemical Co. Div.
CIK	Flint Ink Corp., Cal/Ink Div.		
CUS	Customs Pigments Corp.	SNA	Sun Chemical Corp.
		SW	Sherwin-Williams Co.
DUP	E. I. duPont de Nemours & Co., Inc.		
		TMS	Sterling Drug, Inc., Thomasset Colors Div.
GLX	Galaxie Chemical Corp.		
		UHL	Paul Uhlich & Co., Inc.
HSH	Harshaw Chemical Co.	USM	Crown Metro, Inc.
HST	American Hoechst Corp., Specialty Products Div.		
		VPC	Mobay Chemical Corp., Dye & Pigment Div.
ICC	Immort Corp. Div. of United Technologies Corp.		
IDC	Industrial Color, Inc.		
IND	Indol Color Co., Inc.		
IPP	International Pigment Processing Corp.		

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

STATISTICAL HIGHLIGHTS

Tedford C. Briggs
202-523-1145

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 1982 amounted to 226.7 million pounds. Total sales of bulk medicinal chemicals in 1982 amounted to 147.3 million pounds, valued at \$1,258.8 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 1982 was as follows: Antibiotics, 32.5 million pounds, 6.3 percent more than in 1981; anti-infective agents other than antibiotics, 24.5 million pounds, 22.8 percent less than in 1981; central nervous system depressants and stimulants, 54.3 million pounds, 6.6 percent less than in 1981; and vitamins, 41.1 million pounds, 4.6 percent less than in 1981.

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.

Production of some of the more important individual products in the table was as follows: Choline chloride, 57.6 million pounds, 2.2 percent less than in 1981; aspirin, 23.4 million pounds, 21.0 percent less; acetaminophen, 22.6 million pounds, 12.0 percent more; penicillins (except semisynthetic), 7.4 million pounds, 0.9 percent more; vitamin E, 7.8 million pounds, 23.5 percent less; and tetracyclines, 7.2 million pounds, 5.8 percent more.

TABLE 1.--MEDICINAL CHEMICALS: U.S. PRODUCTION AND SALES, 1982

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

MEDICINAL CHEMICALS	SALES			
	PRODUCTION ¹	QUANTITY	VALUE	UNIT VALUE ²
	1,000 pounds	1,000 pounds	1,000 dollars	Per pound
Grand total-----	226,747	147,251	1,258,821	\$8.55
Acyclic-----	63,527	55,201	83,405	1.51
Benzenoid ³ -----	113,124	69,723	701,209	10.06
Cyclic nonbenzenoid ⁴ -----	50,096	22,327	474,207	21.24
Antibiotics, total-----	32,518	10,785	421,722	39.10
Cephalosporins-----	1,115	...	...	...
Penicillins, semisynthetic, total-----	2,078	327	20,321	62.14
Amoxicillin-----	571	...	...	...
Ampicillin-----	988	...	...	...
Dicloxacillin, sodium-----	51	...	...	...
All other (semisynthetic)-----	468	327	20,321	62.14
Penicillins (except semisynthetic), for all uses-----	7,429	2,575	30,342	11.78
Tetracyclines, for all uses-----	7,243	4,149	94,995	22.90
Other antibiotics, total-----	14,658	3,734	276,064	73.93
For medicinal use ⁶ -----	3,871	2,066	245,179	118.67
For nonmedicinal uses-----	10,782	1,668	30,885	18.52
Antihistamines, total-----	288	154	7,076	45.95
Antinauseants-----	45	32	1,743	54.47
Brompheniramine maleate-----	21	21	1,309	62.33
All other-----	222	101	4,024	39.84
Anti-infective agents (except antibiotics), total-----	24,545	8,867	46,339	5.23
Anthelmintics-----	7,650	2,972	4,567	1.54
Antifungal agents-----	234	240	835	3.48
Antiprotozoan agents, total-----	9,863	1,955	11,734	6.00
Arsenic and bismuth compounds-----	...	1,886	10,043	5.33
All other ⁷ -----	9,863	69	1,691	24.51
Sulfonamides ⁸ -----	3,097	636	9,402	14.78
Urinary antiseptics-----	145	...	...	...
Other anti-infective agents ⁹ -----	3,556	3,064	19,801	6.46
Autonomic drugs, total-----	1,050	652	15,753	24.16
Sympathomimetic (adrenergic) agents, total-----	989	642	13,660	21.28
Phenylpropanolamine hydrochloride-----	412	316	2,997	9.48
All other-----	577	326	10,663	32.71
Other autonomic drugs-----	61	10	2,093	209.30
Central depressants and stimulants, total-----	54,335	43,931	221,972	5.05
Analgesics, antipyretics, and nonhormonal anti-inflammatory agents, total-----	47,926	39,839	106,739	2.68
Acetaminophen-----	22,591	...	...	...
Aspirin-----	23,420	...	...	...
All other ¹⁰ -----	1,915	39,839	106,739	2.68
Anticonvulsants, hypnotics, and sedatives-----	1,792	343	7,206	21.01
Antidepressants-----	151	12	1,810	150.83
Antitussives, total-----	329	280	54,561	194.86
Codeine-----	129	125	36,858	294.86
Thebaine-----	5	5	3,221	644.20
All other-----	195	150	14,482	96.55
Tranquilizers-----	244	15	2,586	172.40
Other central depressants and stiumlants ¹¹ -----	3,893	3,442	49,070	14.26

See footnotes at end of table.

TABLE 1.--MEDICINAL CHEMICALS: U.S. PRODUCTION AND SALES, 1982--CONTINUED

MEDICINAL CHEMICALS	PRODUCTION ¹	SALES		
		QUANTITY	VALUE	UNIT VALUE ²
	1,000 pounds	1,000 pounds	1,000 dollars	Per pound
Dermatological agents-----	2,137	2,812	3,466	\$1.23
Expectorants and macolytric agents-----	1,155	1,070	9,108	8.51
Gastrointestinal agents and therapeutic nutrients, total ¹² -----	62,236	52,073	39,123	.75
Choline chloride, all grades-----	57,627	49,843	29,544	.59
All other-----	4,609	2,230	9,579	4.30
Hormones and synthetic substitutes, total-----	980	178	133,653	750.86
Synthetic hypoglycemic agents-----	798	...	...	...
All other ¹³ -----	182	178	133,653	750.86
Local anesthetics, total-----	106	75	2,032	27.09
Lidocaine-----	30	...	...	...
All other-----	76	75	2,032	27.09
Renal-acting and edema-reducing agents-----	882	153	5,355	35.00
Smooth muscle relaxants ¹⁴ -----	189	...	...	...
Vitamins, total-----	41,125	25,259	241,764	9.57
Vitamin E-----	7,832	5,336	88,000	16.49
All other vitamins ¹⁵ -----	33,293	19,923	153,764	7.72
Miscellaneous medicinal chemicals ¹⁶ -----	5,201	1,242	111,458	89.74

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; and dicloxacillin, sodium.

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

⁷Includes production of arsenic and bismuth compounds.

⁸Does not include production of sulfaguanidine used as an intermediate in the production of anti-infective sulfonamides.

⁹Includes sales quantity and value of urinary antiseptics.

¹⁰Includes sales quantity and value of acetaminophen and aspirin.

¹¹Includes production and sales of amphetamines, general anesthetics, respiratory and cerebral stimulants, and skeletal muscle relaxants.

¹²Methionine and its salts are now reported in the section in Miscellaneous End-Use Chemicals and Chemical Products under amino acids.

¹³Includes sales quantity and value of synthetic hypoglycemic agents.

¹⁴Includes theophylline derivatives.

¹⁵Includes production and sales of vitamin A, vitamin B, vitamin C, vitamin D, and vitamin K.

¹⁶Includes production and sales of antineoplastic agents, cardiovascular agents, diagnostic agents, hematological agents, and unclassified medicinal chemicals. Also includes sales quantity and value of smooth muscle relaxants.

TABLE 2.--MEDICINAL CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982

[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.
Cephalothin, sodium	- - - - -	LIL.
Cephapirin	- - - - -	BRS.
Cephapirin, sodium	- - - - -	BRS.
Cephradine	- - - - -	SK, TRD.
*PENICILLINS, SEMISYNTHETIC:		
*AMOXICILLIN:		
Amoxicillin (trihydrate)	- - - - -	BEE, BOC, BRS.
Amoxicillin (anhydrous)	- - - - -	MYT.
*AMPICILLIN:		
Ampicillin (anhydrous)	- - - - -	BRS, MYT.
Ampicillin (trihydrate)	- - - - -	BEE, BOC, BRS.
*OTHER SEMISYNTHETIC PENICILLINS:		
Ampicillin, sodium	- - - - -	BEE, BRS, WYT.
Carbenicillin, disodium	- - - - -	BEE, PFZ.
Carbenicillin indanyl, sodium	- - - - -	PFZ.
Cloxacillin, sodium	- - - - -	BEE, BOC, BRS.
Cyclacillin	- - - - -	MYT.
Dicloxacillin, sodium	- - - - -	BEE, BRS, WYT.
Epicillin	- - - - -	TRD.
Hetacillin, potassium	- - - - -	BRS.
Methicillin, sodium	- - - - -	BEE, BRS.
Nafticillin, sodium	- - - - -	BRS, WYT.
Oxacillin, sodium	- - - - -	BEE, BOC, BRS.
Piperacillin	- - - - -	BRS.
Ticarcillin, disodium	- - - - -	BEE.
*PENICILLINS (EXCEPT SEMISYNTHETIC):		
FOR MEDICINAL USE:		
Penicillin V	- - - - -	BRS, PFZ.

TABLE 2.--MEDICINAL CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER,
1982--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	OMS, PFZ, WYT.
Penicillin V, potassium	BRS, LIL.
Penicillin G, procaine (medicinal grade)	PFZ, WYT.
FOR NONMEDICINAL USES:	
Penicillin G, procaine (animal feed grade)	MRK, OMS, PFZ.
*TETRACYCLINES:	
FOR MEDICINAL USE:	
Chlortetracycline (medicinal grade)	ACY.
Demeclocycline	ACY.
Doxycycline	PFZ.
Methacycline	PFZ.
Minocycline	ACY.
Oxytetracycline (medicinal grade)	PFZ.
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.
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	LIL, UPJ.
Gentamycin	SCH.
Kanamycin	BRS.
Lincomycin (medicinal grade)	UPJ.
Moxalactam	LIL.
Neomycin (medicinal grade)	UPJ.
Novobiocin, sodium	MRK, UPJ.
Polymyxin B	PFZ.

TABLE 2.--MEDICINAL CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--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	
Sisomicin	SCH.
Spectinomycin (medicinal grade)	ABB, UPJ.
Thiostrepton	CLP, OMS.
Vancomycin	LIL.
* FOR NONMEDICINAL USES:	
Bacitracin (animal feed grade)	IMC.
Cycloheximide	UPJ.
Hygromycin B	LIL.
Lasalocid	HOF.
Lasalocid, sodium	X.
Lincomycin (animal feed grade)	UPJ.
Nonesin	LIL.
Neomycin (animal feed grade)	PFZ, UPJ.
Novobiocin (animal feed grade)	UPJ.
Nystatin (animal feed grade)	OMS.
Streptomycin	PFZ.
Tylosin	LIL.
*ANTIHISTAMINES:	
* ANTINAUSEANTS:	
Cyclizine hydrochloride	BUR.
Dimenhydrinate	GAN, SRL.
Metoclopramide hydrochloride	LIL.
Trimethobenzamide hydrochloride	GAN, HOF.
* OTHER ANTIHISTAMINES:	
Azatadine maleate	SCH.
Bromodiphenhydramine hydrochloride	PD.
Brompheniramine maleate	HEX, LLI, SCH.
Chlorcyclizine hydrochloride	BUR.
Chlorpheniramine maleate	HEX, SCH, SK.
Cyproheptadine hydrochloride	GAN, MRK.
Dexbrompheniramine maleate	SCH.
Dexchlorpheniramine maleate	SCH.
Dimethindene maleate	CGY.
Diphenhydramine hydrochloride	PD, MYK.
Doxylamine succinate	BKC, HOF.
Phenindamine tartrate	HOF.
Phenyltoloxamine citrate	GAN.
Pyrilamine maleate	HEX.
Tripeleminamine	CGY.
Tripeleminamine citrate	CGY.
Tripeleminamine hydrochloride	CGY.

TABLE 2.--MEDICINAL CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

MEDICINAL CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
*ANTHISTAMINES--CONTINUED	
*OTHER ANTHISTAMINES--CONTINUED	
Triprolidine hydrochloride	AMD, BUR.
*ANTI-INFECTION AGENTS (EXCEPT ANTIBIOTICS):	
*ANTHELMINTICS:	
Dichlorvos	SHC.
Phenothiazine	WAG.
Piperazine	TX, UCC.
Piperazine citrate	BUR, PCL.
Piperazine dihydrochloride	FLM, TX.
Piperazine hexahydrate	PCL, TX.
Piperazine hydrochloride	FLM, WHL.
Piperazine phosphate	PCL, TX.
Pyrantel pamoate	PFZ.
Pyrantel tartrate	PFZ.
Rafoxanide	MRK.
Thiabendazole	MRK.
*ANTIPROTOZOAN AGENTS:	
*ARSENIC AND BISMUTH COMPOUNDS:	
Arsanilic acid	FLM, WHL.
Bismuth subsalicylate	NOR, PEN.
Carbarsone	WHL.
Nitarzone	SAL.
Roxarsone	SAL.
Roxarsone, sodium	SAL.
*OTHER ANTIPROTOZOAN AGENTS:	
Aklomide	SAL.
Amodiaquine hydrochloride	PD.
Amprolium	MRK.
Apyrinocid	MRK.
Chloroquine phosphate	SDM.
Dinitolmide	SAL.
Ethopabate	MRK.
Furazolidone	NOR.
Hydroxychloroquine sulfate	SDM.
Iodochlorhydroxyquin	CGY.
Ipronidazole	HOF.
Metronidazole	RDA.
Nitromide	SAL.
Ronidazole	MRK.
* SULFONAMIDES:	
Mafenide	SDM.
Mafenide acetate	SDM.

TABLE 2. --MEDICINAL CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

MEDICINAL CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
*ANTI-INFECTIVE AGENTS--CONTINUED	
*SULFONAMIDES--CONTINUED	
Sulfabenzamide	ACY.
Sulfacetamide, sodium	SCH.
Sulfachloropyrazine, sodium	ACY.
Sulfachloropyridazine	ACY.
Sulfadiazine	ACY.
Sulfadiazine, silver	LEM.
Sulfadimethoxine	HOF.
Sulfamethazine	ACY, RLS, SAL.
Sulfamethazine, sodium	SAL.
Sulfamethizole	ACY.
Sulfamethoxazole	HOF.
Sulfantran	SAL.
Sulfaguinoxaline	MRK.
Sulfasalazine	SAL.
Sulfathiazole, sodium	SAL.
Sulfisoxazole	HOF.
Sulfisoxazole, acetyl	HOF.
URINARY ANTISEPTICS:	
Methenamine	PD.
Methenamine hippurate	RIK.
Methenamine mandelate	ARM, PD.
Nitrofurantoin	NOR.
*OTHER ANTI-INFECTIVE AGENTS:	
*ANTIFUNGAL AGENTS:	
Benzoic acid	MON.
Calcium undecylenate	WTL.
Sodium caprylate	LEM.
Zinc undecylenate	WTL.
ANTILEPTIC AND ANTITUBERCULAR AGENTS:	
Aminosalicic acid	HXL.
ANTIVIRAL AGENTS:	
Amantadine	BUR.
MERCURY COMPOUNDS:	
Nitromersol	ABB.
GENERAL ANTISEPTICS AND ANTIBACTERIAL AGENTS:	
Bromchlorenone	MHI.
Carbadox	PFZ.
Cetylpyridinium chloride	HEX, HXL.
Chlorobutanol	SFS.
Chlorothymol	OPC.
m-Cresyl acetate	ADC.

TABLE 2.--MEDICINAL CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--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	
8-Hydroxy-5-quinolinesulfonic acid	MRK.
Iodoform	DPM, PEN.
Malidixic acid	SDM, X.
Ormetoprim	HOF.
Povidone - iodine	GAF.
Pyriithione, zinc	NES.
Resorcinol	KPT, LEM.
Trimethoprim	BUR, HOF.
Anti-infective agents, all other	ARA.
*AUTONOMIC DRUGS:	
*SYMPATHOMIMETIC AGENTS:	
Cyclopentamine hydrochloride	LIL.
Dobutamine hydrochloride	LIL.
Dopamine hydrochloride	HEX.
Mephentermine	ARA.
Mephentermine sulfate	ARA.
Methoxyphenamine hydrochloride	HXL.
Naphazoline hydrochloride	CGY.
Phenylephrine	SDM.
Phenylephrine bitartrate	GAN.
Phenylephrine hydrochloride	GAN.
Phenylpropanolamine hydrochloride	ARS, GAN, NEP, 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):	
Diphenamil methylsulfate	SCH.
Glycopyrrolate	LII.
Isopropamide iodide	SK.
Propantheline bromide	SRL.
Tridihexethyl chloride	ACY.
PARASYMPATHOLYTIC TERTIARY AMINES (EXCEPT TROPANE DERIVATIVES):	
Oxybutynin chloride	PD.
Oxyphencyclimine hydrochloride	PFZ.
Trihexyphenidyl hydrochloride	ACY.

TABLE 2.--MEDICINAL CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

MEDICINAL CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
*AUTONOMIC DRUGS--CONTINUED	
*OTHER AUTONOMIC DRUGS--CONTINUED	
PARASYMPATHOLYTIC TROPANE DERIVATIVES:	
Anisotropine methylbromide	ARA.
Benztropine mesylate	ARA.
PARASYMPATHOMIMETIC AGENTS:	
Bethanechol chlorzide	GAM, MRK.
Neostigmine methylsulfate	HOF.
Pyridostigmine bromide	HOF.
SYMPATHOLYTIC AGENTS:	
Timolol maleate	MRK.
*CENTRAL DEPRESSANTS AND STIMULANTS:	
*ANALGESICS, ANTIPIRETTICS, AND NONHORMONAL ANTI-INFLAMMATORY AGENTS:	
*Acetaminophen	MAL, MON, PEN.
Aminobenzoic acid	GAM, WYK.
*Aspirin	DOM, MON, NOR, SDM.
Aurothioglucose	SCH.
Benoxaprofen	LIL.
Choline magnesium salicylate	LEM.
Diflunisal	MRK.
Etoheptazine citrate	WYT.
Fenoprofen	LIL.
Ibuprofen	PD.
Indomethacin	MRK.
Isoxicam	PD.
Meclofenamate, sodium	PD.
Meclofenamic acid	PD.
Mefenamic acid	PD.
Meperidine hydrochloride	PEN, SDM, WYT.
Methadone hydrochloride	MAL.
Morphine sulfate (pentahydrate)	MRK.
Morphine sulfate	MAL, PEN.
Oxycodone hydrochloride	EN, MAL, PEN.
Oxyphenbutazone	CGY.
Phenylbutazone	CGY.
Piroxicam	PFZ.
Potassium aminobenzoate	GAM, WYK.
Potassium salicylate	HN.
Propoxyphene hydrochloride	GAM, LIL.
Propoxyphene napsylate	GAM, LIL.
Salicylamide	PEN.
Salsalate	PD, RIK, WYK.
Sodium aminobenzoate	GAM.

TABLE 2.--MEDICINAL CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

MEDICINAL CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
*CENTRAL DEPRESSANTS AND STIMULANTS--CONTINUED	
*ANALGESICS, ANTIPIRETTICS, AND NON HORMONAL ANTI-INFLAMMATORY AGENTS--CONTINUED	
Sodium salicylate	HN.
Sulindac	MRK.
Zomepirac, sodium	SDM.
*ANTICONSULSANTS, HYPNOTICS, AND SEDATIVES:	
ANTICONSULSANTS (EXCEPT BARBITURATES):	
Aminoglutethimide	CGY.
Carbamazepine	CGY.
Ethosuximide	PD.
Ethotoin	ABB.
Methsuximide	PD.
Phensuximide	PD.
Phenytoin	PD.
Phenytoin, sodium	PD.
Valproate, calcium	PD.
Valproic acid	ABB.
BARBITURATES:	
Amobarbital	GAN.
Amobarbital, sodium	GAN.
Butabarbital	ABB, GAN.
Butabarbital, sodium	ABB, GAN.
Butalbital	GAN.
Butalbital, sodium	GAN.
Hexobarbital	GAN.
Mephobarbital	GAN, SDW.
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.
Cardromal	PD.
Ethchlorvynol	ABB.
Glutethimide	CGY, GAN.
*ANTIDEPRESSANTS:	
Amitriptyline	MRK.

TABLE 2.--MEDICINAL CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

MEDICINAL CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
*CENTRAL DEPRESSANTS AND STIMULANTS--CONTINUED	
*ANTIDEPRESSANTS--CONTINUED	
Amitriptyline hydrochloride	MRK, PD.
Doxepin hydrochloride	PFZ, SK.
Imipramine hydrochloride	CGY.
Maprotiline hydrochloride	CGY.
Nortriptyline hydrochloride	LIL.
*ANTITUSSIVES:	
Benzonate	AMD, CGY.
Caramiphen edisylate	SK.
Carbetapentane citrate	PFZ.
*Codeine	MAL, MRK, PEN.
Dextromethorphan hydrobromide	HOF.
Hydrocodone bitartrate	MAL, MRK.
Noscapine	MAL, PEN.
*Thebaine	MAL, MRK, PEN.
*TRANQUILIZERS:	
PHENOTHIAZINE DERIVATIVES:	
Acetophenazine maleate	SCH.
Chlorpromazine hydrochloride	SK.
Fluphenazine hydrochloride	SCH.
Perphenazine	SCH.
Prochlorperazine edisylate	SK.
Prochlorperazine maleate	SK.
Promazine hydrochloride	WYT.
Promethazine hydrochloride	WYT.
OTHER TRANQUILIZERS:	
Buclicazine hydrochloride	PFZ.
Chlormezanone	SDW.
Clorazepate dipotassium	ABB.
Halazepam	GAN.
Haloperidol	SRL.
Hydroxyzine hydrochloride	PFZ.
Hydroxyzine pamoate	PFZ.
Loxazepam	WYT.
Oxazepam	WYT.
Prazepam	PD.
Temazepam	WYT.
Thiothixene hydrochloride	PFZ.
*OTHER CENTRAL DEPRESSANTS AND STIMULANTS:	
*AMPHETAMINES:	
Amphetamine	ARN.
Amphetamine sulfate	ARN.

TABLE 2.--MEDICINAL CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER,
1982--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	
Dextroamphetamine	ARN, SK.
Dextroamphetamine sulfate	ARN, SK.
Methamphetamine	ARN.
Methamphetamine hydrochloride	ARN.
GENERAL ANESTHETICS:	
Enflurane	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.
Deanol bitartrate	AMD.
Diethylpropion hydrochloride	BKC.
Methylphenidate hydrochloride	CGY.
Mikethamide	CGY.
Phendimetrazine tartrate	GAN.
Phentermine	HEX.
SKELETAL MUSCLE RELAXANTS:	
Chlorphenesin carbamate	UPJ.
Cyclobenzaprine hydrochloride	MRK.
Methocarbamol	LLI.
Orphenadrine citrate	PD, RIK.
Succinylcholine chloride	ABB, BUR.
Tubocurarine	ABB.
* DERMATOLOGICAL AGENTS:	
Allantoin	HFT.
Aluminum phenolsulfonate	SAL.
Ammonium phenolsulfonate	SAL.
Salicylic acid	DOW, MON.
Zinc phenolsulfonate	MAL, SAL.
* EXPECTORANTS AND MUCOLYTIC AGENTS:	
Ethylenediamine dihydrochloride	DPM, MAG, WHL.
Guaifenesin	LLI.
Iodinated glycerol	X.
Potassium guaiacolsulfonate	HM.

TABLE 2.--MEDICINAL CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

MEDICINAL CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
* GASTROINTESTINAL AGENTS AND THERAPEUTIC NUTRIENTS:	
GASTROINTESTINAL AGENTS:	
*CHOLINE CHLORIDE (ALL GRADES):	
Choline chloride (animal feed grade)-	HFT, IMG, NUT, TMH.
Choline chloride (medicinal grade)-	HFT.
OTHER GASTROINTESTINAL AGENTS:	
Betaine hydrochloride-	HFT.
Calcium polycarbophil-	LLI.
Choline bicarbonate-	HFT, IMG.
Choline bitartrate-	HFT.
Choline citrate-	HFT.
Choline dihydrogen citrate-	HFT.
Choline salts, all other-	WAY.
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:	
Copper gluconate-	PFZ.
Magnesium gluconate-	PFZ.
Manganese gluconate-	PFZ.
Potassium gluconate-	PFZ.
Zinc gluconate-	PFZ.
*HORMONES AND SYNTHETIC SUBSTITUTES:	
ANABOLIC AGENTS AND ANDROGENS:	
Fluoxymesterone-	UPJ.
Methyltestosterone-	CGI, UPJ.
Testosterone-	UPJ.
Testosterone cypionate-	UPJ.
Testosterone enanthate-	UPJ.
Testosterone propionate-	UPJ.
Zeranol-	INC.
CORTICOSTEROIDS:	
Beclomethasone-	SCH.
Betamethasone-	SCH.
Betamethasone dipropionate-	SCH.

TABLE 2.--MEDICINAL CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

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

TABLE 2.--MEDICINAL CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

MEDICINAL CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
*HORMONES AND SYNTHETIC SUBSTITUTES--CONTINUED	
THYROID HORMONE AND ANTHYROID AGENTS--CONTINUED	
Thyroglobulin	NEP.
Thyroid	ARP.
OTHER HORMONES AND SYNTHETIC SUBSTITUTES:	
Calcitonin	ARP.
Corticotropin	ARP, ORG.
Dinoprost tromethamine	UPJ.
Glucagon	LIL.
Gonadorelin	BIB.
Insulin	LIL.
Oxytocin	PD.
*LOCAL ANESTHETICS:	
Benzocaine	WYK.
Butamben	ABB, WYK.
Butamben picrate	ABB.
Chloroprocaine hydrochloride	ARA.
Cocaine	MRK.
Dibucaine	CGY.
Dibucaine hydrochloride	CGY.
Lidocaine	LEM, SDM, WYK.
Lidocaine hydrochloride	LEM, SDM, WYK.
Mepivacaine	WYK.
Mepivacaine hydrochloride	LEM.
Oxethazaine	WYT.
Pramoxine hydrochloride	ABB.
Procaine hydrochloride	WYK.
*RENAL-ACTING AND EDEMA-REDUCING AGENTS:	
BENZOTHIADIAZINE DERIVATIVES:	
Benzthiazide	PFZ.
Chlorothiazide	MRK.
Hydrochlorothiazide	ABB, CGY, MRK.
Methyclothiazide	ABB.
Trichlormethiazide	SCH.
OTHER RENAL-ACTING AND EDEMA-REDUCING AGENTS:	
Acetazolamide	ACY.
Amiloride hydrochloride	MRK.
Dichlorphenamide	MRK.
Ethacrynic acid	MRK.
Probenecid	MRK.
Spirolactone	SRL.
Sulfinpyrazone	CGY.
Triamterene	GAN, SK.

TABLE 2.--MEDICINAL CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

MEDICINAL CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
* SMOOTH MUSCLE RELAXANTS:	
Aminophylline	GAM, MAL.
Cinnamidine hydrochloride	SDM.
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)	NEP, RIL.
PANTOTHENIC ACID DERIVATIVES:	
d-Calcium pantothenate (medicinal 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.
Riboflavin (animal feed grade)	MRK.
Riboflavin (medicinal grade)	HOF, MRK.
Riboflavin-5-phosphate, sodium	HOF.
Thiamine hydrochloride	HOF.
Thiamine mononitrate	HOF.
VITAMIN C:	
Ascorbic acid	HOF, PFZ.
Sodium ascorbate	HOF, PFZ.

TABLE 2. --MEDICINAL CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

MEDICINAL CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
*VITAMINS--CONTINUED	
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:	
MENADIOLONE SODIUM BISULFITE:	
Menadione sodium bisulfite (anhydrous)	ABB.
Menadione sodium bisulfite (trihydrate)	HET.
OTHER VITAMIN K:	
Menadione	ABB.
* MISCELLANEOUS MEDICINAL CHEMICALS:	
ANTINEOPLASTIC AGENTS:	
Azathioprine	BUR.
Cytarabine	UPJ.
Meraptopurine	BUR.
Streptozocin	PFN, UPJ.
Thioguanine (hemihydrate)	BUR.
Vinblastine sulfate	LIL.
Vincristine sulfate	LIL.
CARDIOVASCULAR AGENTS:	
ANTIHYPERTENSIVE AGENTS:	
Captopril	TRD.
Diazoxide	SCH.
Guanethidine sulfate	CGY.
Hydralazine hydrochloride	CGY.
Methyldopa	MRK.
Metoprolol tartrate	CGY.
Minoxidil	UPJ.
Nadolol	TRD.
Rauwolfia serpentina	PEN.
BIOFLAVONOIDS:	
Hesperidin	SKG.
Lemon bioflavonoid complex	SKG.

TABLE 2.--MEDICINAL CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

MEDICINAL CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
* MISCELLANEOUS MEDICINAL CHEMICALS--CONTINUED	
CARDIOVASCULAR AGENTS--CONTINUED	
BIOPHYTONOIDS--CONTINUED	
Naringin	SKG.
Orange-lemon flavonate	SKG.
VASODILATORS:	
Amyl nitrite	BUR, FKE.
Nifedipine	PFZ.
Oxprenolol hydrochloride	CGY.
OTHER CARDIOVASCULAR AGENTS:	
Bevantolol	PD.
Digoxin	BUR.
Disopyramide phosphate	SRL.
Flecainide	RIK.
Procainamide hydrochloride	PD.
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.
Aminohippuric acid	MYK.
Glutaryl-p-nitroaniline (liver function test)	REG.
Metyrapone	CGY.
Phenolsulfonphthalein	HYN.
HEMATOLOGICAL AGENTS:	
Ammonium heparin	ABB, RIK, SPR.
Anisindione	SCH.
Benzalkonium heparin	RIK.
Cellulose, oxidized	EKT.
Dextran	PHR.
Lithium heparin	RIK, SPR.
Sodium heparin	ABB, RIK, SPR.
Warfarin	SDW.
UNCLASSIFIED MEDICINAL CHEMICALS:	
Allopurinol	BUR.
Carbidopa	MRK.
Levodopa	MON.

TABLE 3.--MEDICINAL CHEMICALS: DIRECTORY OF MANUFACTURERS, 1982

ALPHABETICAL DIRECTORY BY CODE

[Names of manufacturers that reported production and/or sales of medicinal chemicals to the U.S. International Trade Commission for 1982 are listed below in the order of their identification codes as used in table 2]

CODE	NAME OF COMPANY	CODE	NAME OF COMPANY
ABB	Abbott Laboratories	MAL	Mallinckrodt, Inc.
ACY	American Cyanamid Co.	MHI	Morton-Thiokol, Inc., Ventron Div.
ADC	Anderson Development Co.	MON	Monsanto Co.
AMD	Cyclo Chemical Corp.	MRK	Merck & Co., Inc.
ARA	Syntex Chemicals, Inc.		
ARN	Arenol Chemical Corp.	NEP	Nepera Chemical Co., Inc.
ARP	Armour Pharmaceutical Co.	NES	Ruetgers-Nease Chemical Co.
ARS	Arsynco, Inc.	NOR	Norwich Eaton Pharmaceutical, Inc.
		NUT	Nutris, Inc.
BAS	BASF Wyandotte Corp.		
BAX	Baxter Travenol Laboratories, Inc.	OH	Ohio Medical Anesthetics
BCA	Beca Products, Inc.	OMS	E.R. Squibb & Sons, Inc.
BEE	Beecham, Inc., Beecham Laboratories Div.	OPC	Orbis Products Corp.
BIB	Beckman Instruments, Inc., Bioproducts Operations	ORG	Organics, Inc./LaGrange Laboratories, Inc.
BKC	J.T. Baker Chemical Co.	ORT	Roehr Chemicals, Inc.
BOC	Biocraft Laboratories, Inc.		
BRS	Bristol-Myers Co.	PCL	Polychemical Laboratories, Inc.
BUR	Burroughs-Wellcome Co.	PD	Parke-Davis & Co.
		PEN	CPC International, Inc., Penick Corp.
CGY	Ciba-Geigy Corp.	PFN	Pfanstiehl Laboratories, Inc.
CHT	Chattem Corp.	PFZ	Pfizer, Inc. and Pfizer Pharmaceuticals, Inc.
CLP	Cell Products, Inc.	PHR	Pharmachem Corp.
CPR	Certified Processing Corp.		
		REG	Regis Chemical Co.
DAT	Daitom, Inc.	RDA	Rhone-Poulenc, Inc.
DOW	Dow Chemical Co.	RIK	Riker Laboratories, Inc. Sub. of 3M Co.
DPW	Deepwater Chemical Co., Ltd.	RIL	Reilly Tar & Chemical Corp.
		RLS	Rachelle Laboratories, Inc.
EK	Eastman Kodak Co.:		
EKT	Tennessee Eastman Co. Div.	SAL	Salsbury Laboratories, Inc.
EN	Endo Laboratories, Inc.	SCH	Schering Corp.
		SCP	Henkel Corp.
FKE	Frank Enterprises, Inc.		Sterling Drug Corp.:
FLM	Fleming Laboratories, Inc.	SDH	Hilton Davis Chemical Co. Div.
		SDW	Sterling Organics Div.
GAF	GAF Corp.	SFS	Stauffer Chemical Co., Specialty Div.
GAN	Gane's Chemicals, Inc.	SHC	Shell Oil Co., Shell Chemical Co. Div.
GNF	General Foods Corp., Maxwell House Coffee Div.	SK	SmithKline Beckman Corp., SmithKline Chemicals Div.
		SKG	Sunkist Growers, Inc.
HET	Heterochemical Corp.	SPR	Scientific Protein Laboratories, Inc.
HEX	Hexagon Laboratories, Inc.	SRL	G.D. Searle & Co.
HFT	Syntex Agribusiness, Inc.		
HN	Tenneco, Inc., Tenneco Chemicals, Inc.	TMH	Thompson-Hayward Chemical Co.
HOF	Hoffmann-LaRoche, Inc.	TRD	Squibb Manufacturing, Inc.
HXL	Hexcel Corp., Hexcel Chemical Products	TX	Texaco, Inc.
HYN	Hynson, Westcott & Dunning, Inc.		
		UCC	Union Carbide Corp.
IMC	International Minerals & Chemical Corp.	UPJ	Upjohn Co.
KPT	Koppers Co., Inc.	VTM	Vitamins, Inc.
LEM	Napp Chemicals, Inc.	WAG	West Agro-Chemical, Inc.
LIL	Eli Lilly & Co., U.S. and Puerto Rico	WHL	Whitmoyer Laboratories, Inc.
LLI	Lee Laboratories, Inc.	WTK	Whittaker Corp., Heico Div.
		WTL	Pennwalt Corp., Lucidol Div.
		WYK	Wyckott Chemical Co., Inc.
		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.

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 1982 amounted to 156.4 million pounds. Sales of these materials in 1982 amounted to 112.8 million pounds, valued at \$283.5 million, compared with 118.6 million pounds, valued at \$251.6 million, in 1981. 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 1982 declined by 5.0 percent from the level in 1981 while the quantity of sales declined by 4.9 percent.

Production of cyclic flavor and perfume materials in 1982 amounted to 84.7 million pounds; sales amounted to 65.5 million pounds, valued at \$210.7 million. Individual publishable chemicals in the cyclic group produced in the greatest volume in 1982 were α -terpineol, anethole, and α -terpinyl acetate.

U.S. output of acyclic flavor and perfume materials in 1982 amounted to 71.7 million pounds; sales of these materials amounted to 47.3 million pounds, valued at \$72.9 million. Monosodium glutamate was by far the most important of the acyclic chemicals in 1982, although the data are not publishable. Other important acyclic compounds included linalyl alcohol, citronellol, and linalyl acetate.

TABLE 1.--FLAVOR AND PERFUME MATERIALS: U.S. PRODUCTION AND SALES, 1982

[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 dollars	Per pound
Grand total-----	156,377	112,802	283,545	\$2.51
CYCLIC				
Total-----	84,710	65,489	210,657	3.22
<i>Benzenoid and Naphthalenoid</i>				
Total-----	69,472	54,188	162,292	2.99
4-Allyl-2-methoxyphenol (Eugenol)-----	319	195	778	3.98
4-Allyl-2-methoxyphenol acetate (Eugenol acetate)----	5	...	...	...
Benzyl propionate-----	39	...	...	...
Cinnamyl acetate-----	12	11	77	7.18
2-Ethylhexyl salicylate-----	175	169	449	2.65
Isobutyl phenylacetate-----	31	25	72	2.86
Phenethyl isobutyrate-----	9	6	37	5.81
2-Phenethyl phenylacetate-----	22	13	87	6.46
2-Phenoxyethyl isobutyrate-----	159	178	410	2.31
p-Propenylanisole (Anethole)-----	² 2,677	² 3,276	² 5,287	² 1.61
All other benzenoid and naphthalenoid materials-----	66,024	50,315	155,095	2.87
<i>Terpenoid, Heterocyclic, and Alicyclic</i>				
Total-----	15,238	11,301	48,365	4.28
Cedryl acetate-----	192	180	843	4.67
Guaicwood acetate-----	7	8	53	6.76
Ionones-----	140	101	903	8.94
Methylionones-----	698	489	4,773	9.76
α-Terpineol-----	² 4,290	² 3,504	² 2,675	² 2.76
α-Terpinyl acetate-----	1,140	...	...	...
Vetivenyl acetate-----	22	...	...	...
All other terpenoid, heterocyclic, and alicyclic materials-----	8,749	7,019	39,118	5.57
ACYCLIC				
Total-----	71,667	47,313	72,888	1.54
Citronellyl acetate-----	62	45	215	4.73
Citronellyl formate-----	18	12	96	7.91
Citronellyl isobutyrate-----	8	6	47	8.45
3,7-Dimethyl-cis-2,6-octadien-1-ol (Nerol)-----	...	340	315	.92
3,7-Dimethyl-cis-2,6-octadien-1-ol acetate (Neryl acetate)-----	37	16	81	5.19
3,7-Dimethyl-1,6-octadien-3-ol (Linalool; linalyl alcohol)-----	1,979	2,240	4,737	2.11
3,7-Dimethyl-6-octen-1-ol (Citronellol)-----	2,230	1,721	6,686	3.89
Ethyl heptanoate-----	6	10	54	5.22
Ethyl hexanoate (Ethyl caproate)-----	...	9	35	3.80
Ethyl myristate-----	8	6	25	4.25
Geranyl acetate-----	189	127	589	4.64
Geranyl formate-----	21	...	...	...

See footnotes at end of table.

TABLE 1.--FLAVOR AND PERFUME MATERIALS: U.S. PRODUCTION AND SALES, 1982--CONTINUED

FLAVOR AND PERFUME MATERIALS	PRODUCTION	SALES		
		QUANTITY	VALUE	UNIT VALUE ¹
ACYCLIC--Continued	1,000 <i>pounds</i>	1,000 <i>pounds</i>	1,000 <i>dollars</i>	<i>Per pound</i>
N-Octyl acetate-----	6	4	20	\$4.25
Rhodinol-----	6	...	...	...
Undecanal-----	11	...	...	...
All other acyclic materials-----	67,086	42,777	59,988	1.40

¹Calculated from the unrounded figures.²Estimated.

TABLE 2.--FLAVOR AND PERFUME MATERIALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1982

(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-ethnycyclohexane	GIV.
p-Allylanisole	SCM, X.
Allyl anthranilate	RT.
4-Allyl-1,2-dimethoxybenzene (4-Allylveratrole)	CI.
*4-Allyl-2-methoxyphenol (Eugenol)	BAS, BDS, CI, ELN, GIV, IFF, UNG.
*4-Allyl-2-methoxyphenol acetate (Eugenol acetate)	CI, ELN, IFF.
Allyl phenoxacetate	GIV.
α -Amyl cinnamic aldehyde	IFF.
p-Anisaldehyde	IFF.
Anisole (Methoxybenzene) (Methyl phenyl ether)	OPC.
Anisyl acetate	ELN.
Anisyl butyrate	RT.
Anisyl caproate	RT.
Aurantol	BDS.
Benzaldehyde glyceryl acetal	GIV.
Benzophenone	GMN, PD.
Benzyl acetate	GIV, MON, SBC, TNA.
Benzyl benzoate	GIV, MON, PFZ.
Benzyl butyrate	MON, PFZ.
Benzyl cinnamate	BAS, ELN.
Benzyl formate	BAS.
Benzyl isobutyrate	ELN.
Benzyl isopentyl ether	ELN.
Benzyl isovalerate	GIV.
Benzyl laurate	ELN.
1-(Benzylloxy)-2-methoxy-4-propenylbenzene (Benzyl isoeugenyl ether)	GIV.
Benzyl phenylacetate	ELN, GIV.
*Benzyl propionate	BAS, ELN, SBC.
Benzyl salicylate	BAS, GIV, MON.

TABLE 2.--FLAVOR AND PERFUME MATERIALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

FLAVOR AND PERFUME MATERIALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
CYCLIC--CONTINUED	
BENZENOID AND NAPHTHALENOID--CONTINUED	
4-tert-Butyl-2',6'-dimethyl-3',5'-dinitroacetophenone (Musk ketone)	GIV.
6-tert-Butyl-3-methyl-2,4-dinitroanisole (Musk ambrette)	GIV.
p-tert-Butyl- α -Methylhydrocinnamaldehyde	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.
Carvacrol	GIV.
Cinnamaldehyde	BAS, CI.
Cinnamic aldehyde dimethyl acetal	CI.
*Cinnamyl acetate	BAS, ELN, GIV.
Cinnamyl alcohol	BAS.
Cinnamyl butyrate	BAS.
Cinnamyl cinnamate	BAS, FEL.
Cinnamyl nitrile	IFF.
Cinnamyl propionate	ELN.
Cinnamyl tiglate	BAS.
Coumarin	RDA.
Cumyl acetate	IFF.
Cumyl alcohol	IFF.
Cumyl formate	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)	BAS.
3,7-Dimethyl-2,6-octadienyl phenylacetate (Geranyl phenylacetate)	GIV, SBC.
α , α -Dimethylphenethyl acetate	IFF.
α , α -Dimethylphenethyl alcohol	IFF.
α , α -Dimethylphenethyl butyrate	IFF.
Dimethyl phenylethyl carbinol	IFF.
Dimethyl phenylethyl carbonyl acetate	IFF.
Diphenylmethane (Benzylbenzene)	PD.
p-Ethoxybenzaldehyde	GIV.
2-Ethoxynaphthalene	GIV.
Ethyl anthranilate	BAS.
Ethyl benzoate	ELN.
Ethyl cinnamate	ELN.
Ethyl- α , β -epoxy- β -methylhyrocinnamate	ELN.
*2-Ethyl hexyl salicylate	ELN, FEL, OPC.

TABLE 2.--FLAVOR AND PERFUME MATERIALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

FLAVOR AND PERFUME MATERIALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
CYCLIC--CONTINUED	
BENZENOID AND NAPHTHALENOID--CONTINUED	
Ethyl phenylacetate	ELN, GIV, OPC.
Ethyl salicylate	BAS.
Geranyl benzoate	GIV.
α-Hexylcinnamaldehyde	CI, IFF.
Hexyl salicylate	IFF.
Hydratropaldehyde	GIV, IFF.
Hydratropaldehyde, dimethyl acetal	GIV, IFF.
Hydrocinnamic acid	ELN.
Hydrocoumarin	GIV.
Hydroxycitronellal methyl anthranilate	BAS, GIV, IFF.
4-Hydroxy-3-ethoxybenzaldehyde (Ethylvanillin)	MON, 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.
*Isobutyl phenylacetate	BAS, ELN, OPC.
Isobutylquinoline	IFF.
Isobutyl salicylate	BAS.
Isopentyl benzoate	GIV.
Isopentyl salicylate	BAS, MON.
Isopropylbenzaldehyde (Cumaldehyde)	GIV.
p-Isopropyl-α-methylhydrocinnamaldehyde (Cyclamen aldehyde)	RDA.
p-Isopropyl-α-methylhydrocinnamyl alcohol	GIV.
l-Limonene	SCW.
linalyl anthranilate	BDS, FMT.
linalyl benzoate	GIV.
p-Mentha-1,8-diene (Limonene)	IFF, SKG.
p-Methoxybenzyl alcohol (Anisyl alcohol)	ELN, GIV, OPC.
o-Methoxy cinnamic aldehyde	BAS.
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, X.
p-Methylanisole	GIV, OPC.
Methyl anthranilate	BAS, SW, UNG.
Methyl benzoate	HN, PFW.

TABLE 2.--FLAVOR AND PERFUME MATERIALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED,
IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

FLAVOR AND PERFUME MATERIALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
CYCLIC--CONTINUED	
BENZENOID AND NAPHTHALENOID--CONTINUED	
α -Methylbenzyl acetate (Styralyl acetate)	CI, GIV.
α -Methylcinnamaldehyde	BAS, CI.
Methyl cinnamate	BAS.
6-Methylcoumarin	GIV.
p-Methyl ethyl phenyl glycidate	PFM.
p-Methylhydratropaldehyde	GIV.
1-Methyl-isoheptyl-hexahydro benzaldehyde	GIV.
Methyl N-methylanthranilate	SM.
Methyl phenylacetate	ELM, OPC.
Methyl salicylate	HN, MON.
Musk 89	IFF.
1,1,3,3,5-Pentamethyl-4,6-dinitroindan (Moskene)	GIV.
α -Pentylcinnamaldehyde	BAS, CI.
Phenethyl acetate	BDS, IFF.
Phenethyl alcohol	IFF, OPC.
Phenethyl benzoate	IFF.
Phenethyl formate	ELM, IFF.
*Phenethyl isobutyrate	ELM, GIV, IFF.
Phenethyl isovalerate	BAS, ELM.
*2-Phenethyl phenylacetate	BDS, CI, ELM, GIV, IFF.
Phenethyl propionate	ELM, IFF.
*2-Phenoxyethyl isobutyrate	BAS, ELM, GIV, IFF, OPC.
Phenoxyethyl propionate	IFF, SBC.
Phenylacetaldehyde	GIV.
Phenylacetaldehyde dimethyl acetal	CI, ELM, GIV.
Phenylacetic acid	GIV.
Phenylacetic acid isopentyl ester	GIV.
α -Phenylanisole	GIV.
4-Phenyl-3-buten-2-one	BAS.
Phenylethyl anthranilate	RI.
3-Phenyl-1-propanol (Hydrocinnamic alcohol)	BAS.
3-Phenylpropyl acetate	ELM, GIV.
3-Phenylpropyl cinnamate	BAS.
Piperonal (Heliotropin)	AMB.
*p-Propenylanisole (Anethole)	ARZ, HPC(E), NCI, SCM.
4-Propenyl-1,2-dimethoxybenzene (Methyl isoeugenol)	CI.
p-Propylanisole (Dihydroanethole)	BAS, GIV.
SWEETENERS, SYNTHETIC:	
Saccharin (1,2-Benzisothiazolin-3-one,-1,1-dioxide)	SM.

TABLE 2. -- FLAVOR AND PERFUME MATERIALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

FLAVOR AND PERFUME MATERIALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
BENZENOID AND NAPHTHALENOID--CONTINUED	
SWEETENERS, SYNTHETIC--CONTINUED	
Saccharin, calcium salt	ABB.
Saccharin, sodium salt	SM.
Synthetic sweetener material, all other	SFR.
p-Tolualdehyde	BAS, GIV.
p-Tolylacetaldehyde	GIV.
p-Tolyl acetate	ELN.
p-Tolylphenylacetate	GIV.
Triethanolamine salicylate	RSA.
Trimethylcyclohexyl salicylate	ARS.
All other benzenoid or naphthalenoid chemicals	IFF.
TERPENOID, HETEROCYCLIC, AND ALICYCLIC:	
Acetyl-n-butyl (2,3-Hexanedione)	BAS.
Acetyl cedrene (Vertoflex)	BDS.
Acetyl isovaleryl (5-Methyl-2,3-hexanedione)	BAS.
Acetyl propionyl (2,3-Pentanedione)	BAS.
Allo-ocimene	GIV, IFF, X.
Allyl cyclohexyl propionate	GIV.
Amyl cyclohexyl acetate	IFF.
Amyris acetate	GIV.
Beta methyl ionone coevz	IFF.
Bornyl isovalerate	BAS.
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	BAS.
l-Carvone	SCM.
Carvone oxide	OPC.
β-Caryophyllene	BDS, CI, GIV, SCM.
Caryophyllene acetate	CI.
Caryophyllene epoxide	BDS.
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	BAS, RT.
2-Cyclohexylcyclohexanone	GIV, IFF.

TABLE 2.--FLAVOR AND PERFUME MATERIALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

FLAVOR AND PERFUME MATERIALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
CYCLIC--CONTINUED	
TERPENOID, HETEROCYCLIC, AND ALICYCLIC--CONTINUED	
Cyclohexyl isovalerate	RT.
Dihydro-iso-jasnone	BAS.
Dihydroindicyclopentadienyl acetate (Cyclacet)	BDS, CI, IFF.
Dihydroindicyclopentadienyl isobutyrate	IFF.
Dihydroindicyclopentadienyl propionate (Cyclaprop) (Verdyl propionate extra)	BDS, CI, IFF. IFF, NCI.
Dihydro terpineol	IFF, NCI, SCM.
Dihydroterpinyl acetate	RT.
Furfural acetone	RT.
Furfuryl acetate	RT.
Galaxolide (1,3,4,6,7,8-Hexahydro-4,6,6,7,8,8-hexamethyl-cyclopenta-7-2-benzopyran)	IFF. BAS, ELN, GIV, UNG.
Guaiacwood acetate	BAS, ELN, GIV, UNG.
Guaiene	BAS.
Hexadecanamide	IFF.
3-Hydroxy-2-ethyl-4-pyrone (Ethylmaltol)	IFF.
4-(4-Hydroxy-4-methyl pentyl)-3-cyclohexene-10-carboxaldehyde (Lyral)	PFZ.
3-Hydroxy-2-methyl-4-pyrone (Maltol)	IFF.
4-Hydroxynonan acid, 7-lactone (7-Nonalactone)	PFZ.
Ionone(α - and β -)	ELN.
α -Ionone	BDS, GIV, NCI.
β -Ionone	BDS, GIV, HOF, IFF.
Isoamyl furoate	HOF.
Isobornyl acetate	RT.
Isobornyl methyl ether	NCI, RDA.
Isobornyl propionate	SCM.
Isocamphyl cyclohexanols	ELN.
Isojasnone	GIV.
Isomenthone	BAS.
2-Isopropylcyclohexanol	BAS.
Isopulegyl acetate	GIV.
Jasmal	GIV.
Lavandin, acetylated	IFF.
p-Mentha-1,3-diene (α -Terpinene)	GIV.
p-Mentha-1,4-diene (7-Terpinene)	SCM.
1-p-Mentha-6,8-dien-2-yl acetate (Carvyl acetate)	SCM.
p-Menth-8-en-3-ol (Isopulegol)	BAS.
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.

TABLE 2.--FLAVOR AND PERFUME MATERIALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

FLAVOR AND PERFUME MATERIALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
TERPENOID, HETEROCYCLIC, AND ALICYCLIC--CONTINUED	
d-Menthol	SCM.
dl-Menthol, synthetic	GIV, HAR, NCI, SCM.
l-Menthol, synthetic	HAR, SCM.
Menthone	SCM.
Methyl acetate	GIV.
l-Methyl acetate	SCM.
p-Mentha-6,8-dien-2-06 (Carveol)	BAS.
p-Mentha-6,8-dien-2-one (Carvone)	BAS, OPC.
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.
α -Pinene oxide	VIK.
Rose oxide	BAS.
α -Santalol	GIV.
α -Santalyl acetate	GIV.
Sassafras oil, hydrogenated	GIV.
Terpinene-ol	SCM.
* α -Terpineol	HPC(E), NCI, SCM.
Terpinolene	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	BDS, GIV.
*Vetivenyl acetate	BAS, BDS, GIV, IFF.
All other terpenoid, heterocyclic, or alicyclic flavor and perfume chemicals	HPC(E), IFF.
ACYCLIC	
Acetyl-iso-valeryl	BAS.
Allyl heptanoate	BAS, ELN.
Allyl hexanoate	BAS, ELN.
Allyl isothiocyanate (Synthetic mustard oil)	OPC.
Allyl isovalerate	RT.
Allyl mercaptan	RT.
Allyl octanoate (Allyl caprylate)	RT.
Allyl sulfide	RT.

TABLE 2.--FLAVOR AND PERFUME MATERIALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

FLAVOR AND PERFUME MATERIALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
Ammonium isovalerate	RSA.
3-Bromo-propyl-amine hydrobromide	PFM.
Butter acids	RT.
Butter esters	RT.
Butyl butyrate	BAS.
Butyl butyryl lactate	ARS, ELM, RT.
Butyl undecylenate	GIV, IFF.
Citral dimethyl acetal	CI, IFF.
Citronelllic acid	PFM.
*Citronellyl acetate	BDS, ELM, GIV, IFF, NCI.
Citronellyl butyrate	GIV.
*Citronellyl formate	BDS, ELM, GIV, IFF.
*Citronellyl isobutyrate	ELN, GIV, IFF.
Citronellyl nitxile	CI.
Citronellyl oxycetaldehyde	IFF.
Citronellyl propionate	GIV, IFF.
Crude acetate mixture (Linalyl, geranyl acetates, main components)	X.
Decanal (Capraldehyde)	CI, GIV.
Decyl acetate	GIV.
Diethyl acetal	BAS.
Diethyl sebacate	ELN.
Diethyl succinate	ELN.
Dihexyl fumarate	BAS.
Dihydrocarvone	SCM.
Dihydrolinalool	SCM.
Dihydro myrcenol	IFF, NCI.
Dihydraterpinyl 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, geraniol)	BAS, FEL.
3,7-Dimethyl-2,6-octadienal (Citral a,b)	NCI, SCM.
*3,7-Dimethyl-cis-2,6-octadien-1-ol (Nerol)	BAS, ELM, GIV, IFF, NCI, SCM.
3,7-Dimethyl-trans-2,6-octadien-1-ol (Geraniol)	BAS, ELM, FEL, GIV, IFF, NCI, SCM.
*3,7-Dimethyl-1,6-octadien-3-ol (Linalool)	
(Linalyl alcohol)	BAS, FEL, GIV, IFF, SCM.
*3,7-Dimethyl-cis-2,6-octadienol, acetate (Neryl acetate)	CI, ELM, GIV, NCI.

TABLE 2. -- FLAVOR AND PERFUME MATERIALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1982 -- CONTINUED

FLAVOR AND PERFUME MATERIALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
3,7-Dimethyl-1,6-octadien-3-ol, acetate (Linalyl acetate)	BAS, ELM, GIV, NCI, SCM.
3,7-Dimethyl-1,6-octadien-3-yl isobutyrate (Linalyl isobutyrate)	ELN.
3,7-Dimethyl-1,6-octadien-3-yl propionate (Linalyl propionate)	ELN.
Dimethyloctanal	GIV, SCM.
3,7-Dimethyloctanol-1 [Tetrahydrogeraniol]	GIV, NCI, SCM.
3,7-Dimethyl-3-octanol	GIV, IFF, SCM.
Dimethyloctanyl acetate	IFF.
3,7-Dimethyl-6-octen-1-ol (Citronellal)	BAS, GIV, SCM.
*3,7-Dimethyl-6-octen-1-ol (Citronellol)	BAS, ELM, GIV, IFF, NCI, SCM.
3,7-Dimethyl-7-octenol 70%, 6-octenol isomer 30%	GIV.
Dimyrcetol	IFF.
Ethyl butyrate	BAS, NW.
Ethyl caprate	BAS.
Ethyl crotonate	RT.
Ethyl dihydrolinalool	HOF.
Ethyl formate	BAS, RT.
*Ethyl heptanoate	BAS, ELM, FEL, HOF, RT.
*Ethyl hexanoate	BAS, ELM, NW.
Ethyl isobutyrate	BAS.
Ethyl isovalerate	BAS, ELM.
Ethyl laurate	BAS, ELM.
Ethyl linalool (3,7-Dimethyl-1,6-nonadien-3-ol)	HOF.
Ethyl-2-methyl butyrate	PFM, SCM.
Ethyl-2-methyl-1,3-dioxolane-2-acetate	IFF.
Ethyl-2-methyl pentanoate	PFM.
*Ethyl myristate	ELN, PFM, RT.
Ethyl nonanoate	ELN, PFM, RT.
Ethyl octanoate	BAS, ELM.
Ethyl oxyhydrate	BAS, ELM.
Ethyl propionate	RT.
Ethyl valerate	BAS, NW.
Ethyl linalyl acetate (3,7-Dimethyl-1,6-nonadien-3-ol acetate)	ELN.
*Geranyl acetate	HOF.
Geranyl butyrate	BDS, CI, ELM, FEL, GIV, IFF, NCI, PFM, SCM.
Geranyl crotonate	ELN, GIV.
Geranyl ethyl ether	BAS.
Geranyl formate	IFF.
	BDS, ELM, GIV.

TABLE 2.--FLAVOR AND PERFUME MATERIALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

FLAVOR AND PERFUME MATERIALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
Geranyl isobutyrate	: IFF.
Geranyl isovalerate	: BAS.
Geranyl and methyl tiglate	: FMT.
Geranyl nitrile (Citralva)	: CI, IFF.
Geranyl propionate	: BAS, ELM.
Geranyl tiglate	: BAS.
Glutamic acid, monosodium salt (Monosodium glutamate)	: SFF.
Glyceryl tripropionate	: PFM.
Heptanolide	: BAS.
Hexadecyl acetate	: SBC.
Hexadecyl octanoate	: SBC.
N-hexanal	: SCM.
Hexanoic acid [Caproic acid]	: SCM.
2-Hexenal	: BAS, GIV.
cis-3-Hexen-1-ol	: GIV.
2-Hexenol	: BAS, SCM.
cis-3-Hexen-1-yl acetate	: BDS, GIV.
cis-3-Hexenyl benzoate	: BDS.
cis-3-Hexenyl butyrate	: SCM.
cis-3-Hexenyl salicylate	: BDS.
cis-3-Hexenyl Isovalerate	: SCM.
cis-3-Hexenyl tiglate	: BDS.
Hexyl caproate	: BAS.
Hexyl 2-methylbutyrate	: SCM.
Hydroxycitronellol	: SCM.
7-Hydroxy-3,7-dimethyl-1-octanal (Hydroxycitronellal)	: GIV, OPC, SCM.
7-Hydroxy-3,7-dimethyl octanal, dimethyl acetal (Hydroxycitronellal, dimethyl acetal)	: GIV, IFF.
Hydroxy-2-propanone (Acetol)	: BAS.
Isoamyl caproate	: BAS.
Isoamyl caprylate	: BAS.
Isoamyl propionate	: BAS.
Isobutyl acetate	: BAS, NW.
Isobutyl butyrate	: BAS, NW.
Isodihydro lavandulol	: BAS.
Isodihydro lavandulylacetate	: BAS.
Isodihydro lavandulylaldehyde	: BAS.
Isononyl acetate	: SBC.
Isopentyl acetate (Isoamyl acetate)	: ALD, BAS, ELM, NW, PFM.
Isopentyl butyrate	: BAS, GIV, NW.

ACYCLIC--CONTINUED

TABLE 2.--FLAVOR AND PERFUME MATERIALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

FLAVOR AND PERFUME MATERIALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
Isopentyl formate	BAS, ELN, RT.
Isopentyl isovalerate	BAS, ELN, PFW.
Laureldehyde	BAS, ELN, PFW.
Methoxy citronellal	BAS, GIV.
3-Methyl butyl butyrate	SCM.
2-Methylbutyl isovalerate	BAS.
Methyl butynol	SCM.
3-Methyl butyraldehyde	X.
Methyl crotonate	UCC.
3-Methyl-5-heptanone oxime	BAS, RT.
Methyl hexyl ether	GIV.
Methyl isobutyrate	SCM.
Methyl isovalerate	ALD, PFW.
Methyl-2-methyl butyrate	BAS.
3-Methyl-2-[and]nonene nitrxile	SCM.
Methyl-octyl aldehyde	GIV.
Methylol methyl hexyl ketone	CI.
4-Methyl pentanoic acid	GIV.
Methyl Pentynol	PFW.
Methyl propionate	X.
6-Methyl thiopropionaldehyde	BAS.
Methyl tiglate	RT.
2-Methylundecanal	BAS.
2-Methyl undecanal dimethylacetal	CI, GIV.
Myrcenyl acetate	CI.
Myristaldehyde	IFF.
Nonanal	GIV.
1,3-Nonanediol acetate	CI, GIV.
Nonyl acetate	GIV, SBC.
Nonylenic acid	CI, ELN.
Ocimene	PFW.
Ocimenyl acetate	IFF.
Octanal	IFF.
Octanal dimethylacetal	CI, GIV.
3-Octanol	CI.
3-Octanone (Ethyl amyl ketone)	SCM.
N-Octyl acetate	GIV.
Octyl formate	BAS, ELN, GIV.
Pentadecanone	BAS.
N-Propyl acetate	AIC.
n-Propyl n-butyrate	NW.

ACYCLIC--CONTINUED

TABLE 2.--FLAVOR AND PERFUME MATERIALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

FLAVOR AND PERFUME MATERIALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
Pseudo linalyl acetate (Neobergamate)	IFF.
*Rhodinol	BAS, FEL, GIV, IFF.
Rhodinyl acetate	GIV, 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, X.

TABLE 3.--FLAVOR AND PERFUME MATERIALS: DIRECTORY OF MANUFACTURERS, 1982

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 1982 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.
AIC	Chemsampco, DBA, Albany International Corp., Chemical Div.	NCI	Union Camp Corp., Terpene and Aromatics Div.
ALD	Aldrich Chemical Co., Inc.	NW	Northwestern Chemical Co.
AMB	American Bio-Synthetics Corp.	OPC	Orbis Products Corp.
ARS	Arsynco, Inc.	PD	Parke-Davis & Co.
ARZ	Arizona Chemical Co.	PFW	Hercules, Inc., PFW Div.
BAS	BASF Wyandotte Corp.	PFZ	Pfizer, Inc.
BDS	Biddle Sawyer Corp.	RDA	Rhone-Poulenc, Inc.
CI	Chem-Fleur, Inc.	RSA	R.S.A. Corp.
CWN	Upjohn Co., Fine Chemical Div.	RT	Ritter International
ELN	Elan Chemical Co.	SBC	Scher Chemicals, Inc.
FEL	Felton International, Inc.	SCM	SCM Corp., Organic Chemicals Div.
FKE	Frank Enterprises, Inc.	SFF	Stauffer Chemical Co., Food Ingredients Div.
FMT	Fairmount Chemical Co., Inc.	SFR	Searle Food Resources, Inc.
GIV	Givaudan Corp.	SKG	Sunkist Growers, Inc.
HAR	Haarmann & Reimer Corp.	SW	Sherwin-Williams Co.
HN	Tenneco, Inc., Tenneco Chemicals, Inc.	TNA	Ethyl Corp.
HOF	Hoffmann-LaRoche, Inc.	UCC	Union Carbide Corp.
HPC	Hercules, Inc.	UNG	Ungerer & Co.
IFF	International Flavors & Fragrances, Inc.	VIK	Viking 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 41 reporting companies and company divisions for which permission to publish was not restricted.

STATISTICAL HIGHLIGHTS

Edward J. Taylor, Mildred C. Higgs, and Kenneth R. Kozel
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 1982 are given in table 1. U.S. production of plastics and resin materials in 1982 totaled 38,313 million pounds, or 5.6 percent less than the 40,601 million pounds produced in 1981. Sales in 1982 totaled 32,002 million pounds, valued at \$15,313 million, compared with 36,107 million pounds, valued at \$17,092 million, in 1981.

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 6,141 million pounds in 1982, compared with 7,295 million pounds in 1981. Production of the most important products in 1982 included phenolic resins (1,398 million pounds), amino (or urea and melamine) resins (1,264 million pounds), polyester resins, unsaturated (1,000 million pounds), and alkyd resins (523 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 32,172 million pounds in 1982 (or 84.0 percent of the total output for 1982), compared with 33,306 million pounds in 1981. Production of the most important products in 1982 included polyethylene (12,548 million pounds), vinyl resins (6,619 million pounds), and styrene type materials (5,609 million pounds).

TABLE 1.--PLASTICS AND RESIN MATERIALS: U.S. PRODUCTION AND SALES, 1982

[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	1,000		
	pounds	pounds	1,000	Per
	dry basis ²	dry basis ²	dollars	pound
Grand total-----	38,313,258	32,002,080	15,312,702	\$0.48
Plastics and resin materials, benzenoid ³ -----	11,110,845	9,280,603	6,125,081	.66
Plastics and resin materials, nonbenzenoid-----	27,202,413	22,721,477	9,187,621	.40
THERMOSETTING RESINS				
Total-----	6,141,292	4,934,551	3,026,342	.61
Alkyd resins, total-----	522,944	284,021	245,069	.86
Alkyd-acrylate copolymer resins-----	2,367	1,268	1,706	1.35
Phthalic anhydride type-----	395,323	218,626	195,085	.89
Polybasic acid type-----	55,034	23,015	19,630	.85
Styrenated-alkyds or copolymer alkyds-----	11,201	5,916	5,574	.94
Vinyl toluene alkyds-----	30,930	32,385	19,460	.60
Other copolymer alkyds-----	28,089	2,811	3,614	1.31
Dicyandiamide resins-----	859	752	619	.82
Epoxy resins: ^{4 5}				
Unmodified-----	261,426	243,084	300,643	1.24
Advanced-----	(175,670)	(132,986)	(179,008)	(1.35)
Furfuryl type resins-----	19,572	18,087	13,940	.77
Glyoxal-formaldehyde resins-----	7,996	3,497	2,648	.76
Melamine-formaldehyde resins (an amino resin)-----	175,301	146,835	125,579	.86
Phenolic and other tar acid resins-----	1,397,685	1,019,615	490,261	.48
Polyester resins, unsaturated ⁶ -----	1,000,126	905,624	599,466	.66
Polyether and polyester polyols for urethanes ⁷ -----	1,191,697	1,013,620	601,762	.59
Polyurethane elastomers and plastics products,				
total-----	346,219	253,047	325,161	1.28
Elastomers ⁸ -----	152,812	124,211	179,589	1.45
Plastics-----	193,407	128,836	145,572	1.13
Silicone resins-----	12,675	8,174	40,289	4.93
Urea-formaldehyde resins (an amino resin)-----	1,088,234	937,270	203,901	.22
Other thermosetting resins ⁹ -----	116,558	100,925	77,004	.76
THERMOPLASTIC RESINS				
Total-----	32,171,966	27,067,529	12,286,360	.45
Acrylic resins, total ¹⁰ -----	1,130,765	812,215	779,081	.96
Butyl acrylate-ethyl acrylate copolymers resins-----	21,524	16,464	13,793	.84
Polymethyl methacrylate-----	414,100	269,676	255,000	.95
Thermosetting acrylics-----	79,725	11,317	14,540	1.28
Other acrylics-----	615,416	514,758	495,748	.96
Engineering plastics ¹¹ -----	556,462	409,156	677,407	1.66
Fluorocarbon resins-----	27,596	26,143	177,720	6.80
Petroleum hydrocarbons resins-----	282,732	261,586	124,410	.48
Polyamide resins, total-----	263,726	242,298	370,605	1.53
Nylon type ^{11 12} -----	214,340	198,336	319,716	1.61
Non-nylon type-----	49,386	43,962	50,889	1.16

See footnotes at end of table.

TABLE 1.--PLASTICS AND RESIN MATERIALS: U.S. PRODUCTION AND SALES, 1982--CONTINUED

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
THERMOPLASTIC RESINS--Continued				
Polyester resins, saturated, total ^{10 43}	850,471	562,939	351,229	\$0.62
Polyethylene terephthalate (PET)	744,882	505,562	285,748	.57
Polybutylene terephthalate (PBT) and other polyesters, saturated	105,589	87,377	65,481	1.41
Polyethylene resins total	12,548,010	10,460,030	3,632,013	.35
Specific gravity 0.940 and below	7,698,619	6,187,751	2,087,828	.34
Specific gravity over 0.940	4,849,391	4,272,279	1,544,186	.36
Polypropylene resins	3,514,975	3,163,869	1,186,453	.38
Polyterpene resins	30,567	28,903	19,911	.69
Rosin modifications, total	388,188	324,849	175,628	.54
Modified rosins (unesterified)	253,805	197,307	77,873	.39
Modified rosin esters	106,113	94,852	76,482	.81
Rosin esters, unmodified (Ester gums)	28,270	32,690	21,273	.65
Styrene plastics materials, total	5,608,560	4,775,286	2,647,213	.55
Acrylonitrile-butadiene-styrene terpolymer (ABS) resins	820,395	751,753	593,310	.79
Expandable polystyrene beads	559,089	555,503	305,565	.55
Rubber modified polystyrene	1,058,750	1,140,877	476,929	.42
Straight polystyrene	1,797,535	1,326,883	541,874	.41
Styrene-acrylonitrile copolymers resins (SAN)	297,116	166,821	110,907	.66
Styrene-butadiene latexes	475,748	450,209	281,480	.63
All other styrene latexes	53,837	53,464	27,826	.52
All other styrene plastics materials ¹⁴	546,090	329,776	309,322	.94
Vinyl resins, total ¹⁵	6,619,208	5,720,631	1,809,824	.32
Polyvinyl acetate ¹⁶	531,144	463,739	265,186	.57
Polyvinyl alcohol ¹⁷	...	120,339	108,423	.90
Polyvinyl chloride and copolymers	5,397,206	4,712,026	1,146,362	.24
Polyvinylidene chloride latex resins	23,645	22,611	17,126	.76
Vinyl acetate-acrylate copolymers	251,145	232,169	91,829	.40
Other vinyl and vinylidene resins ¹⁸	416,068	169,747	180,898	1.07
All other thermoplastic resins ¹⁹	350,706	279,624	334,866	1.20

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 benzenoid plastics and resin materials as defined in part 1 of schedule 4 of the Tariff Schedules of the United States (TSUS); also includes urethane type elastomers which are not defined in part 1 of schedule 4 of the TSUS.

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

⁵Data 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.

⁶Polyester 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.

⁷In 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.

⁸The 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.

⁹Includes acetone-formaldehyde resins, alkyl resins, polybutadiene resins, thiourea resins, and certain other thermosetting resins.

Footnotes--Continued

¹⁰Does not include production or sales for fiber use.

¹¹Engineering 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.

¹²Statistics for nylon 6 and nylon 6/6 which are used plastic applications (e.g., molding, etc.) are included here.

¹³Statistics 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.

¹⁴Includes data for α -methyl styrene polymers, methyl methacrylate-butadiene-styrene (MBS) resins, styrene-divinylbenzene copolymer resins, styrene-maleic anhydride copolymers resins, styrene-methyl methacrylate copolymers resins, and other styrene copolymers.

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

¹⁶Data 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.

¹⁷Production and sales do not include polyvinyl alcohol used as a reactive intermediate for polyvinyl butyral or other vinyl resins.

¹⁸Includes polyvinyl alcohol (production only), polyvinyl butyral, and polyvinyl formal.

¹⁹Includes cellulose plastics, coumarone-indene 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 REPORTED, IDENTIFIED BY MANUFACTURER, 1982

[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-	CPV, FRE, MNP, OBC, SCM.
Alkyl phenol-	X.
*phthalic anhydride type alkyd resins	ACO, ASH, AZS, BAK, BAL, BEN, BLC, BRU, CEI, CEL, CGI, CJO, CPV, DEG, DRC, DRR, DSO, EM, FUL, FMO, FOC, FRE, GAI, GEI, GRV, HAN, ICF, JOB, JSC, KMP, LIC, MCC, MID, MNP, NCP, OBC, PPG, PRT, RCI, REL, RH, SCM, SCN, SDH, SKT, SM, STT, SW, USS, X, X.
*polybasic acid type alkyd resins	ACY, BEN, CEI, CJO, CPV, DEG, DSO, DUP, EM, FJI, FMO, FOC, FRE, GEI, GRV, HAN, ICF, IOV, MCC, PER, PPG, RCI, REL, SCM, SKT, STT, SW.
*Styrenated-alkyds, or copolymer alkyds	ACY, CJO, CPV, DSO, EM, FRE, GEI, GRV, HAN, MCC, MRT, REL, SCM, SKT, SM, STT, SW.
*vinyl toluene alkyds	BLC, CGI, CPV, CSD, FJI, FRE, GEI, JOB, MCC, MNP, OBC, PPG, PRT, REL, SCM, STT, SW.
*Alkyd copolymers, all other	CGL, DEG, DSO, DUP, GEI, LIC, MCC, OBC, PPG, PRT, SM.
AMINO RESINS:	
Dicyandiamide resins	APX, CNP, ECC, JSC, STC, VPC.
*Melamine-formaldehyde resins	ACY, AUX, BOR, CBD, CEL, CGL, CPV, DGO, DRC, FMO, GAI, GP, GRV, HAN, ICF, JSC, LIC, MID, MNP, MON, NVH, OCF, PKP, PLS, PMC, PPG, PPL, PST, QCP, RCI, REL, SIM, SM, SNW, STC, WPG, WRD.
Thiourea resins-	APX, CMP.
*Urea-formaldehyde resins	ACY, APX, AUX, BOR, CBD, CBM, CEL, CGL, CMP, CPV, DAN, DSO, GAF, GOC, GP, GRV, JSC, MMM, MNP, MON, NCJ, PC, PKP, PMC, PPG, PPL, PST, RCI, REL, SAC, SM, SNW, SOR, SYT, USM, VAL, VPC, X, X.
Amino resins, all other	BAK.
*EPOXY RESINS:	
*Epoxy, resins advanced-	ASH, AZS, BEN, CEI, CEL, CGL, CGY, CJO, CNI, FMO, GAI, GE, GRV, ICF, ISM, LIC, MCC, MID, MMM, MRT, OBC, OCF, PPG, RCI, SCM, SCN, SM, STT, SW, WLN.
*Epoxy, resins unmodified-	ADC, CEI, CGY, DA, DOW, DSO, EM, GAF, ICF, JOB, PPG, PRT, RCI, SHC, SM, UCC, X.

TABLE 2.--PLASTICS AND RESIN MATERIALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

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

TABLE 2.--PLASTICS AND RESIN MATERIALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--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	
Methyl methacrylate-2-ethyl hexyl-	DSO.
Other copolymer resins of acrylic and/or methacrylic acid esters-	ACO, AZS, DRB, DRC, FIH, FMO, GAF, ICF, JNS, JSC, NSC, PPG, PRT, PYT, RAS, REL, RH, SCP, SM, STT, SYT, UCC, VAL, WTC.
HOMOPOLYMER RESINS OF ACRYLIC AND/OR METHACRYLIC ACID RESINS:	
Polyethyl methacrylate	TX.
Polymethyl methacrylate (PMMA)-	ACY, CTP, CYR, DUP, ICF, IOC, JOB, MRT, PKL, PKL, PPG, RH, SAR, SNW, STC, TX, USS.
Other homopolymer resins of acrylic and/or methacrylic acid esters-	CPV, CYR, GLC, GRV, PPG, PVI, PYT, RH, SAR, SW, UOC.
Thermosetting acrylate resins-	CEL, CHP, CPV, DSO, DUP, EFH, FMO, FRE, GAI, HAN, ICF, MID, OBC, PPG, SCM, VAL, VPC.
* CELLULOSE PLASTICS AND RESINS:	
Cellulose acetate-	EKT.
Cellulose acetate butyrate	EKT.
Cellulose acetate propionate	EKT.
Cellulose nitrate-	ICF, X.
Ethyl cellulose-	X.
Cellulose plastics, all other	DOM.
Coumarone-indene resins-	HPC, NEV.
* ENGINEERING PLASTICS:	
Acetal resins-	CEL, DUP, MCC, MNP, PPG, WPG.
Polycarbonate resins	GE, MOB.
Polyimides and amide-imide polymers-	AMO, DUP, EW, GE, GEI, PDI.
Polyphenylene oxide type resins-	GE, MON.
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, DA, EKX, ENJ, GYR, HPC, ICF, LIL, MCC, NEV, RCI, RNL, SCM.
Phenoxy (R) resin (other than for coating and adhesives)	UCC.
* POLYAMIDE RESINS:	
*Non-nylon type, polyamide resins-	AZS, CBY, COO, EFH, ENR, HYC, LIL, NCI, OBC, PAC, S, SCP, SM, SNW, STC, USM.

TABLE 2.--PLASTICS AND RESIN MATERIALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

PLASTICS AND RESIN MATERIALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
THERMOPLASTIC RESINS--CONTINUED	
POLYAMIDE RESINS--CONTINUED	
Nylon type ,polyamide resins	APP, AZS, BCM, CEL, CTR, DGO, DUP, FRF, HST, MON, POL, RSN, SCP, USM, ENO, SHC.
Polybutylene type resins	GAF, GE, USM.
POLYESTER RESINS, SATURATED:	
*Polybutylene terephthalate(PBT)	COO, DUP, EK, EKT, GEI, GYR, HST, ICI, MMM, MRT, SNW, USM.
*Polyethylene terephthalate (PET)	CXI, DGO, DUP, EKT, FMO, GAI, HYC, ICI, LIL, MNP, SCM.
Polyester resins, saturated, all other	CPX, NSC.
POLYETHYLENE AND COPOLYMERS RESINS:	
Ethylene-vinyl acetate (EVA) copolymer resins	APP, ATR, CBN, CPX, DOM, DUP, EKX, ELP, ENJ, GOC, NWP, SLT, SM, SNW, UCC, USI, X.
*Specific gravity 0.940 and below	ELP, ENJ, PLC.
*Specific gravity 0.940 and below	APP, AMO, ATR, CBN, CPX, DOW, DUP, ENJ, GOC, HPC, MON, PLC, SLT, UCC, USI.
*Specific gravity over 0.940	HPC, MON.
Other ethylene copolymer resins	AMO, ATR, EKX, ELP, ENJ, GOC, HPC, NWP, PFZ, PLC, SHC, SLT, USS.
Polyphenyl aromatic ester resins	ARZ, CBY, HPC, RCI, SCN.
*Polypropylene polymer and copolymer resins	ARZ, CJO, DPP, FJI, HPC, MON, NCI, SYL.
*Polyterpene resins	BAK, CBY, DPP, EW, FRP, GRV, HPC, LIL, MCC, NCI, RCI, SCM, SKT, STC, SYL.
*ROSIN MODIFICATIONS:	
*Modified rosin (Unesterified)	ARZ, CBY, DA, DPP, FRP, HPC, MCC, NCI, RCI, SDH, SKT, SYL.
*Modified rosin esters	
*Rosin esters, unmodified (Ester gums)	
* STYRENE TYPE PLASTICS MATERIALS:	
*Acrylonitrile-butadiene-styrene (ABS) terpolymer resins	CSD, DOM, GOR, GRD, GYR, MCB, MON, USS.
α-Methyl styrene polymers	AMO, JNS.
*Styrene-acrylonitrile copolymer resins (SAN)	BFG, CSD, DOW, MON, RCI, SKT.
POLYSTYRENE:	
*Expandable polystyrene beads	ATR, BAS, CSD, SM, TXS.
*Rubber modified polystyrene	ATR, CSD, DOW, GOR, MON, PLR, SHC, SM, STT.
*Straight polystyrene	AEP, AMO, ATR, CSD, DOW, GOC, GOR, HGC, HST, MMM, MON, PLR, SHC, SM, TXS.
STYRENE LATEXES:	
*Styrene-butadiene latexes	DOM, GNT, GRD, GYR, PLR, UOC.
*Styrene latexes, all other	ADC, DOW, DSO, GNT, GRD, HKP, MON, PVI, UCC, UOC.
OTHER STYRENE COPOLYMERS:	
Methyl methacrylate-butadiene styrene (MBS) resins	CYR, MCB.

TABLE 2.--PLASTICS AND RESIN MATERIALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

PLASTICS AND RESIN MATERIALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
THERMOPLASTIC RESINS--CONTINUED	
OTHER STYRENE COPOLYMERS:	
Styrene-allyl alcohol copolymer resins	HPC.
Styrene-divinylbenzene copolymer resins	RH.
Styrene-maleic anhydride copolymer resins	ATR, MON.
Styrene-methyl methacrylate copolymer resins	RCD.
Vinyl pyrrolidone styrene copolymer	GAF.
Styrene copolymers, all other	ARZ, BFG, DA, DOM, DSO, DUP, GYR, IOC, JNS, MON, MRT, PLC, USP, USS.
VINYL RESINS:	
*Polyvinyl acetate resins	AIP, AZS, BAL, BOR, DAM, DSO, FJI, FLH, FLN, GLC, GRD, JOB, JSC, MCC, MNP, MON, NSC, PYT, RCI, SCM, SCO, UCC, UOC, X, X.
*Polyvinyl alcohol resins	AIP, DUP, MON
Polyvinyl butyral resins	DUP, MON.
Polyvinyl formal resin	EM, MON.
Vinyl acetate-acrylate copolymers	ACO, DSO, FLN, KMP, NCJ, NTC, OBC, PYT, SCM, SPC, UCC, UOC.
*POLYVINYL CHLORIDE AND COPOLYMER RESINS:	
Polyvinyl chloride copolymer resins	CNI, GNT, HKP, HN, SFP.
Polyvinyl chloride homopolymer resins	AIP, BFG, BOR, CNT, CO, DA, GNT, GP, GRA, GYR, HKP, HN, KYS, PNT, SFP, SHT, TNA, UCC.
Polyvinylidene chloride latex resins	BFG, DOW, GRD, MRT, UOC.
Vinyl resins, all other	DOW, DSO, DUP, PNT, RH, SCM, UCC.
Thermoplastic resins, all other	ARA, EKX, MOB, MON, MRT, RAS, SW, UOC, X.

TABLE 3.--PLASTICS AND RESIN MATERIALS: DIRECTORY OF MANUFACTURERS, 1982

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 1982 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 Group	CPX	Chemplex Co.
ACR	CPC International, Inc., Acme Resin Corp.	CRC	California Resin & Chemical Co., Inc.
ACO	Adco Chemical Co.	CSD	Cosden Oil & Chemical Co.
ACY	American Cyanamid Co.	CTP	Continental Polymers, Inc.
ADC	Anderson Development Co.	CTR	Custom Resins Div. of Bemis Co., Inc.
AEP	A & E Plastics Corp.	CWN	Upjohn Co., Fine Chemical Div.
AFP	Allied Corp., Allied Fibers & Plastics Co. Div.	CYR	CYRO Industries, Inc.
AIP	Air Products & Chemicals, Inc.	CXI	Chemical Exchange Industries, Inc.
AMO	Standard Oil Co. (Indiana)	DA	Diamond Shamrock Corp.
APH	The Alpha Corp. of Tennessee	DAN	Dan River, Inc., Chemical Products Div.
APX	Apex Chemical Co., Inc.	DCC	Dow Corning Corp.
ARA	Syntex Chemical, Inc.	DEG	Degan Oil & Chemical Co.
ARK	Armstrong World Industries, Inc.	DGO	Day-Glo Color Corp.
ARO	Arnco	DNS	Dennis Chemical Co.
ARZ	Arizona Chemical Co.	DOW	Dow Chemical Co.
ASH	Ashland Oil, Inc.	DPP	Dixie Pine Chemicals, Inc.
ATR	Atlantic Richfield Co., Arco Chemical Co.	DRB	The Derby Co., Inc.
AUX	Auralux Corp.	DRC	Dock Resins Corp.
AZS	AZS Corp. & AZS Chemical Corp.	DRR	Delta Resins & Refractory
BAK	Baker International - Magna Corp.	DSO	DeSoto, Inc.
BAL	Dutch Boy, Inc., Consumers Div., Sherwin-Williams Co.	DUP	E.I. duPont de Nemours & Co., Inc.
BAS	BASF Wyandotte Corp.	ECC	Eastern Color & Chemical Co.
BCM	Belding Cortecelli Industries	ECP	Eaton Corp., EPP Div.
BEN	Bennett's	EFH	E.F. Houghton & Co.
BFG	B.F. Goodrich Co., B.F. Goodrich Chemical Group	EK	Eastman Kodak Co.:
BLC	Ball Chemical Co.	EKT	Tennessee Eastman Co. Div.
BME	Bendix Corp., FM Div.	EKK	Texas Eastman Co. Div.
BOR	Borden Co., Borden Chemical Co. Div.	ELP	El Paso Chemical Co.
BRU	M.A. Bruder & Sons, Inc.	EMR	Emery Industries Div. of National Distillers & Chemical Corp.
BSC	Cascade Resins, Inc.	ENJ	Exxon Chemical Americas
CBD	Chembond Corp.	EPI	Eagle Pitcher Industries, Inc., Ohio Rubber Co. Div.
CBM	Sohio Chemical Co., Metallurgy Div.	EW	Westinghouse Electric Corp., Insulating Materials Div.
CBN	Cities Service Co., Petrochemical Div.	FJI	Foy-Johnson, Inc.
CBY	Crosby Chemicals, Inc.	FLH	H.B. Fuller Co.
CCS	Colorado Chemical Specialties, Inc.	FLN	Franklin Chemical Industries
CEI	Combustion Engineering, Inc., C-E Cast Products	FMO	Ford Motor Co., Paint Plant
CEL	Celanese Corp., Celanese Specialty Resins	FMP	FMC Corp., Industrial Chemical Div.
CFX	Chemfax, Inc.	FOC	Handschy Industries, Inc., Farac Varnishes & Chemicals
CGL	Cargill, Inc.	FRE	Freeman Chemical Corp.
CGY	Ciba-Geigy Corp.	FRF	Firestone Tire & Rubber Co., Firestone Fibers & Textile Co.
CHC	Carpenter Chemical Co.	FRP	FRP Company
CHP	C.H. Patrick & Co., Inc.	GAF	GAF Corp.
CJO	C. J. Osborn Chemicals, Inc.	GAI	Glasurit America, Inc.
CLK	Clark Oil & Refining Corp.	GE	General Electric Co.:
CLU	Core-Lube, Inc.	GEI	Insulating Materials Products Sec.
CMP	Commercial Products Co., Inc.	GLC	General Latex & Chemical Corp.
CNI	Frye Copysystems, Conap Div.	GNT	General Tire & Rubber Co.
CMT	Certainteed Corp.	GOC	Gulf Oil Corp., Gulf Oil Chemicals Co. U.S.
CO	Conoco, Inc.	GOR	Carl Gordon Industries, Inc.
COO	The Terrell Corp.	GP	Georgia-Pacific Corp.:
CPV	Cook Paint & Varnish Co.		Plaquemine Div.
			Resins Operations

TABLE 3.--PLASTICS AND RESIN MATERIALS: DIRECTORY OF MANUFACTURERS, 1982--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	Guardsman 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.	PC	Proctor Chemical Co.
	Occidental Chemical Corp.:	PDI	Phelps Dodge Industries, Inc., Phelps Dodge Magnet Wire Co. Div.
HKD	Durez Div.	PEL	Pelron Corp.
HKP	PVC Div.	PER	Perry & Derrick Co., Inc.
HN	Tenneco, Inc., Tenneco Chemicals, Inc.	PFZ	Pfizer, Inc.
HPC	Hercules, Inc.	PKL	Plaskolite, Inc.
HST	American Hoechst Corp.:	PKP	Plaskon Products, Inc.
	Hoechst Fiber Industries Div.	PLC	Phillips Petroleum Co.
	Petrochemical Div.	PLN	Disogrin Industries Corp.
HVG	Ametek, Inc., Haveg Div.	PLR	Polysar, Inc.:
HXL	Hexcel Corp., Hexcel Chemical Products		Polysar Latex Div.
HYC	Dexter Corp., Hysol Div.		Resins Div.
		PLS	Plastics Engineering Co.
ICF	Inmont Corp.	PMC	Plastics Manufacturing Co.
ICI	ICI Americas, Inc. & Chemical Specialties Co.	PNT	Pantasote, Inc., Film/Compound Div.
INL	Inland Steel Co., Island Steel Container Co. Div.	PPG	PPG Industries, Inc.
INP	Synair Corp.	PPL	Pioneer Plastics Div. of LOF Plastics, Inc.
IOC	Sybron Corp., Sybron Chemical Div.	PRC	Products Research & Chemical Corp.
IOV	Iovite, Inc.	PRT	Pratt & Lambert, Inc.
IPC	Interplastic Corp.	PSL	Plaslok Corp.
IRI	Ironsides Co.	PST	Perstorp, Inc.
ISM	Isochem Resins 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.
JSC	Sybron Corp., Sybron Chemical Div.		
		QCP	Quaker Chemical Corp.
KMP	Kelly-Moore Paint Co., Inc.	QUN	K.J. Quinn & Co., Inc.
KPT	Koppers Co., Inc.		
KYS	Keysor Corp.	RAB	Raymork Corp.
		RAS	Raffi and Swanson, Inc.
LC	Lord Corp., Chemicals Products Group	RBI	Reeves Brothers, Inc.
LIC	Lilly Industrial Coatings, Inc.	RCD	Richardson Polymer Corp.
LII	Lawter International, Inc.	RCI	Reichhold Chemicals, Inc.
		REL	Reliance Universal, Inc., Louisville Resins Operations
MCA	Masonite Corp., Alpine Div.	RH	Rohm & Haas Co.
MCB	Borg-Warner Corp., Borg-Warner Chemicals	RNL	Resinall Corp.
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		
MID	Dexter Corp., Midland Div.	S	Sandoz, Inc., Colors & Chemicals Div.
MMM	Minnesota Mining & Manufacturing Co.	SAC	Southeastern Adhesives Co.
MNP	The Valspar Corp., 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.	SFP	Stauffer Chemical Co., Plastics Div.
NEV	Neville Chemical Co.	SHC	Shell Oil Co., Shell Chemical Co. Div.
NSC	National Starch & Chemical Corp.	SHT	Shintech, Inc.
NTC	National Casein Co.	SIC	Sohio Chemicals Co., Silmar Div.
NVM	Nevamer Corp.	SIM	Simpson Timber Co.
NWP	Northern Petrochemical Co.	SKT	Textron Inc., Spencer Kellogg Div.
		SLC	Soluol Chem Co., Inc.
		SLT	Soltex Polymer Corp.

TABLE 3.--PLASTICS AND RESIN MATERIALS: DIRECTORY OF MANUFACTURERS, 1982--CONTINUED

CODE	NAME OF COMPANY	CODE	NAME OF COMPANY
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.
SMO	Smooth-On, Inc.	USM	Crown Metro, Inc.
SNW	Sun Chemical Corp., Chemicals Div.	USM	Emhart Corp., Bostik Div.
SOR	MW Manufacturers, Southern Resin Div.	USP	U.S. Polymers, Inc.
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 Fibre Co., Inc., Industrial Plastics Div.	VAL	Valchem Div. of United Merchants & Manufacturers, Inc.
STC	American Hoechst Corp., Sou-Tex Works	VPC	Mobay Chemical Corp., Dye & Pigments Div.
STI	Standard T Chemicals, Inc.	VSV	Valentine Sugars, Inc., Valite Div.
SW	Sherwin-Williams Co.		
SYL	Sylvachem Corp.		
SYT	Synthron, Inc.	WCA	West Coast Adhesives Co.
		WLN	Wilmington Chemical Corp.
TKL	Morton-Thiokol Inc., Specialty Chemicals Div.	WPG	West Point-Pepperill, Inc., Grifftex Chemical Co. Sub.
TNA	Ethyl Corp., Polymer Div.	WRD	Weyerhaeuser Co.
TX	Texaco, Inc.	WTC	Witco Chemical Corp.
TKS	Textstyrene Plastics, Inc.		
UCC	Union Carbide Corp.		
UNO	United-Erie, Inc.		
UOC	Union Oil Co. of California		

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

Bonnie J. Noreen
202-523-1255

Rubber-processing chemicals are organic compounds that are added to natural and synthetic rubber to give them qualities necessary for their conversion into finished rubber goods. In this report, statistics are given for cyclic and acyclic compounds by use--such as accelerators, antioxidants, blowing agents, and peptizers. Data on production and sales of rubber-processing chemicals in 1982 are given in table 1.¹

Production of rubber-processing chemicals as a group in 1982 amounted to 232 million pounds or 17 percent less than the 280 million pounds produced in 1981. Sales of rubber-processing chemicals in 1982 amounted to 154 million pounds, valued at \$264 million, compared with 182 million pounds, valued at \$298 million, in 1981.

The production of cyclic rubber-processing chemicals in 1982 amounted to 208 million pounds, or 16 percent less than the 246 million pounds in 1981. Sales of cyclic rubber-processing chemicals in 1982 totaled 135 million pounds, valued at \$241 million, compared with 158 million pounds, valued at \$271 million, in 1981. Of the total production of cyclic rubber-processing chemicals in 1982, antioxidants, antiozonants, and stabilizers accounted for 63.5 percent and accelerators, activators, and vulcanizing agents for 31.8 percent. Production of antioxidants, antiozonants, and stabilizers, which amounted to 132 million pounds in 1982, included 87 million pounds of amino compounds and 45 million pounds of phenolic and phosphite compounds. Sales of amino antioxidants, antiozonants, and stabilizers in 1982 amounted to 56 million pounds, valued at \$98 million; sales of phenolic and phosphite antioxidants, antiozonants, and stabilizers were 28 million pounds, valued at \$47 million.

Production of acyclic rubber-processing chemicals in 1982 amounted to 24 million pounds, or 27 percent less than the 33 million pounds produced in 1981. Sales in 1982 totaled 19 million pounds, valued at \$23 million, compared with 24 million pounds, valued at \$27 million, in 1981. Dithiocarbamic acid derivatives accounted for 25.4 percent of sales (based on quantity) of acyclic rubber-processing chemicals in 1982.

¹See also 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, 1982

[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-----	231,947	153,513	263,654	\$1.72
CYCLIC				
Total-----	207,740	134,625	240,717	1.79
Accelerators, activators, and vulcanizing agents, total-----	65,985	40,303	73,421	1.82
Aldehyde-amine reaction products-----	280	...	...	...
Thiazole derivatives, total-----	61,480	35,666	59,333	1.66
2,2'-Dithiobis[benzothiazole]-----	6,912	4,823	6,209	1.29
2-Mercaptobenzothiazole-----	...	4,310	3,773	.88
2-Mercaptobenzothiazole, zinc salt-----	890	1,170	1,619	1.38
N-Oxydiethylene-2-benzothiazolesulfenamide-----	...	6,036	12,020	1.99
All other thiazole derivatives-----	53,678	19,327	35,712	1.85
All other accelerators, activators, and vulcanizing agents ^{2 3} -----	4,225	4,637	14,088	3.04
Antioxidants, antiozonants, and stabilizers, total---	132,006	84,258	145,226	1.72
Amino compounds, total-----	87,161	55,867	97,887	1.75
Substituted p-phenylenediamines-----	53,037	30,209	60,283	2.00
All other amino compounds ⁴ -----	34,124	25,658	37,604	1.47
Phenolic and phosphite compounds, total-----	44,845	28,391	47,339	1.67
Nonylphenyl phosphites, mixed-----	12,485	8,081	6,428	.80
Phenolic compounds:				
Phenol, alkylated-----	4,749	2,432	5,278	2.17
Phenol, styrenated, mixtures-----	629	769	870	1.13
All other phenolic and phosphite compounds-----	26,982	17,109	34,763	2.03
All other cyclic rubber-processing chemicals ⁵ -----	9,749	10,064	22,070	2.19
ACYCLIC				
Total-----	24,207	18,888	22,937	1.21
Accelerators, activators, and vulcanizing agents, total-----	6,573	6,778	13,853	2.04
Dithiocarbamic acid derivatives, total ³ -----	5,009	4,789	9,753	2.04
Dibutyldithiocarbamic acid, nickel salt-----	306	...	...	...
Dibutyldithiocarbamic acid, sodium salt-----	201	...	...	...
Dimethyldithiocarbamic acid, zinc salt-----	1,334	1,688	2,496	1.48
All other dithiocarbamic acid derivatives-----	3,168	3,101	7,257	2.34
All other accelerators, activators, and vulcanizing agents ⁶ -----	1,564	1,989	4,100	2.06
All other acyclic rubber-processing chemicals ⁷ -----	17,634	12,110	9,084	.75

¹Calculated from unrounded figures.

²Includes 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.

⁵Includes blowing agents, peptizers, and other cyclic rubber-processing chemicals.

⁶Includes thurams, xanthates, sulfides, and other accelerators, activators, and vulcanizing agents.

⁷Includes 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 EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1982

[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]

RUBBER-PROCESSING CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
*ACCELERATORS, ACTIVATORS, AND VULCANIZING AGENTS:	
*ALDEHYDE-AMINE REACTION PRODUCTS:	
n-Butylaldehyde-aniline condensate	DUP.
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:	
Dibenzylthiocarbamic acid, sodium salt	USR.
Dibenzylthiocarbamic acid, zinc salt	USR.
Dibutylthiocarbamic acid, N,N-dimethylcyclohexylamine salt	RBC.
Piperidinecarbodithioic acid, piperidinium potassium salts, mixed	DUP.
GUANIDINES:	
Dicacetyl 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	ACY, MON(E), USR.
N,N-Diisopropyl-2-benzothiazolesulfenamide	ACY.
2,5-Dimercapto-1,3,4-thiadiazole	VNC.
*2,2'-Dithiobis [benzothiazole]	ACY, BFG, GYR, MON, USR.
*2-Mercaptobenzothiazole	ACY, GYR, MON, USR.
2-Mercaptobenzothiazole, copper salt	ACY.
2-Mercaptobenzothiazole, zinc chloride	DUP.
*2-Mercaptobenzothiazole, zinc salt	ACY, GYR, USR, VNC.
N-Morpholinyl-2-benzothiazolyl disulfide	GYR.
*N-Oxydiethylene-2-benzothiazolesulfenamide	ACY, BFG, USR.
N-Oxydiethylenethiocarbamyl-N'-oxydiethylenesulfenamide	BFG.
ALL OTHER CYCLIC ACCELERATORS, ACTIVATORS, AND VULCANIZING AGENTS:	
Bis(morpholinothiocarbamoyl) disulfide	ACY.

TABLE 2.--RUBBER-PROCESSING CHEMICALS FOR WHICH U. S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1982--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	
Dibenzylamine	HXL, USR.
1,3-Dihydro-2H-benzimidazole-2-thione, zinc salt	VNC.
1,3-Dihydro-4(or 5)-methyl-2H-benzimidazole-2-thione	VNC.
Dimethylammonium hydrogen isophthalate	VNC.
Di-N,N'-pentamethylenethiuram tetrasulfide	VNC.
4,4'-Dithiodimorpholine	MON.
m-Phenylenebismaleimide	DUP.
Tetramethylthiuram disulfide	DUP.
Tetramethylthiuram tetrasulfide	GYR.
p-Toluenesulfonic 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.
Diaxylenediamines, 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	USR.
N-(1-Methylheptyl)-N'-phenyl-p-phenylenediamine	UPM.
N-(1-Methylpentyl)-N'-phenyl-p-phenylenediamine	USR.
OTHER AMINES:	
p-Anilinophenol	BFG.
1,2-Dihydro-6-dodecyl-2,4-trimethylquinoline	MON.
1,2-Dihydro-2,4-trimethylquinoline	BFG, MON, USR.
Diphenylamine-styrenated	GYR.
Diphenylamine, substituted	USR.
Nonyldiphenylamine mixture (Mono-, di-, and tri-)	USR.

TABLE 2.--RUBBER-PROCESSING CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
RUBBER-PROCESSING CHEMICALS	
CYCLIC--CONTINUED	
ANTIOXIDANTS, ANTIOZONANTS, AND STABILIZERS--CONTINUED	
AMINO ANTIOXIDANTS, ANTIOZONANTS, AND STABILIZERS--CONTINUED	
OTHER AMINES--CONTINUED	
Octyldiphenylamine	BFG, USR.
Octyldiphenylamine, alkylated	BFG.
p-(p-Toluenesulfonamido)diphenylamine	USR.
*PHENOLIC AND PHOSPHITE ANTIOXIDANTS AND STABILIZERS:	
PHOSPHITES:	
Alkylaryl phosphites mixed	FER, MCB.
*Nonylphenyl phosphites, mixed	FER, 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.
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:	
o-Cresol, alkylated	PIT.
*Phenol, alkylated	ACY, BFG, GYR, NEV, RCI.
Phenol, hindered	DUP, OMC, USR.
*Phenol, styrenated, mixtures	GYR, NEV, USR.
N-Stearoyl-p-aminophenol	HXL.
BLOWING AGENTS:	
Dinitrosopentamethylenetetramine	OMC.
p,p'-Oxybis(benzenesulfonhydrazide)	USR.
5-Phenyltetrazole	OMC.
p-Toluenesulfonylhydrazide	USR.
p-Toluenesulfonylsemicarbazide	USR.
PEPTIZERS:	
2',2''-Dithiobis(benzanilide)	ACY.
Dixylol disulfides, mixed	PIT.
ALL OTHER CYCLIC RUBBER-PROCESSING CHEMICALS:	
p-tert-Amylphenol sulfide (Tackifier)	PAS.
4-Chloro-2,6-bis(2,4-dihydroxybenzyl)phenol	ICI.
p-Cumylphenyl acetate	KPI(E).

TABLE 2.--RUBBER-PROCESSING CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

RUBBER-PROCESSING CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
CYCLIC--CONTINUED	
ALL OTHER CYCLIC RUBBER-PROCESSING CHEMICALS--CONTINUED	
P-Cumylphenyl benzoate	KPI(E).
N-(Cyclohexylthio)phthalimide	MON.
Diphenyl-4,4'-diphenylmethylenedicarbamate	USR.
N-(2-Methyl-2-nitropropyl)-4-nitrosoaniline	MON.
Nitrosodiphenylamine (Retarder)	GYR.
Rubber-processing chemicals, cyclic, all other	KPI(E).
ACYCLIC	
*ACCELERATORS, ACTIVATORS, AND VULCANIZING AGENTS:	
*DITHIOCARBAMIC ACID DERIVATIVES:	
Activated dithiocarbamate blends	VNC.
Activated dithiocarbamates	VNC.
*Dibutylthiocarbamic acid, nickel salt	DUP, USR, VNC.
*Dibutylthiocarbamic acid, sodium salt	DUP, USR, VNC.
Dibutylthiocarbamic acid, zinc salt	RBC, VNC.
Diethylthiocarbamic acid, cadmium salt and bis(diethylthiocarbamoyl)disulfide, mixture	VNC.
Diethylthiocarbamic acid, selenium salt	VNC.
Diethylthiocarbamic acid, sodium salt	EK, VNC.
Diethylthiocarbamic acid, tellurium salt	VNC.
Diethylthiocarbamic acid, zinc salt	ALC, GYR.
Diisobutylthiocarbamic acid, nickel salt	VNC.
Dimethylthiocarbamic acid, bismuth salt	VNC.
Dimethylthiocarbamic acid, copper salt	VNC.
Dimethylthiocarbamic acid, lead salt	VNC.
Dimethylthiocarbamic acid, nickel salt	VNC.
Dimethylthiocarbamic acid, selenium salt	VNC.
Dimethylthiocarbamic acid, sodium salt and sodium polysulfide	BFG.
*Dimethylthiocarbamic acid, zinc salt	ALC, FMN, GYR, USR, VNC.
THIURAMS:	
Bis(dibutylthiocarbamoyl) disulfide	VNC.
Bis(diethylthiocarbamoyl) disulfide	GYR.
Bis(dimethylthiocarbamoyl) disulfide	GYR.
Bis(dimethylthiocarbamoyl) sulfide	GYR, USR.
N,N'-Dioctadecyl-N,N'-diisopropyl thiuram disulfide	USR.
XANTHATES AND SULFIDES:	
Di-n-butylxantho disulfide	USR.
Diisopropylxantho disulfide	BFG.
Polydiethoxytetrasulfides, mixed	RBC.
Zinc isopropyl xanthate	VNC.

TABLE 2.--RUBBER-PROCESSING CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE EITHER REPORTED, OR ESTIMATED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

RUBBER-PROCESSING CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
ACCELERATORS, ACTIVATORS, AND VULCANIZING AGENTS--CONTINUED	
ALL OTHER ACYCLIC ACCELERATORS, ACTIVATORS, AND VULCANIZING AGENTS:	
p-Aminocyclohexylmethane carbonate	DUP.
n-Butylaldehyde-butylamine condensate	DUP.
Ethylenediamine carbamate	DUP.
Methacrylic acid, zinc salt	USR.
BLOWING AGENTS:	
1,2-Hydrazinedicarboxylic acid, bis(1-methylethyl ester)	USR.
POLYMERIZATION REGULATORS:	
Alkyl mercaptans, mixed	PLC.
n-Decyl mercaptan	PLC.
n-Dodecyl mercaptans	PAS, PLC.
tert-Hexadecyl mercaptan	PLC.
tert-Nonyl mercaptan	PAS.
n-Octyl mercaptan	PLC.
Tetradecyl mercaptan	PAS, PLC.
SHORTSTOPS:	
Dimethyldithiocarbamic acid, potassium salt	ALC, USR.
Dimethyldithiocarbamic acid, sodium salt	ALC, USR, VNC.
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	KPI(E).

TABLE 3.--RUBBER-PROCESSING CHEMICALS: DIRECTORY OF MANUFACTURERS, 1982

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 1982 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.	MCB	Borg-Warner Corp., Borg-Warner Chemicals
ALC	Alco Chemical Corp.	MON	Monsanto Co.
BFG	B. F. Goodrich Co., B. F. Goodrich Chemical Group	NEV	Neville Chemical Co.
DUP	E. I. duPont de Nemours & Co., Inc.	OMC	Olin Corp.
EK	Eastman Kodak Co.	PAS	Pennwalt Corp.
FER	Ferro Corp., Ferro Chemical Div.	PIT	Pitt-Consol Chemical Co.
FMN	FMC Corp., Agricultural 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.	UPM	UOP, Inc., UOP Process Div.
KPI	Kenrich Petrichemicals, Inc.	USR	Uniroyal, Inc., Uniroyal Chemical Div.
		VNC	Vanderbilt Chemical Corp.

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
202-523-0127

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 its original length. U.S. production and sales of elastomers in 1982 are shown in table 1.¹

Total U.S. production² of synthetic rubber in 1982 amounted to 3,842 million pounds, a decrease of 20.8 percent from that produced in 1981. Total sales² of elastomers in 1982 amounted to 2,514 million pounds, a decrease of 22.8 percent from that sold in 1981.

Styrene-butadiene rubber (SBR, or S-type rubber) in 1982 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 20 million pounds of its vinylpyridine sub-type, amounted to 1,893 million pounds in 1982. Solution polymerized butadiene rubber, a stereo type elastomer, was produced domestically in 1982 in the next largest amount--525 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 253 million pounds in 1982; acrylonitrile-butadiene (N-type) rubber, production of which was 98 million pounds; and silicone type elastomers, production of which was 104 million pounds.

Sales of S-type rubber by U.S. producers in 1982 (including its vinylpyridine sub-type) amounted to 912 million pounds. Sales of solution polymerized butadiene rubber amounted to 203 million pounds, and those of ethylene-propylene rubber to 235 million pounds. Sales of N-type rubber in 1982 amounted to 85 million pounds.

¹See 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.

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

TABLE 1.--ELASTOMERS (SYNTHETIC RUBBER):¹ U.S. PRODUCTION AND SALES, 1982

[Listed below are all elastomers (synthetic rubber) for which reported data on production or sales may be published. 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 pounds	1,000 pounds	1,000 dollars	Per pound
Grand total-----	3,842,178	2,514,349	2,024,068	\$0.81
Cyclic-----	2,152,098	1,208,899	683,784	.57
Acyclic-----	1,690,080	1,305,450	1,340,284	1.03
Acrylonitrile-butadiene type (N-type)-----	98,354	85,172	83,707	.98
Ethylene-propylene type-----	253,425	235,388	195,579	.83
Polyacrylate ester type-----	4,094	3,684	7,893	2.14
Polybutadiene (solution polymerized) type-----	524,748	202,825	124,438	.61
Silicone type-----	104,103	170,277	291,841	1.71
Styrene-butadiene type (S-type)-----	1,872,248	906,492	410,558	.45
Styrene-butadiene-vinylpyridine type-----	20,314	5,625	11,198	1.99
All other elastomers ⁴ -----	964,892	904,886	898,854	.99

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, 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, 1982
 [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)	ASU, BFG, CPY, FRS, GNT, GRD, GYR, MMM, PLC, PLR, USR.
*Butadiene-styrene-vinylpyridine	BFG, FRS, GNT, GYR, HKP.
Polyester elastomer	DUP.
Polyisoprene, cyclized	WAY.
Butadiene-styrene type elastomers, other	PLC.
Elastomers, cyclic, all other	HPC, SHC.
ACYCLIC	
*POLYACRYLATE ESTER TYPE:	
Polyacrylate ester, type elastomers	ACY, BFG, DUP.
Polyalkalene oxide	PRC.
POLYALKALENE SULFIDE TYPE:	
Butadiene-acrylic acid-acrylonitrile	ASU.
Polyalkalene sulfide, type elastomers	TKL.
*BUTADIENE-ACRYLONITRILE TYPE (N-TYPE):	
*Butadiene-acrylonitrile type (N-Type)	BFG, CPY, GYR, MMM, USR.
POLYBUTADIENE TYPE (EMULSION):	
Polybutadiene type (Emulsion)	BFG, GYR, LC, TKL.
POLYCHLOROPRENE TYPE (NEOPRENE):	
Epichlorohydrin rubbers	DUP, HPC.
Fluoroelastomers	DUP.
Polychloroprene type (Neoprene)	DKA, DUP.
POLYISOBUTYLENE TYPE:	
Polisobutylene, type elastomers	ENJ, MMM.
ISOBUTYLENE-ISOPRENE TYPE (BUTYL):	
Isobutylene-isoprene type (Butyl)	CBN, ENJ.
*SILICONE TYPE:	
Silicone type elastomers	DCC, SPD, SMS.
STEREOISOMER TYPE:	
*Ethylene-propylene rubber	BFG, CPY, DUP, ENJ, USR.
*Polybutadiene (Solution polymerized)	ASU, BFG, FRS, GNT, GYR, PLC.
Polyisoprene (Solution polymerized)	GYR.
Stereoisomer type, all other	ADC, FRS.
Thermoplastic elastomers, acyclic	ASU.
Elastomers, acyclic, all other	BFG, USR.

TABLE 3.--ELASTOMERS (SYNTHETIC RUBBER): DIRECTORY OF MANUFACTURERS, 1982

ALPHABETICAL DIRECTORY BY CODE

[Names of manufacturers that reported production and/or sales of elastomers to the U.S. International Trade Commission for 1982 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.	HKP	Occidental Chemical Corp., PVC Div.
ADC	Anderson Development Co.	HPC	Hercules, Inc.
ASY	American Synthetic Rubber Corp.	LC	Lord Corp., Chemical Products Group
BFG	B. F. Goodrich Co., B. F. Goodrich Chemical Group	MMM	Minnesota Mining and Manufacturing Co.
CBN	Cities Service Co., Columbian Div.	PLC	Phillips Petroleum Co.
CPY	Copolymer Rubber & Chemical Corp.	PLR	Polysar, Inc., Polysar Latex Div.
DCC	Dow Corning Corp.	PRC	Products Research & Chemical Corp.
DKA	Denka Chemical Corp.	SHC	Shell Oil Co., Shell Chemical Co. Div.
DUP	E. I. duPont de Nemours & Co., Inc.	SPD	General Electric Co., Silicone Products Dept.
ENJ	Exxon Chemical Americas	SWS	Stauffer Chemical Co., SWS Silicones Div.
FRS	Firestone Tire & Rubber Co., Firestone Synthetic Rubber & Latex Co. Div.	TKL	Morton-Thiokol, Specialty Chemical Div.
GNT	General Tire & Rubber Co.	USR	Uniroyal, Inc., Uniroyal Chemical Div.
GRD	W. R. Grace & Co., Polymers & Chemical Div.	VNC	Vanderbilt Chemical Corp.
GYR	Goodyear Tire & Rubber Co.	WAY	Philip A. Hunt Chemical Corp., Organic Chemical Div.

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

STATISTICAL HIGHLIGHTS

Jesse Lawrence Johnson
202-523-0127

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

U.S. production of plasticizers totaled 1,411 million pounds in 1982, a decrease of 24.4 percent from the 1,866 million pounds reported for 1981. Sales of plasticizers totaled 1,316 million pounds, valued at \$741 million, in 1982, compared with 1,567 million pounds, valued at \$894 million, in 1981.

Production of cyclic plasticizers in 1982, which consisted chiefly of the esters of phthalic anhydride, phosphoric acid, and trimellitic acid, amounted to 1,072 million pounds, a decrease of 26.5 percent from the 1,458 million pounds reported for 1981. Sales of cyclic plasticizers in 1982 totaled 1,015 million pounds, valued at \$510 million, compared with 1,209 million pounds, valued at \$622 million, in 1981. The most important cyclic plasticizers were the dioctyl phthalates, with production of 266 million pounds, in 1982.

Production of acyclic plasticizers in 1982 totaled 338 million pounds, a decrease of 16.9 percent from the 407 million pounds reported for 1981. Sales of acyclic plasticizers totaled 302 million pounds, valued at \$231 million, in 1982, compared with 358 million pounds, valued at \$271 million, in 1981. Epoxidized soya oils were the most important acyclic plasticizers in 1982 with production of 85 million pounds.

TABLE 1.--PLASTICIZERS:¹ U.S. PRODUCTION AND SALES, 1982

[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 ²
	1,000 pounds	1,000 pounds	1,000 dollars	Per pound
Grand total-----	1,410,532	1,316,497	740,849	\$0.56
Benzenoid ³ -----	1,170,810	1,101,882	594,022	.54
Nonbenzenoid-----	239,722	214,615	146,827	.68
CYCLIC				
Total-----	1,072,260	1,014,907	509,562	.50
Phosphoric acid esters ⁴ -----	53,747	42,425	60,206	1.42
Phthalic anhydride esters, total-----	951,641	912,617	404,250	.44
Butyl octyl phthalates ⁵ -----	12,280	11,616	10,187	.88
Dibutyl phthalates (including diisobutyl phthalates)-----	17,138	16,529	8,044	.49
Diethyl phthalate-----	16,805	14,586	18,378	1.26
Diisodecyl phthalate ⁶ -----	117,191	102,797	42,731	.42
Dimethyl phthalate-----	5,272	5,514	3,300	.60
Dioctyl phthalates, total ⁶ -----	266,419	240,564	94,736	.39
Di(2-ethylhexyl) phthalate-----	251,067	226,956	89,660	.40
All other dioctyl phthalates-----	15,352	13,608	5,076	.37
Di-tridecyl phthalate-----	20,663	20,225	12,801	.63
Hexyl-n-decyl and n-octyl-n-decyl phthalates-----	34,018	32,553	13,888	.43
All other phthalic anhydride esters-----	461,855	468,233	200,185	.43
Trimellitic acid esters, total-----	32,094	26,844	19,077	.71
Tri(2-ethylhexyl) and triisooctyl trimellitates-----	3,725	6,211	4,058	.65
Trioctyl trimellitates ⁷ -----	18,333	13,879	9,309	.67
All other trimellitic acid esters-----	10,036	6,754	5,710	.85
All other cyclic plasticizers ⁸ -----	34,778	33,021	26,029	.79
ACYCLIC				
Total-----	338,272	301,590	231,287	.77
Adipic acid esters, total-----	70,047	57,977	53,424	.92
Di(2-(2-butoxyethyl)ethyl) adipate-----	1,582	...	...	...
Di(2-ethylhexyl) adipate-----	20,242	21,541	13,150	.61
Diisodecyl adipate-----	1,636	1,545	1,218	.79
Diisopropyl adipate-----	...	786	688	.88
Di-n-octyl adipate-----	608	498	414	.83
All other adipic acid esters-----	45,979	33,607	37,954	1.13
Complex linear polyesters and polymeric plasticizers, total-----	43,539	29,061	27,961	.96
Adipic acid type-----	15,543	11,857	11,019	.93
All other-----	27,996	17,204	16,942	.98
Epoxidized esters, total-----	103,653	98,810	51,294	.52
Epoxidized linseed oils-----	7,380	6,690	5,549	.83
Epoxidized soya oils-----	85,115	80,546	38,685	.48
All other epoxidized esters-----	11,158	11,574	7,060	.61
Isopropyl myristate-----	1,207	1,341	1,343	1.00

See footnotes at end of table.

TABLE 1.--PLASTICIZERS:¹ U.S. PRODUCTION AND SALES, 1982--CONTINUED

PLASTICIZERS	PRODUCTION	SALES		
		QUANTITY	VALUE	UNIT VALUE ²
ACYCLIC--Continued	1,000 pounds	1,000 pounds	1,000 dollars	Per pound
Oleic acid esters, total-----	12,030	11,417	6,462	\$0.57
Butyl oleate-----	1,039	1,012	591	.58
Decyl oleate-----	248	...	...	...
All other oleic acid esters-----	10,743	10,405	5,871	.56
Palmitic acid esters-----	5,056	4,252	3,261	.77
Phosphoric acid esters-----	20,641	18,028	20,739	1.15
Sebacic acid esters, total-----	3,995	3,992	6,001	1.50
Di(2-ethylhexyl) sebacate-----	1,882	2,304	3,301	1.43
All other sebacic acid esters-----	2,113	1,688	2,700	1.60
Stearic acid esters, total-----	8,823	8,816	6,095	.69
n-Butyl stearate-----	5,781	5,595	3,070	.55
Isobutyl stearate-----	379	419	281	.67
Tridecyl stearate-----	1,072	1,059	802	.76
All other stearic acid esters-----	1,591	1,743	1,942	1.11
All other acyclic plasticizers ³ -----	69,281	67,896	54,707	.81

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

⁵Includes butyl-2-ethylhexyl phthalate and other butyl octyl phthalates.

⁶The 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.

⁷Except tri(2-ethylhexyl) and triisooctyl trimellitates.

⁸Includes data for glycol dibenzoates, toluenesulfonamides, tetrahydrofurfuryl oleate, and other cyclic plasticizers.

⁹Includes 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, 1982

[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]

	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
PLASTICIZERS	
CYCLIC	
N-n-Butyl benzenesulfonamide	TNA.
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	DOM.
* PHOSPHORIC ACID ESTERS:	
Diphenyl octyl phosphate	MON.
Tricresyl phosphate	FMP, SFS.
Triphenyl phosphate	EK, MON.
Phosphoric acid esters, all other	FMP, MON, 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, RCI, USS, WTH.
Dicyclohexyl phthalate	PFZ.
Diethyl isophthalate	PFZ.
* Diethyl phthalate	EKT, KF, MON, PFZ.
* Diisodecyl phthalate	CO, DBC, ENJ, HCC, HN, RCI, TEK, USS.
Diisohexyl phthalate	ENJ.
Diisononyl phthalate	ENJ, USS.
Di(2-methoxyethyl) phthalate	EKT.
Dimethyl isophthalate	PFZ.
* Dimethyl phthalate	EKT, KF, PFZ, WTC.
Dinonyl phthalate	ENJ, TEK.
* Di-tridecyl phthalate	EMR, ENJ, HCC, HN, RCI, SM, TEK, USS.
Undecyl phthalate	MON.
Hexyl n-decyl phthalate	CO, ENJ, HN.
Hexyl iso-octyl phthalate	PFZ.
n-Octyl n-decyl phthalate	RCI, TEK, USS.

TABLE 2.--PLASTICIZERS FOR WHICH U. S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982
 --CONTINUED

PLASTICIZERS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
CYCLIC--CONTINUED	
*PHTHALIC ANHYDRIDE ESTERS--CONTINUED	
Phthalic acid, diallyl ester	TMA.
*DIOCTYL PHTHALATES:	
Dicapryl phthalate	WTH.
*Di(2-ethylhexyl) phthalate	CO, DBC, EKT, HCC, HM, RCI, TEK, USS.
Diiso-octyl phthalate	ENJ, RCI, USS.
Di-n-octyl phthalate	EK.
GLYCOL PHTHALATE ESTERS:	
Butyl phthalyl butyl glycolate	PFZ.
*Phthalic anhydride esters, all other	HCC, HN, MON, SCP, TEK.
Tetrahydrofurfuryl oleate	EMR.
Toluenesulfonamide o-, p-mixtures	MON.
*TRIMELLITIC ACID ESTERS:	
*Tri(2-ethylhexyl) trimellitate	DBC, HCC.
Tri-n-hexyltrimellitate	PFZ.
Triisononyl trimellitate	ENJ.
Triisoocetyl trimellitate	ENJ, HAL, PFZ, RCI, TEK, USS.
Trimethyl trimellitate	FER.
Tri-n-octyl n-decyl trimellitate	RCI, USS.
*Triocetyl trimellitate	EKT, HAL, HN, RCI, USS, WTH.
*All other trimellitic acid esters	HCC, MON, TEK, X.
Cyclic plasticizers, all other	HN, NEV, SBC.
ACYCLIC	
*ADIPIIC ACID ESTERS:	
Butylene glycol adipate	HAL.
*Di(2-(2-butoxyethoxy)(ethyl) adipate-	EKT, HAL, RIC, TLK.
Dibutoxyethyl adipate	HAL.
Di(2-ethylhexyl)adipate	DBC, EKT, HAL, HCC, HM, MON, PFZ, RCI, RH, TEK, USS, WM, WTH.
Di-n-hexyl adipate	EKT, MON.
Diisobutyl adipate	HAL, HCC.
*Disodecyl adipate	EMR, HAL, HCC, PFZ, RCI, RH, SM.
Diisononyl adipate	ENJ, USS.
Diiso-octyl adipate	ENJ, HAL, HCC, RCI.
*Diisopropyl adipate	VND, WM, WTH.
Dimethyl adipate	PFZ.
*Di-n-octyl adipate	DA, WM, WTH.
Di-n-propyl adipate	HCC.
Di-tridecyl adipate	EMR, HCC, SM.
Ethylene glycol adipate	HAL.
n-Hexyl n-decyl adipate	TEK.
n-Octyl n-decyl adipate	MON, RCI, RH, USS.

TABLE 2.--PLASTICIZERS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982
--CONTINUED

PLASTICIZERS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
*ADIPIC ACID ESTERS--CONTINUED	
Propylene glycol adipate	HAL.
*Adipic acid esters, all others	HAL, PFZ, 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.
Castor oil maleate	RH.
CITRIC AND ACETYLCITRIC ACID ESTERS:	
Tributyl acetylcitrate	PFZ.
Triethyl acetylcitrate	PFZ.
Triethyl citrate	PFZ.
Citric and acetylcitric acid esters, all other	PFZ, SCP.
*COMPLEX LINEAR POLYESTERS AND POLYMERIC PLASTICIZERS:	
*Adipic acid type complex linear polyesters and polymeric plasticizers	CMB, DUP, HCC, RH, SHX, SM, TEK, WTC, WTH.
*Complex linear polyesters and polymeric plasticizers, all other	DRC, EKX, EMR, HPC, MON, PFZ, RCI, RH, SBC, SCP, SM, VND, WM, WTC.
Poly(2,2,4-trimethyl-1,3-pentanediol) maleate	EKT.
Di(2-(2-butoxyethoxy)ethyl) methane	TKL.
*EPOXIDIZED ESTERS:	
*Epoxydized linseed oils	FER, SWT, UCC, VIK, WTC.
epoxydized pentaerythritol tetraphthalate	UCC.
*Epoxydized soya oils	FER, FMP, RH, SHX, UCC, USS, VIK, WTC.
Epoxydized tall oils	SWT.
Epoxy oleates, mixed	RH.
2-Ethylhexyl epoxytallates	UCC.
Octyl epoxytallates	RH, WTC.
*Epoxydized esters, all other	VIK.
GLUTARIC ACID ESTERS:	
Butylene glycol glutarate	HAL.
Neopentyl 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.
*OLEIC ACID ESTERS:	
2-Butoxyethyl oleate	HAL.
* Butyl oleate	CHL, EMR, GRO, HAL, WTH.

TABLE 2.--PLASTICIZERS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982
--CONTINUED

PLASTICIZERS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
*OLEIC ACID ESTERS--CONTINUED	
* Decyl oleate	SRC, SCP, VND.
2-Ethylhexyl oleate	HAL.
Glyceryl trioleate (Triolein)	ENR, GRO, TCH.
Isocetyl oleate	HAL.
Methyl oleate	ENR, GRO, TCH.
* PROPYL OLEATES:	
n-Propyl oleate	CHL, EMR, GRO, TCH.
* OLEIC ACID ESTERS, all other	
	ENR, HAL.
* PALMITIC ACID ESTERS:	
n-Butyl palmitate	EKT.
2-Ethylhexyl palmitate	VND, WTH.
Isopropyl palmitate	WM, WTH.
2-Methoxyethyl palmitate	EKT.
* PELARGONIC ACID ESTERS:	
Glyceryl pelargonate	ENR.
Isodecyl pelargonate	EKT, EMR.
* PHOSPHORIC ACID ESTERS:	
Tri(2-butoxyethyl) phosphate	FMP.
Tri(2-chloroethyl) phosphate	SFS.
Tri(2-chloropropyl) phosphate	FER, SFS.
Triethyl phosphate	EKT.
Trioctyl phosphate	HK.
Phosphoric acid esters, all other	SFS.
* SEBACIC ACID ESTERS:	
Dibutoxyethyl sebacate	HAL.
Dibutyl sebacate	EKT, X.
* Di(2-ethylhexyl) sebacate	HAL, HCC, RH, X, X.
Diisopropyl sebacate	X, X.
Dimethyl sebacate	X, X.
Propylene glycol sebacate	HAL, X.
* STEARIC ACID ESTERS:	
* n-Butyl stearate	CHL, EMR, GRO, SCP, TCH, WM, WTH.
2-Ethylhexyl stearate	SCP, TCH.
* Isobutyl stearate	DA, GRO, WM, WTH.
Isodecyl stearate	MM.
Isopropyl stearate	TCH, WTH.
Methyl pentachlorostearate	VDM.
Methyl stearate	CHL, GRO.
Myristyl stearate	VND.
2-Octyldecyl-12-stearoyl stearate	VND.
Polyethylene tetrastearate	HPC.

TABLE 2.--PLASTICIZERS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982
 --CONTINUED

PLASTICIZERS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
*STEARIC ACID ESTERS--CONTINUED	
*Tridecyl stearate	GRO, TCH.
Stearic acid esters, all other	SBC, SCP.
Sucrose acetate isobutyrate	EKT.
Tetraethylene glycol di(2-ethylhexanoate)	HAL, UCC.
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	ARZ, EMR, HCC, HPC, TCH, WM, WTH.
Acyclic plasticizers, all other	

TABLE 3.--PLASTICIZERS: DIRECTORY OF MANUFACTURERS, 1982

ALPHABETICAL DIRECTORY BY CODE

[Names of manufacturers that reported production and/or sales of plasticizers to the U.S. International Trade Commission for 1982 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.	MON	Monsanto Co.
CHL	Chemol, Inc.	NES	Ruetgers-Nease Chemical Co.
CMB	Cambridge Industries Co.	NEV	Neville Chemical Co.
CO	Conoco, Inc.	PFZ	Pfizer, Inc.
DA	Diamond Shamrock Corp.	RCI	Reichhold Chemicals, Inc.
DBC	Badische Corp.	RH	Rohm & Haas Co.
DOW	Dow Chemical Co.	SBC	Scher Chemicals, Inc.
DRC	Dock Resins Corp.	SCP	Henkel, Inc.
DUP	E. I. duPont de Nemours & Co., Inc.	SFS	Stauffer Chemical Co., Specialty Div.
EK	Eastman Kodak Co.:	SHX	Sherex Chemical Co., Inc.
EKT	Tennessee Eastman Co. Div.	SM	Mobil Oil Corp., Mobil Chemical Co., Chemical Coatings Div.
EKX	Texas Eastman Co. Div.	SWT	Eschem Inc., Swift Technical Products Div.
EMR	Emery Industries Div. of National Distillers & Chemical Corp.	TCH	Emery Industries, Inc., Trylon Div.
ENJ	Exxon Chemical Americas	TEK	Teknor Apex Co.
FER	Ferro Corp.:	TKL	Morton-Thiokol Inc., Specialty Chemicals Div.
	Ferro Chemical Div.	TNA	Ethyl Corp.
	Grant Cheical Div.	UCC	Union Carbide Corp.
FMP	FMC Corp., Industrial Chemical Group	USS	U.S. Steel Corp., USS Chemicals Div.
GRO	A. Gross & Co., Millmaster Onyx Group	VDM	Van De Mark Chemical Co., Inc.
HAL	C. P. Hall Co.	VEL	Velsicol Chemical Corp.
HCC	Hatco Chemical Corp.	VIK	Viking Chemical Co.
HN	Tenneco, Inc., Tenneco Chemicals, Inc.	VND	Van Dyk & Co., Inc.
HPC	Hercules, Inc.	WM	American Can Co., Inolex Chemical Div.
KF	Kay-Fries Inc., Chemical Div., Dynamit Nobel of America, Inc.	WTC	Witco Chemical Corp.
KLM	Kalama Chemical, Inc.	WTH	Union Camp Corp.

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

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 ingredient 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 1982 amounted to 4,367 million pounds, or 14.0 percent less than the 5,078 million pounds reported for 1981. Sales of bulk surface-active agents in 1982 amounted to 2,595 million pounds, valued at \$1,248 million, compared with sales in 1981 of 3,104 million pounds, valued at \$1,477 million. In terms of quantity, sales in 1982 were 16.4 percent less than in 1981.

Production of anionic surface-active agents in 1982 amounted to 3,055 million pounds, or 69.9 percent of the total surfactant output reported for 1982. Sales of anionics in 1982 amounted to 1,499 million pounds, valued at \$501 million.

Production of cationic surface-active agents in 1982 amounted to 380 million pounds, 12.7 percent more than the 337 million pounds reported in 1981. Production of nonionic surface-active agents amounted to 907 million pounds in 1982, 33.7 percent less than the 1,369 million pounds reported in 1981. Sales of cationic surface-active agents in 1982 increased by 15.4 percent in terms of quantity and increased by 7.9 percent in terms of value when compared with sales in 1981. Sales of nonionics in 1982 decreased by 34.2 percent in terms of quantity and decreased by 30.9 percent in terms of value when compared with sales in 1981.

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

TABLE 1.--SURFACE-ACTIVE AGENTS: U.S. PRODUCTION AND SALES, 1982

[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 ¹	VALUE	UNIT VALUE ³
	1,000 pounds	1,000 pounds	1,000 dollars	Per pound
Grand total-----	4,367,126	2,595,010	1,248,266	\$0.48
<i>AMPHOTERIC</i>				
Total-----	25,088	26,189	28,242	1.08
<i>ANIONIC</i>				
Total-----	3,054,760	1,499,042	501,438	.33
Carboxylic acids (and salts thereof), total-----	802,641	121,573	77,479	.64
Amine salts of fatty, rosin, and tall oil acids-----	1,703	645	1,022	1.58
Carboxylic acids having amide, ester, or ether linkages-----	3,940	3,459	6,000	1.73
Coconut oil acids, potassium salt-----	...	846	700	.83
Coconut oil acids, sodium salt-----	113,333	...	...	...
Oleic acid, potassium salt-----	1,003	...	...	...
Palm oil acids, sodium salt-----	232	...	...	...
Stearic acid, potassium salt-----	275	...	...	...
Tall oil acids, potassium salt-----	4,476	2,062	1,053	.51
Tallow acids, sodium salt-----	362,775	...	...	...
All other carboxylic acids (and salts thereof)-----	314,904	114,561	68,704	.60
Phosphoric and polyphosphoric acid esters (and salts thereof), total-----	28,852	23,352	21,915	.94
Alcohols and phenols, alkoxyated and phosphated, total-----	21,634	18,738	15,838	.85
Decyl alcohol, ethoxylated and phosphated-----	986	753	496	.66
Dinonylphenol, ethoxylated and phosphated-----	806	650	567	.87
Mixed linear alcohols, ethoxylated and phosphated-----	2,973	2,320	2,232	.96
Nonylphenol, ethoxylated and phosphated-----	9,690	9,375	6,327	.67
Phenol, ethoxylated and phosphated-----	2,352	2,061	2,118	1.06
Tridecyl alcohol, ethoxylated and phosphated-----	650	...	...	...
All other-----	4,177	3,579	4,098	1.15
All other phosphoric and polyphosphoric acid esters (and salts thereof), total-----	7,218	4,614	6,077	1.32
2-Ethylhexyl phosphate, sodium salt-----	259	...	...	...
Mixed alkyl phosphate-----	2,012	1,270	1,917	1.51
All other-----	4,947	3,344	4,160	1.24
Sulfonic acids (and salts thereof), total-----	1,634,707	1,118,468	254,922	.23
Alkylbenzenesulfonates, total-----	572,961	188,770	82,289	.44
Dodecylbenzenesulfonic acid-----	208,982	118,546	50,825	.43
Dodecylbenzenesulfonic acid, ammonium salt-----	131	...	...	...
Dodecylbenzenesulfonic acid, calcium salt-----	9,180	4,890	4,550	.93
Dodecylbenzenesulfonic acid, isopropylamine salt-----	3,393	3,343	2,491	.75
Dodecylbenzenesulfonic acid, sodium salt-----	226,060	54,816	20,085	.37
Dodecylbenzenesulfonic acid, triethanolamine salt-----	5,270	5,121	3,092	.60
All other-----	119,945	2,054	1,246	.61
Benzene-, cumene-, toluene-, and xylenesulfonates, total-----	108,218	93,126	23,070	.25
Xylenesulfonic acid, ammonium salt-----	30,202	30,436	7,425	.24
Xylenesulfonic acid, sodium salt-----	53,789	46,519	9,600	.21
All other-----	24,227	16,171	6,045	.37

See footnotes at end of table.

TABLE 1.--SURFACE-ACTIVE AGENTS: U.S. PRODUCTION AND SALES, 1982--CONTINUED

SURFACE-ACTIVE AGENTS	PRODUCTION ¹	SALES ²		
		QUANTITY ¹	VALUE	UNIT VALUE ³
	1,000 pounds	1,000 pounds	1,000 dollars	Per pound
<i>ANIONIC--Continued</i>				
Sulfonic acids (and salts thereof)--Continued				
Ligninsulfonates and naphthalenesulfonates, total--	850,074	770,055	86,990	\$0.11
Ligninsulfonic acid, ammonium salt-----	...	8,499	545	.06
Ligninsulfonic acid, calcium salt-----	552,814	479,828	23,413	.05
Ligninsulfonic acid, chromium salt-----	83,474	80,930	16,590	.20
Ligninsulfonic acid, sodium salt-----	145,561	136,883	16,237	.12
All other-----	68,225	63,915	30,205	.47
Sulfosuccinamic acid derivatives-----	2,362	2,081	2,469	1.19
Taurine derivatives-----	2,234	1,833	3,150	1.72
Sulfonic acids having ester or ether linkages, total-----	63,574	26,589	37,619	1.41
Sulfosuccinic acid esters, total-----	18,594	14,606	16,467	1.13
Sulfosuccinic acid, bis(2,6-dimethyl-4-heptyl)- ester, sodium salt-----	476	476	323	.68
Sulfosuccinic acid, bis(2-ethylhexyl)ester, sodium salt-----	13,399	10,027	13,111	1.31
Sulfosuccinic acid, diisooctyl ester, sodium salt-----	1,167	...	...	...
All other-----	3,552	4,103	3,033	.74
Other sulfonic acids having ester or ether linkages-----	44,980	11,983	21,152	1.77
All other sulfonic acids (and salts thereof)-----	35,284	36,014	19,335	.54
Sulfuric acid esters (and salts thereof), total-----	536,733	206,480	130,793	.63
Acids, amides, and esters, sulfated, total-----	9,954	7,490	4,486	.60
Butyl oleate, sulfated, sodium salt-----	1,385	1,391	639	.46
Propyl oleate, sulfated, sodium salt-----	189	123	934	.76
All other-----	8,380	5,976	2,913	.49
Alcohols and ethers, sulfated, total-----	509,700	188,963	121,839	.64
Alkylphenols, ethoxylated and sulfated-----	6,513	4,726	5,750	1.22
Decyl sulfate, sodium salt-----	662	786	626	.80
Dodecyl alcohol, ethoxylated and sulfated, ammonium salt-----	2,914	2,359	1,838	.78
Dodecyl alcohol, ethoxylated and sulfated, sodium salt-----	14,332	15,030	13,424	.89
Dodecyl sulfate, ammonium salt-----	20,435	18,746	10,781	.58
Dodecyl sulfate, diethanolamide salt-----	1,641	2,400	1,709	.71
Dodecyl sulfate, magnesium salt-----	...	177	195	1.10
Dodecyl sulfate, sodium salt-----	20,900	19,802	17,452	.88
Dodecyl sulfate, triethanolamine salt-----	11,880	9,048	7,715	.85
2-Ethylhexyl sulfate, sodium salt-----	974	807	1,454	1.80
Mixed linear alcohols, ethoxylated and phosphated, ammonium salt-----	107,148	58,760	27,085	.46
Mixed linear alcohols, ethoxylated and sulfated, sodium salt-----	125,248	31,784	14,052	.44
Mixed linear alcohols, sulfated, ammonium salt---	27,628	5,640	4,483	.79
Octyl sulfate, sodium salt-----	275	213	319	1.50
All other-----	169,150	18,685	14,956	.80
Castor oil, sulfated, sodium salt-----	3,092	2,442	1,756	.72
Cod oil, sulfated, sodium salt-----	1,020	755	254	.34
Herring oil, sulfated, sodium salt-----	1,661	...	...	...
Mixed fish oils, sulfated, sodium salt-----	4,398	3,883	1,461	.38
Neat's foot oil, sulfated, sodium salt-----	2,684	...	...	...
Tall oil, sulfated, sodium salt-----	1,925	856	292	.34
Tallow sulfated, sodium salt-----	2,299	2,091	705	.34
Other anionic surface-active agents ⁴ -----	51,827	29,169	16,329	.55

See footnotes at end of table.

TABLE 1.--SURFACE-ACTIVE AGENTS: U.S. PRODUCTION AND SALES, 1982--CONTINUED

SURFACE-ACTIVE AGENTS	PRODUCTION ¹	SALES ²		
		QUANTITY ¹	VALUE	UNIT VALUE ³
	1,000	1,000	1,000	Per
	pounds	pounds	dollars	pound
<i>CATIONIC</i>				
Total-----	380,051	295,572	246,100	\$0.83
Amine oxides and oxygen-containing amines (except those having amide linkages), total-----	83,125	32,501	31,266	.96
Acyclic, total-----	71,835	23,625	19,945	.84
(Coconut oil alkyl)amine, ethoxylated-----	1,862	...	...	...
(9-Octadecenyl)amine, ethoxylated-----	924	...	...	...
(Tallow alkyl)amine, ethoxylated-----	7,494	7,475	3,883	.52
All other-----	61,555	16,150	16,062	.99
Cyclic (including imidazoline and oxazoline derivatives), total-----	11,290	8,876	11,321	1.28
1-(2-Hydroxyethyl)-2-nonyl-2-imidazoline-----	463	463	615	1.33
1-(2-Hydroxyethyl-2-nor(coconut oil alkyl)-2-imidazoline-----	198	188	226	1.20
1-(2-Hydroxyethyl)-2-nor(tall oil alkyl)-2-imidazoline-----	891	...	...	...
Rosin amine, ethoxylated-----	521	...	...	...
All other-----	9,217	8,225	10,480	1.27
Amines and amine oxides having amide linkages, total-----	46,086	34,096	26,663	.78
Stearic acid-diethylenetriamine condensate-----	453	377	433	1.15
Stearic acid-ethylenediamine condensate, mono-ethoxylated-----	159	168	166	.99
Tall oil acids polyalkylenepolyamine condensate-----	19,397	15,531	11,524	.74
All other-----	26,077	18,020	14,540	.81
Amines, not containing oxygen (and salts thereof), total-----	61,845	55,684	53,445	.96
Amine salts-----	1,438	1,511	2,457	1.63
Diamines and polyamines, total-----	27,610	21,115	20,810	.99
Imidazoline derivatives-----	2,596	2,773	3,583	1.29
N-(Tallow alkyl)dipropylenetriamine-----	216	285	289	1.01
N-(Tallow alkyl)trimethylenediamine-----	6,474	6,298	7,408	1.18
All other-----	18,324	11,759	9,530	.81
Primary monoamines, total-----	22,188	22,233	18,348	.83
(Coconut oil alkyl)amine-----	1,116	1,232	1,332	1.08
(Hydrogenated tallow alkyl)amine-----	2,312	2,837	2,185	.77
9-Octadecenylamine-----	4,952	5,070	5,167	1.02
Octadecylamine-----	312	555	684	1.23
(Soybean oil alkyl)amine-----	...	1,275	884	.69
(Tallow alkyl)amine-----	11,520	10,483	6,950	.66
All other-----	1,976	781	1,146	1.47
Secondary and tertiary monoamines-----	10,609	10,825	11,830	1.09
Quaternary ammonium salts, not containing oxygen, total-----	155,654	141,820	109,044	.77
Acyclic, total-----	127,669	116,602	78,857	.68
Bis(hydrogenated tallow alkyl)dimethylammonium chloride-----	66,392	66,389	37,128	.56
N,N,N',N',N'-Pentamethyl-N-(tallow alkyl)trimethylene-bis[ammonium chloride]-----	2,461	2,517	1,815	.72
Trimethyl(soybean oil alkyl)ammonium chloride-----	1,271	1,183	1,162	.98
Trimethyl(tallow alkyl)ammonium chloride-----	1,195	1,163	978	.84
All other-----	56,350	45,350	37,774	.83
Benzenoid, total-----	27,985	25,218	30,187	1.20
Benzyl(coconut oil alkyl)dimethylammonium chloride-----	198	...	...	...
Benzyl(dimethyl(mixed alkyl)ammonium chloride)-----	14,430	14,000	17,888	1.28
Benzyl(dimethyloctadecylammonium chloride)-----	3,030	2,731	3,572	1.31

See footnotes at end of table.

TABLE 1.--SURFACE-ACTIVE AGENTS: U.S. PRODUCTION AND SALES, 1982--CONTINUED

SURFACE ACTIVE AGENTS	PRODUCTION ¹	SALES ²		
		QUANTITY ¹	VALUE	UNIT VALUE ³
	1,000	1,000	1,000	Per
	pounds	pounds	dollars	pound
<i>CATIONIC--Continued</i>				
Quaternary ammonium salts, not containing oxygen-- Continued				
Benzenoid--Continued				
Benzyltrimethylammonium chloride-----	3,410	3,186	2,186	\$0.69
All other-----	6,917	5,301	6,541	1.23
Other cationic surface-active agents ⁵ -----	33,341	31,471	25,682	.82
<i>NONIONIC</i>				
Total-----	907,227	774,207	472,486	.61
Carboxylic acid amides, total-----	58,305	48,993	46,100	.94
Diethanolamine condensates (amine/acid ratio=2/1), total-----	12,505	10,922	8,010	.73
Coconut oil acids-----	5,556	5,887	4,281	.73
Coconut oil and tallow acids-----	2,378	2,286	1,493	.65
Lauric and myristic acids-----	1,189	524	489	.93
Linoleic acid-----	50	50	50	1.01
Oleic acid-----	563	152	120	.78
Tall oil acids-----	820	629	489	.78
All other-----	1,949	1,394	1,088	.78
Diethanolamine condensates (other amine/acid ratios), total-----	28,986	26,200	28,779	1.10
Coconut oil acids (amine/acid ratio=1/1)-----	20,047	18,176	22,031	1.21
Lauric acid (amine/acid ratio=1/1)-----	3,002	2,360	2,053	.87
Lauric and myristic acids (amine/acid ratio=1/1)-----	3,744	3,634	3,147	.87
Linoleic acid (amine/acid ratio=1/1)-----	602	631	513	.81
Stearic acid (amine/acid ratio=1/1)-----	163	101	61	.61
All other-----	1,428	1,298	974	.75
All other carboxylic acid amides-----	16,814	11,871	9,311	.78
Carboxylic acid esters, total-----	210,273	171,559	130,883	.76
Anhydrosorbitol monolaurate-----	5,927	3,887	3,115	.81
Anhydrosorbitol mono-oleate-----	4,241	3,831	3,305	.86
Anhydrosorbitol trioleate-----	1,834	1,177	1,025	.87
Diethylene glycol esters, total-----	706	423	410	.97
Diethylene glycol monostearate-----	135	132	138	1.05
All other-----	571	291	272	.93
Ethoxylated anhydrosorbitol mono-oleate-----	2,954	2,963	2,225	.75
Ethoxylated anhydrosorbitol monostearate-----	7,300	...	...	...
Ethylene glycol monostearate-----	1,546	1,843	1,362	.74
Glycerol esters of chemically defined acids, total-----	16,769	15,008	11,339	.76
Glycerol mono-oleate-----	3,221	2,825	2,216	.78
Glycerol monostearate-----	13,207	11,844	8,702	.73
All other-----	341	339	421	1.25
Glycerol esters of mixed acids-----	28,640	26,231	19,910	.76
Natural fats and oils, ethoxylated, total-----	19,005	12,641	9,586	.76
Castor oil, ethoxylated-----	7,819	5,181	4,241	.82
Hydrogenated castor oil, ethoxylated-----	...	1,207	1,015	.84
Lanolin, ethoxylated-----	1,589	1,251	1,247	1.00
All other-----	9,597	5,002	3,083	.62
Polyethylene glycol esters, total-----	45,361	38,436	23,601	.61
Polyethylene glycol diester of tall oil acids-----	2,664	660	354	.54
Polyethylene glycol dilaurate-----	828	832	813	.98
Polyethylene glycol dioleate-----	2,351	1,225	963	.79
Polyethylene glycol distearate-----	4,040	3,897	3,913	1.50
Polyethylene glycol monoester of tall oil acids-----	412	302	279	.93
Polyethylene glycol monolaurate-----	2,509	2,462	1,997	.81

See footnotes at end of table.

TABLE 1.--SURFACE-ACTIVE AGENTS: U.S. PRODUCTION AND SALES, 1982--CONTINUED

SURFACE-ACTIVE AGENTS	PRODUCTION ¹	SALES ²		
		QUANTITY ¹	VALUE	UNIT VALUE ³
<i>NONIONIC--Continued</i>				
	<i>1,000</i>	<i>1,000</i>	<i>1,000</i>	<i>Per</i>
	<i>pounds</i>	<i>pounds</i>	<i>dollars</i>	<i>pound</i>
Carboxylic acid esters--Continued				
Polyethylene glycol esters--Continued				
Polyethylene glycol mono-oleate-----	3,460	3,048	2,336	\$0.77
Polyethylene glycol monopalmitate-----	238	230	204	.89
Polyethylene glycol monostearate-----	5,789	4,426	3,593	.81
Polyethylene glycol sesquiesther of tall oil acids-----	14,759	14,148	3,507	.25
All other-----	8,311	7,206	5,642	.78
Polyglycerol esters-----	1,458	1,326	1,391	1.05
Propanediol esters-----	1,875	1,519	1,693	1.11
All other carboxylic acid esters-----	72,657	62,274	51,921	.83
Ethers, total-----	591,925	539,707	284,058	.53
Benzenoid ethers, total ⁶ -----	334,850	284,845	153,895	.54
Dinonylphenol, ethoxylated-----	3,973	2,898	2,348	.81
Dodecylphenol, ethoxylated-----	13,700	13,523	7,611	.56
Nonylphenol, ethoxylated-----	234,017	211,118	105,246	.50
n-Octylphenol, ethoxylated-----	1,477	2,152	1,156	.54
Phenol, ethoxylated-----	2,014	1,321	960	.73
All other-----	79,669	53,833	36,574	.68
Nonbenzenoid ethers, total-----	175,885	190,364	87,483	.46
Chemically-defined linear alcohols, ethoxylated, total-----	17,583	13,880	11,656	.84
Decyl alcohol, ethoxylated-----	5,977	3,732	1,938	.52
Dodecyl alcohol, ethoxylated-----	1,237	...	...	...
Oleyl alcohol, ethoxylated-----	1,530	1,463	2,301	1.57
All other-----	8,839	8,685	7,417	.85
Mixed linear alcohols, alkoxyated, total-----	158,302	176,484	75,827	.43
Mixed linear alcohols, ethoxylated-----	104,389	126,370	52,416	.41
Mixed linear alcohols, ethoxylated and propoxylated-----	24,171	20,406	13,096	.64
All other-----	29,742	29,708	10,315	.35
Other ethers and thioethers, total-----	81,190	64,498	42,680	.66
Mixed alcohols, ethoxylated-----	1,436	814	887	1.09
Poly(mixed ethylene, proylene) glycol-----	46,097	...	...	...
Polypropylene glycol, ethoxylated-----	2,354	...	...	...
Tridecyl alcohol, ethoxylated-----	10,872	9,426	5,912	.63
All other-----	20,431	54,258	35,881	.66
Other nonionic surface-active agents-----	46,724	13,948	11,445	.82

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.

⁴Includes all other natural fats and oils, sulfated.

⁵Includes quaternary ammonium salts, containing oxygen.

⁶The term "benzenoid" used in this report, describes any surface-active agents, 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 REPORTED, IDENTIFIED BY MANUFACTURER, 1982

[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	
1, 1-Bis(carboxymethyl)-2-undecyl-2-imidazolium chloride, disodium salt	BRD.
1, 1-Bis(carboxymethyl)-2-undecyl-2-imidazolium hydroxide, disodium salt	X.
Bis(2-hydroxyethyl)alloxammonium ethanoate	MIR.
3-[Caprylamidoethylene-(2-hydroxyethyl)amino]propionic acid	MIR.
1-Carboxyethyl-1-(2-ethoxycarboxyethyl)-2-cocoiimidazolium, disodium salt	SBC.
1-Carboxyethyl-1-(2-hydroxyethyl)-2-heptyl-2-imidazolium hydroxide, sodium derivative, sodium salt	MIR.
1-Carboxyethyl-1-(2-hydroxyethyl)-2-nonyl-2-imidazolium hydroxide, sodium derivative, sodium salt	MIR.
(1-Carboxyheptadecyl)trimethylammonium hydroxide, inner salt	DUP.
(Carboxymethyl)[3-(coconut oil amido)propyl]dimethylammonium hydroxide, inner salt	CYL, HLI, JOR, SBC, SCP, SHX, WM.
1-Carboxymethyl-2-heptadecyl-1-(2-hydroxyethyl)-2-imidazolium hydroxide, sodium derivative, sodium salt	BRD, MIR.
1-Carboxymethyl-1-(2-hydroxyethyl)-2-heptyl-2-imidazolium hydroxide, sodium derivative, sodium salt	MIR.
1-Carboxymethyl-1-(2-hydroxyethyl)-2-nonyl-2-imidazolium hydroxide, sodium derivative, sodium salt	BRD, MIR.
1-Carboxymethyl-1-(2-hydroxyethyl)-2-undecyl-2-imidazolium hydroxide, sodium derivative, sodium salt	MIR, SHX.
1-Carboxymethyl-1-(2-hydroxyethyl)-2-undecyl-2-imidazolium hydroxide, sodium derivative, sodium salt	MIR.

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U. S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

SURFACE-ACTIVE AGENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
AMPHOTERIC--CONTINUED	
Cocoamidophoglycinate	MOA.
Cocoamidopropyl betaine	CRD, MOA.
3-[3-(Cocoamidopropyl)dimethylammonio]-2-hydroxypropane sulfonate	MIR.
(3-Cocoamidopropyl)-(2-hydroxy-3-sulfopropyl)-dimethyl ammonium hydroxide, inner salt	SHX.
3-Cocoamidopropyl-2-hydroxy-3-sulfopropyl-dimethyl ammonium hydroxide, inner salt	SBC, 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.
Dimethyl(3-cocoamidopropyl)ammonio]propionate	MIR.
Dimethyltallowammonium ethanoate	MIR.
N-Dodecyl-3-iminodipropionic acid, disodium salt	SCP.
N-Dodecyl-3-iminodipropionic acid, monosodium salt	MIR.
N-Dodecyl-3-iminopropionic acid, monosodium salt	SCP.
N-(Dodecyl and tetradecyl)- β -alanine	SCP.
Heptadecylmethylbenzimidazolinesulfonic acid, sodium salt	BRD.
N, N-Di(hydroxyethyl)-N-carboxymethyl tallow ammonium quat, inner salt	SHX.
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.
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.
Isostearyl amphotropionate	MOA.
Laurylamidopropyl betaine	MOA.

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

SURFACE-ACTIVE AGENTS		MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
AMPHOTERIC--CONTINUED		
Laurylamphoglycinate		MOA.
Mixed acyclic primary amines, ethoxylated and sulfated, sodium salt		RH.
(Mixed alkyl)sulfobetaine		BRD, MOA.
Oleic acid-ethylenediamine condensate, propoxylated and sulfated, sodium salt		MOA.
Oleyl betaine		SCP.
Polypeptide ammonium salt		STP.
Polypeptide, sodium salt		STP.
1-(Sodiumcarboxylethylene)-1-(sodium carboxymethyleneoxyethylene)-2-nor-tall oil fatty acids-2-imidazolium hydroxide		MIR.
1-(Sodiumcarboxymethyl)-1-(sodium carboxymethyleneoxyethylene)-2-nor-coconut oil fatty acids-2-imidazolium lauryl sulfate		MIR.
N-(Tallow alkyl)-3-iminodipropionic acid, disodium salt		SCP.
Tridecylpoly(ethyleneoxy)propionic acid, potassium salt		MRV.
Amphoteric surface-active agents, all other-		CSC, MOA, X.
ANIONIC		
*CARBOXYLIC ACIDS (AND SALTS THEREOF):		
*AMINE SALTS OF FATTY, ROSIN, AND TALL OIL ACIDS:		
Coconut oil acids, diethanolamine salt		SHX.
Coconut oil acids, ethanolamine salt		SBP.
Isostearic acid, triethanolamine salt		PCI.
Mixed fatty acids, ethanolamine salt		SBP.
Octanoic acid, triethanolamine salt		X.
Oleic acid, butylamine salt		DYS.
Oleic acid, morpholine salt		X.
Oleic acid, triethanolamine salt		X.
Rosin acids, triethanolamine salt		ONX.
Stearic acid,N,N',N'-tetrakis(2-hydroxyethyl)-ethylenediamine salt		ICI.
Stearic acid, triethanolamine salt		GLY, X.
Tallow acids, ethanolamine salt		SBP.
Tallow acids, triethanolamine salt		PCI, SBP.
Amine salts of fatty, rosin, and tall oil acids, all other-		MM.

TABLE 2. --SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

SURFACE-ACTIVE AGENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ANIONIC--CONTINUED	
CARBOXYLIC ACIDS (AND SALTS THEREOF)--CONTINUED	
*CARBOXYLIC ACIDS HAVING AMIDE, ESTER, OR ETHER LINKAGES:	
Butyl ethoxycarbonate, sodium salt	S.
5(or 6)-Carboxy-4-hexyl-2-cyclohexene-1-octanoic acid, reaction products with castor oil	X.
N-(Coconut oil acyl)polypeptide, potassium salt	STP.
N-(Coconut oil acyl)polypeptide, sodium salt	STP.
N-(Coconut oil acyl)polypeptide, triethanolamine salt	STP.
N-(Coconut oil acyl)sarcosine	HMP.
N-(Coconut oil acyl)sarcosine, sodium salt	HMP, ONX.
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.
Tridecylloxypoly(ethyleneoxy)acetic acid, sodium salt	STC.
N-(Undecylenic oil acyl)polypeptide, potassium salt	STP.
Carboxylic acids with amide, ester or ether linkage, other	HMP, STC.
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	DA, SEA.
Castor oil acids, sodium salt	HEM.
*Coconut oil acids, potassium salt	AGP, CON, DYS, ESS, HEM, HIP, HNT, LAS, LUR, NMC, PEK, PG, PNX, SKW, SOP, X.
*Coconut oil acids, sodium salt	BSM, CON, CP, HEM, 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, sodium salt	HEM.
Mixed vegetable fatty acids, potassium salt	DYS, GRL, QCP.
Mixed vegetable fatty acids, sodium salt	NMC.
Oleic acid, epoxidized, ammonium salt	SCP.
*Oleic acid, potassium salt	HAL, HNT, SNW, USR, WBG, X.

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--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	
Oleic acid, sodium salt--	BSM, HAL, IAS, USR, WBG.
Olive oil acids, sodium salt--	HNT.
Palm kernel oil acids, potassium salt--	PG.
*Palm kernel oil acids, sodium salt--	NMC, MCB, HEM, IAS.
*Palm oil acids, sodium salt--	BSM, HEM, IAS.
Rosin acids, potassium salt--	ARZ, DA, X.
Rosin acids, sodium salt--	ARZ, DA, SLM, X.
Soybean oil acids, potassium salt--	PEK, PNX.
Soybean oil acids, sodium salt--	LUR.
Stearic acid, ammonium salt--	BSM.
Stearic acid, sodium salt--	BSM, CCC, CON, HEM.
*Tall oil acids, potassium salt--	DA, HEM.
Tall oil acids, sodium salt--	CCC, CON, DA, DAN, DYS, ESS, HIP, HNT, PNX, SOP, X.
Tallow acids, potassium salt--	CON, GDC, HIP, NMC, MVA, X.
*Tallow acids, sodium salt--	AGP, DYS, IAS, PG, PNX.
Potassium and sodium salts of fatty, rosin, and tall oil acids, all other--	BSM, CON, CP, HEM, JRG, LAS, LEV, NMC, NPR, PG, PRX.
*PHOSPHORIC AND POLYPHOSPHORIC ACID ESTERS (AND SALTS THEREOF):	USR.
*ALCOHOLS AND PHENOLS, ALKOXYLATED AND PHOSPHATED:	
Amylalcohol, ethoxylated and phosphated--	GAF.
Butyl alcohol, ethoxylated and phosphated--	GAF.
*Decyl alcohol, ethoxylated and phosphated--	GAF, MCB, MCP, RPC, TCH.
*Dinonylphenol, ethoxylated and phosphated--	CYL, GAF, JOR, PCI, WAY.
Dodecyl alcohol, ethoxylated and phosphated--	GAF, JOR.
Dodecylphenol, ethoxylated and phosphated--	GAF.
2-Ethylhexanol and ethoxylated nonyl phenol, polyphosphated--	CCC.
2-Ethylhexanol and ethoxylated nonyl phenol, polyphosphated, sodium salt--	CCC.
2-Ethylhexanol, ethoxylated and phosphated--	DA, RPC, WAY.
Hexylalcohol, ethoxylated and phosphated--	GAF.
*Isopentyl alcohol, ethoxylated and phosphated--	AZS.
*Mixed linear alcohols, ethoxylated and phosphated	AZS, CHP, CRT, CYL, FER, GAF, HIP, HRT, MCB, MOA, MRV, SCP, STC, TCH, WTC, MVA, X, X.
Mixed linear alcohols, ethoxylated and phosphated, sodium salt--	CHP, SCP.
Mixed tridecyl alcohol and 2-ethylhexanol, phosphated, potassium salt--	CHP.
*Nonylphenol, ethoxylated and phosphated--	ARL, BAK, CRT, CTI, CYL, DEX, ESS, GAF, GDC, HRT, MCB, MCP, MET, MOA, SCP, SOP, TCC, WAY, WTC, WVA, X, X.

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

SURFACE-ACTIVE AGENTS		MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ANIONIC--CONTINUED		
PHOSPHORIC AND POLYPHOSPHORIC ACID ESTERS (AND SALTS THERE OF)--CONTINUED		
ALCOHOLS AND PHENOLS, ALKOXYLATED AND PHOSPHATED-- CONTINUED		
Nonylphenol, ethoxylated and phosphated, barium salt		MTC.
9-Octadecenyl alcohol, ethoxylated and phosphated		GAF, JOR.
9-Octadecyl alcohol, ethoxylated and phosphated		GAF.
Octylphenol, ethoxylated and phosphated		RH, RPC, WTC.
Octylphenol, ethoxylated and phosphated, magnesium salt		ONX.
*Phenol, ethoxylated and phosphated		DA, GAF, MIL, MOA, RH, SHX, TCH, WTC, X.
Polyhydric alcohol, ethoxylated and phosphated		CYL, DEX, GAF.
*Tridecyl alcohol, ethoxylated and phosphated, polyalkylene polyamine salt		X.
Tridecyl alcohol, ethoxylated and phosphated		DAN, GAF, HIP, MIL, SNW, VPC, X.
Alcohols and phenols, alkoxyalted and phosphated or polyphosphated, all other		GAF, MCB, RPC.
ALCOHOLS, PHOSPHATED OR POLYPHOSPHATED:		
Butyl phosphate, potassium salt		DUP.
Dodecylphosphate		DA.
2-Ethylhexyl phosphate		CHP, GAF.
*2-Ethylhexyl phosphate, sodium salt		CHP, DAN, WTC.
2-Ethylhexyl phosphate, triethanolamine salt		MIL.
2-Ethylhexyl polyphosphate		X.
2-Ethylhexyl polyphosphate, sodium salt		X.
Hexyl phosphate		ICI, SFS.
Hexyl phosphate, potassium salt		ICI.
Hexyl polyphosphate, potassium salt		DEX.
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, alkylamine salt		X.
Mixed alkyl phosphate, diethanolamine salt		DUP, SCP.
Octyl phosphate		SCP, WTC.
Octyl phosphate, alkylamine salt		SCP, X.
Octyl phosphate, ethylenedioxy titanium salt		KPI.
Octyl phosphate, isopropoxy titanium salt		KPI.
Octyl phosphate, potassium salt		DEX.
Octyl polyphosphate		DEX.
Octyl polyphosphate, potassium salt		SNW, X.
Octyl pyrophosphate, ethylenedioxy titanium salt		KPI.
Octyl pyrophosphate, ethylenedioxy titanium salt/dimethylamino methacrylate salt		KPI.

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

SURFACE-ACTIVE AGENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ANIONIC--CONTINUED	
PHOSPHORIC AND POLYPHOSPHORIC ACID ESTERS--CONTINUED	
ALCOHOLS, PHOSPHATED OR POLYPHOSPHATED--CONTINUED	
Octyl pyrophosphate, isopropoxy titanium salt	KPI.
Octyl pyrophosphate, octethylenedioxy titanium salt	KPI.
Phosphated and polyphosphated alcohols, all other	HRT, KPI, WTC.
OTHER PHOSPHORIC AND POLYPHOSPHORIC ACID ESTERS:	
Glycerol, ethoxylated and phosphated	X.
Glycerol monoester of mixed fatty acids, phosphated	QCP, WTC.
Hydroxyamine, phosphate ester and salts	SCP.
Polyoxyalkylate(fatty alcohol), phosphate ester	BAS.
Stearyamine polyphosphoric acid	GDC.
Phosphoric and polyphosphoric acid esters, all other	X, X.
* SULFONIC ACIDS (AND SALTS THEREOF):	
* ALKYL BENZENESULFONATES:	
DODECYLBENZENESULFONATES:	
*Dodecylbenzenesulfonic acid	AAC, ARC, CMT, CO, CRT, CTL, EMK, FTX, HLI, JLP, LEV, MON, ONX, PIL, PLX, PRX, STP, TCI, TEN, WTC, WVA, X.
Dodecylbenzenesulfonic acid, (Mixed alkyl)amine salt	HIP, X.
*Dodecylbenzenesulfonic acid, ammonium salt	CCC, ONX, X.
*Dodecylbenzenesulfonic acid, calcium salt	ICI, RH, STC, STP, TMH, WTC, WVA, X.
Dodecylbenzenesulfonic acid, isopropanolamine salt	ECC, PIL.
*Dodecylbenzenesulfonic acid, isopropylamine salt	CIN, CTL, FTX, ICI, STP, TCH, WTC.
Dodecylbenzenesulfonic acid, isopropoxy titanium salt	KPI.
Dodecylbenzenesulfonic acid, isopropoxy titanium salt/3-dimethylamino butanol-1 salt	KPI.
Dodecylbenzenesulfonic acid, methylamine salt	FTX.
Dodecylbenzenesulfonic acid, potassium salt	ECC, MRV.
*Dodecylbenzenesulfonic acid, sodium salt	AAC, ARC, BLA, CMT, CO, CP, CTL, CYL, DA, DUP, GDC, JLP, LEV, MMC, ONX, PEK, PG, PIL, PLX, PNX, PRX, RPC, SOP, STP, TEN, WTC, WVA.
*Dodecylbenzenesulfonic acid, triethanolamine salt	AAC, BRD, CCC, CIN, CTL, ESS, HLI, MRV, ONX, PIL, STP, WTC, X.
Dodecylbenzene sulfonates, all other	WTC, X.

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

SURFACE-ACTIVE AGENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ANIONIC--CONTINUED	
SULFONIC ACIDS (AND SALTS THEREOF)--CONTINUED	
ALKYLBENZENE SULFONATES--CONTINUED	
OTHER ALKYL BENZENESULFONATES:	
Decylbenzenesulfonic acid, sodium salt	: CRT.
Didodecylbenzenesulfonic acid	: WTC.
Didodecylbenzenesulfonic acid, sodium salt	: NPR.
Octanoylbenzenesulfonate, sodium salt	: MMC.
Pentadecylbenzenesulfonic acid, potassium salt	: CP.
Tridecylbenzenesulfonic acid	: PLX.
Tridecylbenzenesulfonic acid, sodium salt	: BIA, LAS, 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, PG.
*Xylenesulfonic acid, ammonium salt	: CO, NES, STP, WTC.
*Xylenesulfonic acid, sodium salt	: CO, ICI, NES, PIL, SDC, STP, WTC.
LIGNINSULFONATES:	
*Ligninsulfonic acid, ammonium salt	: CRZ, MAR, SPA.
*Ligninsulfonic acid, calcium salt	: CRZ, CMP, FPC, LKY, MAR, PSP.
*Ligninsulfonic acid, chromium salt	: DA, 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	: CRZ, MAR, PSP, RAY, WVA.
Ligninsulfonic acid, zinc salt	: MAR, PSP.
NAPHTHALENESULFONATES:	
Butylnaphthalenesulfonic acid, sodium salt	: DA, ECC, UDI.
Di(C5-C6alkyl)naphthalenesulfonic acid	: X.
Diethylnaphthalenesulfonic acid	: UDI.
Diisopropylnaphthalenesulfonic acid, sodium salt	: DUP, UDI.
Isopropylnaphthalenesulfonic acid	: DA, UDI.
Methylnaphthalenesulfonic acid, sodium salt	: DA, SYT, UDI.
Naphthalenesulfonic acid, ammonium salt	: DA.
Tetrahydronaphthalenesulfonic acid, sodium salt	: UDI.
Naphthalenesulfonates, all other	: ICI, PCI.

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

SURFACE-ACTIVE AGENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ANIONIC--CONTINUED	
SULFONIC ACIDS (AND SALTS THEREOF)--CONTINUED	
SULFONIC ACIDS HAVING AMIDE LINKAGES:	
*SULFOSUCCINAMIC ACID DERIVATIVES:	
Cocoamidopropylsulfosuccinamic acid, disodium salt	BRD.
N-(1,2-Dicarboxylethyl)-N- octadecylsulfosuccinamic acid, tetrasodium salt	ACY, MOA.
Lauric alkanolamidesulfosuccinate, sodium salt	TCH.
N-Octadecylsulfosuccinamic acid, disodium salt	ACY, WTC.
N-(Oleoyloxyisopropyl)sulfosuccinamic acid	WTC.
*TAURINE DERIVATIVES:	
N-(Coconut oil acyl)-N-methyltaurine, sodium salt	FTX, GAF, TNI.
N-Cyclohexyl-N-palmitoyltaurine, sodium salt	GAF.
N-Methyl-N-oleoyltaurine, sodium salt	FTX, GAF, HRT, STC.
N-Methyl-N-palmitoyltaurine, sodium salt	GAF.
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, TCH.
*SULFONIC ACIDS HAVING ESTER OR ETHER LINKAGES:	
*SULFOSUCCINIC ACID ESTERS:	
*Sulfosuccinic acid, bis(2,6-dimethyl-4-heptyl)- ester, sodium salt	ECC, MOA, PC.
Sulfosuccinic acid, bis(2-ethylhexyl)ester, sodium salt	ACY, ARI, CCC, CHP, CRT, DAN, EMK, FTX, HIP, HRT, MCP, MOA, MRV, RH, WTC.
Sulfosuccinic acid, dihexyl ester, sodium salt	ACY.
Sulfosuccinic acid, dodecyl 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, dodecyl 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.

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

SURFACE-ACTIVE AGENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ANIONIC--CONTINUED	
SULFONIC ACIDS (AND SALTS THEREOF)--CONTINUED	
SULFONIC ACIDS HAVING ESTER OR ETHER LINKAGES--CONTINUED	
SULFOSUCCINIC ACID ESTERS--CONTINUED	
Sulfosuccinic acid, oleamidopolyethyleneglycol, disodium salt	MOA.
Sulfosuccinic acid esters, all other	MOA, WTC.
ALL OTHER SULFONIC ACIDS HAVING ESTER OR ETHER LINKAGES:	
Coconut oil acids, 2-sulfoethyl ester, sodium salt	GAF, LEV.
Dipolyetherdisulfonic acid, diammonium salt	VPC.
Dipolyetherdisulfonic acid, diethanolamine salt	VPC.
Dodecylidiphenyloxidedisulfonic acid	X.
Dodecylidiphenyloxidedisulfonic acid, disodium salt	CTI, DOM, X.
Dodecyl sulfoacetate, sodium salt	STP.
Glycerol monostearate sulfoacetate, sodium salt	WTC.
Iso-octylphenol, ethoxylated and sulfonated, sodium salt	GAF, RH.
n-Octylphenol, ethoxylated and sulfonated, sodium salt	CRT, PG.
Sulfonic acids with ether linkages, all other	WTC.
OTHER SULFONIC ACIDS:	
Mixed alkane sulfonic acid, sodium salt	AAC, CCL, DUP, ONX, QCP, WTC, WVA, X.
Oleyloxyethylamide oxypropanol sulfonic acid	S.
Petroleumsulfonic acid, water soluble (Acid layer), sodium salt	DA, PIL, WTC.
Triglycerides, sulfonated	AZS.
Sulfonic acids, all other	CLU, SIM, STP, USR, WTC, X.
*SULFURIC ACID ESTERS (AND SALTS THEREOF):	
*ACIDS, AMIDES, AND ESTERS, SULFATED:	
Coconut oil acids-ethanolamine salt, sulfated, potassium salt	ENK.
Oleic acid-aminoethylethanolamine condensate, diethyl sulfate	DA.
CARBOXYLIC ACID ESTERS (EXCEPT NATURAL FATS AND OILS), SULFATED:	
ESTERS OF SULFATED OLEIC ACID:	
Butoxyethoxypropionate, sodium salt	BRD.
*Butyl oleate, sulfated, sodium salt	AKS, HIP, ICI, MCP, MRV, PC.
Butyl and propyl oleate, sulfated, sodium salt	CRT.
2-Ethylhexyl tallate, sulfated, sodium salt	CHP.

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--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	
Isobutyl oleate, sulfated, sodium salt	DA.
Isopropyl oleate, sulfated, sodium salt	DEX.
Isopropyl talate, sulfated, sodium salt	ARI.
Methyl oleate, sulfated, sodium salt	ICI.
Mixed oleic acid esters, sulfated, sodium salt	TEN.
Oleic acid, sulfated, disodium salt	ACT, ACY, CIN, DA, MCP, TEN.
*Propyl oleate, sulfated, sodium salt	AKS, CHP, MRV.
OTHER SULFATED ESTERS:	
Glycerol monoester of coconut oil acids, sulfated, sodium salt	CP.
Mixed linear olefin sulfonate	X.
9-Octadecenyl acetate, sulfated, sodium salt	DUP.
Tall oil acids, oxobottom ester, sulfated, sodium salt	DA.
ALCOHOLS, SULFATED:	
Decyl and octyl sulfate, sodium salt	TCH.
Decyl sulfate, ammonium salt	HLI.
*Decyl sulfate, sodium salt	AAC, CRT, HLI, ONX, SCP.
DODECYSULFATE SALTS:	
*Dodecyl sulfate, ammonium salt	AAC, BRD, CTL, CYL, HLI, JRG, ONX, STP, TCH, TNI, WTC.
*Dodecyl sulfate, diethanolamine salt	AAC, CYL, DUP, JRG, ONX, STP, TCH.
Dodecyl sulfate, diethylamine salt	AAC.
Dodecyl sulfate, N,N-diethylcyclohexylamine salt	DUP.
Dodecyl sulfate, isopropanolamine salt	JRG, TCH.
*Dodecyl sulfate, magnesium salt	AAC, CYL, HLI, ONX, STP, WTC.
Dodecyl sulfate, potassium salt	PG.
*Dodecyl sulfate, sodium salt	AAC, BRD, DUP, HLI, ONX, STP, TCH, WTC, MVA.
*Dodecyl sulfate, triethanolamine salt	AAC, BRD, CYL, HLI, ONX, STP, TCH, TNI, WTC.
3,9-Diethyl-6-tridecyl sulfate, sodium salt	NCC.
*2-Ethylhexyl sulfate, sodium salt	AAC, NCC, SCP, TCH, WTC.
7-Ethyl-2-methyl-4-undecyl sulfate, sodium salt	NCC.
Hexadecyl sulfate, sodium salt	AAC, CTL.
Hexyl sulfate, potassium salt	DEX.
Lauryl sulfate, sodium salt	AZS.
Linear alcohols, sulfated, all other	WTC.
*Mixed linear alcohols, sulfated, ammonium salt	
Mixed linear alcohols, sulfated, diethanolamine salt	CP, NTL, PG, S, SCP, WTC.
Mixed linear alcohols, sulfated, magnesium salt	SCP.

TABLE 2. -- SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

SURFACE-ACTIVE AGENTS		MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ANIONIC--CONTINUED		
ALCOHOLS, SULFATED--CONTINUED		
Mixed linear alcohols, sulfated, mixed diethanolamine/triethanolamine salt-		SCP.
Mixed linear alcohols, sulfated, sodium salt		DA, DUP, PG, SCP, WTC.
Mixed linear alcohols, sulfated, triethanolamine salt		CTL, PG, SCP, WTC.
Naphthalene-formaldehyde condensate sulfate, sodium salt-		UDI.
1-Octadecenyl-2-naphthyl tetrahydropyrimidine		EMK, ONX.
*Octyl sulfate, sodium salt		AAC, APX, DUP.
Oleyl sulfate, sodium salt		DUP.
Polyglycidol sulfate		GAF.
Tridecyl sulfate, sodium salt-		AAC, DA.
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.
Nonylphenol, ethoxylated and sulfated, sodium salt		GAF, WTC.
Octylphenoxy polyethoxy ethyl sulfate-		DA, RH.
Phenol, 4,4'-sulfonobispolymex with formaldehyde and naphthalenesulfonic acid-		DA.
Decyl alcohol, propoxylated and sulfated, sodium salt		APX.
*Dodecyl alcohol, ethoxylated and sulfated, ammonium salt-		AAC, CTL, HLI, MOA, ONX, STP.
*Dodecyl alcohol, ethoxylated and sulfated, sodium salt		AAC, CYL, HLI, ONX, SCP, STP, TCH.
Dodecyl and tetradecyl alcohols, ethoxylated and sulfated, ammonium salt		HLI, LEV.
Isobutanol, ethoxylated and sulfated, ammonium salt		X.
*Mixed linear alcohols, ethoxylated and sulfated, ammonium salt-		AAC, 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 REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
SURFACE-ACTIVE AGENTS	
ANIONIC--CONTINUED	
ETHERS, SULFATED--CONTINUED	
Mixed linear alcohols, ethoxylated and sulfated, sodium salt	AAC, BRD, CO, DUP, GAP, PG, PII, SCP, SHC, STP, TGT, TX, WTC, WVA.
Myristic alcohol, sulfated, sodium salt	DA.
Tridecyl alcohol, ethoxylated and sulfated, sodium salt	AAC, ARL, ONX.
Sulfated ethers, all other	MOA.
NATURAL FATS AND OILS, SULFATED:	
*Castor oil, sulfated, sodium salt	ACT, ACY, AKS, ARI, ARL, CRT, DA, DEX, FTX, HFP, ICI, LEA, LUR, MRV, SCP, SEA, SLM, WHM.
Coconut oil, sulfated, sodium salt	ACY, CIN, MRD.
*Cod oil, sulfated, sodium salt	ARI, DA, SEA, WHI, WHW.
Grease, other than wool, sulfated, sodium salt	WHI.
*Herring oil, sulfated, sodium salt	ARI, SEA, SLM, WHW.
Lard, sulfated, sodium salt	CRT, FTX, MRD.
*Mixed fish oils, sulfated, sodium salt	CIN, MRD, SLM, WHW, WTC.
Mixed vegetable oils, sulfated, sodium salt	CIN.
Mustard oil, sulfated, sodium salt	DA.
Mustard seed oil, sulfated, sodium salt	DA.
*Neat's foot oil, sulfated, sodium salt	ACT, ARI, CIN, MRD, SLM, WHI, 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.
Sulfated fish and marine fat oils, all other	SLM.
Tail oil, sulfated, potassium salt	X.
*Tail oil, sulfated, sodium salt	ACT, APX, ARI, CHP, CIN, CRT, ICI, SEA, SOS, WHI, WHM, WTC.
*Tallow, sulfated, sodium salt	ACY, ARI, CCC, DA, ECC, LUR, MRD, PC, SID, SLM, SOS, WHI.
Wool grease, sulfated, sodium salt	WHI.
Sulfuric acid esters, all other	BFP, SLM.
OTHER ANIONIC SURFACE-ACTIVE AGENTS:	
Decyl alcohol, ethoxylated and carbonated, sodium salt	S.
Lignin, sodium salt	WVA.
Mixed linear alcohols, ethoxylated and carbonated, sodium salt	S.
Tridecyl alcohol, ethoxylated and carbonated, sodium salt	S.

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

SURFACE-ACTIVE AGENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
CATIONIC	
OTHER ANIONIC SURFACE-ACTIVE AGENTS--CONTINUED	
Anionic surface-active agents, all other	CMT, DAN, MIR, SLM, X.
ANIONIC SURFACE-ACTIVE AGENTS:	
*AMINE OXIDES AND OXYGEN-CONTAINING AMINES (EXCEPT THOSE HAVING AMIDE LINKAGES):	
*ACYCLIC:	
N,N-Bis(2-hydroxyethyl)(coconut oil alkyl)amine oxide	ARC.
N,N-Bis(2-hydroxyethyl)octadecylamine	ARC, SHX.
N,N-Bis(2-hydroxyethyl)(tallow alkyl)amine	ARC, SHX.
N,N-Bis(1-hydroxyisopropyl)tallowalkylamine	SVC.
*(Coconut oil alkyl)amine, ethoxylated	ARC, SHX, SVC, TCH, X.
(Coconut oil alkyl)amine, ethoxylated, oleate	BRD.
Cocoyl amidopropyl dimethylamine oxide	SCP.
Diethylenetriamine, propoxylated	BAK.
Diethylenetriamine, ethoxylated and propoxylated	BRD, HLI, JOR, PG, SBC, WTC.
N,N-Dimethyldodecylamine oxide	ARC.
N,N-Dimethyl(coconut oil alkyl)amine oxide	BRD.
N,N-Dimethylhexadecylamine oxide	ARC, BRD, JOR, ONX.
N,N-Dimethyl(hydrogenated tallow alkyl)amine oxide	ARC.
N,N-Dimethyl(mixed alkyl)amine oxide	PG.
N,N-Dimethyl oleyl amine oxide	SCP.
Docosylamine, ethoxylated	S.
Ethoxydiethanolamine	TCH.
Ethylendiamine, alkoxylated	X.
Ethylendiamine, propoxylated	DUP.
(Hydrogenated tallow alkyl)amine, ethoxylated	CPC, SHX.
N-(2-Hydroxyethyl)-N,N'-tris(2-hydroxypropyl)-ethylendiamine	ONX, WTC.
3-Isodecylxyloxy propylamine	SHX.
3-(3-Isodecylxyloxy)propylaminopropyl amine	SHX.
3-(Mixed alkoxy)propylamine, ethoxylated oxides	SHX.
3-(3-Mixed alkoxy)propylaminopropyl amine	SHX.
(Mixed alkyl)amine, ethoxylated	ICI, RH.
(Mixed alkyl)oxypropylamine	DUP.
Mixed tert-alkyl primary amines, ethoxylated	BAK.
*(9-Octadecenyl)amine, ethoxylated	GAF, TCH, X.
Octadecylamine, ethoxylated	ARC, TCH.
Polyalkylene polyamine, ethoxylated	X.

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--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	
Polyether amine, ethoxylated	TX.
Polyethylenepolyamine, alkoxylated	X.
(Soybean oil alkyl)amine, ethoxylated	ARC, SHX, SVC.
* (Tallow alkyl)amine, ethoxylated	ARC, BAS, DA, DUP, GAF, MCB, MRV, S, SHX, TCH, MVA.
(Tallow alkyl)amine, propoxylated	ARC.
N-Tallowalkyl-1,3-diaminopropylene, propoxylated	SVC.
N-(Tallow alkyl)trimethylenediamine, ethoxylated	ARC.
N-(Tallow alkyl)trimethylenediamine, propoxylated	ARC.
Tallow amidopropyl dimethylamine oxide	SCP.
Tetrakis(2-ethylenediamino)ethyl titanate	KPI.
3-(3-Tridecyloxy)propylaminopropyl amine	SHX.
Triethanolamine, ethoxylated	MIL.
Amine oxides and oxygen-containing amines (Except those with amide linkages), acyclic, all other	MCB, SDH.
*CYCLIC:	
Aniline, ethoxylated	MIL.
2-Butenedioic acid-(#)-diamine 1-(2-aminoethyl)-2-(tall oil alkyl)-2-imidazoline condensate	BAK.
2-(Coconut oil alkyl)-idiaboxylic imidazoline	MOA.
2,5-Dimethoxyaniline, ethoxylated	MIL.
Ethyl-2-capryl oxypropionic imidazoline	MOA.
2-Heptadecyl-1,4-hydroxymethyl-4-ethyl-2-oxazoline	BRD.
N-Hexadecylmorpholine	BRD.
1-(2-Hydroxyethyl)-2-heptadecyl-2-imidazoline	BRD, MOA.
*1-(2-Hydroxyethyl)-2-nonyl-2-imidazoline	BRD, DA, MIR, SCP, SHX.
*1-(2-Hydroxyethyl)-2-nor(coconut oil alkyl)-2-imidazoline	
*1-(2-Hydroxyethyl)-2-nor(tall oil alkyl)-2-imidazoline	AAC, BRD, CGY, MOA, TCH.
1-(2-Hydroxyethyl)-2-tall oil alkylimidazoline, patty acid salt	BRD, MOA, WTC, X.
1-(2-Hydroxyethyl)-2-tridecyl-2-imidazoline hydrochloride	X.
1-(2-Naphthenic acid amidoethyl)-2-naphthenyl-2-imidazoline	CGY.
*Rosin amine, ethoxylated	ARC.
m-Toluidine, ethoxylated	BAK, HPC, WTC.
Amine oxides and oxygen-containing amines (Except those having amine linkages), cyclic, all other	MIL.
	STC, TCH, WTC, MVA.

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

SURFACE-ACTIVE AGENTS		MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
CATIONIC--CONTINUED		
*AMINES AND AMINE OXIDES HAVING AMIDE LINKAGES:		
CARBOXYLIC ACID - DIAMINE AND POLYAMINE CONDENSATES:		
Caprylic acid tetraethylene-pentamine condensate		ICI.
Carboxylic acid-diamine and polyamine condensates, all other		GAF, RPC, STC, WTC.
Coconut oil acids-diethylenetriamine condensate		FTX.
Coconut oil acids-N,N-dimethyltrimethylenediamine condensate		SCP.
Mixed fatty acids-polyalkylenepolyamine condensate		AZS, QCP.
Naphthenic acids-polyalkylene polyamine condensate		X.
Naphthenic acids-tall oil fatty acids-polyalkylene polyamine condensate		X.
2-Nor tall oil alkyl-1-tall oil amidoethyl imidazoline		SHX.
Oleic acid-diethylenetriamine condensate		DA, ICI.
Oleic acid-N,N-dimethyltrimethylenediamine condensate		CCW.
Pelargonic acid-tetraethylenepentamine condensate		ICI.
*Stearic acid-diethylenetriamine condensate		ARI, DA, FTX, JOR, S.
Stearic acid - diethylenetriamine condensate, ethylsulfate		GDC.
Stearic acid - ethylenediamine condensate		CLD.
Stearic acid - ethylenediamine condensate, monoethoxylated, acetate		GDC.
Stearic acid - ethylenediamine condensate, monoethoxylated, ethylsulfate		GDC.
Stearic acid-tetraethylenepentamine condensate		ONX.
Stearic acid-tetraethylenepentamine condensate, acetate salts		X.
Tall oil acids-diethylenetriamine condensate		ARI, AZS, SCP, STC, MVA.
Tall oil acids-N,N-dimethylpropylenediamine condensate		FER.
Tall oil acids-polyalkylenepolyamine condensate		AZS, NCM, QCP, SCP, TP, MVA, 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		MVA.
Oleic acid-ethylenediamine condensate, monoethoxylated		DA, DEX, SOC.

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--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 CONDESATES, ALKOXYLATED--CONTINUED	
*Stearic acid-ethylenediamine condensate, monoethoxylated-	DA, DEX, ICI, SLC.
OTHER AMINES AND AMINE OXIDES HAVING AMIDE LINKAGES:	
Bichlorohydrin polyamide, ethoxylated-	S.
N,N-Bis(2-hydroxyethyl)-oleamide-	CGY.
N,N'-(Di-tall oil acid)amidoethylamine-	BAK, STC.
3-lauramido-N,N-dimethylpropylamine oxide-	HLI, ONX, SNW.
Stearamidoethyldiethylamine-	S.
Stearamidoethyl ethanolamine 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- ethanediyl)bis, monoacetate-	DA.
N,N-Dimethyl-N-alkylamine phosphate-	X.
(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.
N-(Docosyl and eicosyl)trimethylenediamine-	ENO.
2-Heptadecyl-2-imidazoline-	CGY, SCO.
3-(Hydrogenated tallow amino)propyl amine-	SHX.
N-(Mixed alkyl)polyethylenepolyamine-	CCM, 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.

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--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	
*N-(Tallow alkyl)dipropyleneetriamine	ARC, JTO, SHX.
N-(Tallow alkyl)trimethylamine triamine	NCM, TP.
*N-(Tallow alkyl)trimethylenediamine	ARC, JTO, NCM, TP.
N-(Tallow alkyl)-N,N',N'-trimethyl-1,3-propane diamine	ARC.
3-Tetradecylaminopropyl amine	SHX.
Diamines and polyamines, all other	STC, X, X.
*PRIMARY MONOAMINES:	
Arachidylbenzenylalkyl amine	ENO.
*Cocoonut oil alkyl)amine	ARC, ENO, JTO, MCB, SHX.
Dimeracidialkyl amine	ENO.
Dodecylamine	ARC, SHX.
Hexadecylamine	ARC, ENO.
*(Hydrogenated tallow alkyl)amine	ARC, ENO, JTO, SHX.
(Mixed alkyl)amine	SHX.
*9-Octadecenylamine	ARC, ENO, JTO, SHX.
*Octadecylamine	ARC, ENO, SHX.
(Soybean oil alkyl)amine	ARC, ENO, JTO.
(Tall oil alkyl)amine	SHX.
*(Tallow alkyl)amine	ARC, ENO, JTO, NCM, SHX, TP.
*SECONDARY AND TERTIARY MONOAMINES:	
Bis(coconut oil alkyl)amine	ARC.
Bis(hydrogenated tallow alkyl)amine	ARC.
Bis(octadecylamine)	ENO.
Bis(tallow alkyl)amine	ARC.
N,N-Didecylmethylamine	BRD.
N,N-Dimethyl(behenyl alkyl)amine	ENO.
N,N-Dimethyl(coconut oil alkyl)amine	ARC, ARC.
N,N-Dimethyl(dodecylamine)	ARC.
N,N-Dimethylhexadecylamine	ARC, ONX.
N,N-Dimethyl(hydrogenated tallow alkyl)amine	ARC, SHX.
N,N-Dimethyl(mixed alkyl)amine	BRD, ONX.
N,N-Dimethyl(9-octadecenyl-alkyl)amine	ENO.
N,N-Dimethyl-9-octadecenylamine	ARC.
N,N-Dimethyloctadecylamine	ARC, ENO.
N,N-Dimethyl(soybean oil alkyl)amine	ARC, ENO.
N,N-Dimethyl(tallow alkyl)amine	ARC, ENO.
N,N-Dimethyltetradecylamine	ARC.
N-Methylbis(coconut oil alkyl)amine	ARC.
N-Methylbis(hydrogenated tallow alkyl)amine	ARC, ENO, SHX.
Methyl didecylamine	ARC.

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
SURFACE-ACTIVE AGENTS	
CATIONIC--CONTINUED	
AMINES, NOT CONTAINING OXYGEN (AND SALTS THEREOF)--	
CONTINUED	
SECONDARY AND TERTIARY MONOAMINES--CONTINUED	
Tridodecylamine	ARC.
Trisodocylamine	SCP.
Trilaurylamine	SCP.
Tri(mixed alkyl)amine	SHX.
Trioctylamine	SCP, SHX.
Tri(tridecyl)amine	SHX.
Secondary and tertiary monoamines, all other	JTO, PEL, TNA.
OXYGEN-CONTAINING QUATERNARY AMMONIUM SALTS:	
Alkyldimethylamine diethyl sulfate	DA.
Benzene-methanamonium-N-(3-aminopropyl)-N,N-dimethyl-N-cocoacyl derivatives-chlorides	BAK.
Benzene-methanamonium-N,N-dimethyl-N-tetradecylchloride	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.
Benzyl(xrosin amine)ammonium chloride, ethoxylated	BAK.
Benzyl(tallow alkyl)bis(2-hydroxyethyl)ammonium chloride	DUP.
Bis(N,N'-ethyl(stearic/arachidic/behenic)amide)-cyanoethyl ethylammonium ethosulfate	PCI.
Bis(2-hydroxyethyl, ethoxylated)methyl(9-octadecenyl)-ammonium chloride	ARC.
Bis(2-hydroxyethyl, ethoxylated)-methyl(octadecyl)ammonium chloride	ARC.
Bis-2-hydroxyethyl-hydrogenated tallo-ethyl sulfate	ICI.
Bis(2-hydroxyethyl)methyl(tallow alkyl)methylammonium chloride	ARC.
Bis-2-hydroxyethyl-octyl-methyl-p-toluene sulfonate (Coconut oil alkyl)bis(2-hydroxyethyl, ethoxylated)-methylammonium chloride	HXL.
(Coconut oil alkyl)-bis-(2-hydroxyethyl)methylammonium nitrate	ARC, GAF, SHX.
Ethanaminium, 2-hydroxy-N,N-bis(2-hydroxyethyl)-N-methyl-, salt with salicylic acid	X.
(Ethoxybenzyl)dimethyl(octylcresoxy) ammonium chloride	RH.
(Ethoxybenzyl)dimethyl(octylphenoxy) ammonium chloride	RH.

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

SURFACE-ACTIVE AGENTS		MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
CATIONIC--CONTINUED		
OXYGEN-CONTAINING QUATERNARY AMMONIUM SALTS--CONTINUED:		
N-Ethyl-N,N-bis(polyoxyethylene)tallow ammonium ethyl sulfate		SHX.
1-Ethyl-2-(8-heptadecenyl)-1-(2-hydroxyethyl)-2-imidazolinium ethyl sulfate		SHX.
1-Ethyl-2-(8-heptadecenyl)-1-(9-octadecenyl)-amidoethyl ammonium sulfate		SHX.
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.
N-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 amidoethyl) ammonium methyl sulfate		SHX.
(3-Lauramidopropyl)trimethylammonium methyl sulfate		ACY.
2-(2-Lauroyloxyethyl)carbamoyl-1-methylpyridinium chloride		WTC.
1-Methyl-2-(8-heptadecenyl)-1-(9-octadecenyl)amidoethyl		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.
Methyltallondietylenetriamine condensate, polyethoxylated, methyl sulfate		SVC.
Methyltallondietylenetriamine condensate, polypropoxylated, methyl sulfate		SVC.
(Mixed fatty acid)imidazoline, diethyl sulfate		DA.
Oxygen-containing quaternary ammonium salts (Except those having amide linkages), all other		BAK, ICI, PCI, TCH, WTC, X, X.
1-Propanaminium, N-ethyl-N,N-dimethyl-3-((1-oxooctadecyl) amino-, ethyl sulfate)		SBC.

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

SURFACE-ACTIVE AGENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
CATIONIC--CONTINUED	
OXYGEN-CONTAINING QUATERNARY AMMONIUM SALTS--CONTINUED	
Stearylamidopropyl dimethyl myristyl acetate ammonium chloride	VND.
Stearylimidazoline, diethyl sulfate	DA.
Tallow amine, ethoxylated, quaternary ammonium salt	DUP, VND.
Tris(2-hydroxyethyl)(tallow alkyl)ammonium acetate	ARC.
Tris(2-hydroxyethyl)(tallow alkyl) ammonium acetate/N,N',N',N' penta(2-hydroxyethyl)(tallow alkyl)-1,3-diaminopropane diacetate	ARC.
Quaternary ammonium salts having amide linkages, all other	BAK, RPC, SHX, SNW.
*QUATERNARY AMMONIUM SALTS, NOT CONTAINING OXYGEN:	
*ACYCLIC:	
Bis(coconut oil alkyl)dimethylammonium chloride	ARC, ONX, SCP, SHX, WTC.
*Bis(hydrogenated tallow alkyl)dimethylammonium chloride	ARC, ENO, SHX, SVC, WTC.
Bis(hydrogenated tallow alkyl)-dimethylammonium methyl 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)amino]butyric acid, sodium salt	ARC, JTO, ONX, SHX.
Didecyl dimethylammonium chloride	BRD, HNT.
Dilauryldimethylammonium chloride	HXL.
Dimethyldi(C12-18)ammonium chloride (mixed straight and branched chains)	SHX.
Dimethyldiacetadecylbehenylammonium chloride	ENO.
Dimethyldi(coconut oil alkyl)ammonium sulfate	ARC.
Dimethyldioctadecylammonium chloride	SHX.
Dimethyldioctadecylammonium methyl sulfate	SHX.
Dimethylditallow ammonium chloride	SHX.
M,N-Dioctyl-N,N-dimethyl ammonium chloride	BRD.
Ditallowamidoammonium sulfate	CRD.
Dodecyltrimethylammonium chloride	ARC, SHX.
Ethyl dimethyl(mixed alkyl)ammonium ethyl sulfate	DEX, JOR.
Ethyl dimethyl(9-octadecenyl)ammonium bromide	ONX.
Ethylhexadecyldimethylammonium bromide	HXL.
Hexadecyltrimethylammonium bromide	HXL.
Hexadecyltrimethylammonium chloride	ARC, BRD, SHX.

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

SURFACE-ACTIVE AGENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
CATIONIC--CONTINUED	
QUATERNARY AMMONIUM SALTS, NOT CONTAINING OXYGEN--CONTINUED	
ACYCLIC--CONTINUED	
Hexadecyltrimethylammonium p-toluenesulfonate	HXL.
(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 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'-Pentamethyl-N-(tallow alkyl)-trimethylene-bis(ammonium chloride)	ARC, JTO, SHX.
Tetraethylammonium bromide	EK, HXL, RSA.
Tetraethylammonium bromide	EK, RSA, WCC.
Tetraethylammonium hydroxide	EK, TNA.
Tetraethylammonium bromide	RSA.
Tetraethylammonium chloride	EK.
Tetraethylammonium hydroxide	RSA.
Tetraethylammonium bromide	RSA.
Tetraethylammonium hydroxide	RSA.
Tributylmethylammonium chloride	TNA.
Trimethyl-dodecyl ammonium chloride	ONX.
*Trimethyl(soybean oil alkyl)ammonium chloride	ARC, JTO, SHX.
*Trimethyl(tallow alkyl)ammonium chloride	ARC, ENO, JTO, SHX.
Trimethyltetradecylammonium bromide	HXL.
Quaternary ammonium salts, not containing oxygen, acyclic, all other	CPS, ENO, TNA.
*BENZENOID:	
Benzyl(alkylpyridinium)chloride	X.
*Benzyl(coconut oil alkyl)dimethylammonium chloride	ARC, CCL, CRT, ENO, SCP, TCC.
*Benzyltrimethyl(mixed alkyl)ammonium chloride	AAC, BKM, BRD, HNT, JOR, ONX, PCI, RH, SCP, SDH, SHX, X.
*Benzyltrimethyl(mixed alkyl)ammonium chloride	CRD, CYL, HLI, HXL, JOR, ONX, SCP, SHX, TNI.
Benzyltrimethyl(tallow alkyl)ammonium chloride	ENO.
Benzyltrimethyltetradecylammonium chloride	HXL.

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

SURFACE-ACTIVE AGENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
CATIONIC--CONTINUED	
QUATERNARY AMMONIUM SALTS, NOT CONTAINING OXYGEN--CONTINUED	
BENZENOID--CONTINUED	
Benzyl(dodecyl-carbamyl-methyl)dimethylammonium chloride	HXL.
Benzyl dodecyl dimethyl ammonium chloride	HXL, ONX.
Benzyl hexadecyl dimethyl ammonium chloride	BKM, ONX.
Benzyl(hydrogenated tallow alkyl)dimethyl ammonium chloride	ARC, ENO, SHX.
Benzyl methyl-bis(hydrogenated tallow) ammonium chloride	ENO.
1-Benzyl-2-picolinium bromide	HXL.
Benzyl picolinium chloride	AKS.
1-Benzylpyridinium chloride	BRD, PCI.
Benzyl triethyl ammonium chloride	RSA.
*Benzyl trimethyl ammonium chloride	CHT, HIP, HXL, PCI, RSA, SHX, TCC.
Benzyl-tris(2-hydroxyethyl) ammonium chloride	TCC.
2,4-Dichlorobenzyl dimethyl(mixed alkyl) ammonium chloride	X.
(3,4-Dichlorobenzyl) dodecyl dimethyl ammonium chloride	ONX.
2-Dodecyl isoquinolinium bromide	ONX.
(Dodecyl methyl benzyl) trimethyl ammonium chloride	RH.
1-Dodecyl pyridinium chloride	CCL, DAN.
(Ethyl benzyl) dimethyl(mixed alkyl) ammonium chloride	HNT.
Methyl-bis(coconut oil alkyl) benzyl ammonium chloride	ARC.
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, GDC, ICI, X.
Cationic surface-active agents, all other	MTR, 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)	FTX, PC.
*Coconut oil acids (Ratio = 2/1)	AKS, ARL, CCL, CLI, CPC, CRD, CTL, CYL, DA, ECC, EFH, FTX, GDC, HLI, HNT, HRT, HTN, JOR, LEA, LUR, MCP, MOA, MRV, PEK, PNK, SBC, SCP, SHX, SOP, STP, TCH, UNN, VAL, WTC, X.

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

SURFACE-ACTIVE AGENTS		MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
NONIONIC--CONTINUED		
CARBOXYLIC ACID AMIDES--CONTINUED		
DIETHANOLAMINE CONDENSATES (AMINE/ACID RATIO = 2/1)--CONTINUED		
*Coconut oil and tallow acids (Ratio = 2/1)		BRD, CON, CRT, CTL, ESS, MOA, SBC, WTC, X.
Lard oil acids		FER.
Lard oil and tall oil acids		FER.
Lauric acid (Ratio = 2/1)		CLI, CRD, KNP, MOA.
*Lauric and myristic acids (Ratio = 2/1)		CRD, HRT, MOA, PG, SBC, STP.
Lauric and oleic acids (Ratio = 2/1)		SCP.
*Linoleic acid (Ratio = 2/1)		HRT, MOA, VND.
Modified coconut oil acids		BRD.
*Oleic acid (Ratio = 2/1)		ARC, CLI, EMR, FTX, SBC, SCP, STP.
Pellargonic acid (Ratio = 2/1)		TCH.
Stearic acid (Ratio = 2/1)		CLI, VAL.
*Tall oil acids (Ratio = 2/1)		ECC, FTX, MOA, SBC, WTC, MVA.
Tallow acids (Ratio = 2/1)		CLI, EFH, MOA.
Diethanolamine condensates (Amine/acid = 2/1), all other		SOS.
DIETHANOLAMINE CONDENSATES (OTHER AMINE/ACID RATIOS):		
Capric acid (Ratio = 1/1)		MOA.
*Coconut oil acids (Ratio = 1/1)		BRD, CGY, CLI, CTL, EMK, FTX, GAF, HLI, HNT, HRT, HTN, JOR, JRG, MOA, ONX, PII, SBC, SCP, SHX, STP, TCC, WTC, X.
*Lauric acid (Ratio = 1/1)		BRD, CLI, CYL, MOA, SBC, TCH, TNI.
*Lauric and myristic acid (Ratio = 1/1)		BRD, CLI, CPC, CYL, FTX, HTN, ONX, SBC, WTC.
*Linoleic acid (Ratio = 1/1)		CLI, FTX, MOA, SBC, VND.
Myristic acid (Ratio=1/1)		MOA.
Oleic acid (Ratio = 1/1)		HLI, SBC.
Soybean oil acids (Ratio=1/1)		MOA.
*Stearic acid (Ratio = 1/1)		CHP, ECC, HIP, MRV.
Tall oil acids		CHP, WTC.
Tallow acids		MOA, TCH, VPC.
ALL OTHER CARBOXYLIC ACID AMIDES:		
Alkanolamine condensates, all other		SCP, TCH, VND, WTC.
Carboxylic acid - alkanolamine condensates, all other		ROB, WTC.
Carboxylic acid-diamine and polyamine condensate, all other		JRG.
Castor oil acids-polyalkylene polyamine maleic anhydride condensate		X.
Coccaminoamide		DA.
Coconut oil acids		STP.
Coconut oil acids (Ratio = 1/1)		BRD, CYL, DA, HLI, MOA, VND.
Coconut oil acids (Ratio = 2/1)		STP.

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

SURFACE-ACTIVE AGENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
NONIONIC--CONTINUED	
CARBOXYLIC ACID AMIDES--CONTINUED	
ALL OTHER CARBOXYLIC ACID AMIDES--CONTINUED	
Coconut oil acids-	CCC.
Coconut oil acids-ethanolamine condensate, ethoxylated-	SFP.
Diolic acid (Ratio = 1/2)	CID.
Ethanolamine condensates, amine/acid ratio = 1/1, all other-	VND.
Ethanolamine condensates, amine/acid ratio = 2/1, all other-	MOA.
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.
Isopropanolamine condensates, all other-	WTC.
Isostearic acid, aminoethylethanolamide, acetate salt	PCI.
Lauric acid-	CLI, HTN, MOA.
Lauric and myristic acids (Ratio = 1/1)	MOA, ONX, PG.
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, RPC.
Oleic acid aminoethylethanolamine condensate (amine/acid ratio=1/2)	CID.
Oleic acid-ethanolamine condensate, ethoxylated	ONX, SHX.
Ricinoleic acid-	TCH.
Stearic acid (Ratio = 1/1)-	ECC, MOA, VND, WTC.
Stearic acid (Ratio = 1/2)	WTC.
Stearic acid (Ratio = 2/1)-	AKS, CLI.
Stearic acid aminoethanolamine (amine acid ratio = 1.0/1.65)-	CHP.
Stearic acid-aminoethyl ethanolamine (amine/acid ratio=1.75/1.0)-	SBC.
Stearic acid aminoethylethanolamine (amine acid ratio=1/2)	CID.
Stearic acid-N-aminoethyl ethanolamine condensate	MRV.
Stearic acid diethanolamine (amine acid ratio = 1.0/11.6)-	CHP.

TABLE 2.---SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

SURFACE-ACTIVE AGENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
NONIONIC--CONTINUED	
CARBOXYLIC ACID AMIDES--CONTINUED	
ALL OTHER CARBOXYLIC ACID AMIDES--CONTINUED	
Stearic acid-ethylenediamine condensate	
amine/acid ratio=1/2	TCH, WTC.
Tall oil acids-ethylene diamine condensate (Amine acid rat=10=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 and cocoa butter acids (Ratio=1/1)	GAF.
Undecylenic acid	TCH.
Carboxylic acid amides, all other	BAK, BKM, RPC, WTC.
*CARBOXYLIC ACID ESTERS:	
ANHROSORBITOL ESTERS:	
Anhydrosorbitol diostearate	TCH.
Anhydrosorbitol dioleate	ICI.
Anhydrosorbitol monoester of tall oil acids	WTC.
* Anhydrosorbitol monolaurate	BAS, BRD, GLY, ICI, TCH.
* Anhydrosorbitol mono-oleate	BAS, BRD, GLY, ICI, TCH.
Anhydrosorbitol monopalmitate	BAS, BRD, GLY, ICI.
Anhydrosorbitol monostearate	TCH.
Anhydrosorbitol sesquioleate	GLY, ICI.
* Anhydrosorbitol sesquisteate	BRD, GLY, ICI, TCH.
* Anhydrosorbitol trioleate	BRD, GLY, ICI.
* Anhydrosorbitol tristearate	GLY, ICI.
*DIETHYLENE GLYCOL ESTERS:	
Diethylene glycol distearate	GLY, STP.
Diethylene glycol monoester of tall oil acids	BKM.
Diethylene glycol monolaurate	ECC, GLY.
Diethylene glycol mono-oleate	VND.
* Diethylene glycol monostearate	CLI, ECC, ONX, STP, VND, WTC.
Diethylene glycol sesquieater of tall oil acids	ECC.
Diethylene glycol sesquisteate	GLY.
Diethylene glycol sesquilateate	WTC.
ETHOXYLATED ANHROSORBITOL ESTERS:	
Ethoxylated anhydrosorbitol hexaoleate	GLY.
Ethoxylated anhydrosorbitol monolaurate	BAS, BRD, GLY, ICI, TCH.
* Ethoxylated anhydrosorbitol mono-oleate	BAS, BRD, EMR, GLY, ICI, MCB, TCH.
Ethoxylated anhydrosorbitol monopalmitate	ICI.
* Ethoxylated anhydrosorbitol monostearate	GLY, ICI, TCH.
Ethoxylated anhydrosorbitol monotalate	TCH.
Ethoxylated anhydrosorbitol triester of tall oil acids	ICI.

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

SURFACE-ACTIVE AGENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
NONIONIC--CONTINUED	
CARBOXYLIC ACID ESTERS--CONTINUED	
ETHOXYLATED ANHYDROSORBITOL ESTERS--CONTINUED	
Ethoxylated anhydrosorbitol trioleate	GLY, ICI, TCH.
Ethoxylated anhydrosorbitol tristearate	BAS, GLY, ICI, TCH.
ETHOXYLATED SORBITOL ESTERS:	
Ethoxylated sorbitol beeswax ester	ICI.
Ethoxylated sorbitol esters, all other	BAK.
Ethoxylated sorbitol hexaester of tall oil acids	TCH.
Ethoxylated sorbitol hexaoleate	ICI, TCH.
Ethoxylated sorbitol lanolin ester	ICI.
Ethoxylated sorbitol mono-oleate	ICI, TCH.
Ethoxylated sorbitol oleate, acetylated	ICI.
Ethoxylated sorbitol pantalaurate	ICI.
Ethoxylated sorbitol tetraester of lauric and oleic acids	ICI.
Ethoxylated sorbitol tetraester of tall oil acids	WTC.
Ethoxylated sorbitol tetraoleate	ICI, MET, X.
Ethoxylated sorbitol tetraester	ICI.
Ethoxylated sorbitol trioleate	BAS.
ETHYLENE GLYCOL ESTERS:	
Ethylene glycol distearate	EMR, ICI, STP, TCH, WM, WTC.
Ethylene glycol mono-oleate	CGY, EFH.
*Ethylene glycol monostearate	CLI, CYL, GLY, HAL, KNP, STP, TCH, VND, WM.
Ethylene glycol esters, all other	MVA.
GLYCEROL ESTERS:	
COMPLEX GLYCEROL ESTERS:	
Glycerol diacetiltartrate 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, ethoxylated	SCP.
*GLYCEROL ESTERS OF CHEMICALLY DEFINED ACIDS:	
Glycerol dilaurate	VND.
Glycerol dioleate	STP.
Glycerol monocaprylate	GLY, HAL.
Glycerol monolaurate	GLY, HAL.
*Glycerol mono-oleate	EFH, EMR, GLY, GRO, HAL, STP, SVC, TCH.
*Glycerol monoricinoleate	GLY.
*Glycerol monostearate	ARI, CCC, CHL, CLD, CPC, CYL, EMR, GLY, GRO, HAL, HRT, LUR, SOS, STP, SVC, TCH, VND, WM, WTC, X.

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

SURFACE-ACTIVE AGENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
NONIONIC--CONTINUED	
CARBOXYLIC ACID ESTERS--CONTINUED	
GLYCEROL ACIDS--CONTINUED	
*GLYCEROL ESTERS OF MIXED ACIDS:	
Glycerol diester of lard acids	GLY.
Glycerol monoester of C ₈ -C ₁₀ acids	SVC.
Glycerol monoester of coconut oil acids and trioleic acid, mixed	SVC.
Glycerol monoester of cottonseed oil acids	EKT.
Glycerol monoester of hydrogenated cottonseed oil acids	EKT, WM.
Glycerol monoester of hydrogenated lard acids	EKT.
Glycerol monoester of hydrogenated soybean oil acids	BFP, EKT, WTC.
Glycerol monoester of lard acids	EKT.
Glycerol monoester of mixed fatty acids	LEV.
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 sesquiesther of hydrogenated tallow acids	WTC.
Glycerol sesquiesther of tall oil acids	SLM.
Glycerol esters of mixed acids, all other	BFP.
*NATURAL FATS AND OILS, ETHOXYLATED:	
Carnauba wax, ethoxylated	SHX.
*Castor oil, ethoxylated	BAS, DA, GAF, HTN, ICI, MCB, MIL, S, STC, SVC, TCH, TMH, WVA, X.
Cocnut oil, ethoxylated	MCB, SVC.
*Hydrogenated castor oil, ethoxylated	BAS, ICI, MCB, MIL, TCH.
*lanolin, ethoxylated	AAC, CRD, CRN, TCH.
Oleic acid, ethoxylated and propoxylated	MIL.
Soybean oil, ethoxylated	DA.
Stearic acid, ethoxylated	GAF.
Tall oil acids, ethoxylated and propoxylated	X.
Tall oil, refined, ethoxylated	TCH, X.
Natural fats and oils, ethoxylated, all other	MCB.
*POLYETHYLENE GLYCOL ESTERS:	
POLYETHYLENE GLYCOL ESTERS OF CHEMICALLY DEFINED ACIDS:	
*Polyethylene glycol dilaurate	GLY, HAL, STP, TCH, WM.
*Polyethylene glycol dioleate	CGY, CLD, DA, EFH, GLY, HAL, MIL, STP, TCH.
*Polyethylene glycol distearate	CHP, CRT, GLY, SBC, SHX, STP, TCH.

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--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 hydroxyacetate		CCA.
Polyethylene glycol monocaprylate		ECC.
* Polyethylene glycol monolaurate		TCH, WM. BAS, CCA, CGY, CLD, ECC, EFH, GLY, HAL, ICI, SHX, STP,
* Polyethylene glycol mono-oleate		ARC, BAS, CCA, CCC, CLD, CPC, CRT, DA, DEX, ECC, EFH, GAF, GDC, GLY, HAL, MRV, ONX, SHX, STP, SVC, TCH, WM, WTC.
Polyethylene glycol mono-oleate, ethoxylated		ICI.
* Polyethylene glycol monopalmitate		GLY, ICI, WTC.
Polyethylene glycol monopelargonate		TCH.
Polyethylene glycol monoricinoleate		DA.
* Polyethylene glycol monostearate		AKS, ARC, ARI, BAS, CRT, CYL, DA, EFH, GAF, GDC, GLY, HRT, ICI, SLC, STC, STP, SVC, TCH, VND.
Polyethylene glycol sesquinoate		TCH, WTC.
Polyethylene glycol (13 units) stearate		WPG.
Polyethylene glycol esters of chemically defined acids, all other		TCH, WTC.
POLYETHYLENE GLYCOL ESTERS OF MIXED ACIDS:		
Polyethylene glycol diester of coconut oil and oleic acids		EFH.
* Polyethylene glycol diester of tall oil acids		BRD, CCC, EFH, PCI, MVA, 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.
Polyethylene glycol (mixed ester) of tall oil acids		DA.
Polyethylene glycol sesquiester of coconut oil acids		AKS, LUR, MRT.
Polyethylene glycol sesquiester of rosin acids		MVA.
* Polyethylene glycol sesquiester of tall oil acids		AZS, ICI, IUR, SLM, MVA.
Polyethylene glycol sesquiester of tallow acids		SHX, WTC.
Polyethylene glycol esters of mixed acids, all other		EFH, PCI, S, SOS.
*POLYGLYCEROL ESTERS:		
Decaglycerol oleate		GLY.
Polyglycerol decaoleate		TCH.
Polyglycerol distearate		GLY, SHX.
Polyglycerol mono-oleate		MTC.

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

SURFACE-ACTIVE AGENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
CARBOXYLIC ACID ESTERS--CONTINUED	
POLYGLYCEROL ESTERS--CONTINUED	
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, SBC, TCH, WM.
OTHER CARBOXYLIC ACID ESTERS:	
Di-isobutylene maleate	RH.
Ethoxylated butanediol monostearate	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.
Hydroxyethyl methacrylate, monomer	AAC.
Isohexyldecylstearate	STC.
Lauric acid ester of glycerol and ethoxylated nonylphenol	TCC.
Linoleic acid dimers, alkoxylated	X.
Methylglucoside	CRN.
Methylglucoside dioleate	CRN.
Methylglucoside sesquistearate	CRN.
Mixed alkyl citrate	DUP.
Oleic acid, ethoxylated	S.
Pentaerythritol stearate	SCP.
Pentaerythritol, tall oil acid ester, alkoxylated	X.
Polycarboxylic acid, alkoxylate	X.
Polycarboxylic acid, alkylate	X.
Polycarboxylic acid, alkylphenoxalkoxylate	X.
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.
Carboxylic acid esters, all other	BAK, CHP, CRN, EMR, ICI, MCB, PEL, ROB, SVC, SYL, SYT.
*ETHERS:	
*BENZENOID ETHERS:	
Alkylphenol-formaldehyde condensates, alkoxylated, all other	WTC.
t-Amylphenol, ethoxylated	X.

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

SURFACE-ACTIVE AGENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
NONIONIC--CONTINUED	
ETHERS--CONTINUED	
BENZENOID ETHERS--CONTINUED	
*Dinonylphenol, ethoxylated	BAS, CPC, DA, GAF, HTN, RH, S, TCH, WTC.
*Dodecylphenol, ethoxylated	DA, GAF, MON, OMC, SOC, TCH, TMH.
Epichlorohydrin bisphenol A, ethoxylated	X.
Furfuryl alcohol, ethoxylated	SVC.
Iso-octylphenol, ethoxylated	AAC, GAF, MCB, RH, TMH.
(Mixed alkyl)phenol alkylenediamine dicarboxylic acid-formaldehyde, alkoxylated	X.
(Mixed alkyl)phenol alkylenediamine-formaldehyde, alkoxylated	X.
(Mixed alkyl)phenol epichlorohydrin-formaldehyde, alkoxylated	X.
(Mixed alkyl)phenol epichlorohydrin-glycerin-formaldehyde, alkoxylated	X.
(Mixed alkyl)phenol, ethoxylated	MIL, NTL.
(Mixed alkyl)phenol, ethoxylated, butyl ether	RH.
(Mixed alkyl)phenol-formaldehyde, ethoxylated	DA.
(Mixed alkyl)phenol-formaldehyde, alkoxylated	NTL, STC, WTC, X.
(Mixed alkyl)phenoxypoly(ethyleneoxy)ethyl chloride	GAF.
β -Naphthol, ethoxylated	X.
*Nonylphenol, ethoxylated	ARC, BAS, CPC, DA, GAF, HTN, ICI, MCB, MET, MIL, MON, MRV, OMC, RH, S, STC, STP, TCH, TMH, TX, UCC, WTC, MVA, X, X, X.
Nonylphenol, ethoxylated and propoxylated	RH, X.
Nonylphenol-formaldehyde, alkoxylated	WTC, X.
*n-Octylphenol, ethoxylated	BAS, DA, TCH.
tert-Octylphenol-formaldehyde, ethoxylated	SDM.
*Phenol, ethoxylated	BAS, DA, GAF, ICI, MIL, STC, TCH.
Soya sterols, ethoxylated	SCP.
Tridecylphenol, ethoxylated	TCH.
Phenols, ethoxylated, all other	MCB, PEL, RH, SVC.
*NONBENZENOID ETHERS:	
*LINEAR ALCOHOLS, ALKOXYLATED:	
Butanol, alkoxylated	X.
Butanol, ethoxylated	GAF, X.
Butanol, propoxylated	DA.
Cetyl alcohol, ethoxylated	GLY.
Decyl alcohol, ethoxylated and propoxylated	DA, TCH.
*Decyl alcohol, ethoxylated	BAS, GAF, MCB, MIL, MRV, S, TCH.
Decyloxypropyl(ethyleneoxy)ethyl chloride	GAF, ICI.
*Dodecyl alcohol, ethoxylated	AAC, MIL, WTC, X.

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

SURFACE-ACTIVE AGENTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
NONIONIC--CONTINUED	
NONBENZENOID ETHERS--CONTINUED	
LINEAR ALCOHOLS, ALKOXYLATED--CONTINUED	
Eicosyl alcohol, ethoxylated	SHX.
Hexadecyl alcohol, ethoxylated	ICI, TCH.
Lauryl alcohol, ethoxylated	S.
Methyl alcohol, alkoxyated	X.
N-Hexyl alcohol, ethoxylated	GAF.
9-Octadecenyl alcohol, ethoxylated	AAC, GAF, ICI, TCH.
Octadecyl alcohol, ethoxylated	GAF, ICI, S.
*Oleyl alcohol, ethoxylated	CRD, CRN, HTN, ICI, STC.
Stearyl alcohol, propoxylated	ICI.
Chemically defined linear alcohol, alkoxyated, all other	MCB, WTC.
Allyl alcohol, alkoxyated	MIL.
Coconut oil alcohol, ethoxylated	GAF, GLY, STC, TX.
Decyl and octyl alcohols, ethoxylated	GAF.
Ianolin alcohol, propoxylated	CRN.
*Mixed linear alcohols, ethoxylated	CO, DA, DUP, GAF, ICI, MCB, MET, MIL, PG, RH, S, SHC, STC, STP, TCH, TX, UCC, WTC, WVA, X.
*Mixed linear alcohols, ethoxylated and propoxylated	BAS, DA, DUP, GAF, MCB, MET, MIL, OMC, PG, S, STP, TCH, TX, UCC, WTC, WVA, X, X.
Mixed linear alkylpoly(ethyleneoxy)ethyl chloride	GAF.
Tallow alcohol, ethoxylated	AAC, PG, SHX, STC, TX.
Wool wax alcohols, ethoxylated	CRD.
Mixed linear alcohols, alkoxyated, all other	CRN, X, X.
*OTHER ETHERS AND THIOETHERS:	
Bis(alkyl-aryl)alcohols, ethoxylated	DA.
Butanediol, ethoxylated	GAF.
Butynediol, ethoxylated	GAF.
tert-Dodecyl mercaptan, ethoxylated	AAC, GAF, MET, X.
Glycerine, ethoxylated	MCB, X.
Isodecyl alcohol, ethoxylated	TCH.
Isodecyl alcohol, ethoxylated and propoxylated	MCB.
*Mixed alcohols, ethoxylated	CRN, DA, MCB, MIL, RH, X.
(Mixed aryl)alcohols, propoxylated	DA.
Polyethylene, ethoxylated	RH.
*Poly(mixed ethylene, propylene)glycol	BAS, DA, UCC, X, X.
Polypropylene glycol, ethoxylated	MCB, WTC, X.
Propoxylated corn starch	VAL.
2,4,7,9-Tetramethyl-5-decyne-4,7-diol, ethoxylated	MCB, TCH.
*Tridecyl alcohol, ethoxylated	BAS, DA, DUP, GAF, HTN, ICI, MCB, MIL, OMC, S, STC, TCH, TX, WTC, X.

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
SURFACE-ACTIVE AGENTS	
NONIONIC--CONTINUED	
OTHER ETHERS AND THIOETHERS--CONTINUED	
Tridecyl alcohol, propoxylated and ethoxylated	TCH, TX, WTC, X.
Trimethylaonyl alcohol, ethoxylated	MCB, TX.
Trimethylolpropane, alkoxylated	UCG.
Ethers and thioethers, all other	BAS, MCB, WTC.
*OTHER NONIONIC SURFACE-ACTIVE AGENTS:	AAC, ICI, MIL, RH, MVA, X.
Glycerol polyethylene glycol	SVC.
(Mixed alkyl)phenol alkylenediaminealkanolamine	
formaldehyde	X.
Octyl phosphate, ethoxylated	DUP.
Tri(castor oil alkyl)phosphate	GLY.
Nonionic surface-active agents, all other	CRN, KPI, MCB, MIL, PCI, PEL, PG, RPC, STC, TCH, WTC, X, X.

TABLE 3.--SURFACE-ACTIVE AGENTS: DIRECTORY OF MANUFACTURERS, 1982

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 1982 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.	KMR	Emery Industries Div. of National Distillers & Chemical Corp.
ACT	Southland Corp., Chemical Div.	ENO	Enenco, Inc.
ACY	American Cyanamid Co.	ESS	Essential Chemicals Corp.
AGP	Armour-Dial, Inc.	FER	Ferro Corp., Keil Chemical Div.
AKS	Arkansas Co., Inc.	FPC	Flambeau Paper Corp.
APX	Apex Chemical Co., Inc.	FTX	Finetex, Inc.
ARC	Armak Co.	GAF	GAF Corp.
ARI	Atlas Refining, Inc.	GDC	Gresto, Inc.
ARL	Arol Chemical Products Co.	GLY	Glyco, Inc.
ARZ	Arizona Chemical Co.	GRL	Chemed Corp., Vestal Laboratories Div.
AZS	AZS Corp. & AZS Chemical Corp.	GRO	A. Gross & Co., Millmaster Onyx Group
BAK	Baker International - Magna Corp.	HAL	C.P. Hall Co.
BAS	BASF Wyandotte Corp.	HEW	Hewitt Soap Co., Inc.
BFP	Breddo Food Products Corp., Inc.	HIP	High Point Chemical Corp.
BKM	Buckman Laboratories, Inc.	HLI	Onyx Chemical Co.
BLA	Astor Products, Inc., Blue Arrow Div.	HMP	W.R. Grace & Co., Hampshire Chemicals Div.
BRD	Lonza, Inc.	HNT	Huntington Laboratories, Inc.
BSW	Original Bradford Soap Works, Inc.	HPC	Hercules, Inc.
CCA	Interstab Chemicals, Inc.	HRT	Hart Products Corp.
CCC	C.N.C. Chemical Corp.	HTN	Heterene Chemical Co., Inc.
CCL	Catawba-Charlab, Inc.	HXL	Hexcel Corp., Hexcel Chemical Products
CCW	Carstab Corp.	ICI	ICI Americas, Inc., Chemical Specialties Co.
CGY	Ciba-Geigy Corp.	JLP	J.L. Prescott Co.
CHL	Chemol, Inc.	JOR	Jordan Chemical Co.
CHP	C.H. Patrick & Co., Inc.	JRG	Andrew Jergens Co.
CIN	Stockhausen, Inc.	JTO	Jetco Chemicals, Inc.
CLD	Colloids, Inc.	KNP	Knapp Products, Inc.
CLI	Clintwood Chemical Co.	KPI	Kenrich Petrochemicals, Inc.
CLU	Core-Lube, Inc.	LAS	Los Angeles Soap Co.
CMT	Chemithon Corp.	LEA	Leatex Chemical Co.
CO	Conoco, Inc.	LEV	Lever Brothers Co.
CON	Concord Chemical Co., Inc.	LKY	Lake States Div. of Rhineland Paper Co.
CP	Colgate-Palmolive Co.	LUR	Laurel Products Corp.
CPC	Grant Chemical Co.	MAR	American Can Co., Lignin Chemicals Div.
CPS	CPS Chemical Co., Inc.	MCB	Borg-Warner Corp., Borg-Warner Chemicals
CRD	Croda, Inc.	MCP	Moretex Chemical Products, Inc.
CRN	CPC International, Inc., Amerchol Corp.	MET	M & T Chemicals, Inc.
CRT	Chemos Corp., Crest Chemical Div.	MIL	Milliken & Co., Milliken Chemical Div.
CRZ	Crown Zellerbach Corp.	MIR	Miranol Chemical Co., Inc.
CSC	Central Soya Co., Inc.	MMC	EM Industries, Inc., EM Sciences Div.
CTL	Continental Chemical Co.	MOA	Mona Industrial, Inc.
CWP	Consolidated Papers, Inc.	MON	Monsanto Co.
CYL	Cyclo Chemicals Corp.	MRD	Marden-Wild Corp.
DA	Diamond Shamrock Corp.	MRT	Morton-Thiokol, Inc., Morton Chemical Co. Div.
DAN	Dan River, Inc., Chemical Products Div.	MRV	Marlowe-Van Loan Corp.
DEX	Dexter Chemical Corp.	NCC	Niacet Corp.
DOW	Dow Chemical Corp.	NCW	Tomah Products
DUP	E.I. duPont de Nemours & Co., Inc.		
DYS	Davies-Young Co.		
ECC	Eastern Color & Chemical Co.		
EFH	E.F. Houghton & Co.		
EK	Eastman Kodak Co.:		
EKT	Tennessee Eastman Co. Div.		
EMK	Emkay Chemical Co.		

SECTION XIII -- PESTICIDES AND RELATED PRODUCTS

223

STATISTICAL HIGHLIGHTS

Edmund Cappuccilli

202-523-0490

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

U.S. production of pesticides and related products in 1982 amounted to 1,113 million pounds--22.2 percent less than the 1,430 million pounds reported for 1981 (table 1).¹ Sales in 1982 were 1,147 million pounds, a decline of 11.1 percent, as compared with 1,291 million pounds reported in 1981; the value of sales was \$4,432 million in 1982, compared with \$4,652 million in 1981--a decrease of 4.7 percent.

The output of cyclic pesticides and related products amounted to 766 million pounds in 1982--24.4 percent less than the 1,012 million pounds produced in 1981. Sales in 1982 were 766 million pounds, valued at \$3,295 million, compared with 907 million pounds, valued at \$3,504 million, in 1981.

Production of acyclic pesticides and related products in 1982 amounted to 347 million pounds, compared with 418 million pounds reported for 1981. Sales in 1982 were 381 million pounds, compared with 383 million pounds reported for 1981; the value of sales were 1,137 million in 1982, compared with \$1,148 million in 1981.

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, 1982

[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-----	1,112,798	1,146,751	4,431,667	\$3.87
Benzenoid-----	644,531	627,242	2,658,966	4.24
Nonbenzenoid-----	468,267	519,509	1,772,701	3.41
CYCLIC				
Total-----	765,585	765,695	3,294,999	4.30
Fungicides, total-----	87,200	86,400	261,904	3.03
Naphthenic acid, copper salt-----	...	511	505	.99
All other cyclic fungicides ² -----	87,200	85,889	261,399	3.04
Herbicides and plant growth regulators, total-----	486,792	501,934	2,186,321	4.36
2-Chloro-4-(ethylamino)-6-(isopropylamino)-s-triazine (Atrazine)-----	56,239	82,123	201,122	2.45
2,4-Dichlorophenoxyacetic acid, dimethylamine salt-----	15,913	15,389	18,111	1.18
2,4-Dichlorophenoxyacetic acid, iso-octyl ester-----	3,405	3,130	3,667	1.17
3',4'-Dichloropropionanilide (Propanil)-----	14,635	...	...	...
All other cyclic herbicides ³ -----	396,600	401,292	1,963,421	4.89
Insecticides and rodenticides, total-----	191,593	177,361	846,774	4.77
Organophosphorus insecticides ⁴ -----	72,113	68,039	298,536	4.39
All other cyclic insecticides and rodenticides ⁵ -----	119,480	109,322	548,238	5.02
ACYCLIC				
Total-----	347,213	381,056	1,136,668	2.98
Fungicides, total-----	23,306	23,632	38,819	1.64
Dithiocarbamic acid salts ⁶ -----	20,375	21,189	32,424	1.53
All other acyclic fungicides-----	2,931	2,443	6,395	2.62
Herbicides and plant growth regulators ⁷ -----	136,559	160,903	679,511	4.22
Insecticides, rodenticides, soil conditioners, and fumigants, total-----	187,348	196,521	418,338	2.13
Organophosphorus insecticides ⁸ -----	50,316	57,432	190,424	3.32
Trichloronitromethane (Chloropicrin)-----	...	3,834	3,494	.91
All other acyclic insecticides, rodenticides, soil conditioners, and fumigants ⁹ -----	137,032	135,255	224,420	1.66

¹Calculated from unrounded figures.

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

³Includes 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.

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

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

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

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

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

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

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

TABLE 2.--PESTICIDES AND RELATED PRODUCTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982

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

PESTICIDES AND RELATED PRODUCTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
CYCLIC	
**FUNGICIDES:	
2-Bromo-4'-hydroxyacetophenone	BKM.
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)	DUP.
1,2-Dihydro-6-ethoxy-2,2,4-trimethylquinoline (Ethoxyquin)	MON.
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.
Mercaptobenzothiazole, zinc salt	VNC.
Methyl-1-(butylcarbamoyl)-2-benzimidazolecarbamate (Benonyl)	DUP.
2-(1-Methyl-n-heptyl)-4,6-dinitrophenyl crotonate (Dinocap)	MCI, RH.
2-Methyl-4-isothiazolin-3-one	RH.
*Naphtheneic acid, copper salt	CCA, FER, TRO, WTC.
2-n-Octyl-4-isothiazolin-3-one	FER, RH.
Pentachloronitrobenzene (PCNB)	OMC.
Pentachlorophenol (PCP)	DOM, FRO, RCI.
Pentachlorophenol, sodium salt	DOM.
Phenylmercuric acetate (PMA)	CLY, COS, TRO.
Phenylmercuric ammonium acetate	TRO.
Phenylmercuric oleate	COS, TRO.
8-Quinolinol	SOL.
8-Quinolinol, citrate salt	SOL.
8-Quinolinol(8-hydroxyquinoline), copper salt	SOL.
8-Quinolinol, sulfate salt	SOL.
cis-N-[(1,1,2,2-Tetrachloroethyl)thio]-1-cyclohexene-1,2-dicarboximide (Captafol)	SOC.
2,4,5,6-Tetrachloroisophthalonitrile	DA.

TABLE 2. -- PESTICIDES AND RELATED PRODUCTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

PESTICIDES AND RELATED PRODUCTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
CYCLIC--CONTINUED	
*FUNGICIDES--CONTINUED	
Tetrahydro-3,5-dimethyl-2H-1,3,5-thiadiazine-2-thione (DMT)	EFH, MRK, VCC.
2-(Thiocyanomethylthio)benzothiazole	BKM.
N-Trichloromethylthio-4-cyclohexene-1,2-dicarboximide (Captan)	SFA, SFC, VNC.
N-Trichloromethylthiophthalimide (Folpet)	EFH.
1,3,5-Tri(2-isopropanol)-s-triazine	USR.
Triphenyltin hydroxide	LIL.
Cyclic fungicides, all other	
*HERBICIDES AND PLANT GROWTH REGULATORS:	
3-Amino-2,5-dichlorobenzoic acid, ammonium salt (2,5-Dichloro-3-aminobenzoic acid, ammonium salt)	GAF, UCC.
4-Amino-6-(1,1-dimethylethyl)-3-(methylthio)-1,2,4-triazin-5-(4H)-one	CHG, DUP.
4-Amino-3,5,6-trichloropicolinic acid (Picloram)	DOW.
4,6-Bis(isopropylamino)-2-methoxy-s-triazine (Prometon)	CGY.
2,4-Bis(isopropylamino)-6-(methylthio)-s-triazine (Prometryn)	CGY.
5-Bromo-3-sec-butyl-6-methyluracil (Bromacil)	DUP.
2-(tert-Butylamino)-4-ethylamino-6-(methylthio)-s-triazine	CGY.
3-tert-Butyl-5-chloro-6-methyluracil	DUP.
N-Butyl-N-ethyl- α,α -trifluoro-2,6-dinitro-p-toluidine (Benefin)	LIL.
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.
2-[4-Chloro-6-(ethylamino)-s-triazin-2-ylamino]-2-methylpropionitrile (Cyanazine)	CGY.

TABLE 2.--PESTICIDES AND RELATED PRODUCTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--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 -trifluoro-2,6-dinitro-N-propyl-p-toluidine (Fluchloralin)	BAS.
2-Chloro-N-isopropylacetanilide (Propachlox)	DOM, MON.
2-Chloro-N-[4-methoxy-6-methyl-1,3,5-triazin-2-yl]aminocarbonylbenzenesulfonamide	DUP.
2-(4-Chloro-2-methylphenoxy)propionic acid (MCP)	DA.
2-(4-Chloro-2-methylphenoxy)propionic acid, dimethylamine salt	DA.
3-Cyclohexyl-6-(dimethylamino)-1-methyl-1,3,5-triazine-2,4-(1H,3H)-dione	DUP.
N-(Cyclopropylmethyl)- α,α -trifluoro-2,6-dinitro-N-propyl-p-toluidine (Profluralin)	CGY.
3,6-Dichloro-2-anisic acid (Dicamba)	VEL.
2-(2,4-Dichlorophenoxy)propionic acid	DA.
2-(2,4-Dichlorophenoxy)propionic acid, dimethylamine salt	DA, RBC.
3-(3,4-Dichlorophenyl)-1,1-dimethylurea (Diuron)	DUP.
3-(3,4-Dichlorophenyl)-1-methoxy-1-methylurea (Linuron)	DUP.
*3,4'-Dichloropropionanilide (Propanil)	CYT, RH, VTC.
S-(0,0-Diisopropyl phosphorodithioate) ester of N-(α -mercaptoethyl)benzenesulfonamide (Bensulide)	SFA.
1,1'-Dimethyl-4,4'-bipyridinium dichloride	X.
N,N-Dimethyl-2,2-diphenylacetamide (Diphenamid)	CMN.
N-(1,1-Dimethyl-2-propynyl)-3,5-dichlorobenzamide (Pronamide)	RH.
Dimethyl-2,3,5,6-tetrachloroterephthalate (DCPA)	DA.
N-[2,4-dimethyl-5-[[trifluoromethyl]sulfonyl]amino]phenylacetamide, diethanolamine salt	MMM.
Dinitrobutylphenol (DNBP)	DOM, USR, VTC.
Dinitrobutylphenol, ammonium salt	VTC.
Dinitrobutylphenol, triethanolamine salt	VTC.
Dinitroresol (DNOC)	USR.
2,6-Dinitro-N,N-dipropyl cumidine	CGY, LIL.
3,5-Dinitro-N,N-dipropylsulfanilamide	X.
2-(Ethylamino)-4-(isopropylamino)-6-(methylthio)-s-triazine (Ametryne)	CGY.
5-Ethyl cyclohexylethylthiocarbamate	SFA.
S-Ethyl-hexahydro-1H-azepine-1-carbothioate (Mollinate)	SFA.

TABLE 2.--PESTICIDES AND RELATED PRODUCTS FOR WHICH U.S.PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

PESTICIDES AND RELATED PRODUCTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
CYCLIC--CONTINUED	
*HERBICIDES AND PLANT GROWTH REGULATORS--CONTINUED	
N-(1-Ethylpropyl)-3,4-dimethyl-2,6-dinitrobenzenamine	ACY, S.
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)	DUP.
1-(2-Methylcyclohexyl)-3-phenylurea (Siduron)	DUP.
Methyl 2-[[[(4,6-dimethyl-2-pyrimidinyl)amino]carbonyl]amino]sulfonyl]benzoate	USR.
N-1-Naphthylphthalamic acid (NPA)	PAS.
7-Oxabicyclo-[2.2.1]heptane-2,3-dicarboxylic acid, disodium salt (Endothall)	DA.
PHENOXYACETIC ACID DERIVATIVES:	
4-Chloro-2-methylphenoxyacetic acid (MCPA)	DA.
4-Chloro-2-methylphenoxyacetic acid, dimethylamine salt	DA.
2,4-DICHLOROPHENOXYACETIC ACID, ESTERS AND SALTS:	
2,4-Dichlorophenoxyacetic acid (2,4-D)	DA, DOM, RDA.
2,4-Dichlorophenoxyacetic acid, butoxyethanol ester	DOM.
2,4-Dichlorophenoxyacetic acid, ethanalamine and butoxypropylpropylene glycol ester	DOM.
2,4-Dichlorophenoxyacetic acid, sec-butyl ester	DOM.
*2,4-Dichlorophenoxyacetic acid, dimethylamine salt	DA, DOM, PBI, RDA, RIV.
2,4-Dichlorophenoxyacetic acid, ethanalamine and isopropanolamine salts	DOM.
*2,4-Dichlorophenoxyacetic acid, iso-octyl ester	DOM, RDA, 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	DOM.
2,4,5-Trichlorophenoxyacetic acid, butoxypropylene glycol ester	DOM.
2,4,5-Trichlorophenoxyacetic acid, triethylamine salt	DOM.

TABLE 2.--PESTICIDES AND RELATED PRODUCTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

PESTICIDES AND RELATED PRODUCTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
CYCLIC--CONTINUED	
*HERBICIDES AND PLANT GROWTH REGULATORS--CONTINUED	
PLANT GROWTH REGULATORS:	
2-Chloro-6-(trichloromethyl)pyridine	DOM.
n-Decanol	USR.
1,2-Dihydro-3,6-pyridazinedione (Maleic hydrazide) (MH)	ACY, FMT, USR.
N,N-Dimethylpiperidinium chloride	BAS.
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)-phenylmethanesulfonamide, diethanolamine salt	MMM.
2-(2,4,5-Trichlorophenoxy)propionic acid, 2-butoxypropylene ester	DOM.
α , α -Trifluoro-2,6-dinitro-N,N-dipropyl-p-toluidine (Trifluralin)	LIL.
INSECT ATTRACTANTS AND REPELLENTS:	
N,N-Diethyltoluamide (DEET)	PFZ, TNA, VGC.
Insect attractants, all other	AIC.
*INSECTICIDES:	
Bacillus thuringiensis	ABB, S.
(5-Benzyl-3-furyl)methyl-2,2-dimethyl-3-(2-methylpropenyl)cyclopropane carboxylate (Resmethrin)	PEN.
2,3,4,5-6-Butenylene-tetrahydrofurfural	PLC.
2-(p-tert-Butylphenoxy)cyclohexyl-2-propynyl sulfite	ACY, USR.
Cyano(3-phenoxyphenyl)methyl-4-chloro- α -(1-methyl)benzeneacetate	SFA.
Cypermethrin	FMM, SHC, X.
2,3-Dihydro-2,2-dimethyl-7-benzofuranyl(dibutylamino)thioimethyl carbamate	FMM, NES.
2,3-Dihydro-2,2-dimethyl-7-benzofuranyl methylcarbamate	FMM.
2,2-Dimethyl-1,3-benzodioxol-4-yl N-methylcarbamate	FSM.
Di-n-propylisocinchomeronate	MGK.
Distinnaxane, hexakis(2-methyl-2-phenylpropyl)	SHC.

TABLE 2.--PESTICIDES AND RELATED PRODUCTS FOR WHICH U.S.PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

PESTICIDES AND RELATED PRODUCTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
CYCLIC--CONTINUED	
*INSECTICIDES--CONTINUED	
Heliothis nuclear polyhedrosis virus	S.
Isopropyl-11-methoxy-3,7,11-trimethyldeca-2,4-dienoate	X.
Methyl 3-(2,2-dichlorovinyl)-2,2-dimethylcyclopropane carboxate	FMN.
1-Naphthyl N-methylcarbamate (Carbaryl)	UCC.
Permethrin	FMX, X.
Tetrahydro-5,5-dimethyl-2(1H)-pyrimidinone[3-[4-(trifluoromethyl)phenyl]-1-[4-(trifluoromethyl)phenyl]ethenyl]-2-propenylidene hydrozone	ACY.
Tricyclohexyltin hydroxide	X.
CHLORINATED INSECTICIDES:	
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, VTC.
1,1,1-Trichloro-2,2-bis(p-chlorophenyl)ethane (DDT)	MTO.
1,1,1-Trichloro-2,2-bis(p-methoxyphenyl)ethane (Methoxychlor)	CHF, DUP.
Cyclic insecticides, all other	PEN.
*ORGANOPHOSPHORUS INSECTICIDES:	
S-[(p-Chlorophenyl)thio]methyl 0,0-diethylphosphorodithioate (Carbophenothion)	SFA.
N'-(Chloro-o-tolyl-N,N-dimethylformamide (Chlordimeform)	FRI.
2-Chloro-1-(2,4,5-trichlorophenyl)vinyl dimethyl phosphate (Tetrachlorvinphos)	SHC.
O-(2,4-Dichlorophenyl) 0-ethyl S-propylphosphorodithioate	CHG.
2-(Diethoxyphosphinylimino)-4-methyl-1,3-dithiolane	ACY, X.
0,0-Diethyl O-(2-isopropyl-4-methyl-6-pyrimidinyl) phosphorothioate (Diazinon)	CGY, VEL.
0,0-Diethyl O-(4-(methylsulfanyl)phenyl) phosphorothioate	CHG.
0,0-Diethyl O-(p-nitrophenyl)phosphorothioate (Parathion)	MON.
0,0-Diethyl 0-3,5,6-trichloro-2-pyridyl phosphorothioate	DOW.

TABLE 2.--PESTICIDES AND RELATED PRODUCTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

PESTICIDES AND RELATED PRODUCTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
CYCLIC--CONTINUED	
*INSECTICIDES--CONTINUED	
*ORGANOPHOSPHORUS INSECTICIDES--CONTINUED	
0,0-Dimethyl 0-[4-(methylthio)-m-tolyl]-phosphorothioate (Fenthion)	CHG.
0,0-Dimethyl 0-(p-nitrophenyl)phosphorothioate (Methyl parathion)	MON.
0,0-Dimethyl S-[4-oxo-1,2,3-benzotriazin-3(3H)-yl)methyl]phosphorodithioate (Azinphos-methyl)	CHG.
0,0-Dimethyl 0-(2,4,5-trichlorophenyl)-phosphorothioate (Ronnel)	DOM.
2,3-p-Dioxanedithiol S,S-Bis-(0,0-diethyl)-phosphorodithioate (Dioxathion)	BHA.
0-Ethyl 0-[4-(methylthio)phenyl] S-propyl-phosphorodithioate	CHG.
0-Ethyl 0-(p-nitrophenyl)phenylphosphorothioate (EPN)	DUP, SFA.
0-Ethyl-S-phenylethylphosphonodithioate	SFA.
0-2-Isopropoxycarbonyl-1-methylvinyl 0-methyl ethylphosphoramidothioate	S.
NEMATOCIDES:	
0,0-Diethyl 0-(2,4-dichlorophenyl)phosphorothioate (Dichlofenthion)	RDA.
RODENTICIDES:	
3-(α -Acetylbenzyl)-4-hydroxycoumarin (Warfazin)	MOT.
2-Diphenylacetyl-1,3-indandione and sodium salt	MOT, RBC.
2-Isovaleryl-1,3-indandione	MOT.
2-Pivaloyl-1,3-indandione (Pindone)	MOT.
CYCLIC PESTICIDES, ALL OTHER:	
α -[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.
Pesticides and related products, cyclic, all other	FKE.
ACYCLIC	
*FUNGICIDES:	
Bis-1,4-bromoacetoxy-2-butene	VIN.
1,2-Dibromo-2,4-dicyanobutane	MRK.
Sodium cyanodithioimidocarbonate	BKM.
n-Dodecylguanidine acetate (Dodine)	ACY.
Dotecylguanidine hydrochloride	MRK.
Methylene bis(thiocyanate)	MRK, VCC.

TABLE 2.--PESTICIDES AND RELATED PRODUCTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

PESTICIDES AND RELATED PRODUCTS
 MANUFACTURERS' IDENTIFICATION CODES
 (ACCORDING TO LIST IN TABLE 3)

ACYCLIC--CONTINUED

*FUNGICIDES--CONTINUED
 Poly[oxyethylene(dimethyliminio)-
 ethylene(dimethyliminio)ethylene dichloride] -- BKM.
 Poly(n,n,n',n'-tetramethylethylenediamine) with
 (chloromethyl)oxirane -- BKM.
 *DITHIOCARBAMIC ACID FUNGICIDES:
 Dimethyldithiocarbamic acid, ferric salt (Ferbam) : FMN.
 Dimethyldithiocarbamic acid, potassium salt -- BKM.
 Dimethyldithiocarbamic acid, sodium salt -- VCC, VNC.
 Ethylene bis(dithiocarbamic acid), diammonium salt : RBC.
 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) -- FMN, RH.
 Hydroxymethyl(methyl)dithiocarbamic acid,
 potassium salt -- BKM, FMN.
 N-Methyldithiocarbamic acid, potassium salt -- BKM.
 N,N-Bis(phosphonomethyl)glycine -- MON.
 2-Chloroallyl diethyldithiocarbamate (CDEC) -- 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.
 S-Ethyl diisobutylthiocarbamate (Butylate) -- SFA.
 S-Ethyl dipropylthiocarbamate (EPTC) -- SFA.
 Ethyl xanthogen disulfide -- RBC.
 Methanearsonic acid, disodium salt (DSMA) -- CLY, VIN.
 Methanearsonic acid, dodecyl- and octyl- ammonium
 salts -- CLY.
 Methanearsonic acid, monosodium salt (MSMA) -- DA.
 Methylthiosulfonic acid, S-(2-hydroxypropyl) ester : BKM.
 N-(Phosphonomethyl)glycine, isopropylamine salt -- MON.
 S-Propyl butylethylthiocarbamate (Pebulate) -- SFA.
 S-Propyl dipropylthiocarbamate (Vernolate) -- SFA.

TABLE 2.---PESTICIDES AND RELATED PRODUCTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

PESTICIDES AND RELATED PRODUCTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
*HERBICIDES AND PLANT GROWTH REGULATORS--CONTINUED	
Thiocyanic acid, methylene ester	BKM.
S,S-Tributyl phosphorotriothioate	CHG, PLC.
Tributyl phosphorotriothioate (Mezphos)	RDA.
S-(1,2,3-Trichloroallyl) diisopropylthiocarbamate (Triallate)	MON.
PLANT GROWTH REGULATORS:	
2-(Chloroethyl)phosphonic acid	GAF, 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-[(methylcarbamoyloxy)-1-thiooxamidate]	DUP.
S-Methyl-N-[(methylcarbamoyloxy)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 1,2-Dibromo-2,2-dichloroethyl dimethyl phosphate (Naled)	AMV, SHC.
O,O-Diethyl S-[2-(ethylthio)ethyl]-phosphorodithioate (Disulfoton)	CHG.
O,O-Diethyl O-[2-(ethylthio)ethyl]-phosphorothioate (Demeton O)	CHG.
O,O-Diethyl S-[(ethylthio)methyl]-phosphorodithioate (Phorate)	ACY.
3-(Dimethoxyphosphinyloxy)-N,N-dimethyl-cis-crotonamide	SHC.
O,S-Dimethylacetylphosphoramidothioate (Acephate)	SOC.
O,O-Dimethyl-O-2,2-dichlorovinyl phosphate (DDVP)	AMV, SHC.
S-[[1,1-Dimethylethyl]thio]methyl] O,O-diethyl phosphorodithioate (Turbufos)	ACY.
Dimethyl phosphate of 3-hydroxy-N-methyl-cis-crotonamide	SHC.
O,S-Dimethyl phosphoramidothioate	CHG.
O,O-Dimethyl phosphorochloridothioate	CHG.

TABLE 2.--PESTICIDES AND RELATED PRODUCTS FOR WHICH U.S.PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

PESTICIDES AND RELATED PRODUCTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
*INSECTICIDES--CONTINUED	
*ORGANOPHOSPHORUS INSECTICIDES--CONTINUED	
0,0,0',0'-Tetraethyl S,S'-methylene- bisphosphorodithioate (Ethion)	FMN.
0,0,0,0-Tetra-n-propylidithiopyrophosphate	SFA.
Organophosphorus insecticides, acyclic, all other	AMV.
RODENTICIDES:	
Fluoroacetamide	RBC.
2-Hydroxyethyl n-octyl sulfide	PLC.
Sodium fluoroacetate	RBC, TUL.
SOIL CONDITIONERS:	
Polyacrylonitrile, hydrolyzed, sodium salt	ACY, ALC.
SOIL FUMIGANTS:	
1,2-Dibromo-3-chloropropane (DBCP)	AMV.
1,3-Dichloropropene	DOM.
1,3-Dichloropropene, 1,2-dichloropropane	DOM, SHC.
O-Ethyl S,S-dipropyl phosphorodithioate	RDA.
Methyl bromide (Bromomethane)	DOM, GTL.
N-Methyldithiocarbamic acid, sodium salt (Metham)	BKM, SFA, X.
Methyl isothiocyanate	MRT.
*Trichloronitromethane (Chloropicrin)	DOM, LCP, NLO.
ACYCLIC PESTICIDES, ALL OTHER:	
Bromoacetic acid	VIN.
Copper ethylenediamine complex	S.
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, 1982

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 1982 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.
AIC	Chemsampco, Inc., DBA, Albany International Corp., Chemical Div.	MRT	Morton-Thjakol, 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.	OMC	Olin Corp., Specialty Chemicals Dept.
BHA	Boots Hercules Agrochemicals Co.	PAS	Pennwalt Corp.
BKM	Buckman Laboratories, Inc.	PBI	PBI-Gordon Corp.
CCA	Interstab Chemicals, Inc.	PCW	Pfister Chemical, Inc.
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.
CLY	W. A. Cleary Corp.	PPG	PPG Industries, Inc.
COS	Cosan Chemical Corp.	RBC	Fike Chemicals, Inc.
CWN	Upjohn Co., Fine Chemical Div.	RCI	Reichhold Chemicals, Inc.
CYT	Cumberland Chemical Corp.	RDA	Rhone-Poulenc, Inc.
DA	Diamond Shamrock Corp. and Diamond Shamrock Agriculture Chemical, Inc., Phenoxy Plant	RH	Rohm & Haas Co.
DOW	Dow Chemical Co.	RIV	Riverdale Chemical Co.
DUP	E. I. duPont de Nemours & Co., Inc.	S	Sandoz Inc., Crop Protection
EFH	E. F. Houghton & Co.	Stauff	Stauffer Chemical Co.: Agricultural Div.
FER	Ferro Corp., Ferro Chemical Div.	SFA	Calhio Chemicals, Inc.
FKE	Frank Enterprise, Inc.	SFC	Shell Oil Co., Shell Chemical Co. Div.
FMN	FMC Corp., Agricultural Chemical Div.	SM	Mobil Oil Corp., Mobil Chemical Co.
FMT	Fairmount Chemical Co., Inc.	SOC	Standard Oil Co. of California, Chevron Chemical Co.
FRI	Farmland Industries, Inc.	SOL	Southland Corp., Fine Chemicals Div.
FRO	Vulcan Materials Co., Chemicals Div.	TMA	Ethyl Corp.
FSN	BFC Chemicals Inc.	TRO	Troy Chemical Corp.
GAF	GAF Corp.	TUL	Tull Chemical Co., Inc.
GNW	Greenwood Chemical Co.	UCC	Union Carbide Corp.
GTH	Guth Corp.	USR	Uniroyal, Inc., Uniroyal Chemical Div.
GTL	Great Lakes Chemical Corp.	VCC	Vinings Chemical Co.
LAK	Bofors Nobel, Inc. & Lakeway, Inc.	VEL	Velsicol Chemical Corp.
LCP	LCP Corp.-Maine	VGC	Virginia Chemicals, Inc.
LIL	Eli Lilly & Co.	VIN	Vineland Chemical Co., Inc.
MCI	Mooney Chemical, Inc.	VNC	Vanderbilt Chemical Corp.
MGK	McLaughlin Gormley King Co.	VTC	Vertac Chemical Corp.
MMM	Minnesota Mining & Manufacturing Co.	WTC	Witco Chemical Corp.
MOW	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 81 reporting companies and company divisions for which permission to publish was not restricted.

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

237

STATISTICAL HIGHLIGHTS

David G. Michels
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 1982, the production of miscellaneous end-use chemicals exceeded 33.0 billion pounds, an increase of 49 percent from the more than 22.2 billion pounds of production reported for 1981. Sales in 1982 totaled 12.9 billion pounds, valued at \$3.6 billion. The sales quantity decreased 0.5 percent from that of 1981 with the value of sales decreasing by 9.9 percent. Polymers for fibers and urea collectively accounted for 50 percent of the 1982 production of these miscellaneous end-use chemicals. Urea accounted for 33 percent of the 1982 sales quantity of these chemicals.

In 1982, the production of lubricating oil and grease additives totaled 1.5 billion pounds, a decrease of 1.5 percent, compared with 1981. Total sales quantity for 1982 was 1.1 billion pounds, 2.8 percent less than the 1981 sales quantity of 1.1 billion pounds, while the value of sales increased 3.3 percent to \$925 million.

Production of fuel additives for 1982 totaled 1.4 billion pounds, an increase of 2.2 percent from the previous year. Total sales quantity for 1982 was 1.2 billion pounds, up 4.1 percent from the 1981 sales quantity of 1.1 billion pounds, with the sales value decreasing 2.9 percent to \$649 million.

TABLE 1.--MISCELLANEOUS END-USE CHEMICALS AND CHEMICAL PRODUCTS: U.S. PRODUCTION AND SALES, 1982

[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 and may not be published or where no data were reported.) Table 2 lists all miscellaneous end-use chemicals and chemical products for which data on production and/or sales were reported and identifies the manufacturers of each]

MISCELLANEOUS END-USE CHEMICALS AND CHEMICAL PRODUCTS	SALES			
	PRODUCTION	QUANTITY	VALUE	UNIT VALUE ¹
	1,000 pounds	1,000 pounds	1,000 dollars	Per pound
Grand total-----	33,012,500	12,895,443	3,583,189	\$0.28
Chelating agents, nitriloacids and salts, total-----	158,130	161,835	112,484	.70
(Diethylenetrinitrilo) pentaacetic acid, penta- sodium salt-----	6,988	10,062	4,545	.45
(Ethylenedinitrilo) tetraacetic acid (EDTA)-----	6,208	5,999	8,898	1.48
(Ethylenedinitrilo) tetraacetic acid, calcium di- sodium salt-----	645	624	1,427	2.29
(Ethylenedinitrilo) tetraacetic acid, disodium copper salt, dihydrate-----	...	392	413	1.05
(Ethylenedinitrilo) tetraacetic acid, disodium salt- (Ethylenedinitrilo) tetraacetic acid, tetrasodium salt-----	1,012	998	1,835	1.84
(N-Hydroxyethylethylenedinitrilo) triacetic acid, iron salt-----	31,401	34,015	26,463	.78
(N-Hydroxyethylethylenedinitrilo) triacetic acid, trisodium salt-----	893	1,171	769	.66
Nitrilo-tris-methylene triphosphonic acid-----	4,801	4,960	3,012	.61
Nitrilo-tris-methylene triphosphonic acid, sodium salt-----	2,741	...	...	...
Polyamine polymethane phosphonic acid-----	807	...	...	...
All other-----	1,560	...	...	...
Chemical indicators-----	101,074	103,614	65,122	.63
Chemical reagents and fine chemicals-----	8	7	948	127.29
Enzymes:	593	363	22,537	62.10
Bacterial amylase-----	(²)	(²)	10,522	(²)
Glucosylase-----	(²)	(²)	24,660	(²)
Proteases, total-----	(²)	(²)	17,159	(²)
Protease, bacterial-----	(²)	(²)	2,954	(²)
Rennin-----	(²)	(²)	9,471	(²)
All other proteases-----	(²)	(²)	4,734	(²)
Fuel additives, total ³ -----	1,435,225	1,156,115	649,490	.56
Gasoline additives, total-----	1,384,104	1,110,466	595,255	.54
Ethylenedibromide-----	169,757	75,777	20,566	.27
Methyl-t-butyl ether-----	824,013	696,894	134,583	.19
Tetraethyl lead-----	224,195	204,562	259,322	1.27
Tetra(methyl-ethyl) lead, (TEL-TML, reacted)-----	130,263	120,927	164,178	1.36
All other gasoline additives-----	35,876	12,306	16,606	1.35
All other fuel additives-----	51,121	45,649	54,235	1.19
Lubricating oil and grease additives, total-----	1,521,164	1,104,781	925,194	.84
Chlorosulfurized and sulfurized compounds-----	...	2,543	10,397	4.09
Oil soluble petroleum sulfonate, barium salt-----	1,371	...	...	...
Oil soluble petroleum sulfonate, calcium salt-----	203,183	164,335	129,463	.79
Oil soluble petroleum sulfonate, sodium salt-----	108,338	105,875	49,278	.47
Phenol salts, total-----	110,230	105,891	84,830	.80
Nonylphenol, barium salt-----	4,986	...	...	...
All other-----	105,244	105,891	84,830	.80
Phosphorodithioates (Dithiophosphates)-----	92,844	...	...	...
Sulfur compounds-----	101,179	91,616	63,854	.70
All other lubricating oil and grease additives-----	904,019	634,521	587,372	.93

See footnotes at end of table.

TABLE 1.--MISCELLANEOUS END-USE CHEMICALS AND CHEMICAL PRODUCTS: U.S. PRODUCTION AND SALES, 1982--CONTINUED

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
Methionine and its salt-----	75,105	76,474	91,534	\$1.20
Paint driers, naphthenic acid salts, total ⁴ ⁵ -----	7,855	7,247	10,513	1.45
Calcium naphthenate-----	493	491	501	1.02
Cobalt naphthenate-----	2,072	1,956	6,666	3.41
Manganese naphthenate-----	296	293	278	.95
All other-----	4,994	4,507	3,068	.68
Photographic chemicals, total-----	...	836	6,475	7.74
p-Diethylaminobenzenediazonium chloride-----	114	...	...	...
p-Dimethylaminobenzenediazonium chloride-----	120	112	447	4.00
All other photographic chemicals-----	...	724	6,028	8.32
Polymers for fibers, total-----	5,845,039	399,137	411,197	1.03
Nylon 6 and 6/6-----	1,737,343	...	...	...
Polyacrylonitrile and acrylonitrile copolymers-----	561,769	...	...	...
Polyethylene terephthalate-----	2,449,656	87,587	59,112	.67
All other polymers for fibers-----	1,096,271	311,550	352,085	1.13
Polymers, water soluble, total-----	285,716	205,889	364,976	1.77
Cellulose ethers and esters-----	149,015	124,372	228,769	1.84
Polyacrylamide-----	57,381	27,536	57,707	2.10
Polyacrylic acid salts, total-----	29,162	24,048	20,040	.83
Sodium polyacrylate-----	16,164	14,702	6,495	.44
All other polyacrylic acid salts-----	12,998	9,346	13,545	1.45
1-Vinyl-2-pyrrolidinone polymers-----	11,850	8,185	19,723	2.41
All other water soluble polymers-----	38,308	21,748	38,737	1.78
Tanning materials, synthetic, total-----	43,130	37,481	20,602	.55
2-Naphthalenesulfonic acid, formaldehyde condensate and salt-----	37,278	32,293	16,703	.52
All synthetic tanning materials-----	5,852	5,188	3,899	.75
Textile chemicals, other than surface-active agents:				
Dicyanodiamide formaldehyde ammonium chloride polymer-----	498	482	363	.75
Dimethylolhydroxyethylene urea-----	32,336	...	...	...
Urea polymers with formaldehyde and methanol-----	1,093	...	...	...
Urea:				
In feed compounds-----	413,777	338,724	30,633	.09
In liquid fertilizer-----	3,430,432	2,269,718	188,709	.08
In solid fertilizer-----	6,442,847	6,759,435	541,104	.08
In plastics-----	580,048	249,269	18,527	.07
All other miscellaneous end-use chemicals and chem- ical products ⁶ -----	12,739,270	127,650	135,562	1.06

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 or publishable as groups.

TABLE 2.--MISCELLANEOUS END-USE CHEMICALS AND CHEMICAL PRODUCTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982

[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-alkylamino bismethylenephosphonic acid, magnesium salts	: RPC.
N-alkylaminobismethylene phosphonic acid salts	: X.
Aminotrimethyl phosphonic acid	: SCP.
Diethylenetriaminepenta(methylene phosphonic acid)	: WAY.
(Diethylenetriamine)pentamethylene phosphonic acid, sodium salt	: WAY.
(Diethylenetriamino)pentacetic acid	: CGY, HMP.
(Diethylenetriamino)pentacetic acid, monosodium	: CGY.
hydrogen ferric salt	: CGY, DA, DAN, DOM, HMP, RPC.
*(Diethylenetriamino)pentacetic acid, pentasodium salt	: HMP.
(Diethylenetriamino)pentacetic acid, trisodium	: EKT.
(Diethylenetriamino)pentamethylene phosphonic acid, pentasodium salt	: DAN, HMP.
N,N-Dihydroxyethylglycine, sodium salt	: HMP.
N,N-Di-(2-hydroxy-5-sulfonic acid benzyl)glycine, iron salt	: BKM.
[(Dimethylamino)methylene]bisphosphoric acid, trisodium salt	: BKM.
[(Dimethylamino)methylene]bisphosphonic acid, monosodium salt	: HMP.
Ethanol diglycine, disodium salt	: CGY.
Ethylenebis(α-amino-2-hydroxyphenol) acetic acid, hydrogen ferric salt	: WAY.
(Ethylene-bis-nitrilo)dimethylene phosphonic acid, potassium salt	: HEX.
Ethylenediaminetetra(methylene phosphonic acid)	: CGY, DOM, HMP.
*(Ethylenedinitrilo)tetraacetic acid	: CGY, DA, DOM, HMP.
*(Ethylenedinitrilo)tetraacetic acid, calcium disodium salt	

TABLE 2.--MISCELLANEOUS END-USE CHEMICALS AND CHEMICAL PRODUCTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

MISCELLANEOUS END-USE CHEMICALS AND CHEMICAL PRODUCTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
*CHELATING AGENTS, NITRILACIDS AND SALTS--	
(Ethylenedinitrilo)tetraacetic acid, diammonium salt	CGY, DOM, HMP.
(Ethylenedinitrilo)tetraacetic acid, diethanolamine salt	DOM.
*(Ethylenedinitrilo)tetraacetic acid, disodium copper salt, dihydrate	CGY, DOM, HMP.
(Ethylenedinitrilo)tetraacetic acid, disodium magnesium salt	DOM.
*(Ethylenedinitrilo)tetraacetic acid, disodium salt	CGY, DOM, HMP.
(Ethylenedinitrilo)tetraacetic acid, disodium zinc salt, dihydrate	CGY, DOM, 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, DOM, HMP.
(Ethylenedinitrilo)tetraacetic acid, tetrapotassium salt	CGY, HMP.
*(Ethylenedinitrilo)tetraacetic acid, tetrasodium salt	CGY, CRT, DAN, DOM, HMP, RPC.
(Ethylenedinitrilo)tetraacetic acid, trisodium salt	CGY, WAY.
Glucosheptonic acid, β -isomer, sodium salt	BLZ.
Glucosheptonic acid, sodium salt	BLZ, PFN.
Hexamethylenediaminetetra(methylenephosphonic acid), potassium salt	WAY.
Hexamethylenediaminetetra(methylenephosphonic acid) Hydroxyethane-1-diphosphonic acid	WAY.
(N-Hydroxyethylethylenedinitrilo) triacetic acid	HMP, MYO.
*(N-Hydroxyethylethylenedinitrilo) triacetic acid, iron salt	HMP.
*(N-Hydroxyethylethylenedinitrilo) triacetic acid, trisodium salt	CGY, DOM, HMP.
*(N-Hydroxyethylethylenedinitrilo) triacetic acid, trisodium salt	CGY, CRT, DAN, DOM, HMP, RPC.
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	HMP, MYO, X.
*Nitrilo-tris-methylene triphosphonic acid, sodium salt	BAK, MYO, WAY, X.

TABLE 2.--MISCELLANEOUS END-USE CHEMICALS AND CHEMICAL PRODUCTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

MISCELLANEOUS END-USE CHEMICALS AND CHEMICAL PRODUCTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
*CHELATING AGENTS, NITRILACIDS AND SALTS--CONTINUED	
2-Phosphonobutane-1,2,4-tricarboxylic acid, sodium salt	X.
Polyamine polymethane phosphonic acid	SCP, WTC, X.
Chelating agents, nitriloacids and salts, all other	X.
*Chemical indicators	AID, ATL, EK, GFS, MMC.
*Chemical reagents and fine chemicals	AID, ARA, COC, EK, GFS, PFN, PIC, PLB, RBC, REG, RSA, X.
ENZYMES:	
HYDROLYTIC ENZYMES:	
AMYLASES:	
*Bacterial amylase	ADM, GBF, GNR, MLS, PMP.
Fungal amylases	GBF, PFZ.
*Glucoamylase	ADM, CRN, GBF, MLS, NBI.
*PROTEASES:	
Bromelain	DOL.
Pancreatin	SPR.
Papain	GBF, PFZ.
Pepsin	CHH, SPR.
*protease (bacterial)	GBF, GNR, MLS, PMP.
Rennet (extract)	GBF.
Rennin	CHH, MLS, PFZ.
Trypsin	SPR.
Proteases, all other	GNR.
OTHER HYDROLYTIC ENZYMES:	
Cholesterol esterase	BCK.
Glucose isomerase	ADM.
Hydrolytic enzyme mixtures	JFR, MLS, WBC.
Lipase	GBF, MLS.
Oxidoreductase	CLP, WBC.
Pectinase	GNR, MLS.
Pectinesterase	GBF.
Transferase	WBC.
Other hydrolytic enzymes	MLS.
NON-HYDROLYTIC ENZYMES:	
Cholesterol oxidase	BCK, UPJ.
Glucose oxidase	BCA, BCK.
Glucose-6-phosphate dehydrogenase	BCK.
Glycerol kinase	BCK.
Penicillinase	OMS.

TABLE 2.--MISCELLANEOUS END-USE CHEMICALS AND CHEMICAL PRODUCTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

MISCELLANEOUS END-USE CHEMICALS AND CHEMICAL PRODUCTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
*ENZYMES--Continued	
*HYDROLYTIC ENZYMES--Continued	
Uricase	BCK.
FLOTATION REAGENTS:	
Allyl n-butyl triithiocarbonate	PLC.
2,2'-Dimethylthiocarbaniide (Di-o-tolylthiourea)	RBC.
PHOSPHORODITHIOATES, USED AS FLOTATION REAGENTS:	
Dicresylphosphorodithioic acid	ACY.
Dicresylphosphorodithioic acid, ammonium salt	KCU.
Rosin amines	HPC.
Thiocarbaniide (Diphenylthiourea)	ACY, RBC.
XANTHATES AND SULFIDES, USED AS FLOTATION REAGENTS:	
Potassium amylxanthate	ACY.
Sodium amylxanthate	ESX.
Sodium n-butylxanthate	ESX, USR.
Sodium sec-butylxanthate	ESX.
Sodium ethylxanthate	ESX.
Sodium isobutylxanthate	ESX.
*FUEL ADDITIVES:	
Adipic acid-diethylenetriamine-epichlorohydrin polymer	X.
DIESEL FUEL ADDITIVES:	
Hexyl nitrate	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, TX.
Ethoxylated hydantoin glycol dicocaoate	GLY.
Formaldehyde polymer with ethylenediamine and nonyl phenol derivatives	X.
Fuel additives, acyclic, all other	SM.
Fuel oil additives	DUP.
*GASOLINE ADDITIVES:	
N,N'-Di-sec-butyl-p-phenylenediamine	USR.
N,N'-Diisopropyl-p-phenylenediamine	DUP, USR.
*Ethylene dibromide	DOM(E), GTL, PPG, TNA.
Methyl-t-butyl ether	ATR, ENJ, PTT, TUS.
Methylcyclopentadienylmanganese tricarbonyl-	TNA.
*Tetraethyl lead	DUP, PPG, TNA, X.
*Tetra(methyl-ethyl)lead, (Tel-tml, reacted)	DUP, PPG, TNA, X.
Tetramethyl lead	DUP, TNA, X.
Gasoline additives, all other	DUP.

TABLE 2.--MISCELLANEOUS END-USE CHEMICALS AND CHEMICAL PRODUCTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

MISCELLANEOUS END-USE CHEMICALS AND CHEMICAL PRODUCTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
* FUEL ADDITIVES--CONTINUED	
Imidazole from tall oil fatty acids and di-ethylenetriamine-	X.
4,4'-Methylenebis(2,6-di-tert-butylphenol)	TNA.
Methylene-bis(dimethyl)hydantoin and derivatives	GLY.
Mixed aryl diimides-	SM.
Polybutylether carbamate	SOC.
Poly(dimethylimino(2-hydroxytrimethylene)chloride)	X.
Polyethylenepolyamine polymer with 1,4-dihydroxy-2-butene	X.
Rust preventing additives-	ALX, DUP.
Tetrahydroxyimidine from tall oil fatty acids and propylenediamine	X.
Fuel additives, cyclic, all other-	TNA.
* LUBRICATING OIL AND GREASE ADDITIVES:	
*CHLOROSULFURIZED AND SULFURIZED COMPOUNDS:	
di-tert-amylic acid phosphate-	SM.
Methylene-bridged polyalkyl phenols-	SOC, TNA.
Oleic acid phosphate	SM.
2,2'-Thiobis(6-tert-butyl-p-cresol)-	TNA.
Chlorosulfurized and sulfurized compounds: used as lubricating oil and grease additives, all other	DUP, TNA, WTC.
OIL-SOLUBLE PETROLEUM SULFONATES:	
Oil-soluble petroleum sulfonate, ammonium salt	NPL.
*Oil-soluble petroleum sulfonate, barium salt	TX, X.
*Oil-soluble petroleum sulfonate, calcium salt-	PAR, PLC, SOC, TX, WTC, X.
Oil-soluble petroleum sulfonate, magnesium salt-	MTC, X.
*Oil-soluble petroleum sulfonate, sodium salt	ENJ, MOR, PAR, SHC, WTC, X.
Oil-soluble petroleum sulfonate, all other	SHC, SOC, WTC, X.
*PHENOL SALTS:	
Dodecylphenol, ethylenediamine, formaldehyde polymer, calcium salt-	TX.
Dodecylphenol, sulfurized, calcium carbonate overbased salt	TX.
Dodecylphenol, sulfurized, calcium salt-	SOC, TX.
*Nonylphenol, barium salt	CCA, ENJ, FER, WTC.
Phenol, magnesium salt	MTC.
Phenol salts, all other-	X.
*PHOSPHORODITHIOATES (DITHIOPHOSPHATES):	
Bis(1,3-Dimethylbutyl)phosphorodithioate oleyl amine salt	ELC.
Di-2-ethylhexylphosphorodithioic acid-	ELC, SFA.
Di-N-propylphosphorodithioic acid-	ELC.

TABLE 2.--MISCELLANEOUS END-USE CHEMICALS AND CHEMICAL PRODUCTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

MISCELLANEOUS END-USE CHEMICALS AND CHEMICAL PRODUCTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
*LUBRICATING OIL AND GREASE ADDITIVES--CONTINUED	
*PHOSPHORODITHIOATES (DITHIOPHOSPHATES)--CONTINUED	
Zinc dialkyldithiophosphate	ELC, SOC, TX.
Zinc dialkylphenol dithiophosphate	SOC.
Zinc dialkylphenoxethylphosphorodithioate	TX.
Zinc dibutyl phosphorodithioate	ELC.
Zinc diisodecyl phosphorodithioate	ELC.
Zinc hydrocarbon dithiophosphate	X.
SUCCINIMIDES:	
Alkenyl succinimide	SOC.
N,N-Di(C ₁₅ -C ₂₀)-sec-alkylasparagine	TX.
Dodecenyloleoyl succinimide	SM.
All other (specify)	CXI, SM.
*SULFUR COMPOUNDS:	
Aliphatic hydrocarbon sulfides	ELC, FER, SOC, X.
Alkyl phenyl sulfides	SOC.
Chlorosulfurized cresylic acids	CCM, ELC.
Chlorosulfurized lard oil	FER.
Chlorosulfurized sperm oil	CCM, ELC.
Diisobutylene polysulfide	TX.
Di-tertiary nonylpolsulfide	PAS.
Molybdenum dialkyl dithiocarbamate	VNC.
Nonmetallic dithiocarbamates	VNC.
Sulfurized ethylene-propylene co-polymer	SOC.
Sulfurized lard oil	CCM, FER, QCP, MBG.
Sulfurized sperm oil substitutes	CCM, ELC, FER, MTC.
Triisobutylene polysulfide	TX.
Sulfur compounds, all other	TNA, MTC.
ALL OTHER LUBRICATING OIL AND GREASE ADDITIVES:	
Alkene thiophosphonate	TX.
Alkyl succinic anhydride	SM.
Alkyl terephthalate	SOC.
Aminonaphthenic acid salts	SHC, SM.
Bornyl phenylamine	SOC.
Butadiene styrene copolymer	PLC.
Diisopropyl hydrogen phosphite	SM.
Dimer acid esters and polyesters	EMR.
Di-tetradecyl hydroquinone	SM.
Dodeceny succinic acid, benzotriazole salt	SM.
Dodecylphenyl- α -naphthylamine	SM.
Dodecylphenyl- α -naphthylamine, dioctyl diphenylamine co-polymer	SM.
Fatty acid polyamine condensate	SOC.

TABLE 2.--MISCELLANEOUS END-USE CHEMICALS AND CHEMICAL PRODUCTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--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.	
High molecular weight (>200) carboxylates-	X.
Hydrocarbon carboxylic acid derivatives-	X.
Hydrocarbon phosphorous acid, barium salt-	X.
Hydrocarbon phosphoryl derivatives -	X.
Mixed polyesters -	HCC.
Oxidized hydrocarbon mixture -	ALX, VIK, X.
Pentaerythritol esters -	HCC.
N-phenylbis(n,6-hydroxyethyl)tetrapropenyl succinate-	TX.
Polyisobutenyl succinic anhydride-	SM.
1,3,4-Thiadiazole, 2,5-bis(dialkylidithio) derivatives-	ELC.
Tributyl phosphite -	SM.
Trimethylol propane ester-	DA, HCC.
Very high molecular weight (>1000) hydrocarbons-	X.
Lubricating oil and grease additives, all other-	ENJ, MON, TNA, WTC, X.
*PAINT DRIERS, NAPHTHENIC ACID SALTS:	
Barium naphthenate -	CCA.
Cadmium naphthenate -	CCA.
*Calcium naphthenate -	CCA, FER, HN, MCI, WTC.
Chromium naphthenate -	MCI.
*Cobalt naphthenate -	CCA, FER, HN, MCI, SHP, TRO, WTC.
Iron naphthenate -	CCA, HN, MCI.
Lead naphthenate -	CCA, FER, HN, MCI, SHP, WTC.
Lithium naphthenate -	CCA.
*Manganese naphthenate -	CCA, FER, HN, MCI, SM, TRO, WTC.
Naphthenate driers, mixed salts-	MCI.
Rare earths naphthenate -	CCA.
Strontium naphthenate -	CCA.
Vanadyl naphthenate -	SHP.
Zinc naphthenate -	FER, HN, MCI, TRO, WTC.
Paint driers, naphthenic acid salts, all other -	CCA, SM.
*PHOTOGRAPHIC CHEMICALS:	
N-(2-Acetamidophenethyl)-1-hydroxy-2-naphthamide	TX, X.
N-2-(4-Amino-N-ethyl-m-toluidino)ethyl methane-	
N ₂ sulfonamide -	TX.
2-Amino-5-mercapto-1,3,4-thiadiazole	FMT.
5-Aminotetrazole -	FMT.

TABLE 2.--MISCELLANEOUS END-USE CHEMICALS AND CHEMICAL PRODUCTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

MISCELLANEOUS END-USE CHEMICALS AND CHEMICAL PRODUCTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
*PHOTOGRAPHIC CHEMICALS--CONTINUED	
Aryl alkyl polyether alcohol	DIX.
5-Chlorobenzotriazole	FMT.
3-Chloro-4-diaminobenzene	ALL, ESA.
Diazo-2-chloro-N,N-diethylaniline zinc chloride	ESA, FMT.
Chlorohydroquinone	ALL, ESA.
4,4'-Diazido-dibenzal methyl cyclohexanone	FMT.
4-Diazo-2,5-diethoxymorpholinobenzene	ALL, ESA.
4-Diazo-3,5-diethoxythiocol salts	ESA, FMT.
2,5-Diethoxy-4-morpholinobenzene	ALL, ESA.
*p-Diethylaminobenzene diazonium chloride (p-Diazo-N,N-diethylaniline zinc chloride)	ALL, ESA, FMT.
N,N-Diethyltoluene-2,5-diamine, monohydrochloride	EKT.
*p-Dimethylaminobenzene diazonium chloride (p-Diazo-N,N-dimethylaniline zinc chloride)	ALL, ESA, FMT.
2-(Dimethylamino)ethyl dithiocarbamate hydrochloride	X.
2,5-Dimethylbenzothiazole	FMT.
p-Diphenylaminediazonium sulfate	ESA, FMT.
p-(N-Ethylbenzimidazole)benzene diazonium chloride	ESA.
Diazo-N-benzyl-N-ethylaniline-zinc chloride	ESA.
p-[Ethyl(2-hydroxyethyl)amino]benzene diazonium chloride (p-Diazo-n-hydroxyethylaniline zinc chloride)	ESA, FMT.
(N-Ethyl-N-(2-hydroxyethyl)-3-methyldehydrogen sulfate)p-phenylenediamine	X.
N-Ethyl-N-(β-methane sulfonamidoethyl)toluene-2,5-diaminesulfate	X.
Hydroquinone (Hydroquinol)	EKT.
p-[(2-Hydroxyethyl)methylamino]benzene diazonium chloride (p-Diazo-N-hydroxyethyl-N-methylaniline)-zinc chloride	ESA, FMT.
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-triazaindizine	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.

TABLE 2. -- MISCELLANEOUS END-USE CHEMICALS AND CHEMICAL PRODUCTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

MISCELLANEOUS END-USE CHEMICALS AND CHEMICAL PRODUCTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
*PHOTGRAPHIC CHEMICALS--CONTINUED	
4-Methyl-1-phenyl-3-pyrazolidione	MAY.
2-Methylthiazoline	FMT.
p-Morpholinyl-2,5-dibutoxybenzene diazonium chloride	ALL, ESA.
6-Nitrobenzimidazole	FMT.
5-Nitrobenzimidazole nitrate	EK.
Phenyl-5-mercaptopotetrazole	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-sulfofenal)	DUP.
4-N-(1-Pyrazolidyl)-m-toluenediazonium chloride	ALL, ESA.
POLYALFHAOLEFINS:	
Poly- α -olefins	CO, SM, TNA.
Poly- α -olefins, sulfurized	SM.
*POLYMERS FOR FIBERS:	
Cellulose acetate	CEL, EKT, MIL.
Cerex/nylon polymer	MON.
Copolyurethane urea	DUP.
Linear saturated polyester	EKT, HST.
*Nylon 6 (Polymer for fiber, only) and 6/6	AFP, DUP, FRF, MON, SKP.
*Polyacrylonitrile and acrylonitrile copolymers	ACY, DUP, MON.
*Polyethylene terephthalate	DUP, EKT, FND, FRF, GYR, MON.
Poly-m-phenylene isophthalamide	DUP.
Poly-p-phenylene terephthalamide	DUP.
*POLYMERS, WATER SOLUBLE:	
*CELLULOSE ETHERS AND ESTERS:	
Cationic cellulosic ether	UCC.
Ethyl 2-hydroxyethyl cellulose	X.
Hydroxyethylcellulose	MIL, UCC, X.
2-Hydroxypropyl cellulose	X.
Methylcellulose	DOM.
Sodium carboxymethylcellulose (100%)	BUK, CBC, LCS, MAK, X.
Acrylamide-acrylic acid copolymer, sodium salt	X.
Acrylamide vinyl amino copolymer	X.
*POLYACRYLIC ACID SALTS:	
Adipic acid-crosslinked polycrylamide	S.

TABLE 2.--MISCELLANEOUS END-USE CHEMICALS AND CHEMICAL PRODUCTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

MISCELLANEOUS END-USE CHEMICALS AND CHEMICAL PRODUCTS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
*POLYMERS, WATER SOLUABLE--CONTINUED	
*POLYACRYLIC ACID SALTS--CONTINUED	
Ammonium polyacrylate	ALC, BAK, X.
Polyacrylate methacrylate copolymers	ALC, BFG, CRN, X.
Polyacrylic acid	X.
Sodium ammonium polyacrylate and copolymers	X.
Sodium carboxymethyl amylose	CCL.
*Sodium polyacrylate	ALC, BAK, BFG, BKM, DA, MYO, RH, X.
Polyacrylic acid salts, all other	ACY, X.
Dialdehyde starch	HXL.
Dimethyl diallyl ammonium chloride polymers	SHX.
Ethyl acrylate methacrylic acid copolymer	ALC.
Humic acids, sodium salts	X.
*Polyacrylamide	ACY, BKM, DA, DOM, HPC, MRK, X.
Polyacrylonitrile, hydrolyzed	BKM, DIX.
Polyacrylonitrile, starch hydrolyzed polymer	GPC, SCP.
Polyamines	BAK, X.
Poly(diallyldimethylammonium chloride)	BAK, 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)-tetramethyleneethylenediamine	BKM.
*1-Vinyl-2-pyrrolidinone, polymers	CCL, DAN, GAF, UCC, X.
Xanthan gum	PFZ.
Polymers, water soluble, all other	CPS, X, X, X.
RARE SUGARS:	
1-Arabinose	PFN.
D-galactose	PFN.
α-D-Glucose pentaacetate	PFN.
D-Maltose	PFN.
SILICONE GREASES:	
Silicone greases	DCC, SPD, SMS.
*TANNING MATERIALS, SYNTHETIC:	
Cresol-phenol-formaldehyde condensate and salt	DA.
*2-Naphthalenesulfonic acid, formaldehyde condensate and salt	AKS, DA, GRD, RH.
1-Phenol-3-sulfonic acid, formaldehyde condensate (Phenol-formaldehyde, sulfonated)	DA, RH.
Polyoxyalkylated cyclic amines	MIL.
TEXTILE CHEMICALS, OTHER THAN SURFACE-ACTIVE AGENTS:	
Acrylonitrile/stearyl methacrylate polymer	RPC.
Alkylphenol/formaldehyde polymer	RPC.

TABLE 2.--MISCELLANEOUS END-USE CHEMICALS AND CHEMICAL PRODUCTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--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:	
N,N-bis-(2-Hydroxyethyl)octadecanamide	CCC.
N,N-Dibenzylhydroxylamine	CCC.
*Dicyanodiamide formaldehyde ammonium chloride polymer	CCC, DAN, RPC.
Diethylenetriamine, triethylphosphate, urea polymer, stearate	CCC.
*Dimethyldihydroxyethylene urea	ACY, CCC, CHP, DAN, RPC, SYT.
Ethylene glycol, pentaerythritol, polyoxyethylene glycol, terephthalic acid polymer	DUP.
N,N-Ethylene-urea formaldehyde resin	CCC.
Formaldehyde polymer with carbamate esters	RPC.
Melamine formaldehyde methanol polymer	ACY, CCC.
1-[(Octadecyloxy)methyl]pyridinium chloride	CCC.
Oleyl chloride	LMI.
Polyaminoethyl piperazine adipate amide	X.
Product from the reaction of stearyl nitrate, candelilla wax, paraformaldehyde, phosphorous trichloride, and picoline	CCC.
Tris(benzyloxymethyl)trimethoxymethylmelamine	DUP.
N',N'',N'''-Tris(methoxymethyl)-N'-methoxymethyl-N'',N''',-dimethylene-1,3,5-triazine-2,4,6-triamine distearamide	CCC.
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	DRC.
UREA, BY END-USE MARKETS:	
Urea, primary solution (Report on 100% urea-content basis)	ACS, AGY, APD, ARM, BNP, BOR, CAC, CFA, CFI, CHN, CNC, FRI, GCC, HKY, HPC, MSC, OMC, PLC, SMP, SNI, SOC, SOH, SYT, TER, TRI, TVA, UOC, VLN, WLC, WYC, X.
UREA IN COMPOUNDS OR MIXTURES (100% BASIS):	
*Urea in feed compounds (100% Basis)	ACS, AGY, APD, BNP, CAC, CFA, CFI, CHN, CNC, FRI, HKY, HPC, PLC, SMP, SNI, SOC, SOH, TER, TRI, TVA, VLN, WYC, X.
*Urea in liquid fertilizer (100% Basis)	ACS, AGY, ARM, BNP, CAC, CFA, CFI, CHN, CNC, FRI, HKY, HPC, PLC, SMP, SNI, SOC, SOH, TER, TRI, TVA, VLN, WYC, X.
*Urea in plastics (100% Basis)	BOR, MSC, OMC, SOH, SYT, TRI.
*Urea in solid fertilizer (100% Basis)	ACS, AGY, APD, CAC, CFA, CFI, CNC, FRI, GCC, HPC, MSC, OMC, SOH, TER, TRI, TVA, UOC, VLN, WLC, X.
Urea in compounds or mixtures (100% Basis) all other	X.

TABLE 2.--MISCELLANEOUS END-USE CHEMICALS AND CHEMICAL PRODUCTS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--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	ARA, DUP, EKT, MON.
Aspartic acid-	ESX.
Glutamic acid hydrochloride-	LEM.
Glycine (Aminoacetic acid), non-medical	ATR, CHT, HMP.
Potassium glutamate-	LEM.
Protein hydrolysates	BRS.
Sarcosine-	HMP.
Amino acids and salts, all other	AJI, WKY.

TABLE 3.--MISCELLANEOUS END-USE CHEMICALS AND CHEMICAL PRODUCTS: DIRECTORY OF MANUFACTURERS, 1982

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 1982 are listed below in the order of their identification codes as used in table 2]

CODE	NAME OF COMPANY	CODE	NAME OF COMPANY
ACS	Allied Corp., Allied Chemical Co.	EMR	Emery Industries Div. of National Distillers & Chemical Corp.
ACY	American Cyanamid Co.	ENJ	Exxon Chemical Americas
ADM	Archer Daniels Midland, ADM Clinton	ESA	East Shore Chemical Co.
APP	Allied Corp., Allied Fibers & Plastic Co.	ESX	Essex Industrial Chemicals, Inc., Essex Chemical Corp.
AGY	Agway, Inc., Olean Nitrogen Complex	FER	Ferro Corp.: Ferro Chemical Div. Keil Chemical Div.
AJI	Ajinomoto USA, Inc.	FMT	Fairmount Chemical Co., Inc.
AKS	Arkansas Co., 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.	GAF	GAF Corp.
ALX	Alox Corp.	GBF	GBF Fermentation Industries, Inc.
APD	Atlas Powder Co. Sub. of Tyler Corp.	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.
BAK	Baker International - Magna Corp.	GMR	Genencor, Inc.
BCA	Beca Products, Inc.	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.	HCC	Hatco Chemical Corp.
BNP	Bison Nitrogen Products Co.	HEX	Hexagon Laboratories, Inc.
BOR	Borden, Inc., Borden Chemical Div.	HKY	Hawkeye Chemical Co.
BRS	Bristol-Myers Co.	HMP	W. R. Grace & Co., Hampshire Chemical Div.
BUK	Buckeye Cellulose Corp.	HN	Tenneco, Inc., Tenneco Chemicals, Inc.
CAC	Cominco American, Inc.	HPC	Hercules, Inc.
CBC	Carbose Corp.	HST	American Hoechst Corp., Hoechst Fiber Industries Div.
CCA	Interstab Chemicals, Inc.	JFR	George A. Jeffreys & Co., Inc.
CCC	C.N.C. Chemical Corp.	KCU	Kennecott Minerals Co., Utah Copper Div.
CCL	Catawaba-Charlab, Inc.	LCS	Louisiana Cellulose Specialties, Inc.
CCW	Carstab Corp.	LEM	Napp Chemicals, Inc.
CEL	Celanese Corp., Celanese Fibers Co.	LMI	North American Chemical Co.
CFA	Cooperative Farm Chemicals Association	MAK	MAK Chemical Corp.
CFI	CF Industries, Inc.	MCI	Mooney Chemicals, Inc.
CGY	Ciba-Geigy Corp.	MIL	Milliken & Co., Milliken Chemical Co.
CHH	CHR. Hansen's Laboratory, Inc.	MLS	Miles Laboratories, Inc., Biotechnology Group
CHN	N-ReN Corp., Cherokee Nitrogen Div.	MNC	EM Industries, Inc., EM Science Div.
CHP	C. H. Patrick & Co., Inc.	MOM	Monsanto Co.
CHT	Chattem, Inc.	MOR	Marathon Morco, Co.
CLP	Cell Products, Inc.	MRK	Merck & Co., Inc.
CNC	Columbia Nitrogen Corp.	MSC	Mississippi Chemical Corp.
CO	Conoco, Inc.	MYO	Mayo Chemicals Co.
COC	Columbia Organic Chemicals Co., Inc.	NBI	Nova Biochemical, Inc.
CPS	CPS Chemical Co., Inc.	NWL	NL Industries, Inc.
CEN	CPC International, Inc., Amerchol Corp.	ONC	Olin Corp.
CRT	Chemos Corp., Crest Chemical Div.	OSB	E. R. Squibb & Sons, Inc.
CXI	Chemical Exchange Industries, Inc.		
DA	Diamond Shamrock Corp.		
DAN	Dan River, Inc., Chemical Products Div.		
DCC	Dow Corning Corp.		
DGC	Degussa Corp.		
DIX	Dixie Chemical Co., Inc.		
DOL	Castle & Cooke, Inc., Dole Hawaii Div.		
DOW	Dow Chemical Co.		
DUP	E. I. duPont de Nemours & Co., Inc.		
EK	Eastman Kodak Co.:		
EKT	Tennessee Eastman Co. Div.		
ELC	Elco Corp. Sub. of Detrex Chemical Industries, Inc.		

STATISTICAL HIGHLIGHTS

Kenneth J. Conant, III and David G. Michels
202-523-0495 202-523-0493

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 are those used for refrigerants, aerosols, solvents, and a wide range of chemical intermediates.

U.S. production of miscellaneous cyclic and acyclic chemicals in 1982 amounted to 81.5 billion pounds, a decrease of 14 percent, compared with production in 1981. U.S. sales for 1982 totaled 34.6 billion pounds, valued at \$10.6 billion. Compared with 1981, sales quantity decreased 4.0 percent, and sales value decreased by 9.7 percent. Production of miscellaneous cyclic chemicals composed only 0.3 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 decreased from 23.0 billion pounds in 1981 to 17.6 billion pounds in 1982, or by 24 percent. However, total sales of halogenated hydrocarbons rose from 7.8 billion pounds in 1981 to 8.0 billion pounds in 1982, or by 2.6 percent. Production of chlorinated hydrocarbons, the largest segment of this group, fell 24 percent in 1982 to 16.8 billion pounds, from 22.0 billion pounds in 1981.

TABLE 1.--MISCELLANEOUS CYCLIC AND ACYCLIC CHEMICALS: U.S. PRODUCTION AND SALES, 1982

[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-----	81,466,884	34,647,133	10,603,857	\$0.31
CYCLIC				
Total-----	2,082,074	955,292	875,439	.92
Benzoic acid, sodium salt-----	19,047	16,531	12,945	.78
Benzoyl peroxide-----	5,168	5,148	14,071	2.73
Caprolactam-----	792,683	238,443	164,531	.69
2,6-Di-tert-butyl-p-cresol (BHT):				
Food grade-----	4,246	4,686	7,679	1.64
Tech. grade-----	6,752	5,969	9,468	1.59
Dioxane-----	14,974	6,276	5,048	.80
Dodecenylsuccinic anhydride-----	4,731	3,988	3,535	.89
Hexamethylenetetramine, tech. grade-----	81,344	38,327	14,046	.37
p-Hydroxybenzoic acid, methyl ester	1,020	869	3,371	3.88
Lactones-----	...	10,822	12,485	1.15
Maleic anhydride-----	259,521	207,004	77,886	.38
Pinene and derivatives, total-----	210,583	57,830	24,493	.42
β-Pinene-----	36,325	...	...	...
Pinene, sulfate-----	80,224	...	...	...
Pine oil, synthetic-----	36,389	39,478	19,709	.50
All other-----	57,645	18,352	4,784	.26
Tall oil salts-----	2,203	...	...	...
Terpene hydrocarbons, monocyclic (Solvenol)-----	42,340	19,599	5,333	.27
1,3,5-Trichloro-5-triazine-2,4,6-(1H,3H,5H)trione----	41,749	38,417	52,341	1.36
All other miscellaneous cyclic chemicals-----	595,713	301,383	468,207	1.55
ACYCLIC				
Total-----	79,384,810	33,691,841	9,728,418	.29
NITROGENOUS COMPOUNDS				
Total-----	6,059,008	2,253,928	1,136,761	.50
Amides, total-----	209,305	95,166	88,098	.93
Acrylamide-----	69,334	25,789	18,837	.73
Coconut oil amide-----	1,679	...	...	...
All other-----	138,292	69,377	69,261	1.00
Amines, total ² -----	1,214,006	458,599	368,796	.80
Bis-hexamethylenetriamine amine-----	8,458	7,400	8,942	1.21
Butylamines, total-----	37,097	39,358	31,273	.79
n-Butylamine, mono-----	2,453	2,530	2,187	.86
Di-n-butylamine-----	4,785	4,294	3,708	.86
Tri-n-butylamine-----	1,327	947	1,181	1.25
All other-----	28,532	31,587	24,197	.77
Diisopropylamine-----	6,055	...	...	...
Dimethylaminopropylamine-----	10,825	4,526	4,449	.98
Ethylamines, total-----	68,649	53,299	35,115	.66
Diethylamine-----	15,585	4,767	3,786	.79
Ethylamine, mono-----	40,723	38,523	21,473	.56
Triethylamine-----	12,341	10,009	9,856	.98

See footnotes at end of table.

TABLE 1.--MISCELLANEOUS CYCLIC AND ACYCLIC CHEMICALS: U.S. PRODUCTION AND SALES, 1982--CONTINUED

MISCELLANEOUS CYCLIC AND ACYCLIC CHEMICALS	PRODUCTION	SALES		
		QUANTITY	VALUE	UNIT VALUE ¹
ACYCLIC--Continued				
<i>NITROGENOUS COMPOUNDS--Continued</i>	<i>1,000</i>	<i>1,000</i>	<i>1,000</i>	<i>Per</i>
	<i>pounds</i>	<i>pounds</i>	<i>dollars</i>	<i>pound</i>
Amines ² --Continued				
Isopropylamine, mono-----	47,352	48,314	28,096	\$0.58
Methylamines:				
Dimethylamine-----	67,123	56,450	26,654	.47
Methylamine, mono-----	41,858	...	...	...
Trimethylamine-----	34,736	29,617	13,320	.45
Propylamines-----	...	29,946	23,441	.87
All other-----	891,853	189,689	197,506	1.04
2-Diethylaminoethyl methacrylate-----	862	...	...	...
Dimethylaminoethyl methacrylate-----	1,911	1,693	2,993	1.77
Ethanolamines, total-----	416,281	353,200	130,762	.37
2,2'-Aminodiethanol (Diethanolamine)-----	145,055	118,392	43,456	.37
2-Aminoethanol (Monoethanolamine)-----	150,550	119,777	43,772	.37
2,2',2''-Nitrilotriethanol (Triethanolamine)-----	120,676	115,031	43,534	.38
2-Methylaminoethanol-----	4,016	3,974	3,540	.89
2,2'-(Methylimino)diethanol (Methyldiethanolamine) ³ -----	...	6,253	9,938	1.59
Nitriles, total-----	...	1,155,430	393,380	.34
Acetonitrile-----	20,907	...	...	...
Acrylonitrile-----	2,035,217	1,084,683	362,918	.33
2-Methylactonitrile (Acetone cyanohydrin)-----	774,094	...	...	...
All other-----	...	70,747	30,462	.43
All other nitrogenous compounds-----	1,382,409	179,613	139,254	.77
<i>ACIDS, ACYL HALIDES, AND ANHYDRIDES</i>				
Total-----	10,352,236	1,539,758	597,738	.39
Acetic acid, synthetic, 100%-----	2,748,048	552,218	88,967	.16
Acetic anhydride, 100%-----	...	105,640	30,314	.29
Acrylic acid-----	535,385	80,198	39,121	.49
Adipic acid-----	...	139,939	47,288	.34
Fumaric acid-----	24,103	21,742	12,171	.56
Propionic acid-----	65,998	51,235	13,858	.27
All other acids, acyl halides, and anhydrides-----	6,978,702	588,786	366,019	.62
<i>SALTS OF ORGANIC ACIDS</i>				
Total-----	259,355	237,141	194,927	.82
Acetic acid salts, total-----	26,216	25,530	17,325	.68
Ammonium acetate-----	...	271	435	1.61
Calcium acetate-----	627	608	655	1.08
Magnesium acetate-----	...	77	124	1.60
Potassium acetate-----	3,724	3,764	2,642	.70
Sodium acetate-----	16,427	15,617	7,433	.48
Sodium diacetate-----	2,720	2,784	1,292	.46
Zinc acetate-----	...	411	477	1.16
All other-----	2,718	1,998	4,267	2.14
Calcium neodecanoate-----	71	74	77	1.03
Calcium propionate-----	20,940	...	...	...

See footnotes at end of table.

TABLE 1.--MISCELLANEOUS CYCLIC AND ACYCLIC CHEMICALS: U.S. PRODUCTION AND SALES, 1982--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-----	12,629	10,547	22,101	\$2.10
Calcium 2-ethylhexanoate-----	1,616	1,564	1,608	1.03
Cobalt 2-ethylhexanoate-----	2,792	2,481	7,631	3.08
Lead 2-ethylhexanoate-----	911	886	839	.95
Manganese 2-ethylhexanoate-----	811	683	643	.94
Nickel 2-ethylhexanoate-----	...	510	895	1.76
Rare earths 2-ethylhexanoate-----	65	72	274	3.82
Zinc 2-ethylhexanoate-----	666	456	544	1.19
Zirconium 2-ethylhexanoate-----	2,359	1,968	4,513	2.29
All other-----	3,409	1,927	5,154	2.67
Octanoic acid salts-----	392	380	473	1.25
Potassium oxalate-----	23	28	74	2.64
Sodium propionate-----	2,675	...	...	...
Stearic acid salts, total ⁴ -----	98,721	91,836	66,099	.72
Aluminum stearates-----	1,844	1,714	2,176	1.27
Barium stearate-----	1,348	1,315	1,041	.79
Calcium stearate-----	57,669	56,510	33,811	.60
Magnesium stearate-----	16,990	12,534	9,835	.78
Zinc stearate-----	17,931	17,288	15,703	.91
All other-----	2,939	2,475	3,533	1.43
All other salts of organic acids-----	97,688	108,746	88,778	.82
ALDEHYDES				
Total-----	6,981,364	1,649,481	186,568	.11
Butyraldehyde-----	855,594	...	...	...
Formaldehyde (37% by weight) ⁵ -----	4,816,522	1,431,208	105,825	.07
Isobutyraldehyde-----	...	5,585	1,318	.24
Propionaldehyde-----	174,910	6,816	2,041	.30
All other aldehydes-----	1,134,338	205,872	77,384	.38
KETONES				
Total-----	2,555,286	1,905,221	539,092	.28
Acetone:				
From cumene-----	1,261,104	795,361	176,563	.22
From isopropyl alcohol-----	433,109	...	...	...
4-Hydroxy-4-methyl-2-pentanone (Diacetone alcohol)-----	...	20,343	9,317	.46
Methyl ethyl ketone (2-Butanone)-----	468,390	497,615	164,411	.33
4-Methyl-2-pentanone (Methyl isobutyl ketone)-----	130,745	131,695	58,475	.44
4-Methyl-3-pentene-2-one (Mesityl oxide)-----	43,535	7,568	4,110	.54
All other ketones-----	218,403	452,639	126,216	.28
ALCOHOLS, MONOHYDRIC, UNSUBSTITUTED				
Total-----	13,920,034	8,692,550	1,641,760	.19
Alcohols, C ₁₁ or lower, unmixed, total-----	13,142,167	8,193,951	1,341,560	.16
Butyl alcohols, total-----	2,210,112	...	...	...
n-Butyl alcohol (n-Propylcarbinol)-----	730,369	384,473	102,641	.27
Isobutyl alcohol (Isopropylcarbinol)-----	156,122	141,156	29,403	.21
All other-----	1,323,621	...	...	...
Ethyl alcohol, synthetic ⁶ -----	1,023,287	995,497	294,038	.30

See footnotes at end of table.

TABLE 1.--MISCELLANEOUS CYCLIC AND ACYCLIC CHEMICALS: U.S. PRODUCTION AND SALES, 1982--CONTINUED

MISCELLANEOUS CYCLIC AND ACYCLIC CHEMICALS	PRODUCTION	SALES		
		QUANTITY	VALUE	UNIT VALUE ¹
ACYCLIC--Continued				
ALCOHOLS, MONOHYDRIC, UNSUBSTITUTED--Continued	1,000	1,000	1,000	Per
	pounds	pounds	dollars	pound
Alcohols, C ₁₁ or lower, unmixed--Continued				
2-Ethyl-1-hexanol-----	325,015	229,871	74,407	\$0.32
Isopropyl alcohol-----	1,379,953	873,972	237,441	.27
Methanol, synthetic-----	7,554,588	4,351,950	328,206	.08
Propyl alcohol (Propanol)-----	127,426	88,805	30,370	.34
All other-----	521,786	1,128,227	245,054	.22
Mixtures of alcohols:				
C ₁₁ or lower only-----	40,894	75,804	35,716	.47
C ₁₂ or higher only-----	544,607	308,694	210,895	.68
All other alcohols, monohydric, unsubstituted-----	192,366	114,101	53,589	.47
ESTERS OF MONOHYDRIC ALCOHOLS				
Total-----	4,673,825	2,889,662	1,206,880	.42
Butyl acetates:				
n-Butyl acetate-----	121,169	96,664	40,467	.42
Isobutyl acetate-----	67,774	39,589	14,052	.35
Butyl acrylate-----	304,126	160,922	81,076	.50
tert-Butyl peroxy-pivalate-----	2,269	2,285	8,847	3.87
Dibutyl maleate-----	2,834	2,614	1,476	.56
Di(2-ethyl-1-hexyl) maleate-----	1,281	...	...	...
Dilauryl-3,3'-thiodipropionate-----	2,290	1,718	3,030	1.76
Distearyl-3,3'-thiodipropionate-----	1,735	1,377	2,399	1.74
Di(tridecyl)-3,3'-thiodipropionate-----	1,475	1,264	999	.79
Ethyl acetate (85%)-----	235,381	156,076	43,352	.28
Ethyl acrylate-----	257,275	164,198	73,741	.45
2-Ethyl-1-hexyl acrylate-----	57,862	47,473	27,071	.57
Fatty acid esters, not included with plasticizers or surfac-eactive agents, total-----	13,958	14,198	7,297	.51
Myristyl myristate-----	109	336	534	1.59
All other-----	13,849	13,862	6,763	.49
Methyl methacrylate-----	720,955	220,778	119,403	.54
Phosphorus acid esters, not elsewhere specified-----	69,167	49,037	60,296	1.23
Propyl acetate-----	57,059	54,769	23,263	.42
Vinyl acetate-----	1,876,425	1,335,655	373,427	.28
All other esters of monohydric alcohols-----	880,790	541,045	326,684	.60
POLYHYDRIC ALCOHOLS				
Total ⁷ -----	5,642,598	3,366,480	1,047,413	.31
1,4-Butanediol-----	138,219	...	...	...
Ethylene glycol-----	4,309,259	2,515,797	616,038	.24
Pentaerythritol-----	97,043	100,897	58,822	.58
Propylene glycol-----	399,597	351,578	139,609	.40
Sorbitol (70% by weight)-----	165,329	127,377	57,462	.45
All other polyhydric alcohols-----	533,151	270,831	175,482	.65
POLYHYDRIC ALCOHOL ESTERS				
Total-----	157,027	149,893	93,644	.62
POLYHYDRIC ALCOHOL ETHERS				
Total-----	1,657,340	1,156,523	427,557	.37

See footnotes at end of table.

XV -- MISCELLANEOUS CYCLIC AND ACYCLIC CHEMICALS

TABLE 1.--MISCELLANEOUS CYCLIC AND ACYCLIC CHEMICALS: U.S. PRODUCTION AND SALES, 1982--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-----	217,138	201,721	74,807	\$0.37
2-(2-Butoxyethoxy)ethanol (Diethylene glycol mono-butyl ether)-----	48,236	44,102	18,620	.42
2-[2-(2-Butoxyethoxy)ethoxy]ethanol (Triethylene glycol monobutyl ether)-----	5,956	1,326	553	.42
Diethylene glycol-----	393,973	270,531	49,343	.18
Dipropylene glycol-----	39,108	32,122	10,874	.34
2-Ethoxyethanol-----	178,174	78,756	32,027	.41
2-(2-Ethoxyethoxy)ethanol (Diethylene glycol monoethyl ether)-----	27,771	26,225	9,714	.37
2-[2-(2-Ethoxyethoxy)ethoxy]ethanol (Triethylene glycol monoethyl ether)-----	19,696	...	...	...
2-Methoxyethanol (Ethylene glycol monomethyl ether)-----	89,323	80,011	25,787	.32
2-(2-Methoxyethoxy)ethanol (Diethylene glycol monomethyl ether)-----	27,768	26,124	9,488	.36
2-[2-(2-Methoxyethoxy)ethoxy]ethanol (Triethylene glycol monomethyl ether)-----	21,685	...	...	...
Polyethylene glycol-----	72,766	67,615	37,006	.55
Polyethylene glycol, dimethyl ether-----	...	3,724	2,057	.55
Polypropylene glycol-----	21,652	10,947	6,634	.61
Tetraethylene glycol-----	16,731	15,803	7,783	.49
Triethylene glycol-----	95,422	88,290	32,501	.37
All other polyhydric alcohol ethers-----	381,941	209,226	110,363	.53
HALOGENATED HYDROCARBONS				
Total-----	17,573,567	7,981,276	1,646,985	.21
Brominated hydrocarbons-----	12,289	10,924	15,121	1.38
Chlorinated hydrocarbons, total-----	16,775,210	...	...	...
Carbon tetrachloride-----	587,437	310,297	39,885	.13
Chlorinated paraffins (C ₁₀ -C ₃₀):				
35%-64% chlorine-----	68,007	65,963	24,348	.37
65% or more chlorine-----	16,911	14,831	7,655	.52
Chloroform-----	298,913	294,419	66,571	.23
Chloromethane (Methyl chloride)-----	366,360	214,786	38,164	.18
1,2-Dichloroethane (Ethylene dichloride)-----	7,619,179	1,410,637	95,608	.07
Dichloromethane (Methylene chloride)-----	532,262	340,110	67,041	.20
Ethyl chloride (Chloroethane)-----	339,230	...	...	...
Tetrachloroethylene (Perchloroethylene)-----	584,770	504,894	70,235	.14
1,1,1-Trichloroethane (Methyl chloroform)-----	595,186	556,586	144,412	.26
Trichloroethylene-----	...	181,617	37,121	.20
Vinyl chloride, monomer (Chloroethylene)-----	4,901,756	3,187,825	417,595	.13
All other-----	865,199	...	...	...
✓ Chlorodifluoromethane (F-22)-----	174,246	123,481	150,268	1.22
✓ Dichlorodifluoromethane (F-12)-----	258,004	248,946	161,894	.65
Iodinated hydrocarbons, total-----	108	102	944	9.21
Iodoethane (Ethyl iodide), non-medical-----	11	11	101	9.31
Iodomethane-----	82	82	675	8.25
All other-----	15	9	168	18.67
✓ Trichlorofluoromethane (F-11)-----	140,337	121,082	63,241	.57
All other halogenated hydrocarbons-----	213,373	394,776	246,882	.62

See footnotes at end of table.

TABLE 1.--MISCELLANEOUS CYCLIC AND ACYCLIC CHEMICALS: U.S. PRODUCTION AND SALES, 1982--CONTINUED

MISCELLANEOUS CYCLIC AND ACYCLIC	PRODUCTION	SALES		
		QUANTITY	VALUE	UNIT VALUE ¹
ACYCLIC--Continued				
ALL OTHER MISCELLANEOUS ACYCLIC CHEMICALS	1,000 pounds	1,000 pounds	1,000 dollars	Per pound
Total-----	9,273,535	1,711,939	950,424	\$0.56
Acyclic peroxides, total-----	25,884	25,784	35,042	1.36
2-Butanone peroxide-----	5,892	5,957	9,764	1.64
tert-Butyl peroxide-----	2,841	3,006	4,521	1.50
All other-----	17,151	16,821	20,757	1.17
Carbon disulfide-----	261,397	221,581	34,224	.15
Epoxides, ethers, and acetals, total-----	7,309,914	1,255,030	478,903	.38
Ethylene oxide-----	4,987,328	379,193	115,996	.31
All other-----	2,322,586	875,837	362,907	.41
Hydrocarbons, not elsewhere specified-----	...	4,285	5,323	1.24
Organo-tin compounds-----	19,217	13,283	46,000	3.46
Phosgene (Carbonyl chloride)-----	972,723	...	...	...
Silicone fluids-----	135,758	68,460	161,284	2.36
Sodium methoxide (Sodium methylate)-----	15,536	15,898	10,133	.64
All other miscellaneous acyclic chemicals-----	533,106	107,618	179,515	1.67
MIXTURES NOT SPECIFICALLY ITEMIZED				
Total-----	279,635	157,989	58,669	.37

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."

³1981 sales quantity for 2,2'-(Methylimino)diethanol was 2,976,000 pounds, valued at \$4,526,000.

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

⁵1981 sales value for formaldehyde is revised to \$145,443,000.

⁶Statistics for production of specially denatured alcohol, 190,120,497 wine gallons, and completely denatured alcohol, 93,846,545 wine gallons, for calendar year 1982 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 335 million gallons in 1982.

⁷Some polyols which are used as intermediates for urethanes have been included in the section "Plastics and Resin Materials."

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982

[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	WTL.
Alkylphenolalkylenepolyamine formaldehyde copolymer	X.
Alkylphenol formaldehyde condensate, alkoxylated	X.
Alkylphenol formaldehyde copolymer	X.
Aluminum dodecyl benzene sulfonate trimer	KCH.
1-(2-Aminoethyl)piperazine	TX, UCC.
6-Aminopenicillanic acid	BOC.
p-Aminophenethyl alcohol	EKT.
1-(3-Aminopropyl)morpholine	TX.
Amyl p-dimethylaminobenzoate	VND.
Amyl and 2-ethylhexyl o- and p-aminobenzoates	VND.
p-Benzoquinone (p-Quinone)	EKT.
Benzothiazole	RCI, X.
Benzotriazole, substituted	CGY, X.
Benzoyl peroxide	AZT, CAD, NOC, PLC, WTL.
Benzyl alcohol	KIM, SFS.
Benzyl chloroformate	ESX.
Benzyl cocoalkyl dimethyl ammonium chloride	BAK.
1,1-Bisbutylperoxycyclohexane	WTC.
Bis(p-chlorobenzoyl)peroxide	CAD.
Bis(2,4-dichlorobenzoyl)peroxide	CAD, WTL.
Bis(α,α-dimethylbenzyl)peroxide	WTL.
1,1-Bis[3,3,5-trimethyl]dicyclohexane	WTL.
Boron fluoride - phenol complex	ACS.
Bromochloro-5,5'-dimethyl hydantoin	GLY.
2-Butoxyethyl benzoate	X.
Butyl benzoate	PFZ, RPC, TCC.
tert-Butyl cumene hydroperoxide	CAD.
4-tert-Butylcyclohexyl peroxydicarbonate	CAD.
tert-Butyl-α,α-dimethylbenzoyl peroxide	WTL.
tert-Butylhydroquinone	EKT.
2-(and 3)-tert-Butyl-4-methoxyphenol (BHA)	EKT.
tert-Butyl peroxybenzoate	AZT, WTL.
tert-Butyl peroxy-3,5,5-trimethyl cyclohexane	CAD.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
tert-Butylphenyl glycidyl ether	MLN.
N-Butyl phthalimide	RPC.
4-tert-Butylpyrocatechol	CRZ, DOW.
Camphene	HPC, SCM.
*Caprolactam (2-Oxohexamethylenimine)	AFP, BLY, CNP, DBC.
Caprolactam magnesium bromide	X.
Cellulose acetate hexahydrophthalate	X.
Cellulose acetate phthalate	EK.
1-(3-Chloroallyl)-3,5,7-triaza-1-azoniaadamantane chloride	DOW.
p-Chlorobenzylamine	ALB.
p-(Chloromethyl)phenyl trimethoxysilane	SCM.
Chlorothiaxanthone	SM.
Citrazinic acid	EK.
Cresolsulfonic acid, formaldehyde condensate	STC.
Cresyl glycidyl ether	MLN.
Cumene hydroperoxide	CIK, USS.
α-Cumyl peroxynodecanoate	MTL.
Cyanuric acid	FMB, MON.
Cyclic adducted amine curing agents	X.
Cyclohexane dimethanol diglycidyl ether	MLN.
Cyclohexanethiol	PAS.
Cyclohexanone peroxide	EKT.
1,4-Cyclohexylenedimethanol	AAC.
Cyclo chloroacetate	MHI.
Cyclopentenylmagnesium chloride	DOW, GTL.
Decabromobiphenyl or ether	DUP.
Decahydronaphthalene (Decalin)	EKT, GAN.
Dehydroacetic acid or sodium salt	TX, X.
1,4-Diazobicyclo(2.2.2)octane	HPC.
Diazodinitrophenol	EVN.
Dibenzothiophene	MTL.
2,5-Di(benzoyl peroxy)-2,5-dimethylhexane	MTL.
Di-t-butyl diperoxyphthalate	EKT.
2,5-Di-tert-butylhydroquinone	FER.
2,4-Di-t-butyl phenyl 3,5-di-t-butyl hydroxybenzoate	GLY.
1,3-Dichloro-5,5-dimethylhydantoin	
Dichloro-s-triazine-2,4,6(1H,3H,5H)trione	
(Dichloroisocyanuric acids and salts)	FMB, MON, OMC.
4,4'-Dichloro-3-(trifluoromethyl)carbanilide	CGY.
1,1-Dicyclohexane	MTL.

CYCLIC--CONTINUED

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
MISCELLANEOUS CHEMICALS	
CYCLIC--CONTINUED	
X,N-Diethylammonium octaphenylphosphate	VEL.
N,N'-Diethyl-N,N'-diphenylurea	VDM.
Di(2-ethylhexyl)chlorendate	VEL.
1,5-Diethyl-2-thio-4,6-pyrimidinedione	TNI.
2,5-Dihydroxybenzenesulfonic acid, (Sulfolene)	PLC.
2,2'-Dihydroxy-4,4'-dimethoxybenzophenone	X.
2,5-Dihydroxy-3,5-dimethyl-1,2-peroxycyclopentane	CMW.
2,2'-Dihydroxy-4-methoxybenzophenone	MTL.
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.
2,6-Dimethyl-2,4,6-octatriene	SCM.
BENZOIC ACID SALTS:	
Cadmium benzoate	VNC.
Cadmium t-butyl benzoate	VNC.
*Sodium benzoate	VNC, HN, JRC, KLM, MAL, PFZ.
Benzoic acid salts, all other	WTK.
CYCLOHEXENE-1,2-DICARBOXYLIC ACID (TETRAHYDROPHTHALIC ACID), DISUBSTITUTED, POLYESTER SALTS:	
Cyclohexene-1,2-dicarboxylic acid	
(Tetrahydrophthalic acid), disubstituted, polyester salts, tin salt	X.
Dimethyl piperazine	TX.
Dimorpholine diethyl ether	TX.
4,4-Dinitrocarbanilide-4,6-dimethyl-2-pyrimidinol	MRK.
*Dioxane (1,4-Diethylene oxide)	CMW, DOM, FER, MIL, UCC.
1,3-Dioxolane	FER.
Di-para-xylene	WCC.
Dipropylene glycol salicylate	SBC.
*Dodecenylnsuccinic anhydride	DIX, HMY, MIL, X.
Dodecyldiphenyl oxide	X.
4-(Dodecyloxy)-2-hydroxybenzophenone	EKT.
Dodecyl pyridinium chloride	TLC.
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, SM, USR.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
MISCELLANEOUS CHEMICALS	
CYCLIC--CONTINUED	
1,2-Epoxy-3-phenoxypropane (Glycidyl phenyl ether)	MLN.
6-Ethoxy-12-dihydro-2,2,4-trimethyl quinoline	MON.
Ethoxylated methylglucoside	CRN.
Ethyl chrysanthemate	SFS.
2-Ethylhexyl benzoate	TCC.
2-Ethylhexyl-p-dimethylaminobenzoate	VND.
2-Ethylhexyl-3,4-epoxy cyclohexane carboxylate	X.
Ethylidene norbornene	UCC.
4-Ethylmorpholine	TX.
FURAN DERIVATIVES:	
2-Furaldehyde (Furfural)	QKO.
Tetrahydrofurfuryl alcohol	QKO.
Galic acid, tech.	MAL.
Glyceryl p-aminobenzoate	VND.
4-Guanyl-1-nitrosoguanyl tetrazine	REM.
n-Heptyl-p-hydroxybenzoate (Heptylparaben)	LEM.
Hexabromocyclodecane	GTL.
*Hexamethylenetetramine, tech.	BOR, HMP, HN, OMC, PLS, MCL.
Hydroquinone, di(β -hydroxyethyl) ether	EKT.
p-Hydroxybenzoic acid, butyl ester	HN.
p-Hydroxy benzoic acid esters	VND.
p-Hydroxybenzoic acid, ethyl ester	HN.
p-Hydroxybenzoic acid, methyl ester	HN, HXL, LEM.
p-Hydroxybenzoic acid, propyl ester	HN, HXL, LEM.
N-(Hydroxyethyl)piperazine	TCH, TX.
2-Hydroxy-4-methoxybenzophenone	ACY, GLY.
2-Hydroxy-4-methoxy-5-sulfobenzophenone trihydrate	ACY.
2-Hydroxy-2-methylphenyl propanone	MMC.
2-Hydroxy-4-N-octoxybenzophenone	ACY.
2-(2-Hydroxy-5-tert-octylphenyl)benzotriazole	ACY.
α -D-p-Hydroxyphenylglycine methyl ester K	BOC.
1,2,3-Indanione monohydrate (Ninhydrin)	PIC.
iso-Hexadecanyl succinic anhydride	HMY.
*LACTONES:	
Butyrolactone	GAF.
Caprolactone	UCC.
Glucono-6-lactone	PFZ.
Lanolin acetate	CRN.
Lanolin acid, isopropyl ester	CRN.
Lanolin alcohol acetate	CRN.
Lanolin linoleate	CRN.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

MISCELLANEOUS CHEMICALS		MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
CYCLIC--CONTINUED		
Lauryl benzoate		X.
Limonene oxides		VIK.
*Maleic anhydride		AMO, ASH, DKA, HN, MON, RCI, USS.
p-Menthane		HPC.
8-p-Menthyl hydroperoxide		HPC.
4-Methoxyphenol		ASL, EKT.
Methylaziridine		ARS.
2,2'-Methylenebis[4-chlorophenol] (Dichlorophene)		GIV.
2,2'-Methylenebis-(4-methyl-6-tert-butylphenol)-		SM.
2,2'-Methylenebis[3,4,6-trichlorophenol] (Hexachlorophene)		GIV.
4-Methylmorpholine		TX.
N-methyl morpholine oxide		TX.
1-Methyl-2-pyrrolidone monomer		GAF.
5-Methyl resorcinol (Orcinol)		PD.
Methyltetrahydrophthalic anhydride		MIL.
Morpholine		AIP, DOM, TX.
Morpholine salt of p-toluene sulfonic acid		AMB.
Neopentyl glycol dibenzoate		VEL.
5-Nitro-1H-indazole		EK.
Octabromodiphenyl oxide		GTL.
Octadecenyl succinic anhydride		MIL, TNA.
Octenylsuccinic anhydride		MIL.
Oxalyl bis(benzylidene hydrazide)		EKT.
α-Oximinopropiophenone		PD.
Pentabromodiphenyl oxide		GTL.
Pentaerythritol tribenzoate		VEL.
Phenol, styrenated		CHP, MCC.
Phenothiazine		WAG.
2-Phenoxyethanol (Ethylene glycol monophenyl ether)		DOM, TCH.
2-(2-Phenoxyethoxy)ethanol (Diethylene glycol phenyl ether)		DOM.
Phenyldecanedione		X.
Phenyl hydrogen phosphate		SM.
Phenyl xylol ethane		HCC.
Phthalic acid, lead salt, (Dibasic)		ALI.
Phthalimide, potassium salt		PD.
Picramic acid, sodium salt		SDC.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
CYCLIC--CONTINUED	
*Pinene and derivatives:	
Pinane	SCM.
Pinane hydroperoxide	SCM.
2-Pinanol (cis and trans)	SCM.
α -Pinene	ARZ, SCM.
* β -Pinene	ARZ, HPC, NCI, RCI, SCM.
*Pinene, sulfate	ARZ, HPC, NCI.
Pinene, wood	HPC, RCI.
*Pine oil, synthetic	ARZ, NCI, RCI, SCM.
Poly-4-(2-acryloxyethoxy)-2-hydroxybenzophenone	ACY.
Poly(dibromophenylene oxide)	GTL.
Polyethylene glycol, α -nonylphenyl ether	BAK.
Polypropylene glycol glycerol triether and epichlorohydrin bisphenol epoxy resin	BAK.
Propoxylated methylglucoside	CRN.
Propylene glycol dibenzoate	VEL.
Propyl gallate	EKT.
2,4-(1H,3H)Pyrimidinedione	SCM.
Resorcinol diglycidyl ether	MIN.
Resorcinol monobenzoate	EKT.
ROSIN ACID SALTS:	
Calcium resinolate	CBY.
Rosin acid salts, all other	WTC.
Salicylic acid magnesium salt	PD.
Stannous octyl phthalate	X.
Styrene oxide	UCC.
Succinic anhydride	BCC, SOC.
Sucrose benzoate	VEL.
Tall oil, chemically modified	FOC, GAF, MVA, X, X, X.
*TALL OIL SALTS (LINOLEIC-ROSIN ACID SALTS):	
Calcium magnesium tellurate	MCI, SHP.
Calcium tellurate	CCA, MCI, X.
Cobalt manganese tellurate	MCI, SHP.
Cobalt tellurate	HN, MCI, SHP.
Copper tellurate	MCI.
Lead manganese tellurate	SHP.
Lead tellurate	MCI.
Manganese tellurate	MCI, SHP.
Tallow alkyl tellurate	X.
Zinc tellurate	MCI.
Tall oil salts, all other (linoleic-rosin acid salts)	WTK.
TANNIC ACID:	
Tannic acid, N.F.	MAL.
Tannic acid, technical	WTC.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
CYCLIC--CONTINUED	
*Terpene hydrocarbons, monocyclic (solventol)-	HPC, NCI, SCM.
Terpene polymers - - - - -	ARZ.
Tetrabromobisphenol A - - - - -	GTL.
Tetrabromobisphenol a, ethoxylated - - - - -	GTL.
Tetrabromobisphenol A (carbonate) oligomer, tribromophenolend-capped - - - - -	GTL.
n-Tetradecenylsuccinic anhydride - - - - -	DIX, HMY, MIL.
1,2,3,4-Tetrahydronaphthalene (Tetralin) - - - - -	DUP.
Tetrahydrothiophene - - - - -	PAS.
Tetrahydrothiophene-1,1-dioxide (Sulfolane) - - - - -	PLC.
[2,2'-Thiobis(4-octylphenolate)]-n-butylamine nickel salt - - - - -	ACY.
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) - - - - -	FMB, MON, OMC.
3,3,5-Trimethylcyclohexanol (m-homenthol) - - - - -	ARS.
3,5,5-Trimethyl-2-cyclohexene-1-one (Isophorone) - - - - -	ENJ, UCC.
2,4,6-Trinitroresorcinol and lead derivative - - - - -	REM.
2,4,6-Triphenoxy-s-triazine - - - - -	AMB.
Triphenyltin hydroxide - - - - -	X.
1,3,5-Tris(2-hydroxyethyl)-S-hexahydrotriazine - - - - -	HLI.
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 - - - - -	CWN, PAC, REG, RH, SM, UCC, VIK, WTK, X, X, X.
ACYCLIC	
*NITROGENOUS COMPOUNDS:	
Acetaldehyde dimethylhydrazone - - - - -	DIX.
Acetamide hydrochloride - - - - -	WTC.
Acetamidoethanol (N-Acetyl-ethanolamine) - - - - -	DA, SBC.
Acetone oxime - - - - -	ALB.
Alkyl C ₁₂ -C ₁₄ amine hydrochloride - - - - -	COS.
*AMIDES:	
Acetamide - - - - -	ACS, WTK.
*Acrylamide monomer - - - - -	ACY, DOM, SOH, X.
Acrylamide polymer with N,N-Diethyl-N-methyl-2[(1-oxo-2-propenyloxy)ethaniminium sulfate] - - - - -	X.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
*NITROGENOUS COMPOUNDS--CONTINUED	
*AMIDES--CONTINUED	
Amido amine salts as curing agents	CEL, PAC, X.
1,1'-Azobisformamide	OMC, USR.
Bis[2-(octadecylamido)ethyl]-N-(2-cyanoethyl)-N-ethyl ammonium ethyl sulfate	SBC.
2-Chloro-N-(hydroxymethyl)-acetamide	SDW.
*Coconut oil amide	ARC, CAD, FTX, SHX.
N,N-Diethyldodecanamide	ARC, UPJ.
N,N-Dimethylacetamide	DUP, MON.
N,N-Dimethylacetosacetamide	EKT.
Dimethyl caprylamide capramide	HAL.
N,N-Dimethylformamide	AIP, DUP.
Dimethyl oleamide	HAL.
Erucamide	ARC, SHX, WTC.
N,N'-Ethylenebis-oleamide (Oleic acid-ethylene diamine condensate (Amine/acid ratio = 1/2))	GLY, WTC.
N,N'-Ethylenebis(stearamide)	GLY, WTC.
Fish oil fatty acid amide	WTC.
Hexamethyl phosphoric triamide	ALD, X.
N-(Hydroxymethyl)-formamide	X.
4-Hydroxy-4-methyl-2-pentanone acrylamide (Diacetone acrylamide)	ACY.
Methacrylamide	DUP.
N-Methylacetamide	EKT.
Oleamide (Octadecene amide)	ARC, WTC.
Oleoylpalmitamide	HXL.
Oxamide	HML.
Ricinoleamide	TKL.
Stearamide (Octadecane amide)	ARC, WTC.
Stearyl erucamide	HXL.
Tallow amide, hydrogenated	ARC, CAD.
Amides, all other	GAF, WTC.
*AMINES:	
Allylamines	VGC.
Bis-hexamethylenetriamine amine	DUP, MON, SHC, WTC.
* BUTYLAMINES:	
*n-Butylamine, mono	AIP, PAS, VGC.
sec-Butylamine, mono	PAS.
tert-Butylamine, mono	MON.
*Di-n-butylamine	AIP, PAS, VGC.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

MISCELLANEOUS CHEMICALS		MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED		
*NITROGENOUS COMPOUNDS--CONTINUED		
*AMINES--CONTINUED		
*BUTYLAMINES--		
Diisobutylamine		AIP, VGC.
*Tri-n-butylamine		AIP, PAS, VGC.
n-Butylethylamine		AIP.
Di-tert-butylethyldiamine		VGC.
Diethylenetriamine		DOM, UCC.
*Diisopropylamine		AIP, PAS, UCC, VGC.
Dimethylaminopropionitrate		ABB.
*Dimethylaminopropylamine		ABB, TX, UCC.
Dimethylaminopropylamine, propoxylated		TX.
M,N-Dimethylbutylamine		SOL.
1,3-Dimethylbutylamine		VGC.
*ETHYLAMINES:		
*Diethylamine		AIP, PAS, UCC, VGC.
*Ethylamine, mono-		AIP, PAS, UCC, VGC.
*Triethylamine		AIP, PAS, UCC, VGC.
Ethylenediamine		DOM, TX, UCC.
(2-Ethylhexyl)amine, mono-		ARC, VGC.
1,6-Hexanediamine (Hexamethylenediamine)		CEL, DUP, MON.
n-Hexylamine		CXI, PAS.
Iminobisacetoneitrile		HMP.
*Isopropylamine, mono		AIP, PAS, UCC, VGC.
*METHYLAMINES:		
*Dimethylamine		AIP, DUP, GAF, IMC.
*Methylamine, mono-		AIP, DUP, GAF, IMC.
*Trimethyl amine		AIP, DUP, GAF, IMC.
Mixed primary T-alkylamines		RH.
Mitrioltriacetonitrile		HMP, VGC.
tert-Octylamine		RH.
Pentaethylenhexamine		UCC.
PENYLAMINES (AMYLAMINES):		
Dipentylamine		PAS.
Pentylamine, mono-		PAS.
Tripenylamine		PAS.
Polyalkylene polyamine		DOM.
Poly(oxypropylene)diamine		TX.
1,3-Propanediamine (1,3-Diaminopropane)		TX.
*PROPYLAMINES:		
Dipropylamine		AIP, PAS, VGC.
Propylamine, mono-		PAS.
Tripropylamine		AIP, PAS, VGC.
Tetraethylenepentamine		DOM, UCC.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
*NITROGENOUS COMPOUNDS--CONTINUED	
*AMINES--CONTINUED	
N,N,N',N'-Tetramethyl-1,3-butanediamine	MON, UCC.
Tetramethylethylenediamine	BKM.
Triethylenetetramine	DOM, UCC.
Triethyl ethylenediamine	ALB.
Amines, all other	MON, PAC, PIC, USR, WTC.
2-Amino-1-butanol	HNY, IMC.
2-Aminoethanol hydrochloride	HCP, OMC.
2-Aminoethanol (Monoethanol amine) sulfite	EVN.
2-(2-Aminoethylamino)ethanol	TX.
(Aminoethylethanolamine)	DOM, UCC.
2-Aminoethyl mercaptoacetate (Monoethanolamine thioglycolate)	EVN.
2-Amino-2-ethyl-1,3-propanediol	IMC.
Aminoguanidine hydrochloride	REM.
2-Amino-2-(hydroxymethyl)-1,3-propanediol [Tris(hydroxymethyl)aminomethane]	IMC, WTK.
2-Aminomalonate hydrochloride	ABB.
2-Amino-2-methyl-1,3-propanediol	IMC.
2-Amino-2-methyl-1-propanol	IMC.
2-Amino-2-methyl-1-propanol hydrochloride	CCC.
3-Amino-1-propanol	ALB.
1,3-Bis(hydroxymethyl)urea (Dimethylolurea)	CCC.
Bis(N-methylacetamido)ethenylmethylsilane	EKT.
Bis(perfluoroalkyl phosphate, ammonium salt)	DUP.
Bis(perfluoroalkyl phosphate diethanolamine salt)	DUP.
tert-Butylaminoethanol	PAS.
tert-Butylamino methacrylate	CPS.
tert-Butyldiethanolamine	PAS.
1-Butyl-3-ethyl-2-thiourea	PAS.
Butyl isocyanate	UPJ, X.
(Carboxymethyl)dimethyl-2-(polyfluoroalkylthio)ethylammonium hydroxide	DUP.
2-Chloro-N,N-diethylethylamine hydrochloride	SOL.
2-Chloro-N,N-dimethylethylamine (Dimethylamino ethyl chloride) hydrochloride	SOL.
2-Chloro-N,N-dimethylpropylamine hydrochloride	SOL.
3-Chloro-2-hydroxypropyltrimethyl ammonium chloride	DOM.
Choline	HFT, RH.
N-Cocamidopropyl-N,N-dimethyl-N-sodium acetate, ammonium salt	BAK.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
*NITROGENOUS COMPOUNDS--CONTINUED	
Creatine and creatinine	PFM.
1-(2-Cyanoethyl)ethyl urea	GAF.
1-Deoxy-1-(n-octylamino)-d-glucitol	ARA.
Di-amine derivatives of dimer acids	SCP.
Diammonium dithiodiglycolate	EVN.
2-Dibutylaminoethanol	PAS, WTC.
1,3-Dibutyl-3-thiourea	PAS, RBC, VNC.
1,4-Dicyanobutene	DUP.
2-Diethylaminoethanol (N,N-Diethylethanolamine)	PAS, UCC.
2-(2-Diethylaminoethoxy)ethanol	UCC.
Diethylaminoethylacrylate, dimethyl sulfate, quaternary salt	CPS.
*2-Diethylaminoethyl methacrylate	BLM, CPS, DUP.
Diethylcarbamoyl chloride	GAF.
Diethylhydroxylamine	PAS.
N,N-Diethyl-N-methyl-2[(1-oxo-2-propenyl)oxy]ethaniminium sulfate	X.
1,3-Diethyl-2-thiourea	PAS, RBC, VNC.
2-Diisopropylaminoethanol (N,N-Diisopropylethanolamine)	PAS, UCC.
2-Diisopropylaminoethyl methacrylate	DUP.
Dimer acid isocyanates	SCP.
Dimethylamine epichlorohydrin copolymer	X.
Dimethylamine hydrochloride	RBC.
Dimethylamine sulfate	RH.
2-Dimethylaminoethanethiol hydrochloride	EVN.
2-Dimethylaminoethanol (N,N-Dimethylethanolamine)	PAS, TX, UCC.
Dimethylaminoethyl acrylate	BLM.
quaternary salt	BLM.
*Dimethylaminoethyl methacrylate	AAC, BLM, CPS, RH.
Dimethylaminoethylmethacrylate, dimethyl sulfate, quaternary salt	AAC, BLM, CPS.
Dimethylaminoethylmethacrylate, methyl chloride, quaternary salt	AAC, BLM, CPS.
Dimethylaminomethanol	X.
2-Dimethylamino-3-methyl-1-propanol hydrochloride	WPG.
1-(Dimethylamino)-2-propanol	PAS.
1,1-Dimethylhydrazine	OMC, USR.
N,N-Dimethyl-1,3-propanediamine, propoxylated	TX.
2,5-Dithiobiurea	FMT, GAF.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
*NITROGENOUS COMPOUNDS--CONTINUED	
Dithiooxamide	RBC.
tert-Dodecylidissuccinamide	GAF.
*ETHANOLAMINES:	
*Diethanolamine	DOM, OMC, TX, UCC.
*Monoethanolamine	DOM, OMC, TX, UCC.
*Triethanolamine	DOM, OMC, TX, UCC.
2-Ethylaminoethanol (Ethylmonoethanolamine)	PAS, UCC.
Ethylidethanolamine	PAS.
Ethylenediamine dihydrochloride	RSA.
1,1-Ethylenediurea	EK.
2-Ethylhexyl nitrate	SDC, X.
5-(N-Ethyl-N-hydroxyethylamino)-2-pentanone	SDM.
N-Ethyl-N-hydroxyethyl-1,4-pentanediamine	SDM.
Glycine ethyl ester hydrochloride	SFS.
Hexamethylenediamine adipate (Nylon salt)	BLY, DUP, MON.
2-(Hydroxymethyl)-2-nitro-1,3-propanediol (Tris- (hydroxymethyl)nitromethane)	IMC.
Iminodiacetic acid	HMP.
ISOPROPANOLAMINES:	
Diisopropylamine	DOM, X.
Monoisopropylamine	DOM.
Triisopropylamine	DOM.
2-Isopropylaminoethanol	PAS.
Ketimine, tetrafunctional	PAC, SCP, SM.
Methacrylamidopropyl trimethyl ammonium chloride	TX.
2-Methoxyethyl carbamate	ROM, VAL.
*2-Methylaminoethanol (N-Methylethanolamine)	PAS, TX, UCC.
Methylaminopropylamine	TX.
Methylimino bis(propylamine)	TX.
*2,2'-(Methylimino)diethanol (Methyldiethanolamine)	DOM, PAS, UCC.
Methyl isocyanate	UCC.
2-Methyl-2-nitro-1-propanol	IMC.
*NITRILES:	
*Acetonitrile	DUP, SOH, X.
*Acrylonitrile, monomer	ACY, DUP, MON, SOH.
Adiponitrile	DUP, MON, TX.
n-Butyronitrile	EKX, WYT.
Citral nitrile	SBC.
Coconitrile	SHX.
Cyanoacetic acid	KF.
Cyanoethyl acrylate	TKL.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
*NITROGENOUS COMPOUNDS--CONTINUED	
*NITRILES--CONTINUED	
3-Ethoxypropionitrile	DIX.
Ethyl cyanoacetate	KF.
Isobutyronitrile	AIP, EKK.
Lactonitrile	MON.
Methacrylonitrile	DOM.
3-Methoxypropionitrile	X.
Methyl cyanoacetate	KF.
Methylisobutyl ketone aminonitrile	HMP.
*2-Methylacetonitrile (Acetone cyanohydrin)	CYR, DUP, MON, RH.
Oleonitrile (Octadecene nitrile)	ARC.
Pentenenitrile	DUP.
Propionitrile	MON.
Stearonitrile (Octadecane nitrile)	ARC.
Tallow nitrile	ARC, SHX.
Tallow nitrile, hydrogenated	SHX.
3,3'-Thiodipropionitrile	EVN.
Nitriles, all other	ARC, OMC, WTK.
Nitroethane	IMC.
Nitromethane	IMC.
1-Nitropropane	IMC.
2-Nitropropane	IMC.
Octadecyl isocyanate	MOB.
Pentaerythritol tetranitrate	DUP, HPC.
Poly(oxypropylene)diamine bis(urea) adduct	TX.
Polyvinyl octadecyl carbamate	ESA.
n-Propylaminoethanol	PAS, X.
Propylisocyanate	X.
Semicarbazide hydrochloride	FMT.
Tetramethylguanidine	ACY.
Tetranitromethane	HML.
Thiosemicarbazide	FMT.
Triaminoguanidine nitrate	TLI.
2,2,2-Trichloroacetamide	WTK.
Trimethylamine hydrochloride	X.
Trimethylaminoethyl ethanalamine	EKT.
Nitrogenous compounds, acyclic, all other	AVJ, BLY, OMC, PEL, PFZ, REG, UCC, X, X, X.
*ACIDS, ACID ANHYDRIDES, AND ACYL HALIDES:	
ACETIC ACID, 100%:	
Acetic acid, recovered (100%)	AIP, CEL, EKT, MON, RDA, UCC.
Acetic acid, synthetic (100%)	ARC, BOR, CEL, EKT, FMP, MON, UCC, USI.
*ACETIC ANHYDRIDE, 100%:	

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
*ACIDS, ACID ANHYDRIDES, AND ACYL HALIDES-- CONTINUED	
*ACETIC ANHYDRIDE--CONTINUED	
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.
Acetyl chloride--	MCC.
*Acrylic acid--	CEL, DBC, RH, UCC.
*Adipic acid--	AFP, DUP, MON.
Azelaic acid--	EMR, MON.
Azelaoyl chloride--	WTL.
2,2-bis(Hydroxy-methyl)-propionic acid--	IMC.
Bromoacetyl bromide--	WCC.
Bromobutyric acid--	GL.
α -Bromocaproic acid--	MCC.
tert-Butylperoxy maleic acid--	WTC, WTL.
Butyric acid--	CEL, EKT.
Butyryl chloride--	EKT.
β -Carbomethoxypropionyl chloride (Mono-ethyl malonate acid chloride)--	ABB.
Chloroacetic acid, mono--	BUK, DOW, PFZ.
Chloroacetyl chloride--	DOM, MON.
α -Chloropropionic acid, mono--	DOM.
Citric acid--	MLS, PFZ.
Crotonic acid (2-Butenoic acid)--	EKT.
Decanoyl chloride--	MCC, WTL.
2,2-dichloroacetyl chloride--	RDA.
Dimer acid (C-36 Aliphatic dibasic acid)--	CBY, EMR, SYL.
Dimethylpropionic acid--	ENJ.
Dithiodipropionic acid--	EVN.
Dodecanedioic acid--	DUP.
Dodecylsuccinic anhydride--	BCC.
1,2-Ethanedithionyl acid--	SK.
α -Ethyl- α -bromobutyryl bromide--	PD.
2-Ethylbutyric acid (Diethylacetic acid)--	UCC.
2-Ethylhexanoic acid (α -Ethylcaproic acid)--	EKT, UCC.
2-Ethylhexanoyl chloride--	VEL, WTL.
Fatty acids, hydrogenated--	GLY, SHX.
Formic acid, 90%--	CEL, UCC.
*Fumaric acid--	AGC, HN, MON, PFZ, USS.
Gluconic acid, technical--	PFZ.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
*ACIDS, ACID ANHYDRIDES, AND ACYL HALIDES--CONTINUED	
Glycolic acid (Hydroxyacetic acid)	DUP.
Heptanoic acid	CEL.
n-Hexadecylsuccinic anhydride	HNY.
Isethionic acid (2-Hydroxyethanesulfonic acid)	WTC.
Isoascorbic acid (Erythorbic acid)	PFZ.
Isobutyric acid	EKK.
Isobutyric anhydride	EKT.
Isononanoyl chloride	WTL.
Iso-octadecanoic acid	CBY.
Iso-octadecylsuccinic anhydride	HNY.
Isopentanoic acid	UCC.
Isostearyl chloride	WCC.
Itaconic acid (Methylenesuccinic acid)	PFZ.
LACTIC ACID:	
Lactic acid, edible, 100%	MON.
Lauroyl chloride	MCC, WTL.
Maleic acid	PFN, PFZ.
Malic acid	AGC.
Meraptoacetic acid (Thioglycolic acid)	EVN.
3-Mercaptopropionic acid	EVN.
3-Mercaptosuccinic acid (Thiomalic acid)	EVN.
Methacrylic acid	DUP, RH.
Methanesulfonic acid	PAS.
Methanesulfonyl chloride	PAS.
Myristoyl chloride	MCC.
Myristyl bromide	MCC.
Neodecanoic acid	ENJ.
Neodecanoyl chloride	MCC.
Neodecanoic acid (Pelargonic acid)	CEL, EMR.
Nonanoic acid	MCC.
Nonanoyl chloride	HNY.
Nonenylsuccinic anhydride	MCC.
Octanoyl chloride	DRJ.
Oleic acid	CCG, HRT.
Oleoyl chloride	ACS, HK.
Oxalic acid	X.
Oxalyl chloride	X.
Oxidized fischer tropisch wax	SNW.
Palmitoyl chloride	X.
Peroxyacetic acid	FMB, UCC.
Pivaloyl chloride	AZI, VEL, MCC.
Polyacrylic acid	BFG, BKM, RH, SNW, X.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
*ACIDS, ACID ANHYDRIDES, AND ACYL HALIDES--CONTINUED	
*Propionic acid	CEL, EKT, UCC.
Propionic anhydride	EKT.
Propionyl chloride	MCC.
Sebacic acid	WTH.
Sebacoyl chloride	WTL.
Sorbic acid (2,4-Hexadienoic acid)	MON.
Stearoyl chloride	MCC.
Succinic acid	ACS.
Thioacetic acid	EVN.
3,3'-Thiodipropionic acid	EVN.
Thiolactic acid	EVN.
Trifluoroacetic acid	HOC.
Trifluoroacetic anhydride	HOC.
Valeric acid	UCC.
Valeroyl chloride	MCC.
Acids, acid anhydrides, and acyl halides, all other	DRL, FMP, SYL.
*SALTS OF ORGANIC ACIDS:	
*ACETIC ACID SALTS:	
Aluminum acetate	NCC.
Aluminum monoethyl acetoacetate diisopropylate	KCH.
Aluminum tridecanate	KCH.
*Ammonium acetate	ACS, BKC, WTK.
Barium acetate	BKC.
Butyltin acetate (Dibutyltin diacetate)	WTC, X.
*Calcium acetate	ACS, HFT, JRC.
Chromium acetate	SHP.
Cobalt acetate	SHS, SHP, UCC.
Copper acetate	BKC.
Lead acetate	BKC.
Lead subacetate	BKC.
*Magnesium acetate	BKC, JRC, SHP.
Manganese acetate	HCP, HSH, SHP.
Nickel acetate	BKC, HSH, SHP.
*Potassium acetate	ACS, BKC, HCP, JRC, MCC.
*Sodium acetate	ACS, ATL, BKC, DAN, EKT, HCP, JRC, MAL, MCC.
*Sodium diacetate	HCP, JRC, MAL, MCC.
*Zinc acetate	ACS, BKC, NCC, SHP.
Zirconium acetate	CCC, TZC.
Acetic acid salts, all other	X.
Adipic acid, ammonium salt	SOL.
Allylsulfonic acid, sodium salt	IOC.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
*SALTS OF ORGANIC ACIDS--CONTINUED	
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	MTK.
*2-ETHYLHEXANOIC ACID (ALPHA-ETHYLCAPROIC ACID) SALTS	
Aluminum 2-ethylhexanoate	NOC, WTC.
Bismuth 2-ethylhexanoate	SHP.
Cadmium 2-ethylhexanoate	CCA, VNC, WTC.
*Calcium 2-ethylhexanoate	CCA, COS, FER, HN, MCI, TRO, WTC.
Chromium 2-ethylhexanoate	MCI, SHP.
*Cobalt 2-ethylhexanoate	CCA, FER, HN, MCI, SHP, TRO, WTC.
Cobalt-potassium 2-ethylhexanoate	MCI.
Dibutyltin di-2-ethylhexanoate	COS, WTC.
Iron 2-ethylhexanoate	CCA, HN.
*Lead 2-ethylhexanoate	CCA, COS, FER, HN, SHP, TRO, WTC.
*Manganese 2-ethylhexanoate	CCA, COS, FER, HN, MCI, TRO, WTC.
*Nickel 2-ethylhexanoate	MCI, SHP, WTC.
Potassium 2-ethylhexanoate	CCA, MCI, WTC.
*Rare earths 2-ethylhexanoate	CCA, MCI, SHP.
Sodium 2-ethylhexanoate	LIL.
Stannous 2-ethylhexanoate	FER, WTC.
*Zinc 2-ethylhexanoate	CCA, COS, FER, HN, MCI, SHP, VNC, WTC.
*Zirconium 2-ethylhexanoate	CCA, COS, FER, HN, MCI, TRO, WTC.
FORMIC ACID SALTS:	
Calcium formate	IMC.
Potassium formate	HCP.
Sodium formate, refined	BKC, WTK.
Sodium formate, technical	IMC, PST, X.
Formic acid salts, all other	WTK.
Fumaric acid, lead salt	ALI.
GLUCOHEPTANOIC ACID SALTS:	
Calcium glucoheptanoate	PFN.
Sodium glucoheptanoate	RPC.
Zinc alpha-glucoheptanoate	PFN.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982.--CONTINUED

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
*SALT OF ORGANIC ACIDS--CONTINUED	
GLUCONIC ACID SALTS:	
Potassium glycolate	HCP, X.
Sodium gluconate	BCA, PFN, PFZ, PMP, X.
Glycolic acid, sodium salt	HCP.
2-Hydroxy-3(2-propenyloxy)-1-propanesulfonic acid, sodium salt	AAC.
Hydroxystearic acid, sodium salt	WTC.
Isethionic acid, sodium salt	MCB.
Isoscorbic acid, sodium salt (Sodium erythorbate)	PFZ.
TERTIARY-ALPHA-ALKYL CARBOXYLIC ACID SALTS (ISOCARBOXYLIC ACID SALTS):	
Calcium t- α -alkylcarboxylate	MCI.
Calcium/cobalt t- α -alkylcarboxylate	MCI.
Cobalt t- α -alkylcarboxylate	MCI.
Cobalt/manganese/lead t- α -alkylcarboxylate	MCI.
Cobalt/zirconium t- α -alkylcarboxylate	MCI.
Copper t- α -alkylcarboxylate	MCI.
Iron t- α -alkylcarboxylate	MCI.
Isononanoic acid, lead salt	CCA.
Isooctanoic acid, calcium salt	CCA.
Lead t- α -alkylcarboxylate	MCI.
Manganese t- α -alkylcarboxylate	CCA, MCI.
LACTIC ACID SALTS:	
Sodium lactate (Nalac)	PFN.
LAURIC ACID SALTS:	
Barium cadmium laurate	FER.
Dibutyltin dilaurate	COS, FER, X.
Diocetyl tin dilaurate	COS.
Lauro lauric acid, dibutyltin salt	WTC.
Lead salts of menhaden fish oil, c-14 to c-22(lead fishate)	ELC.
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.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
*SALTS OF ORGANIC ACIDS--CONTINUED	
Mercaptopropionic acid, dibutyltin salt-	WTC.
NEODECANOIC ACID SALTS:	
Calcium neodecanoate	CCA, MCI, SHP.
Cobalt neodecanoate	MCI, SHP, UCC.
Lead-cobalt neodecanoate	MCI.
Lead neodecanoate	MCI.
Lithium neodecanoate	MCI.
Manganese neodecanoate	MCI, SHP.
Nickel neodecanoate	MCI.
Rare earths neodecanoate	MCI, SHP.
Zinc/calcium/cobalt neodecanoate	MCI.
Zirconium neodecanoate	MCI, SHP.
*OCTANOIC-ACID (CAPRYLIC ACID) SALTS:	
Aluminum octanoate	KCH, SYP.
Octanoic acid (Caprylic acid) salts, all other	ALL, WTC.
OLEIC ACID SALTS:	
Calcium oleate	X.
Copper oleate	WTC.
OXALIC ACID SALTS:	
Ammonium oxalate	BKG, HML, WTK.
Copper oxalate	SHP.
*Potassium oxalate	BKG, HML, WTK.
Sodium oxalate	BKG, HML.
PALMITIC ACID SALTS:	
Calcium palmitate	SYL.
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.
Phosphorodithioic acid salts (Dithiophosphates), all other	ACY.
Poly(fluoroalkylthio)propionic acid, lithium salt	DUP.
PROPIONIC ACID SALTS:	
Calcium propionate	HFT, MAL, NCC, PFZ.
Cobalt propionate	X.
*Sodium propionate	HFT, MAL, NCC, PFZ, X.
RICINOLEIC ACID SALTS:	
Silver trifluoroacetate	EK.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
*SALTS OF ORGANIC ACIDS--CONTINUED	
RICINOLEIC ACID SALTS--CONTINUED	
Sodium di-2-ethylhexyl sulfosuccinate	WPG.
Ricinoleic acid salts, all other	WTC.
Sodium formaldehyde bisulfite	DAN, EK.
Sodium formaldehyde sulfoxylate	DA.
Sodium-N-methyl-N-oleyl taurate	WPG.
*STEARIC ACID SALTS:	
*ALUMINUM STEARATES:	
Aluminum distearate	KCH, NOC, SYP, WTC.
Aluminum monostearate	MAL, SYP.
Aluminum tristearate	NOC, SYP, WTC, X.
Ammonium stearate	HN, WPG.
*Barium stearate	DA, HN, NOC, SYP, VNC, WTC.
Cadmium stearate	SYP, VNC, WTC.
*Calcium stearate	DA, FER, HN, MAL, NOC, SNM, SYP, WTC.
Cobalt stearate	FER, MCI, SHP.
Ferric stearate	WTC.
Lead stearate	ALI, WTC.
Lead stearate, dibasic	ALI.
Lithium stearate	NOC, SYP, WTC.
*Magnesium stearate	ALI, HN, MAL, NOC, SYP, WTC.
Nickel stearate	WTC.
*Zinc stearate	CCC, DA, HN, MAL, NOC, PLS, SYP, WTC.
Stearic acid salts, all other	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, STC.
*ALDEHYDES:	
Acetaldehyde	CEL, EKX, UCC.
Acrolein (Acrylaldehyde)	UCC.
*Butyraldehyde	CEL, DBC, EKX, UCC.
Chloral (Trichloroacetaldehyde)	MTO.
Crotonaldehyde	EKT.
2-Ethylbutyraldehyde	UCC.
2-Ethylhexanal (α -Ethylcaproaldehyde)	EKX, UCC.
2-Ethyl-2-hexen-1-al (2-Ethyl-3-propylacrolein)	UCC.
2-Ethyl-3-hydroxyhexanal	UCC.
*Formaldehyde (37% HCHO by Weight)	ARC, BOR, CBD, CEL, DUP, GAF, GOC, GP, HN, HPC, IMC, MOM, RCI, WCL.
Glutaraldehyde	UCC.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
*ALDEHYDES--CONTINUED	
Glyoxal	ACY.
*Isobutyraldehyde	CEL, DBC, EKX, UCC.
Isopentaldehyde, mixed isomers	UCC.
Methacrolein (methacrylaldehyde)	RDA.
2-Methylvaleraldehyde (2-Methylpentaldehyde)	UCC.
*Propionaldehyde	CEL, EKX, UCC.
Succinaldehyde-sodium bisulfite complex	EK.
Valeraldehyde (Pentanal)	UCC.
*KETONES:	
*ACETONE:	
*Acetone from cumene	AFP, CLK, DOM, GE, GP, GYR, MON, SHC, SKO, SOC, UCC, USS.
*Acetone from isopropyl alcohol	EKT, ENJ, SHC, UCC.
Acetone, all other	ATR.
Acyloln	X.
1-Chloropinacolone	CHG.
Chloro-2-propanone (Chloroacetone)	EK, MRK.
Diisoamyl ketone	EKT.
Diisopropyl ketone (2,4-Dimethyl-3-pentanone)	EKX.
3-Heptanone (Ethyl amyl ketone)	EKT.
*4-Hydroxy-4-methyl-2-pentanone (Diacetone alcohol)	UCC.
Isovalerone (Diisobutyl ketone)	CEL, SHC, UCC.
4-Methoxy-4-methyl-2-pentanone	SHC.
*Methyl ethyl ketone	ATR, CEL, ENJ, SHC, UCC.
5-Methyl-2-hexanone (Methyl isoamyl ketone)	EKT.
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.
3-Octanone (Ethyl amyl ketone)	SHC.
2,4-Pentanedione (Acetylacetone)	UCC.
3-Pentanone (Diethyl ketone)	EKT, ORT, UCC.
Pseudoionone	NCI, SCM.
2,6,8-Trimethyl-4-nonanone (Isobutyl heptyl ketone)	UCC.
Ketones, all other	
*ALCOHOLS, MONOHYDRIC, UNSUBSTITUTED:	
*ALCOHOLS, C11 OR LOWER, UNMIXED (95% OR MORE PURE):	
Allyl alcohol	FMP.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
*ALCOHOLS, MONOHYDRIC, UNSUBSTITUTED--CONTINUED	
*ALCOHOLS, C11 OR LOWER, UNMIXED (95% OR MORE PURE)--CONTINUED	
AMYL ALCOHOLS:	
2-Methyl-1-butanol	UCC.
1-Pentanol	UCC.
*BUTYL ALCOHOLS:	
*n-Butyl alcohol (n-Propylcarbinol)	ARC, CEL, CO, DBC, EKX, GAF, SHC, UCC.
sec-Butyl alcohol (Methylethylcarbinol)	ARC, 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, PUB, SHC, UCC, USI, X.
*2-Ethyl-1-hexanol	DBC, EKX, SHC, UCC.
n-Heptyl alcohol	EKX.
n-Hexyl alcohol	CO, ENJ, TNA, UCC.
Isodecyl alcohol	USS.
Isoheptyl alcohol	ENJ.
Isononyl alcohol	ENJ, USS.
Iso-octadecyl alcohol	SHX.
Iso-octyl alcohol	ENJ, SCM, USS.
*Isopropyl alcohol	ARC, ATR, ENJ, SHC, UCC.
*Methanol, synthetic only	AIP, ALM, BOR, CEL, DUP, GP, HN, HST, IMC, MON, X.
2-Methyl-3-butyn-2-ol	AIP.
2-Methyl-1-pentanol	ENJ, UCC.
4-Methyl-2-pentanol (1-Methylisobutylcarbinol)	ARC, SHC, UCC.
1-Octanol	CO, TNA.
2-Octanol (sec-Capryl alcohol)	WTH.
*Propyl alcohol (Propanol)	CEL, EKX, UCC.
2-Propyn-1-ol (Propargyl alcohol)	ARC, GAF.
Alcohols, unmixed C11 or lower, all other	UCC.
ALCOHOLS C12 OR HIGHER, UNMIXED (95% OR MORE PURE):	
Dodecyl alcohol (lauryl alcohol)	CO, TNA, X.
1-Hexadecanol (Cetyl alcohol)	CO, CRN, PG.
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.
1-Tridecanol	ENJ.
2,6,8-Trimethyl-4-nonanol	UCC.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
*ALCOHOLS, MONOHYDRIC, UNSUBSTITUTED--CONTINUED	
MIXTURES OF ALCOHOLS:	
Alcohol mixtures, other--	CO, ENJ, SCP, TNA.
Alcohol mixtures, C ₁₀ -C ₁₂ --	TNA.
*Alcohol mixtures, C-11 or lower only--	CO, CXI, EKX, MCI, SHC, TNA, UCC.
*Alcohol mixtures, C-12 through C-18 only--	CO, PG, 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.
t-Amyl peroxy-neo-decanoate--	WTL.
t-Amyl peroxy-pivalate--	WTL.
BUTYL ACETATES:	
*n-Butyl acetate--	CEL, EKT, UCC, WTC.
*Isobutyl acetate--	CEL, EKX, UCC.
Bis(2-[bis(2-hydroxyethyl)amino]ethyl)diisopropyl titanate--	DUP.
Bis[t-butylperoxy]-1,9-nonanedioate--	WTL.
Butyl acrylate--	CEL, DBC, RH, UCC.
n-Butyl chlorocrotonate--	MAL.
sec-Butyl chloroformate--	PPG.
Butyl maleate--	AAC, TCH, USS.
Butyl mercaptopropionate--	EVN.
Butyl methacrylate--	AZT, DUP, RH.
Butyl oleate--	ELC.
tert-Butyl peroxyacetate--	AZT, WTL.
tert-Butyl peroxy-2-ethylhexanoate--	AZT, WTC, WTL.
tert-Butyl peroxyisobutyrate--	WTC, WTL.
tert-Butyl peroxyisononanoate--	WTL.
tert-Butyl peroxyisopropylcarbonate--	CAD, PPG, WTL.
tert-Butyl peroxyneodecanoate--	WTC, WTL.
*tert-Butyl peroxy-pivalate--	AZT, WTC, WTL.
Butyl stearate--	CRN.
Cetylleicosyl methacrylate--	RH.
Cetyl lactate--	VND.
Diallyl maleate--	AAC, FMP.
Dibutyl fumarate--	RCI.
*Dibutyl maleate--	HN, RCI, USS.
Di(sec-butyl)peroxydicarbonate--	WTL.
Diethyl diallyl malonate--	ABB.
Diethyl carbonate (Ethyl carbonate)--	PPG.
Diethyl dipropylmalonate--	ABB.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
*ESTERS OF MONOHYDRIC ALCOHOLS--CONTINUED	
Diethyl(ethoxymethylene)malonate	KF.
Di(2-ethyl-1-hexyl) chloroformate	WTC.
*Di(2-ethyl-1-hexyl) maleate	CCC, CHP, CIN, DAN, HRT, RPC, WPG.
Diethyl maleate	ACY.
Diethyl malonate (Malonic ester)	KF.
Diethyl oxalate (Ethyl oxalate)	PFZ.
Diisobutyl maleate	RPC.
Diisopropyl peroxydicarbonate (Isopropyl percarbonate)	EKX, PPG.
*Dilauryl-3,3'-thiodipropionate	ACY, CCM, EVN.
Dimethyl adipate	X.
Dimethyl carbonate	PPG.
Dimethyl maleate	AAC, BLM.
Dimyristyl-3,3'-thiodipropionate	CCM.
Diocetyl maleate	FTX, RCI, USS.
*Distearyl-3,3'-thiodipropionate	ACY, CCM, EVN.
Dithiobis(stearyl propionate)	EVN.
Ditridecyl maleate	EFH.
*Di(tridecyl)-3,3'-thiodipropionate	ACY, EVN, SM.
Dodecylpentadecyl methacrylate	RM.
Dodecyl succinic lactate	SM.
2-Ethoxyethyl acetate	EKT, EKX, UCC.
*Ethyl acetate (85%)	CEL, EKT, EKX, MON, UCC.
Ethyl acrylate	BRD, EKT.
Ethyl chloroacetate	CEL, RH, UCC.
Ethyl chloroacetate	SK.
Ethyl chloroformate	ESX, PPG.
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, TUL.
Ethyl phosphonothiodichloride	TNA.
Ethyl silicate	KF, SFS.
Ethyl sulfate (Diethyl sulfate)	UCC.
*FATTY ACID ESTERS, NOT INCLUDED WITH PLASTICIZERS OR SURFACE ACTIVE AGENTS:	
Bis(2-ethylhexyl) C ₂ dicarboxylic acid diester	X.
Dialkyl dimerate	WTC.
Dimethyl brassylate	EMR.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
*ESTERS OF MONOHYDRIC ALCOHOLS--CONTINUED	
*FATTY ACID ESTERS, NOT INCLUDED WITH PLASTICIZERS OR SURFACE-ACTIVE AGENTS--CONTINUED	
Dodeceny] succinic 12-hydroxystearate	TX, SCP, VND.
Isocetyl stearate	VND.
Isopropyl linoleate	FTX, PG, WTC.
Methyl esters of coconut oil	CHL, FER.
Methyl esters of tallow	WTH.
Methyl 12-hydroxystearate	CBY.
Methyl iso-octadecenoate	CYL, SBC, VND.
*Myristyl myristate	GHP.
Propyl oleate	CIN, RPC, SCP.
Tridecyl stearate	
Fatty acid esters, not included with plasticizers	
surface-active agents, all other	CCC, FER, PD, SYL, VND.
Hexyl acetate	X.
Hexyl acrylate	CPS.
Isobutyl acrylate	UCC.
Isobutyl chloroformate	PPG.
Isobutyl isobutyrate	EKK.
Isobutyl methacrylate	RH.
Isodecyl acrylate	CPS.
Isodecyl methacrylate	CPS, RH.
Isodecyl thioglycolate	EVN.
Iso-octyl mercaptoacetate	CCM, EVN.
Iso-octyl-3-mercaptopropionate	EVN.
Isopropyl acetate	EKT, UCC.
Isopropyl chloroformate	PPG.
Isostearyl neopentanoate	SBC, VND.
Lauryl lactate	VND.
Lauryl methacrylate	AAC, RH, TX.
Maleic esters and copolymers	GAF.
Menthallylidene diacetate	RDA.
2-Mercaptoethyl adipate	X.
Methyl acetate	EKT, MON.
Methyl acetoacetate	BRD, EKT.
*Methyl acrylate, monomer	CEL.
Methyl borate	SFS.
Methyl butyrate	WCC.
Methyl chloroformate	ESX, PPG.
Methyl formate	CEL.
Methyl methacrylate, monomer	CYR, DUP, RH, UCC.
Methyl pivaloylacetate	EKT.
Methyl sulfate (Dimethyl sulfate)	DUP.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
*ESTERS OF MONOHYDRIC ALCOHOLS--CONTINUED	
*FATTY ACID ESTERS, NOT INCLUDED WITH PLASTICIZERS OR SURFACE-ACTIVE AGENTS--CONTINUED	
Myristyl lactate	SBC, 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 xylol acid phosphate	HK.
Dibutyl butylphosphonate	SM.
Dibutyl hydrogen phosphite	SM.
Dibutyl pyrophosphate	SM.
Diethyl hydrogen phosphite	SM.
Diethyl phosphorochloridothionate	SFA.
Dimethyl hydrogen phosphite	SM.
Dimethyl methylphosphonate	SM.
Dimethyl phosphoridothionate	SFA.
Diolelyl hydrogen phosphite	SM.
Iso-octyl hydrogen phosphate	SM.
Methyl dihydrogen phosphate	HK.
Mixed dialkyl hydrogen phosphates	ELC.
Mixed dialkyl hydrogen phosphates, amine salts	ELC.
Molybdenum alkyl phosphate	ELC.
Stearyl acid phosphate	HK.
Tetrakis(2-chloroethyl)ethylene diphosphate	OMC.
Tri(butoxyethyl)phosphate	SM.
Tributyl phosphate	FMP, MCB, SFS.
Triethyl phosphate	SM.
Triiso-octyl phosphate	MCB, SM.
Triisopropyl phosphate	SM.
Trimethyl phosphate	SFA, SM.
Tris(butyl ethyl)phosphate	HN.
Tris(2-chloroethyl) phosphite	SM.
Tris(chloroisopropyl)thionophosphate	SM.
Tris(2-ethylhexyl)phosphite	SM.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
*ESTERS OF MONOHYDRIC ALCOHOLS--CONTINUED	
*PHOSPHOROUS ACID ESTERS--CONTINUED	
Phosphorus acid esters, all other	MON, USS, X. CEL, EKT, UCC.
*Propyl acetate	TX.
Propylene carbonate	RH, TX.
Stearyl methacrylate	UCC.
Tetraethyl orthosilicate (Tetraethyl silicate)	ADC, UCC.
Tetraethyl silicate, condensed	MON.
Tetraoctyl orthosilicate	
TITANIC ACID ESTERS:	
Di(hydroxy)bis(ammoniumlactato)titanium	DUP.
Diisopropyl titanate acetylacetonate	DUP.
Diisopropyltitanate bis(ethyl-3-oxobutanoate)	DUP.
Tetraethyl titanate	DUP.
Tetraisopropyl titanate	DUP.
Tetakis(2-ethylhexyl)titanate	DUP.
Triethanolamine titanate	KF.
Trichloromethyl chloroformate	MHI.
Triethyl orthoformate	KF.
Triethyl orthopropionate	KF.
Trimethyl orthoacetate	KF.
Trimethyl orthoformate	KF.
Tristearyl citrate	CYL.
*Vinyl acetate, monomer	CEL, DUP, UCC, USI.
Vinyl crotonate	FER.
Monohydric alcohol esters, all other	
*POLYHYDRIC ALCOHOLS:	
2,2-Bis(bromomethyl)-1,3-propanediol	DOM.
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, EKK.
*Ethylene glycol	BAS, CEL, DIX, DOM, EKK, HCF, ICF, ICI, MWP, OMC, PPG, SHC, TX, UCC.
2-Ethyl-1,3-hexanediol	UCC.
2-Ethyl-2-(hydroxymethyl)-1,3-propanediol (Trimethylolpropane)	CEL.
Glycerol, synthetic only	DOM, FMP.
2-(Hydroxymethyl)-2-methyl-1,3-propanediol (Trimethylolthane)	IMC.
Mannitol	ICI.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
*POLYHYDRIC ALCOHOLS--CONTINUED	
3-Mercapto-1,2-propanediol (Thioglycerol)	EVN. UCC.
2-Methyl-2,4-pentanediol (Hexylene glycol)	SHC. UCC.
*Pentaerythritol	CEL, HPC, IMC, PST. UCC.
*Propylene glycol (1,2-Propanediol)	ATR, DOM, OMC, TX, UCC.
*Sorbitol (70% by Weight)	BRD, EHC, ICI, MRK, PFZ.
Tetradecanediol-hexadecanediol mixture	SHC.
2,2,4-Trimethyl-1,3-pentanediol	EKK.
Polyhydric alcohols, all other	ALD, ICI.
*POLYHYDRIC ALCOHOL ESTERS:	
2-(2-Butoxyethoxy)ethyl acetate	EKT, UCC.
2-Butoxyethyl acetate	EKT, EKK, UCC.
1,3-Butylene glycol diborate	USB.
1,3-Butylene glycol diborate/hexylene glycol boric anhydride	USB.
Diethylene glycol adipate	DIX.
Diethylene glycol, borated	OMC.
Diethylene glycol chloroformate	PPG. X.
Dihydromycene	SCM, X.
2-(2-Ethoxyethoxy)ethyl acetate	EKT, TKL, UCC.
Ethylene glycol diacetate	EKT.
Ethylene glycol dimercaptoacetate	EVN.
Ethylene glycol dimercaptopropionate	EVN.
Ethylene glycol hydroxyacetate	CCA.
Ethylene glycol phosphite	SM.
2-Ethyl-2(hydroxymethyl)-1,3-propanediol trimethacrylate	MM.
Glycerol tricaprilate caprate	MM.
Glyceryl diacetate (Diacetin)	HAL.
Glyceryl monoacetate (Monoacetin)	HAL.
Glyceryl monothioglycolate	EVN.
Glyceryl triacetate (Triacetin)	EKT.
Glycol adipate	MM.
1,6-Hexanediol diacrylate	CEL.
Hydroxyethyl acrylate	DOM.
Hydroxyethyl methacrylate	RH.
Hydroxypropyl acrylate	DOM.
Hydroxypropyl methacrylate	GAI, RH.
2-Methoxyethyl acetate	UCC.
Neopentyl glycol diglycidyl ether	MLN.
Pentaerythritol caprylate/caprinate	MM.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
ESTERS AND ETHERS OF POLYHYDRIC ALCOHOLS--CONTINUED	
#POLYHYDRIC ALCOHOL ETHERS--CONTINUED	
Pentaerythritol stearate	GLY, X.
Pentaerythritol tetraacrylate	CEL.
Pentaerythritol tetrakis (3-Mercaptopropionate)	EVM.
Polyethylene glycol maleate	RPC.
Polyethylene polypropylene glycol glyceryl triether maleate	BAK.
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	DOM.
Tetraethylene glycol diacrylate	CEL.
Tetraethylene glycol diheptanoate	MM.
Triethylene glycol diacetate	EKT.
Triethylene glycol diacrylate	CEL, HMY, PLC.
Trimethylololthane pelargonate	MM.
Trimethylolpropane-hexyl dimerate	WTC.
Trimethylolpropane triacrylate	CEL.
Trimethylolpropane tri(2-mercaptopropionate)	EVM.
Trimethylolpropane trimethacrylate	CEL, TKL.
2,2,3-Trimethyl-1,3-pentanediol monoisobutyrate	EKK.
Tripropylene glycol diacrylate	CEL.
Polyhydric alcohol esters, all other	ARA, SNW, UCC.
*POLYHYDRIC ALCOHOL ETHERS:	
Bis(2-butoxyethyl)ether (Diethylene glycol di-n-butyl ether)	ASL.
Bis(2-ethoxyethyl)ether (Diethylene glycol diethyl ether)	ASL, FER.
Bis(hydroxyethyl)ether butynediol	EPH.
Bis[2-(2-methoxyethoxy)ethyl] ether (Tetraethylene glycol dimethyl ether)	ASL, FER.
Bis(2-methoxyethyl)ether (Diethylene glycol dimethyl ether)	ASL, FER.
*2-Butoxyethanol (Ethylene glycol monobutyl ether)	DOM, EKK, TX, UCC.
*2-(2-Butoxyethoxy)ethanol (Diethylene glycol monobutyl ether)	DOM, EKK, TX, UCC.
*2-[2-(2-Butoxyethoxy)ethoxy]ethanol (Triethylene glycol monobutyl ether)	DOM, OMC, UCC.
1-Butoxyethoxy-2-propanol	UCC.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
ESTERS AND ETHERS OF POLYHYDRIC ALCOHOLS--CONTINUED	
*POLYHYDRIC ALCOHOL ETHERS--CONTINUED	
Butyl ethers of tetra- and higher ethylene glycols (high boiling)	EKX, ICI. BAS, CEL, DIX, DOM, EKX, HST, ICI, NWP, OMC, PPG, SHC, TX, UCC.
*Diethylene glycol	EKX, ICI. BAS, CEL, DIX, DOM, EKX, HST, ICI, NWP, OMC, PPG, SHC, TX, UCC.
Diethylene glycol divinyl ether	GAF.
Dimethoxyethane (Ethylene glycol dimethyl ether)	ASL, FER.
*Dipropylene glycol	ATR, DOM, OMC, TX, UCC.
Dipropylene glycol monomethyl ether	OMC.
*2-Ethoxyethanol (Ethylene glycol monoethyl ether)	DOM, EKX, ICI, OMC, SHC, TX, UCC.
*2-(2-Ethoxyethoxy)ethanol (Diethylene glycol monoethyl ether)	DOM, EKX, ICI, OMC, SHC, TX, UCC.
*2-(2-(2-Ethoxyethoxy)ethoxy)ethanol (Triethylene glycol monoethyl ether)	DOM, OMC, UCC.
Ethylene glycol di-tert-butyl ether	EKX.
Ethylene glycol di-tributyl ether	EKX, OMC.
Ethylene glycol monoisobutyl ether	OMC.
Ethyl ethers of tetra- and higher ethylene glycols (high boiling)	EKX, ICI. OMC, UCC.
2-[2-(Hexyloxy)ethoxy]ethanol	X.
Hydroxyethyl hydroxypropyl sulfide	
1-Isobutoxy-2-propanol (Propylene glycol isobutyl ether)	DOM.
2-Methoxyethanol (Ethylene glycol monomethyl ether)	DOM, ICI, OMC, PPG, TX, UCC.
2-(2-Methoxyethoxy)ethanol (Diethylene glycol monomethyl ether)	DOM, ICI, OMC, PPG, TX, UCC.
2-[2-(2-Methoxyethoxy)ethoxy]ethanol (Triethylene glycol monoethyl ether)	DOM, OMC, UCC.
2-(2-Methoxyethoxy)ethyl-2-methoxyethyl ether (Triethylene glycol dimethyl ether)	ASL, FER, OMC. ICI, UCC.
Methoxypolyethylene glycol	DOM, OMC.
1-Methoxy-2-propanol	DOM.
3-(3-Methoxypropoxy)propanol	DOM.
Parafomaldehyde	CEL.
Polyethoxyethyl glycerol	RPC.
Polyethoxylated-1,4-butanediol	X.
*Polyethylene glycol	ABB, CEL, DA, DOM, ICI, MCB, OMC, TX, UCC, WTC, MVA, X.
*Polyethylene glycol dimethyl ether	PPG, SHX, X.
Polyethylene glycol mono decyl ether	BAK.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
MISCELLANEOUS CHEMICALS	
ACYCLIC--CONTINUED	
ESTERS AND ETHERS OF POLYHYDRIC ALCOHOLS--CONTINUED	
*POLYHYDRIC ALCOHOL ETHERS--CONTINUED	
Polyglycols, ethylene glycol and glycol ether, mixed-	DOM, 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	ICI, PEL, UCC, WTC, MVA.
*Polypropylene glycol	DOM, MCB, OMC, PEL, SM, TX.
Polypropylene glycol glycerol tri-ether-	BAK.
Polytetramethylene glycol ether-	DUP, QKO.
Poly(1,1,1-trichlorobutane-2-ol)ethylene glycol dextrose ether	OMC.
Propoxyethanol (Ethylene glycol monopropyl ether)	EKK.
Propylene glycol, mixed ethers	DOM, UCC.
Sorbitol, ethoxylated-	GLY, ICI.
Sorbitol, propoxylated	ICI.
*Tetraethylene glycol	DIX, DOM, EKK, UCC.
2,2'-Thiodiethanol (Thiodiglycol)	X.
Thiodipropanol	X.
*Triethylene glycol	CEL, DIX, DOM, EKX, ICI, OMC, SHC, TX, UCC.
Triethylene glycol allyl methyl ether-	ARA.
Triethylene glycol dichloride-	RH.
Tripolyene glycol	DOM, UCC.
Tripolyene glycol monomethyl ether	OMC.
Tri- and tetraethyle glycol monoethyl ethers, boxate esters	OMC.
Polyhydric alcohol ethers, all other	UCC, WTC, X.
*HALOGENATED HYDROCARBONS:	
*BROMINATED (INCLUDING BROMOCHLORINATED)	
HYDROCARBONS:	
Bromo-chlorinated paraffin C ₁₀ -C ₂₀	FER.
Bromochloromethane	DOM.
Bromoethane (ethyl bromide)	DOM, GTL.
1-Bromohexadecane	HMY.
1-Bromohexane (n-Hexyl bromide)	MCC.
1-Bromo-octadecane	HMY.
1-Bromopentane (n-Amyl bromide)	ABB, MCC.
2-Bromopentane (sec-Pentyl bromide)	GTL.
1-Bromopropane (n-Propyl bromide)	MCC.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
*HALOGENATED HYDROCARBONS--CONTINUED	
*BROMINATED (INCLUDING BROMOCHLORINATED)	
HYDROCARBONS--CONTINUED	
Bromotrichloromethane	OMC.
2,2-Dibromo-2-cyanoacetamide	DOM.
Dibromomethane (methylene bromide)	DOM.
1,1,2,2-Tetrabromoethane (Acetylene tetrabromide)	DOM.
Vinyl bromide (Bromoethylene)	TNA.
Brominated (including bromochlorinated)	
hydrocarbons, all other	WTC.
*CHLORINATED (NOT OTHERWISE HALOGENATED)	
HYDROCARBONS:	
*Carbon tetrachloride	DA, DOM, DUP, FRO, LCP, SFI.
CHLORINATED PARAFFINS (C10-C30):	
*Chlorinated paraffins, 35-64% chlorine	DA, DVC, FER, ICL, NEV, WTC, X.
Chlorinated paraffins, less than 35% chlorine	FER, WTC.
*Chlorinated paraffins, 65% or more chlorine	DA, DVC, FER, NEV.
1-Chlorobutane (n-Butyl chloride)	UCC.
*Chloroform	DA, DOM, FRO, LCP, SFI.
*Chloromethane (Methyl chloride)	CO, DA, DCC, DOM, LCP, TNA, UCC.
3-Chloro-2-methyl-1-propene (Methallyl chloride)	FMP.
3-Chloropropene (Allyl chloride)	DOM, SHC.
1,4-Dichlorobutene	DUP, TNA.
1,2-Dichloropropene (Propylene dichloride)	DOM, OMC.
2,3-Dichloropropene	DOM.
*Ethyl chloride (Chloroethane)	DOM, DUP, HPC, PPG, TNA.
*Ethylene dichloride	ATR, BFG, CO, DA, DOM, FOR, FRO, OMC, PPG, SHC, TNA, UCC.
Hexyl chloride	TNA.
Lauryl chlorides	TNA.
Methylene chloride (Dichloromethane)	DA, DOM, FRO, LCP, SFI.
Octyl chloride	TNA.
Perchloroethylene (Tetrachloroethane)	DA, DOM, DUP, FRO, PPG, TNA.
*1,1,1-Trichloroethane (Methyl chloroform)	DOM, FRO, PPG.
1,1,2-Trichloroethane (Vinyl trichloride)	DOM.
*Trichloroethylene	DOM, PPG, TNA.
1,2,3-Trichloropropene	SHC.
1,2,3-Trichloropropene	DOM.
*Vinyl chloride, monomer (Chloroethylene)	BFG, BOR, CO, DOM, FOR, GP, PPG, SHC, TNA, USR.
Vinylidene chloride, monomer (1,1-Dichloroethylene)	DOM, PPG.
Chlorinated (Not otherwise halogenated)	
hydrocarbons, all other	WTC, X.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
*HALOGENATED HYDROCARBONS--CONTINUED	
FLUORINATED (INCLUDING OTHER FLUOROHALOGENATED)	
HYDROCARBONS:	
2-Bromo-2-chloro-1,1,1-trifluoroethane	HOC.
Bromotrifluoroethane	DUP, HOC, ICI.
1-Chloro-1,1-difluoroethane	PAS.
*Chlorodifluoroethane (F-22)	ACS, DUP, KAI, PAS, RCN.
Chloropentafluoroethane	DUP.
Chlorotrifluoroethane (Trifluorovinyl chloride)	ACS.
Chlorotrifluoroethane	DUP.
*Dichlorodifluoroethane (F-12)	ACS, DUP, KAI, PAS, RCN.
Dichlorotetrafluoroethane	ACS, DUP.
1,1-Difluoroethane	ACS, DUP, PAS.
Hexafluoroethane	DUP.
Hexafluoropropylene, monomer	DUP.
1-Iodoheptafluorocyclohexane	DUP.
Polyhexafluoropropylene oxide	DUP.
Polytetrafluoroethylene ethyl iodine	DUP.
Tetrafluoroethylene, monomer	DUP, ICI.
Tetrafluoroethane	DUP.
*Trichlorofluoroethane	ACS, DUP, KAI, PAS, RCN.
Trichlorotrifluoroethane	DUP.
Trifluoroethanol	HOC.
Trifluoroethyl trichloroethane sulfonate	OMC.
Trifluoroethane	DUP.
Trifluoropropene	HOC.
Vinyl fluoride, monomer	DUP.
Vinylidene fluoride, monomer	PAS.
Fluorinated (including other fluorohalogenated)	
hydrocarbons, all other	ICI, OH.
*IODINATED (NOT OTHERWISE HALOGENATED) HYDROCARBONS:	
Bismuth formic iodide	RSA.
Diiodomethane (Methylene iodide)	NTB.
Iodobutane	RSA.
*Iodoethane (Ethyl iodide), non-medical	COC, FMT, RSA.
Iodoform (Triiodomethane)	NTB.
Iodomethane (Methyl iodide)	COC, DPM, RSA.
Iodinated (Not otherwise halogenated)	
hydrocarbons, all other	COC.
Halogenated hydrocarbons, all other	PEL.
*OTHER MISCELLANEOUS ACYCLIC CHEMICALS:	
Acetone sodium bisulfite	EK.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
*OTHER MISCELLANEOUS ACYCLIC CHEMICALS--CONTINUED	
*ACYCLIC PEROXIDES:	
Acetylacetone peroxide	CAD.
Acetyl peroxide	WTL.
2,2-Bis(t-butyl peroxy)butane	WTL.
*2-Butanone peroxide	CAD, 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, 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	WTL.
2,5-Dimethyl-2,5-di(tert-butylperoxy)hexyne-3	WTL.
Diperoxydodecanedioic acid	MMC.
Lauroyl peroxide	WTC, WTL.
Peroxides, all other	FRE.
Aluminum isopropoxide (Aluminum isopropylate)	CHT, KCH.
*Carbon disulfide	PAS, PPG, SFI.
Diethylphosphorus chloride	TNA.
*EPOXIDES, ETHERS, AND ACETALS:	
Alkyl glycidyl ethers, C ₁₂ -C ₁₄	MLN.
Alkyl glycidyl ethers, C ₈ -C ₁₀	PG, MLN.
1-(Allyloxy)-2,3-epoxypropane (Allyl glycidyl ether)	AAC, BLM, CPS.
Bis(2-chloroethoxy)methane (Dichloroethylformal)	TKL.
Bis(2-chloroethyl)ether (Dichlorodiethyl ether)	BKM.
Bis(2-chloro-1-methylethyl)ether	
(Dichloroisopropyl ether)	DOW.
1,4-Butanediol diglycidyl ether	MLN.
1-Butoxy-2,3-epoxypropane (Butyl glycidyl ether)	CPS, MLN.
Butylene oxide	DOW.
Butyl ether (Di-n-butyl ether)	PUB.
sec-Butyl ether	ATR.
tert-Butyl glycidyl ether	AAC, CPS.
Butyl vinyl ether	GAF.
Chloromethyl methyl ether	RH.
Decyl vinyl ether	GAF.
2,2-Dichloro-1,1-difluoroethyl methyl ether	DOW.
Epichlorohydrin	DOW, SHC.
*Ethylene oxide	BAS, CEL, DOM, EKX, ICI, NMP, OMC, PPG, SHC, SNO, TX, UCC.
Ethyl ether, U.S.P.	USI.
Ethyl ether, absolute	USI.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
*OTHER MISCELLANEOUS ACYCLIC CHEMICALS--CONTINUED	
*EPOXIDES, ETHERS, AND ACETALS--CONTINUED	
Ethyl ether, tech.	USI.
2-Ethylhexyl glycidyl ether	WIN.
Ethyl vinyl ether	GAF.
Glycidol (2,3-Epoxy-1-propanol)	DIX.
Isobutyl vinyl ether	GAF.
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	WIN.
Propylene oxide	ATR, DOW, TX.
Epoxydes, ethers, acetals, all other	ALD, UCC.
1,2-Ethanedithiol	RBC.
Ethyl chlorothioformate	SFA.
2-(Ethylmercapto)ethanol	DOM.
FATS AND OILS, CHEMICALLY MODIFIED:	
Hydrogenated tallow glycerides	CHL, SHX.
Linseed oil, oxygenated	CVO.
Stearic acid glycerides and oxidized stearic acid glycerides	SDW.
Sulfurized corn oil	SM.
Vegetable glycerides, hydrogenated	GLY.
Fats and oils, chemically modified, all other	CHL, PG.
Glutaraldehyde bis(sodium bisulfite)	EK.
Hexachlorodimethyl sulfone	SFS.
1-Hexadecanethiol	HNY.
*HYDROCARBONS:	
3,3-Dimethylbutene	PIC.
2,5-Dimethylhexa-2,4-diene	SFS.
n-Dodecane	HNY, PIC.
Hexadecane	HNY.
Isononanyl peroxide	WTL.
Myrcene	SCM, X.
n-Nonane	PLC.
n-Octadecane	HNY.
n-Octane	HNY, PIC.
n-Tetradecane	HNY.
Hydrocarbons, all other	ALD, MTK.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
*OTHER MISCELLANEOUS ACYCLIC CHEMICALS--CONTINUED	
Magnesium methylete-	SOI.
2-Mercaptoethanol-	PLC.
Methyl sulfide (Dimethyl sulfide)-	CRZ, PAS.
Methyl sulfoxide (Dimethyl sulfoxide)-	CRZ.
1-Octadecanethiol-	HMY.
ORGANO-ALUMINUM COMPOUNDS:	
Aluminum anylate	CHT.
Aluminum di-sec-butoxide acetoacetic ester chelate-	CHT.
Aluminum diisopropoxide acetoacetic ester chelate	CHT.
Aluminum tri-sec-butoxide-	CHT.
Diethylaluminum chloride	TNA, TSA.
Diethyl aluminum ethoxide-	TSA.
Diethylaluminum iodide	TNA, TSA.
Diisobutylaluminum chloride	TNA, TSA.
Diisobutylaluminum hydride	TNA, TSA.
Ethylaluminum dichloride	TNA, TSA.
Ethylaluminum sesquichloride	TNA, TSA.
Isopropenylaluminum-	TSA, X.
Methylaluminum sesquichloride-	TNA.
Oxy-aluminum octanoate	CHT.
Sodium aluminum diethyl dihydrate-	TNA.
Triethylaluminum	TNA, TSA.
Tri-n-hexyl aluminum	TSA.
Triisobutylaluminum-	TNA, TSA.
Trimethylaluminum-	MHI.
Tri-oxyaluminum tri-isopropoxide	KCH.
Organo-aluminum compounds, all other	HXL.
ORGANO-BORON COMPOUNDS:	
Boron fluoride - ethyl ether complex	ACS.
Chromium acetylacetonate complex	HSH, SHP.
Cobalt acetylacetonate complex	HSH, SHP.
Ethylamine with borane (1:1)	ACS.
1-Hexyl-1,2-dicarbadodecaborane-	X.
Iron acetylacetonate complex	HSH, SHP.
Isopropyl borate	ADC.
Manganese acetylacetonate complex-	SHP.
N-Methyl-methanamine with borane (1:1)	X.
2-Methyl-2-propanamine with borane (1:1)	ALD, X.
Nickel acetylacetonate complex	SHP.
Triethylborane	X.
Triethyl borate-	TSA.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
*OTHER MISCELLANEOUS ACYCLIC CHEMICALS--CONTINUED	
ORGANO-BORON COMPOUNDS--CONTINUED	
Trimethoxyboroxine	X.
Trimethyl borate	MHI, X.
N,N,N-Trimethyl methanaminium octahydrotriborate	X.
Organo-boron compounds, all other	X.
ORGANO-LITHIUM COMPOUNDS:	
n-Butyllithium	FTE.
sec-Butyllithium	FTE.
Organo-lithium compounds, all other	ALD.
ORGANO-MAGNESIUM COMPOUNDS:	
Butyl ethyl magnesium	TSA.
Di-n-hexyl magnesium	TNA.
Ethylmagnesium bromide	ARA.
Methylmagnesium bromide	ARA.
Methylmagnesium chloride	ARA.
ORGANO-SILICON COMPOUNDS:	
α-Chloropropyltrichlorosilane	DCC.
Chloropropyltrimethoxysilane	DCC, KF.
Chlorotrimethylsilane	DCC.
Dichlorodimethylsilane	DCC.
Dichloromethylsilane	DCC.
Dichloromethylvinylsilane	DCC, UCC.
Diethoxyphosphorylethyltriethoxysilane	UCC.
α-Glycidioxypropyltrimethoxysilane	UCC.
Hexamethyldisilazane	SCM.
Isobutyltrimethoxysilane	KF.
α-Methacryloxypropyltrimethoxysilane	UCC.
Methyltrimethoxysilane and polymethyltrisiloxane	DCC, KF, UCC.
Polyoxalkene silicones	UCC.
*Silicone fluids	DCC, MON, PD, SPD, SWS, UCC.
Trichloromethylsilane	DCC.
Trichloropropylsilane	DCC.
Trichlorovinylsilane	DCC.
Vinyltriethoxysilane	UCC.
Organo-silicone compounds, all other	UCC, X.
*ORGANO-TIN COMPOUNDS:	
Bis(tributyltin)oxide	WTC, X.
Dibutyltin bis(butylmaleate)	CCA.
Dibutyltin bis(isooctylmercaptacetate)	CCM, FER, WTC, X.
Dibutyltin bis(mercaptolaurate)	X.
Dibutyltin dichloride	X.
Dibutyltin methoxide (Dibutylmethoxytin)	CCA.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
*OTHER MISCELLANEOUS ACYCLIC CHEMICALS--CONTINUED	
*ORGANO-TIN COMPOUNDS--CONTINUED	
Dibutyltin oxide	WTC, X.
Diocetyl tin bisneodecanoate	WTC.
Ester tin mercaptoesters	CCA, X.
Octyltin	CCA, X.
Titanium acetylacetonate complex	KF.
Tributyltin acetate	X.
Tributyltin chloride	X.
Tributyltin fluoride	X.
Tributyltin isopropylmaleate	X.
Tributyltin propylene glycol maleate	CCA.
Organo-tin compounds, all other	ALD, CCM, WTC.
*ORGANO-ZINC COMPOUNDS:	
Diethylzinc	MHI, TSA.
Zinc acetylacetonate complex	SHP.
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, HSH, OMC, RBC.
Succinyl peroxide	WTL.
Tetrakis(hydroxymethyl)phosphonium sulfate-urea condensate	ROM, VAL.
Trimethylsulfonium iodide	DPW.
Miscellaneous acyclic chemicals, all other	CPS, PD, PEL, PLC, S, USSR, WTK, X.
*MIXTURES NOT SPECIFICALLY IDENTIFIED:	
C ₁₂ -C ₁₈ Alcohol lactates	VND.
Alcohols, monohydric, and their esters, c ₈ and higher, mixed	EKX, MON.
Azeotropic mixtures of halogenated hydrocarbons	ACS.
Butyl formcel	CEL.
Caltone	CEL.
Fatty acid amide mixtures	HAL.
Glycol residues	ICI, OMC, TX.
Methacrylate based cationic polyelectrolytes	COS.
Methyl formcel	CEL.
Mixed chain length fatty acid, synthetic	ENJ, PG.
Morpholine residue stream	TX.
Oxidate light ends	HCF.
Polyethylene slip agents	DRC.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION AND/OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1982--CONTINUED

MISCELLANEOUS CHEMICALS	MANUFACTURERS' IDENTIFICATION CODES (ACCORDING TO LIST IN TABLE 3)
ACYCLIC--CONTINUED	
*MIXTURES NOT SPECIFICALLY ITEMIZED--CONTINUED	
Polymethacrylic acid esters	ABB, DUP.
Silicone resins for mold release agents	CNI.
Sodium alkylsulfonates mixture	STC.
Mixtures of miscellaneous acyclic chemicals not specifically itemized	UCC.

TABLE 3.--MISCELLANEOUS CYCLIC AND ACYCLIC CHEMICALS: DIRECTORY OF MANUFACTURERS, 1982

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 1982 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.	CHT	Chattem, Inc.
ABB	Abbott Laboratories	CIN	Stockhausen, Inc.
ACS	Allied Corp., Allied Chemical Co.	CJO	C.J. Osborn Chemicals, Inc.
ACY	American Cyanamid Co.	CLK	Clark Oil & Refining Corp.
ADC	Anderson Development Co.	CMP	Commercial Products Co., Inc.
AFP	Allied Corp., Allied Fibers & Plastics Co. Div.	CNI	Frye Copysystems, Inc., Conap Div.
AGC	Alberta Gas Chemicals, Inc.	CNP	Nipro, Inc.
AGY	Agway, Inc., Olean Nitrogen Complex	CO	Conoco, Inc.
AIP	Air Products & Chemicals, Inc.	COC	Columbia Organic Chemicals Co., Inc.
AJF	Ajinomoto USA, Inc.	COS	Cosan Chemical Corp.
AJY	Ajax Chemicals, Inc.	CPS	CPS Chemical Co.
ALB	Ames Laboratories, Inc.	GRN	CPC International, Inc., Amerchol Corp.
ALD	Aldrich Chemical Co., Inc.	CRZ	Crown Zellerbach Corp.
ALI	Associated Lead, Inc.	CWN	Upjohn Co., Fine Chemical Div.
ALM	Allemania Chemical Co.	CKI	Chemical Exchange Industries, Inc.
ALX	Alox Corp.	CYL	Cyclo Chemicals Corp.
AMB	American Bio-Synthetics Corp.	CYR	CYRO Industries
AMD	Cyclo Chemicals Corp.	DA	Diamond Shamrock Corp.
AMO	Standard Oil Co. (Indiana)	DAN	Dan River, Inc., Chemical Products Div.
ARA	Syntex-Chemicals, Inc.	DBC	Badische Co.
ARC	Arnak Co.	DCC	Dow Corning Corp.
ARS	Arsynco, Inc.	DFW	Deepwater Chemical Co., Ltd.
ARZ	Arizona Chemical Co.	DIX	Dixie Chemical Co., Inc.
ASH	Ashland Oil, Inc.	DKA	Denka Chemical Corp.
ASL	The Ansul Co.	DOM	Dominion Products
ATL	Atlantic Chemical Corp.	DOW	Dow Chemical Co.
ATR	Atlantic Richfield Co., Arco Chemical Co.	DPW	Deepwater Chemical Co., LTD.
AZT	Dart & Kraft, Inc., Aztec Chemicals Div.	DEC	Dock Resins Corp.
BAK	Baker International - Magna Corp.	DEL	Darling & Co., Chemical Div.
BAS	BASF Wyandotte Corp.	DUP	E. I. duPont de Nemours & Co., Inc.
BCA	Beca Products, Inc.	DVC	Dover Chemical Corp. Sub. of ICC Industries, Inc.
BCC	Buffalo Color Corp.	EFH	E. F. Houghton & Co.
BFG	B. F. Goodrich Co., B. F. Goodrich Chemical Group	EHC	EthiChem Corp.
BKC	J. T. Baker Chemical Co.	EK	Eastman Kodak Co.:
BKM	Buckman Laboratories, Inc.	EKT	Tennessee Eastman Co. Div.
BLM	Balchem Corp.	EKK	Texas Eastman Co. Div.
BLY	Berkley & Co., Inc.	ELC	Elco Corp. Sub. of Detrex Chemical Industries, Inc.
BOC	Biocraft, Inc.	EMR	Emery Industries Div. of National Distillers & Chemical Corp.
BOR	Borden Co., Borden Chemical Div.	ENJ	Exxon Chemical Americas
BRD	Lonza, Inc.	ESA	East Shore Chemical Co., Inc.
BUC	Synalloy Corp., Blackman-Uhler Chemicals Div.	ESX	Essex Industrial Chemicals, Inc., Essex Chemical Corp.
BUK	Buckeye Cellulose Corp.	EVN	W.R. Grace & Co., Organic Chemicals Div., Evans Chemetics
CAD	Noury Chemical Corp.	FER	Ferro Corp.:
CBD	Chembond Corp.		Ferro Chemical Div.
CBY	Crosby Chemicals, Inc.		Grant Chemical Div.
CCA	Interstab Chemicals, Inc.		Keil Chemical Div.
CCC	C.N.C. Chemical Corp.		FMC Corp.:
CCW	Carstab Corp.	FMB	Industrial Chemical Group
CEL	Celanese Corp.:	FME	Specialty Chemicals Group
	Celanese Chemical Co., Inc.	FMP	Industrial Chemical Group
	Celanese Fibers Co.	FMT	Fairmount Chemical Co., Inc.
	Celanese Specialties Resins	FOC	Handschy Industries, Inc., Farac Varnishes Chemicals
CGY	Ciba-Geigy Corp.	FOR	Formosa Plastics Corporation Louisiana
CHG	Mobay Chemical Corp., Agricultural Chemicals Div.		
CHL	Chemol, Inc.		
CHP	C. H. Patrick & Co., Inc.		

TABLE 3.--MISCELLANEOUS CYCLIC AND ACYCLIC CHEMICALS: DIRECTORY OF MANUFACTURERS, 1982--CONTINUED

CODE	NAME OF COMPANY	CODE	NAME OF COMPANY
FRE	Freeman Chemical Corp.	MOB	Mobay Chemical Corp., Pittsburgh Div.
PRO	Vulcan Materials Co., Chemicals Div.	MON	Monsanto Co.
FTK	Foote 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 Carbide 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.	NTB	National Biochemical Co.
GLY	Glyco, Inc.	NWP	Northern Petrochemicals Co.
GOC	Gulf Oil Corp., Gulf Oil Chemical Co. U.S.	OMC	Olin Corp.
GP	Georgia-Pacific Corp.: Plaquemine Div. Resins Operations	ONX	Onx Chemicals, Co.
GTL	Great Lakes Chemical Corp.	OET	Roehr Chemicals, Inc.
GYR	Goodyear Tire & Rubber Co.	PAC	Pacific Anchor Chemical Corp.
HAL	C.P. Hall Co.	PAS	Pennwalt Corp.
HCF	Hercofina	PD	Parke-Davis & Co.
HCP	Honig Chemical & Processing Corp.	PEL	Pelron Corp.
HFT	Syntex Agribusiness, Inc.	PFM	Pfanstiehl Laboratories, Inc.
HK	Occidental Chemical Corp., Hooker Industrial and Specialty Chemicals Div.	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.	PLC	Phillips Petroleum Co.
HMY	Humphrey Chemical Co.	PLS	Plastics Engineering Co.
HM	Tenneco, Inc., Tenneco Chemicals, Inc.	PMP	PMP Fermentation Products, Inc.
HOC	Halocarbon Products Corp.	PPG	PPG Industries, Inc.
HPC	Hercules, Inc.	PST	Perstorp, Inc.
HRT	Hart Products Corp.	PUB	Publicker Industries, Inc.
HSB	Harshaw Chemical Co.	QKO	Quaker Oaks Co.
HST	American Hoechst Corp., Hoechst Fiber Industries Div.	RBC	Fike Chemicals, Inc.
HXL	Hexcel Corp., Hexcel Chemical Products	RCI	Reichhold Chemicals, Inc.
ICF	Inmont Corp.	RCN	Racon, Inc.
ICI	ICI Americas, Inc. and Chemical Specialties Co.	RDA	Rhone-Poulenc, Inc.
IMC	International Minerals & Chemicals Corp., Industries Chemicals Div.	REG	Regis Chemical Co.
IOC	Sybron Chemical Div. of Sybron Corp.	REM	Remington Arms Co., Inc.
JRC	Jarchem Industries, Inc.	RH	Rohm & Haas Co.
KAI	Kaiser Aluminum & Chemical Corp.	RPC	Millmaster Onyx Group, Kewanee Industries Inc.
KCH	Joseph Ayers, Inc.	RSA	R.S.A. Corp.
KF	Kay-Fries Inc., Chemical Div., Dynamit Nobel of America, Inc.	RUC	Rubicon, Inc.
KLM	Kalama Chemical, Inc.	S	Sandoz, Inc., Colors & Chemicals Div.
KPT	Koppers Co., Inc.	SBC	Scher Chemicals, Inc.
LCP	LCP Chemicals - West Virginia, Inc.	SCM	SCM Corp.: Organic Chemicals Div. PCR, Inc.
LEM	Mapp Chemicals, Inc.	SCP	Henkel Corp.
LIL	Eli Lilly & Co.	SDC	Martin-Marietta Corp., Sodeyco Div. Sterling Drug, Inc.:
MAL	Mallinckrodt, Inc.	SDH	Hilton Davis Chemical Co. Div.
MCB	Borg-Warner Corp., Borg-Warner Chemicals	SDW	Sterling Organics Div. Stauffer Chemical Co.:
MCI	Mooney Chemicals, Inc.	SFA	Agricultural Div.
MHI	Morton-Thiokol, Inc., Ventron Div.	SFC	Calhio Chemicals, Inc.
MIL	Milliken & Co., Milliken Chemical Co.	SFI	Industrial Div.
MLS	Miles Laboratories, Inc., Biotechnology Group	SFS	Specialty Chemical Div.
MNC	EM Industries, Inc., EM Science Div.	SHC	Shell Oil Co., Shell Chemical Co. Div.

TABLE 3.--MISCELLANEOUS CYCLIC AND ACYCLIC CHEMICALS: DIRECTORY OF MANUFACTURERS, 1982--CONTINUED

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

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 273 reporting companies and company divisions for which permission to publish was not restricted.

A P P E N D I X

TABLE 1.--SYNTHETIC ORGANIC CHEMICALS: ALPHABETICAL DIRECTORY OF MANUFACTURERS, BY COMPANY, 1982

[Names of synthetic organic chemicals manufacturers that reported production and/or sales to the U.S. International Trade Commission for 1982 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 Plastics Corp.	213-968-3801	14505 Proctor Ave., P. O. Box 1268, Industry, CA 91749.
AZS	AZS Corp-----	813-665-6226	2525 So. Combee Rd., Lakeland, FL 33801.
	AZS Chemical Corp-----	404-873-1851	762 Marietta Blvd., Atlanta, GA 30318.
ABB	Abbott Laboratories-----	312-937-7262	14th St. & Sheridan Rd., North Chicago, IL 60064.
ABS	Abex Corp., Friction Products Group-	703-662-3871	P. O. Box 3250, Winchester, VA 22601.
ACO	Adco Chemical Co-----	201-589-0880	Rutherford & Delaney Sts., Newark, NJ 07105.
WLC	Agrico Chemical Co-----	918-588-2000	One Williams Center, Tulsa, OK 74172.
AGY	Agway, Inc., Olean Nitrogen Complex-	716-373-1700	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	P. O. Box 127, Powder Springs, GA 30073.
AJI	Ajinomoto U.S.A., Inc-----	919-832-2890	4020 Ajinomoto Dr., Raleigh, NC 27610.
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-----	201-344-2344	33 Avenue P, Newark, NJ 07105.
	Allied Corp.:		
ACS	Allied Chemicals Co-----	201-455-2000	P. O. Box 2251-R, Morristown, NJ 07960.
AFP	Allied Fibers & Plastics Co-----	212-391-5200	1411 Broadway, New York, NY 10018.
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.
APH	Alpha Corporation of Tennessee-----	901-853-2450	P. O. Drawer A, Hwy. 57E, Collierville, TN 38017.
ALP	Alpha Laboratories, Inc-----	303-756-1338	1685 S. Fairfax St., Denver, CO 80222.
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.
	American Can Co.:		
WM	Inolex Chemicals Co-----	215-271-6400	Jackson & Swanson Sts., Philadelphia, PA 19148.
MAR	Lignin Chemicals Div-----	203-622-7534	GOP #8, Greenwich, CT 06830.
AC	American Color & Chemical Corp-----	704-364-3270	P. O. Box 32516, Charlotte, NC 28211.
ACY	American Cyanamid Co-----	201-831-2000	One Cyanamid 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 Works-----	704-827-7531	P. O. Box 886, Mount Holly, NC 28185.
	Specialty Products Div-----	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	Amvac 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.
ASL	Ansul Co-----	715-735-7411	1 Stanton St., Marinette, WI 54143.
APX	Apex Chemical Co., Inc-----	201-354-5420	200 S. 1st St., Elizabethport, NJ 07206.
APO	Apollo Colors, Inc-----	312-564-9190	899 Skokie Blvd., Northbrook, IL 60062.
ADM	Archer-Daniels-Midland, ADM Clinton-	217-424-5200	1251 Beaver Channel Pkwy., Clinton, IA 52732.
ARN	Arenol Chemical Corp-----	212-784-0948	40-33 23d St., Long Island City, NY 11101.

TABLE 1.--SYNTHETIC ORGANIC CHEMICALS: ALPHABETICAL DIRECTORY OF MANUFACTURERS, BY COMPANY, 1982--CONTINUED

IDENTIFICATION CODE	NAME OF COMPANY	TELEPHONE NUMBER	OFFICE ADDRESS
ARZ	Arizona Chemical Co-----	201-794-3200	One Cyanamid Plaze, Wayne, NJ 07470.
AKS	Arkansas Co., Inc-----	201-589-0516	185 Foundry St., Newark, NJ 07105.
ARC	Arnak Co-----	312-786-0400	300 S. Wacker Dr., Chicago, IL 60606.
ALS	Armco, Inc-----	513-425-6541	703 Curtis St., Middletown, OH 45043.
AGP	Armour-Dial, Inc-----	312-892-4381	2000 Aucutt Rd., Montgomery, IL 60545.
ARP	Armour Pharmaseutical 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-----	212-898-2300	126-02 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	1000 Ashland Dr., Ashland, KY 41101.
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.	213-486-3511	515 S. Flower St., Los Angeles, CA : 90064.
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 71103.
ARI	Atlas Refinery, Inc-----	201-589-2002	142 Lockwood St., Newark, NJ 07105.
AUX	Auralux Corp-----	401-539-2306	Main St., Hope Valley, RI 02832.
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, : 212-929-4100 : 76 - 9th Ave., New York, NY 10011, : 201-263-3400 : and 100 Cherry Hill Rd., Parsippany, : NJ 07054.
FSN	BFC Chemicals, Inc-----	302-575-7850	4311 Lancaster Pike, Wilmington, DE : 19805.
DBC	Badische Corp-----	804-887-6000	602 Copper Rd., Freeport, TX 77541 and : P. O. 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----	713-791-6342	P. O. Box 33387, Houston, TX 77033.
BLM	Balchem Corp-----	914-355-2861	P. O. Box 175, Slate Hill, NY 10973.
BLC	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.
BCA	Beca Products, Inc-----	609-424-5344	38 Strathmore Dr., Cherry Hill, NJ 08003.
BCK	Beckman Instruments, Inc-----	619-438-9151	6200 El Camino Real, Carlsbad, CA 92008.
	Bioproducts Operations-----	415-859-1812	1050 Page Mill Rd., Palo Alto, CA 94304.
BEE	Beecham, Inc., Beecham Laboratories : Div.	201-469-5200	101 Possumtown Rd., Piscataway, NJ : 08854.
BCM	Belding Corticelli Industries-----	212-944-6040	1430 Broadway, New York, NY 10018.
BLZ	Belzak Corp-----	201-773-0602	850 Bloomfield Ave., Clifton, NJ 07012.
BME	Bendix Corp., FM Div-----	518-273-6550	P. O. Box 238, Troy, NY 12180.
BEN	Bennett's Glass & Colorizer Paint---	801-486-2211	P. O. Box 1320, Salt Lake City, UT 84110.
BLY	Berkley & Co., Inc-----	712-336-1520	Trilene Dr., Spirit Lake, IA 51360.
BTS	Bethlehem Steel Corp-----	215-694-4522	Martin Tower, Bethlehem, PA 18016.
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 Way, Waldwick, NJ 07463.
BNP	Bison Nitrogen Products Co-----	712-277-1340	P. O. Box 1828, Sioux City, IA 51102.
LAK	Bofors Nobel, Inc. and Lakeway, Inc-	616-788-2341	5025 Evanston Ave., Muskegon, MI 49443.
BHA	Boots Hercules Agrochemicals Co----	302-575-7850	4311 Lancaster Pike, P. O. Box 2867, : Wilmington, DE 19805.

TABLE 1.--SYNTHETIC ORGANIC CHEMICALS: ALPHABETICAL DIRECTORY OF MANUFACTURERS,
BY COMPANY, 1982--CONTINUED

IDENTIFICATION CODE	NAME OF COMPANY	TELEPHONE NUMBER	OFFICE ADDRESS
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.
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, Inc-	: 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., Woodcliff, NJ 07675.
CMB	: Cambridge Industries Co-----	: 617-924-0026	: 440 Arsenal St., Watertown, MA 02172.
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.
GOR	: Carl Cordon Industries, Inc-----	: 617-798-8721	: 1001 Southbridge St., Worcester, MA 01610.
CHC	: Carpenter Chemical Co-----	: 804-233-8391	: P. O. Box 27205, Richmond, VA 23261.
CCW	: Carstab Corp-----	: 513-733-2100	: West St., Reading, OH 45215.
BSC	: Cascade Resins, Inc-----	: 503-343-2111	: P. O. Box 1989, Eugene, OR 97440.
DOL	: Castle & Cooke, Inc., Dole Hawaii Div.	: 808-536-3411	: 650 Iwilei Rd., Honolulu, HI 96801.
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 Fibers Co-----	: 704-554-2000	: P. O. Box 1414, Charlotte, NC 28201.
	: Celanese Specialties Resins-----	: 502-585-8011	: P. O. Box 37600, Louisville, KY 40233.
CLP	: Cell Products, Inc-----	: 201-828-6100	: 5 Georges Rd., New Brunswick, NJ 08901.
CSC	: Central Soya Co., Inc-----	: 219-425-5100	: 1300 Fort Wayne National Bank Bldg., P. O. Box 1400, Fort Worth, TX 46801.
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 78408.
SOG	: Charter International Oil Co-----	: 713-923-3578	: P. O. Box 5008, Houston, TX 77012.
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.
GRL	: Chemed Corp., Vestal Laboratories Div.	: 314-535-1810	: 5035 Manchester Ave., St. Louis, MO 63110.
CGX	: 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, S.W., 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 Emmet St., Newark, NJ 07114.
CFX	: 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.
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, 410 Swing Rd., Greensboro, NC 27419.

TABLE 1.--SYNTHETIC ORGANIC CHEMICALS: ALPHABETICAL DIRECTORY OF MANUFACTURERS,
 BY COMPANY, 1982--CONTINUED

IDENTIFICATION CODE	NAME OF COMPANY	TELEPHONE NUMBER	OFFICE ADDRESS
	Cities Service Co.:		
CBN	Columbian Chemicals Co-----	918-744-1770	2431 E. 61st St., Tulsa, OK 74102.
CRN	Petrochemicals Div-----	918-561-2211	P. O. Box 1522, Lake Charles, LA 70602 and 110 W. 7th St., Tulsa, OK 74102.
CSO	Petroleum Products Group-----	318-491-6011	P. O. Box 1562, Lake Charles, LA 70602.
CLK	Clark Oil & Refining Corp-----	314-889-9600	7930 Clayton Rd., St. Louis, MO 63117.
CLY	W. A. Clearly Corp-----	201-247-8000	P. O. Box 10, Somerset, NJ 08873.
CLI	Clintwood Chemical Co-----	312-890-5790	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.
CCL	Colorado Chemical Specialties, Inc--	303-278-1963	4295 McIntyre St., Golden, CO 80403.
CNC	Columbia Nitrogen Corp-----	404-823-4000	P. O. Box 1483(13), Augusta, GA 30913.
COC	Columbia Organic Chemicals Co., Inc-	803-776-4990	912 Drake St., Columbia, SC 29209.
CEI	Combustion Engineering, Inc-----	203-329-8771	P. O. Box 457, Muse, PA 15350.
CAC	Cominco American, Inc-----	509-747-6111	P. O. Box 3087, W. 818 Riverside Ave., Spokane, WA 99220.
CMP	Commercial Products Co., Inc-----	201-427-6887	117 Ethel Ave., Hawthorne, NJ 07506.
COR	Commonwealth Oil Refining Co., Inc--	809-843-3030	Petrochemical Complex, Ponce, PR 00731.
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.
CWP	Consolidated Papers, Inc-----	715-422-3111	231 - 1st Ave. N., Wisconsin Rapids, WI 54494.
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.
CBY	Crosby Chemicals, Inc-----	601-798-6902	P. O. Box 460, Picayune, MS 39466.
CCP	Crown Central Petroleum Corp-----	301-539-7400	1 N. Charles St., Baltimore, MD 21203.
USM	Crown Metro, Inc-----	803-277-1870	P. O. Box 5695, Greenville, SC 29606.
CRZ	Crown Zellerbach Corp-----	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.
CTR	Custom Resins Div. of Bemis Co., Inc.	502-826-7641	P. O. Box 933, Henderson, KY 42420.
AMD & CYL	Cyclo Chemical Corp-----	213-582-6411	1922 E. 64th St., Los Angeles, CA 90001
		305-592-6700	and 7500 N.W. 66th St., Miami, FL 33166.
DAT	Daitom, Inc-----	312-023-1600	3150 Speaker Rd., Kansas City, KS 66110.
DAN	Dan River, Inc., Chemical Products Div.	804-779-7000	P. O. Box 261, Danville, VA 24540.
DRL	Darling & Co., Chemical Div----- Dart & Kraft, Inc.:	312-927-3000	4650 S. Racine Ave., Chicago, IL 60609.
AZT	Aztec Chemicals Div-----	312-498-8000	P. O. Box 250, Elyria, OH 44035.
SYP	Synthetic Products Co. Div-----	216-531-6010	1636 Wayside Rd., Cleveland, OH 44112.
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.

TABLE 1.--SYNTHETIC ORGANIC CHEMICALS: ALPHABETICAL DIRECTORY OF MANUFACTURERS,
BY COMPANY, 1982--CONTINUED

IDENTIFICATION CODE	NAME OF COMPANY	TELEPHONE NUMBER	OFFICE ADDRESS
DPW	Deepwater Chemical Co., Ltd-----	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 Tuitonia Ave., Milwaukee, WI 53209.
DKA	Denka Chemical Corp-----	713-477-8821	8701 Park Place Blvd., Houston, TX 77017.
DNS	Dennis Chemical Co-----	314-771-1800	2701 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-----	213-968-6511	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.::		
	Cresylic	205-556-3500	P. O. Box H, Tuscaloosa, AL 35404.
	Phenoxy Plant	205-556-3500	P. O. Box H, Tuscaloosa, AL 35404.
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.
DPP	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-----	212-499-3050	882 - 3d Ave., Brooklyn, NY 11232.
DHC	Donner-Hanna Coke Joint Venture-----	716-822-1600	P. O. Box A, S. Paul Station, Buffalo, NY 14220.
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 Chemicals Co-----	517-636-1000	2020 Dow Center, Midland, MI 48650.
DCC	Dow Corning Corp-----	517-496-4000	P. O. Box 1767, Mail Code #C02205, Midland, MI 48640.
DUP	E. I. duPont de Nemours & Co., Inc--	302-774-4090	DuPont Bldg., Wilmington, DE 19898.
BAL	Dutch Boy Paints, Consumer Div., Sherwin-Williams Co.	312-837-3030	2325 Hollins Ferry Rd., Baltimore, MD 21230.
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.
EPI	Eagle Pitcher Industries, Ohio Rubber Co., Arthane Div.	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 511, Kingsport, TN 37662.
EKX	Texas Eastman Co. Div-----	214-236-5000	P. O. Box 511, Kingsport, TN 37662.
ESA	East Shore Chemical Co., Inc-----	616-726-3106	1221 E. Barney Ave., Muskegon, MI 49443.
EEP	Eaton Corp., EPP Div-----	216-523-5000	Main & Orchard, Mantua, OH 44255.
ELN	Elan Chemical Co-----	201-344-8014	268 Doremus Ave., Newark, NJ 07105.
ELC	Elco Corp. Sub. of Detrex Industries, Inc.	313-749-3605	P. O. Box 09168, Cleveland, OH 44109.
ELP	El Paso Chemical Co-----	201-262-6500	W. 115 Century Rd., Paramus, NJ 07652.
ELP	El Paso Products Co-----	915-333-7200	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 Div-----	617-777-0100	Boston St., Middleton, MA 01949.
EMK	Emkay Chemical Co-----	201-352-7053	319 - 2d St., Elizabeth, NJ 07206.
EN	Endo Laboratories, Inc-----	516-832-2002	1000 Stewart Ave., Garden City, NY 11743.
ENO	Enenco, Inc-----	901-320-5800	P. O. Box 125, Memphis, TN 38101.
EPC	Enterprise Products Co., Enterprise Petrochemicals Co., Sub.	713-880-6500	P. O. Box 4324, Houston, TX 77210.
SWT	Eschem, Inc., Swift Technical Products Div.	219-836-2468	419 Ridge Rd., Suite M, Munster, IN 46321.
ESS	Essential Chemicals Group-----	414-691-3000	28391 Essential Rd., Merton, WI 53056.

TABLE 1.--SYNTHETIC ORGANIC CHEMICALS: ALPHABETICAL DIRECTORY OF MANUFACTURERS, BY COMPANY, 1982--CONTINUED

IDENTIFICATION CODE	NAME OF COMPANY	TELEPHONE NUMBER	OFFICE ADDRESS
ESX	Essex Chemical Corp., Essex	201-773-6300	1401 Broad St., Clifton, NJ 07015.
	Industrial Chemicals, Inc.		
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.
TNA	Polymer Div-----	504-389-7621	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 Group-----	215-299-6000	2000 Market St., Philadelphia, PA 19103.
FMB & FMP	Industrial Chemical Group-----	215-299-6000	2000 Market St., Philadelphia, PA 19103.
FMB	Specialty Chemicals Div-----	215-299-6000	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., 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 10038, Charlotte, NC 28201.
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.	216-379-7000	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 First Ave. N., 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.
CIK	Flint Ink Corp., Cal/Ink 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-----	313-466-3440	400 Greenbeck Hwy., Mt. Clements, MI 48043.
FOR	Formosa Plastics Corporation, Louisiana	504-356-3341	P. O. Box 271, Baton Rouge, LA 70821.
FJI	Foy-Johnston, Inc-----	513-631-4270	1776 Mentor Ave., Cincinnati, OH 45212.
FKE	Frank Enterprises, Inc-----	614-253-5519	700 Rose Ave., Columbus, OH 43219.
FLN	Franklin Chemical Industries, Inc---	614-443-0241	2020 Bruck St., Columbus, OH 43207.
FRE	Freeman Chemical Corp-----	414-284-5541	P. O. Box 247, Port Washington, WI 53074.
FB	Fritzsche Dodge & Olcott, Inc-----	212-929-4100	76 - 9th Ave., New York, NY 10011.
CNI	Frye Copysystems, Inc., Conap Div---	716-372-9650	1405 Buffalo St., Olean, NY 14760.
FLH	H. B. Fuller Co-----	513-891-6513	4450 Malsbary Rd., Blue Ash, OH 45242.
GAF	GAF Corp., Chemical Group-----	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.
GCA	GCA Chemical Corp-----	203-322-5880	75 Camp Ave., Stamford, CT 06907.
GLX	Galaxie Chemical Corp-----	201-279-0558	26 Piercy St., Paterson, NJ 07524.
GAN	Gane's Chemicals, Inc-----	212-391-2580	1114 - 6th Ave., New York, NY 10036.
GNR	Genencor, Inc-----	607-974-4210	Baron Steuber Place, Corning, NY 14831.
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	Mechanicville Rd., Bldg. 11-24, Waterford, NY 12188.
GNF	General Foods Corp., Maxwell House Coffee Div.	201-420-3300	1125 Hudson St., Hoboken, NJ 07030.

TABLE 1.--SYNTHETIC ORGANIC CHEMICALS: ALPHABETICAL DIRECTORY OF MANUFACTURERS,
BY COMPANY, 1982--CONTINUED

IDENTIFICATION CODE	NAME OF COMPANY	TELEPHONE NUMBER	OFFICE ADDRESS
GLC	: General Latex & Chemical Corp-----	: 617-864-7750	: 666 Main St., Cambridge, MA 02139.
GNT	: General Tire & Rubber Co-----	: 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.
	: Georgia-Pacific Corp.:	:	:
PSP	: Bellingham Div-----	: 206-733-4410	: P. O. Box 1236, Bellingham, WA 98225.
GP	: Houston Div-----	: 713-473-4453	: P. O. Box 1959, Pasadena, TX 77501.
GP	: Plaquemine Div-----	: 404-521-4000	: P. O. Box 629, Plaquemine, LA 70764.
GP	: Resins Operations-----	: 404-521-4000	: 133 Peachtree St. N.E., Atlanta, GA 30348.
SKO	: Getty Refining & Marketing Co-----	: 918-560-6000	: P. O. Box 1650, Oil Center Bldg., Tulsa, OK 74102.
TID	: Delaware Refinery-----	: 918-560-6000	: Delaware City, DE 19706.
GAI	: Glasurit America, Inc-----	: 313-861-1000	: 1301 Bourke Ave., Detroit, MI 48238.
TNI	: The Gillette Co., Chemical Div-----	: 617-421-7000	: 3500 W. 16th St., North Chicago, IL 60064.
GIV	: Givaudan Corp-----	: 201-365-8000	: 100 Delawanna Ave., Clifton, NJ 07014.
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., Salt Lake City, UT 84106.
GYR	: Goodyear Tire & Rubber Co-----	: 216-796-1114	: 1144 E. Market St., Akron, OH 44316.
	: W. R. Grace & Co.:	:	:
GCC	: Agricultural Chemicals Group-----	: 901-357-2311	: P. O. Box 27147, Memphis, TN 38127.
HMP	: Hampshire Chemicals Div-----	: 617-861-6600	: 55 Hayden Ave., Lexington, MA 02173.
EVN	: Organic Chemicals Div., Evans Chemetics.	: 203-655-8741	: 90 Tokeneke Rd., Darien, CT 06820.
GRD	: Polymers & Chemicals Div-----	: 617-861-6600	: 55 Hayden Ave., Lexington, MA 02173.
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 NW., West 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.
GRO	: A. Gross & Co., Millmaster Onyx Group.	: 201-344-3216	: 652 Doremus Ave., Newark, NJ 07105.
GPV	: Guardsman Chemicals, Inc-----	: 616-452-5181	: 1350 Steele Ave. SW., Grand Rapids, MI 49507.
GOC	: Gulf Oil Corp., Gulf Oil Chemicals Co.-U.S.	: 713-754-2973	: P. O. Box 3766, Houston, TX 77001.
GTH	: Guth Corp-----	: 312-547-7030	: P. O. Box 302, Naperville, IL 60540.
HNC	: H & N Chemical Co-----	: 201-256-7777	: 90 Maltese Dr., Totowa, NJ 07512.
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 Burlaws Ct., Hackensack, NJ 07601.
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., P. O. Box 147, Columbus, OH 43216.
HSH	: Harshaw Chemical Co-----	: 216-721-8300	: 1945 E. 97th St., Cleveland, OH 44106.
HRT	: Hart Products Corp-----	: 201-433-6639	: 173 Sussex St., Jersey City, NJ 07302.
HCC	: Hatco Chemical Corp-----	: 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.
HCF	: Hercofina-----	: 919-343-1150	: 310 N. Front St., Wilmington, DE 19802.
HCR	: Hercor Chemical Corp-----	: 809-843-3030	: Petrochemical Complex, Ponce, PR 00731.
HPC	: Hercules, Inc-----	: 302-575-5000	: 910 Hercules Tower, Wilmington, DE 19899.
PFW	: PFW Div-----	: 914-343-1900	: 33 Sprague Ave., Middletown, NY 10940.
HER	: Hefesite-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 11582.

TABLE 1.--SYNTHETIC ORGANIC CHEMICALS: ALPHABETICAL DIRECTORY OF MANUFACTURERS, BY COMPANY, 1982--CONTINUED

IDENTIFICATION CODE	NAME OF COMPANY	TELEPHONE NUMBER	OFFICE ADDRESS
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.
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., P. O. Box 930, Valley Forge, PA 19482.
HML	Hummel Chemical Co	201-754-1800	P. O. Box 250, South Plainfield, NJ 07080.
HMY	Humphrey Chemical Co	203-281-0012	P. O. Box 325, North 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	62 Perimeter Center East, Atlanta, GA 30346.
HYN	Hynson, Westcott, & Dunning, Inc	301-837-0890	Charles & Chase Sts., Baltimore, MD 21202.
ICI	ICI Americas, Inc	302-575-3000	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.
IRC	Independent Refining Corp	713-974-1878	1502 Augusta Dr., Houston, TX 77057.
IGC	Indiana Gas & Chemical Corp	812-232-0231	1341 Hulman St., Terra Haute, IN 47808.
IND	Indol Color Co., Inc	201-541-4159	Leffert St., Carteret, NJ 07008.
IDC	Industrial Color, Inc	815-722-7402	Industry Ave., Joliet, IL 60435.
INL	Inland Steel Co	312-346-0300	30 W. Monroe St., Chicago, IL 60603.
	Inland Steel Container Div	312-568-3535	4300 W. 130th St., Chicago, IL 60658.
ICF	Inmont Corp	201-365-3400	1255 Broad St., Clifton, NJ 07015.
ICC	Inmont Corp. Div. of United Technologies Corp.	201-427-6700	150 Wagaraw Rd., Hawthorne, NJ 07506.
SPC	Insilco Corp., 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., Mattison, IL 60443.
IRI	Ironsides Co	614-224-2228	270 W. Mount St., P. O. Box 1999, Columbus, OH 43215.
ISM	Isochem Resins Co	401-723-2100	99 Cook St., Lincoln, RI 02865.
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.
JTO	Jetco Chemicals, Inc	214-872-3011	P. O. Box 1898, Corsicana, TX 75110.
UPF	Jim Walter Resources, Inc., CIC Div	205-849-3032	P. O. Box 5327, Birmingham, AL 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 Central, Dallas, TX 75235.
JLS	Jones & Laughlin Steel Corp., Pittsburgh Plant.	412-227-4006	1600 W. Carson St., Pittsburgh, PA 15263.
JOR	Jordan Chemical Co	215-583-7000	1830 Columbia Ave., Folcroft, PA 19032.
KAI	Kaiser Aluminum & Chemical Corp	504-867-5711	P. O. Box 337, Gramercy, LA 70052.
SNI	Kaiser Agricultural Chemicals Div	912-964-4311	Highway 21, Pt. Wentworth, GA 31407.

TABLE 1.--SYNTHETIC ORGANIC CHEMICALS: ALPHABETICAL DIRECTORY OF MANUFACTURERS, BY COMPANY, 1982--CONTINUED

IDENTIFICATION CODE	NAME OF COMPANY	TELEPHONE NUMBER	OFFICE ADDRESS
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----- Kennecott Minerals Co.:	415-592-8337	987 Commercial St., San Carlos, CA 94070.
KCU	Utah Copper Div-----	801-322-6123	P. O. Box 6500, Salt Lake City, UT 84106.
KPI	Kenrich Petrochemicals, Inc-----	201-436-5702	P. O. Box 32, Bayonne, NJ 07002.
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 Industries, Inc., 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.
KPT	Koppers Co., Inc-----	412-227-2000	Koppers Bldg. K-1301, Pittsburgh, PA 15219.
LCP	LCP Corp-----	800-526-7616	P. O. Box 149, Orrington, ME 04474.
LCP	LCP Chemicals West Virginia, Inc----	304-843-1310	P. O. Drawer "J", Moundsville, WV 26041.
LKY	Lake States Div. of Rhineland Paper Co.	715-369-4356	515 W. Davenport St., Rhineland, WI 54501.
LUR	Laurel Products Corp-----	215-423-5300	2600 E. Tioga St., Philadelphia, PA 19134.
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	2999 Frontage Rd., P. O. Box 1658, Petersburg, VA 23805.
SAR	Leksi, Inc-----	215-521-3800	P. O. Box 56, Essington, PA 19029.
LEL	Leland Chemical Co-----	704-633-1731	P. O. Box 399, Salisbury, NC 28144.
LEV	Lever Brothers Co-----	212-688-6000	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 and G.P.O. Box 71325, San Juan, PR 00936.
LIC	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 90051.
LCS	Louisiana Cellulose Specialties, 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 Manufacturing, Southern Resin Div.	703-483-0211	P. O. Box 68, Thomasville, NC 27360.
TZC	Magnesium Elektron, Inc-----	201-782-5800	Star Route A, Box 202-1, 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 Re- fining Div.	419-422-2121	539 S. Main St., Findlay, OH 48540.
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.
SDC	Martin-Marietta Corp., Sodyeco Div--	704-827-9651	P. O. Box 669246, Charlotte, NC 28266.
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.

TABLE 1.--SYNTHETIC ORGANIC CHEMICALS: ALPHABETICAL DIRECTORY OF MANUFACTURERS, BY COMPANY, 1982--CONTINUED

IDENTIFICATION CODE	NAME OF COMPANY	TELEPHONE NUMBER	OFFICE ADDRESS
MYO	Mayo Chemical Co-----	404-696-6711	5544 Oakdale Rd., Smyrna, GA 30080.
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 E. Slauson Ave., City of Commerce, CA 90040.
STG	McCormick & Co., Inc., McCormick/Stange Flavor Div.	301-667-7400	230 Schilling Circle S. Huntvalley, MD 21031.
MGK	McLaughlin Gormley King Co-----	612-544-0341	8810 10th Ave., N., Minneapolis, MN 55427.
MLC	Melamine Chemicals, Inc-----	504-473-3121	P. O. Box 748, Donaldsonville, LA 70346.
MRK	Merck & Co., Inc-----	201-574-4000	126 E. Lincoln Ave., P. O. Box 2000, Rahway, NJ 07065.
MER	Merichem Co-----	713-455-1311	1914 Haden Rd., Houston, TX 77015.
MLS	Miles Laboratories, Inc., Bio-technology Group.	219-264-8111	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, Kewanee Industries, Inc.	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-----	201-686-3700	Iorio Ct., P. O. Box 385, 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-----	201-467-8500	P. O. Box M-1, Short Hills, NJ 07078.
	Petrochemicals Div-----	713-871-5000	One Greenway Plaza, Suite 1100, Houston, TX 77046.
MOA	Mona Industries, Inc-----	201-345-8220	76 E. 24th St., Paterson, NJ 07544.
MON	Monsanto Co-----	314-694-1000	800 N. Lindbergh Blvd., St. Louis, MO 63167.
MTO	Montrose Chemical Corp. of California.	201-964-3250	2401 Morris Ave., P. O. Box 219, Union, NJ 07083.
MCI	Mooney Chemicals, Inc-----	216-781-8383	2301 Scranton Rd., Cleveland, OH 44113.
MCP	Moretex Chemical Products, Inc-----	803-583-8441	314 W. Henry St., P. O. Box 1799, Spartanburg, SC 29304.
	Morton Thiokol, Inc.:		
MRT	Morton Chemical Co. Div-----	312-621-5555	2 N. Riverside Plaza, Chicago, IL 60606.
TKL	Specialty Chemicals Div-----	312-621-5200	110 N. Wacker Dr., Chicago, IL 60606.
TCL	Texize Div-----	803-963-4261	P. O. Box 368, Greenville, WI 29602.
MHI	Ventron Div-----	617-774-3100	150 Andover St., Danvers, MA 01923.
MOT	Motomco, Ltd-----	608-244-2904	P. O. Box 8422, Madison, WI 53704.
PNX	The Murphy-Phoenix Co-----	216-831-0404	P. O. Box 22930, Beechwood, OH 44122.
NTL	NL Industries, Inc-----	212-621-9400	1230 Avenue of the Americas, New York, NY 10020.
CHN	N-Ren Corp., Cherokee Nitrogen Div--	513-871-8800	P. O. Box 429, Pryor, OK 74362.
LEM	Napp Chemicals, Inc-----	201-773-3900	199 Main St., Lodi, NJ 07644.
NTB	National Biochemical Co-----	312-722-0126	3127 W. Lake St., Chicago, IL 60612.
NTC	National Casein Co-----	312-846-7300	601 W. 80th St., Chicago, IL 60620.
NCJ	National Casein of New Jersey-----	609-829-1880	P. O. Box 226, Riverton, NJ 08077.
USI	National Distillers & Chemicals Corp.:		
	U.S. Industrial Chemicals Co-----	212-949-5000	99 Park Ave., New York, NY 10016.
	National Petro Chemicals Corp---	212-949-5000	99 Park Ave., New York, NY 10016.
NMC	National Milling & Chemical Co-----	215-482-6600	4601 Flat Rock Rd., Philadelphia, PA 19127.

TABLE 1.--SYNTHETIC ORGANIC CHEMICALS: ALPHABETICAL DIRECTORY OF MANUFACTURERS, BY COMPANY, 1982--CONTINUED

IDENTIFICATION CODE	NAME OF COMPANY	TELEPHONE NUMBER	OFFICE ADDRESS
NSC	National Starch & Chemical Corp-----	201-685-5000	10 Finderne Ave., Bridgewater, NJ 08807.
	National Steel Corp.:		
NTS	Great Lakes Plant-----	313-297-2100	Foot of Teccumsen Rd., Ecorse, MI 48229.
NTS	Weirton Steel Div-----	304-797-2200	Weirton, WV 26062.
NEP	Nepera Chemical Co., Inc-----	914-782-8171	Route 17, Harriman, NY 10926.
NVM	Nevarmar Corp-----	301-569-5000	8339 Telegraph Rd., Odenton, MD 21113.
NEV	Neville Chemical Co-----	412-331-4200	Neville Island P. O., 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	225 Fort St., Niles, MI 49120.
	Kordell Industries Div-----	219-295-9678	P. O. Box 930, Mishawaka, IN 46544.
NIL	Nilok Chemicals, Inc-----	513-841-4000	2235 Langdon Farm Rd., Cincinnati, OH 901-358-7011
			45237 and P. O. Box 27134, 5030 Millington Rd., Memphis, TN 38127.
CNP	Nipro, Inc-----	404-823-4000	P. O. Box 1483, Augusta, GA 30903.
NOC	The Norac Co., Inc-----	213-334-2908	405 S. Motor Ave., Azusa, CA 91703.
	Mathe Div-----	201-779-4981	169 Kennedy Dr., P. O. Box 2230, Lodi, NJ 07664.
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-----	206-293-3176	P. O. Box 99, Anacortes, WA 98221.
NOR	Norwich Eaton Pharmaceutical, Inc---	607-335-2405	17 Eaton Ave., Norwich, NY 13815.
CAD	Noury Chemical Corp-----	716-778-8554	2153 Lockport-Olcott Rd., Burt, NY 14028.
NBI	Novo Biochemical, Inc-----	919-494-2014	P. O. Box 576, Franklenton, NC 27525.
NUT	Nutrius, Inc-----	216-589-4400	1100 Superior Ave., Cleveland, OH 44114.
OBC	The O'Brien Corp-----	415-761-2300	450 E. Grand Ave., South San Francisco, CA 94080.
	Occidental Chemical Corp.:		
HKD	Durex Div-----	716-696-6000	Walek Rd., North Tonawanda, NY 14120.
HK	Hooker Industrial & Specialty Chemical Div.	716-286-3000	360 Rainbow Blvd. S., Niagara Falls, NY 14303.
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 06904.
	Specialty Chemicals Dept-----	203-356-2000	P. O. Box 991, Little Rock, AR 72203.
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-----	201-824-3144	140 Route 10, East Hanover, NJ 07936.
ORG	Organics, Inc./LaGrange Labs., 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., West 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.
PLB	P-L Biochemicals, Inc-----	414-347-7300	1037 W. McKinley Ave., Milwaukee, WI 53201.
PMP	PMP Fermentation Products, Inc-----	414-347-7300	1000 N. Market St., Milwaukee, WI 53201.
PPG	PPG Industries, Inc-----	412-434-3131	One PPG Place, Pittsburgh, PA 15272.
PAC	Pacific Anchor Chemical Corp-----	213-725-1800	6055 E. Washington Blvd., Suite 700, Los Angeles, CA 90040.
PNT	Pantasote, Inc., Film/Compound Div--	201-777-8500	26 Jefferson St., Passaic, NJ 07056.
PD	Parke-Davis & Co-----	616-392-2375	188 Newark Ave., Holland, MI 49423.
PSC	Passaic Color & Chemical Co-----	201-279-0400	28-36 Paterson St., Paterson, NJ 07501.
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.
PEL	Pelron Corp-----	312-442-9100	P. O. Box 6, 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.
PER	Perry & Derrick Co., Inc-----	513-351-5800	2510 Highland Ave., Cincinnati, OH 45212.

TABLE 1.--SYNTHETIC ORGANIC CHEMICALS: ALPHABETICAL DIRECTORY OF MANUFACTURERS,
BY COMPANY, 1982--CONTINUED

IDENTIFICATION CODE	NAME OF COMPANY	TELEPHONE NUMBER	OFFICE ADDRESS
PST	Perstorp, Inc-----	413-584-2472	238 Nonotuck St., Florence, MA 01060.
UDI	Petrochemicals Co., Inc-----	817-625-2111	600 E. Central St., P. O. Box 2199, Fort Worth, TX 76113.
PTT	Petro-Tex Chemical Corp-----	713-477-5211	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.
PFZ	Pfizer, Inc-----	212-573-2323	235 E. 42d St., New York, NY 10017.
	Pfizer Pharmaceuticals, Inc-----	809-846-4300	P. O. Box 628, Barceloneta, PR 00617.
PHR	Pharmachem Corp-----	215-867-4654	719 Stefko Blvd., Bethlehem, PA 18018.
PDI	Phelps Dodge Industries, Inc., Phelps Dodge Magnet Wire Co. Div.	219-456-4444	1302 E. Creighton Ave., Fort Wayne, IN 46801.
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.
PRC	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.
PPL	Pioneer Plastics Div. of LOF Plastics, Inc.	207-784-9111	Pionite Rd., Auburn, ME 04210.
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., 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 75224.
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.
PCL	Polychemical Laboratories, Inc-----	212-842-5100	490 Hunts Point Ave., Bronx, NY 10474.
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.
PYZ	Polyrez Co., Inc-----	609-845-1813	P. O. Box 320, Woodbury, NJ 08096.
PLR	Polysar, Inc.: Polysar Latex Div----- Polysar Latex Div----- Resins Div-----	216-836-0451 615-698-9200 617-537-9901	1705 W. Market St., Akron, OH 44313. 8805 Amnicola Hwy., Chattanooga, TN 37421. 29 Fuller St., Leominster, MA 01453.
PVI	Polyvinyl Chemical Industries-----	617-658-6600	730 Main St., Wilmington, MA 01887.
POP	Pope Chemical Corp-----	201-279-2702	33 - 6th Ave., Paterson, NJ 07524.
PRT	Pratt & Lambert, Inc-----	716-873-6000	P. O. Box 22, Buffalo, NY 14240.
JLP	J. L. Prescott Co-----	201-777-4200	27 - 8th St., Passaic, NJ 07055.
PG	Procter & Gamble Co., Procter & Gamble Mfg. Co.	513-763-5194	P. O. Box 599, Cincinnati, OH 45201.
PC	Proctor Chemical Co-----	704-633-1731	P. O. Box 399, Salisbury, NC 28144.
PRC	Products Research & Chemical Corp---	213-240-2060	5430 San Fernando Rd., P. O. Box 1800, Glendale, CA 91209.
PUB	Publicker Industries, Inc-----	203-531-4500	777 W. Putnam Ave., Greenwich, CT 06830.
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	345 Merchandise Mart Plaze, Chicago, IL 60654.
QUN	K. J. Quinn & Co., Inc-----	617-321-3200	195 Canal St., Malden, MA 02148.
QH	Quintana Petrochemical Co-----	512-289-2600	P. O. Box 4656, 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.

TABLE 1.--SYNTHETIC ORGANIC CHEMICALS: ALPHABETICAL DIRECTORY OF MANUFACTURERS, BY COMPANY, 1982--CONTINUED

IDENTIFICATION CODE	NAME OF COMPANY	TELEPHONE NUMBER	OFFICE ADDRESS
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.
RBI	: Reeves Brothers, Inc-----	: 803-576-1210	: P. O. Box 1898, Spartanburg, SC 29304.
REG	: Regis Chemical Co-----	: 312-967-6000	: 8210 Austin Ave., Morton Grove, IL 60053.
RCI	: Reichhold Chemicals, Inc-----	: 914-682-5700	: 525 N. Broadway, White Plains, NY 10603.
RIL	: Reilly Tar & Chemical Corp-----	: 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-----	: 216-622-5000	: P. O. Box 6778, Cleveland, OH 44101.
RNL	: Resinall Corp-----	: 203-339-7100	: P. O. Box 3149, Stamford, CT 06905.
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	: Greenville, SC 29607.
RIK	: Riker Laboratories, Inc. Sub. of : 3M Co.	: 213-341-1300	: 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-----	: 312-756-2010	: 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.
RGC	: Rogers Corp., Molding Materials Div-	: 203-774-9605	: P. O. Box 550, Rogers, CT 06263.
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-----	: 504-673-6141	: P. O. Box 517, Geismar, LA 70734.
NES	: Ruetgers-Nease Chemical Co-----	: 814-238-2424	: P. O. Box 221, St. College, PA 16801.
SCM	: SCM Corp.: : Coatings & Resin Div-----	: 216-344-8000	: 900 Huntington Bank Bldg., Cleveland, OH 44115.
	: Organic Chemicals Div-----	: 904-764-1711	: P. O. Box 389, Jacksonville, FL 32201.
	: PCR, Inc-----	: 904-376-8241	: P. O. Box 1466, Gainesville, FL 32602.
SOS	: SSC Industries, Inc-----	: 404-762-9651	: 1550 E. Taylor Ave., East Point, GA 30344.
NPR	: Safeway Stores, Inc-----	: 415-944-4468	: 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.
SBG	: 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.
	: Crop Protection-----	: 619-298-4343	: 480 Camino Del Rio S., San Diego, CA 92108.
SCN	: Schenectady Chemicals, Inc-----	: 518-370-4200	: P. O. Box 1046, Schenectady, NY 12301.
SBC	: Scher Chemicals, Inc-----	: 201-471-1300	: 1 Styertowne Rd., P. O. Box 1236, Clifton, NJ 07012.
SCH	: The Schering Corp-----	: 201-558-4000	: 1011 Morris Ave., Union, NJ 07083.
SCO	: Scholler, Inc-----	: 215-739-0900	: P. O. Box 4708, Philadelphia, PA 19134.
SPR	: Scientific Protein Laboratories, : Inc.	: 608-849-5944	: P. O. Box 158, Waunakee, WI 53597.
SPA	: Scott Paper Co-----	: 215-521-5000	: P. O. Box 925, Everett, WA 98206.
SEA	: Seaboard Chemicals, Inc-----	: 617-745-1915	: 30 Foster St., P. O. Box 707, Salem, MA 01970.
SRL	: G. D. Searle & Co-----	: 312-982-7000	: 4901 Searle Pkwy., Skokie, IL 60077.
SFR	: Searle Food Resources, Inc-----	: 212-470-6440	: P. O. Box 1111, Skokie, IL 60077.
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., Neville Island, Pittsburgh, PA 15225.
SHP	: Shepherd Chemical Co-----	: 513-731-1110	: 4900 Beech St., Cincinnati, OH 45212.

TABLE 1.--SYNTHETIC ORGANIC CHEMICALS: ALPHABETICAL DIRECTORY OF MANUFACTURERS, BY COMPANY, 1982--CONTINUED

IDENTIFICATION CODE	NAME OF COMPANY	TELEPHONE NUMBER	OFFICE ADDRESS
SHX	Sherex Chemical Co., Inc-----	614-764-6531	P. O. Box 646, Dublin, OH 43017.
SW	The Sherwin-Williams Co., Chemical Div.	216-566-2000	101 Prospect Ave. NW., Cleveland, OH 44115.
SHT	Shintech, Inc-----	713-965-0713	2410 Greenway Plaza, Suite 811, Houston, TX 77098.
SID	George F. Siddal Co., Inc-----	803-576-1556	P. O. Box 925, Spartanburg, SC 29304.
VLN	SimCal Chemical Co-----	209-432-2222	2222 W. Shaw Ave., Fresno, CA 93721.
SMP	J. R. Simplot Co., Minerals & Chemical Div.	208-232-6620	P. O. Box 912, Pocatello, ID 83210.
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 43214, Columbus, OH 43223.
SK	SmithKline Beckman Corp., SmithKline Chemicals Div.	215-278-7000	P. O. Box 900, Conshohocken, PA 19428.
SOH	Sohio Chemical Co-----	216-575-6293	1899 Guildall, Cleveland, OH 44126.
CMB	Metaullics Div-----	716-297-2000	P. O. Box 477, Niagara Falls, NY 14302.
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 Sfs., P. O. Box 112, West Warwick, RI 02893.
SAC	Southeastern Adhesives Co-----	704-754-3493	P. O. Box 791, Lenoir, NC 28645.
SOP	Southern Chemical Products Co----- Southland Corp.:	912-746-5147	430 Lower Boundary St., Macon, GA 31202.
ACT	Chemical Div-----	800-527-6709	7666 W. 63d St., Summit, IL 60501.
SOL	Fine Chemical Div-----	214-331-8391	5801 Marvin D. Lore 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 Plastics Div.	716-692-2000	310 Wheeler St., Tonawanda, NY 14150.
SOI	Specialty Organics, Inc-----	213-962-2008	5623 N. 4th St., Irwindale, CA 91706.
OMS	E. R. Squibb & Sons, Inc-----	609-921-4000	P. O. Box 4000, Route 206 & Provinceline 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	1035 Belleville Turnpike, Kearny, NJ 07032.
SOC	Standard Oil Co. of California, Chevron Chemical Co.	415-894-7700	575 Market St., San Francisco, CA 94105.
AMO	Standard Oil Company (Indiana)-----	312-856-6111	P. O. Box 5910-A, Mail Code 3501, Chicago, IL 60680.
SIO	Standard Oil (Ohio)-----	216-575-5419	307 Midland Bldg., Cleveland, OH 44115.
STT	Standard T Chemical, Inc-----	312-755-1223	10th & Washington Sts., Chicago Heights, IL 60411.
SFA	Stauffer Chemical Co.: 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.
SFF	Food Ingredients Div-----	415-544-9000	636 California St., San Francisco, CA 94108.
SFI	Industrial Div-----	415-544-9000	636 California St., San Francisco, CA 94108.
SFP	Plastics Div-----	415-544-9000	636 California St., San Francisco, CA 94108.
SFS	Specialty 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----- Sterling Drug, Inc.:	312-446-7500 312-446-7500	RR #1, Elwood, IL 60421 and 100 W. Maywood, NJ 07607.
SDH	Hilton Davis Chemical Co. Div-----	212-907-2000	2235 Langdon Farm Rd., Cincinnati, OH 45237.
SDW	Sterling Organics Div-----	212-907-2000	90 Park Ave., New York, NY 10016.
TMS	Thomasset Colors Div-----	212-907-2000	2235 Langdon Farm Rd., Cincinnati, OH 45237.
CIN	Stockhausen, Inc-----	919-378-9393	P. O. Box 16025, Greensboro, NC 27406.

TABLE 1.--SYNTHETIC ORGANIC CHEMICALS: ALPHABETICAL DIRECTORY OF MANUFACTURERS,
BY COMPANY, 1982--CONTINUED

IDENTI- FICATION CODE	NAME OF COMPANY	TELEPHONE NUMBER	OFFICE NUMBER
SVC	Stokely-Van Camp, Inc., Industrial Products Group.	317-263-2000	1530 Jackson St., Janesville, WI 53545.
SBP	Sugar Beet Products Co-----	517-799-4941	302 Waller St., P. O. Box 1387, Saginaw, MI 48605.
SNA	Sun Chemical Corp-----	212-986-5500	411 Sun Ave., Cincinnati, OH 45232.
SNW	Chemicals Div-----	201-224-4600	P. O. Box 70, Chester, SC 29706.
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----- : Sybron Corp.:	215-485-0761	P. O. Box F, Claymont, DE 10703.
TCC	Sybron Chemical Div-----	716-546-4040	P. O. Box 125, Wellford, SC 29385.
IOC	Sybron Chemical Div-----	609-893-1100	Birmingham, NJ 08011.
JSC	Sybron Chemical Div-----	609-893-1100	P. O. Box 66, Birmingham Rd., Birmingham, NY 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.
HFT	Syntex Agribusiness, Inc-----	417-866-7291	P. O. Box 1246 S.S.S., Springfield, MO 65805.
ARA	Syntex Chemicals, Inc-----	303-443-1926	2075 N. 55th St., Boulder, CO 80302.
SYT	Synthron, Inc-----	704-437-8611	P. O. Box 1111, Morganton, NC 28655.
TEK	Teknor Apex Co-----	401-725-8000	505 Central Ave., Pawtucket, RI 02861.
HN	Tenneco, Inc., Tenneco Chemicals, Inc.	201-885-5378	P. O. Box 365, Piscataway, NJ 08854.
TOC	Tenneco Oil Co-----	713-757-2635	P. O. Box 2511, Houston, TX 77001
TEN	Tennessee Chemical Co-----	615-496-3331	1 Ocoee St., Copperhill, TN 37317.
TVA	Tennessee Valley Authority, Chemical Accounting Brand.	205-386-2377	204 NFDC, Muscle Shoals, AL 35660.
TER	Terra Chemicals International, Inc--	712-277-1340	P. O. Box 1828, Sioux City, IA 51102.
TER	Terra Nitrogen, Inc-----	712-277-1340	P. O. Box 1828, Sioux City, IA 51102.
COO	The Terrell Corp-----	616-658-3351	820 Woburn St., Wilmington, MA 01887.
TX	Texaco, Inc-----	713-666-8000	P. O. Box 430, 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.
SKI	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-----	690-299-5600	P. O. Box 388, 1012 Terra Dr., Milton, WI 53563.
TSO	Tosco Corp-----	213-552-7000	10100 Santa Monica Blvd., Los Angeles, CA 90067.
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.
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, P. O. Box U, 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, South Charlestown, WV 25303.
UOC	Union Oil Co. of California----- : Union Chemicals Div-----	213-977-7746 213-977-6898	461 S. Baylston St., Los Angeles, CA 90017. 461 S. Baylston St., Los Angeles, CA 90017.
USR	Uniroyal, Inc., Uniroyal Chemical Div.	203-723-3887	Emic Bldg., Spencer St., Naugatuck, CT 06770.

TABLE 1.--SYNTHETIC ORGANIC CHEMICALS: ALPHABETICAL DIRECTORY OF MANUFACTURERS, BY COMPANY, 1982--CONTINUED

IDENTIFICATION CODE	NAME OF COMPANY	TELEPHONE NUMBER	OFFICE ADDRESS
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 16512.
USB	U.S. Borax & Chemical Corp.	213-381-5311	3075 Wilshire Blvd., Los Angeles, CA 90010.
USO	U.S. Oil Co.	401-434-3000	P. O. Box 4228, East Providence, RI 02914.
USP	U.S. Polymers, Inc.	314-638-1632	300 E. Primm, St. Louis, MO 53111.
USS	U.S. Steel Corp.:		
	Clairton Plant	412-433-1121	600 Grant St., Rm. 2316, Pittsburgh, PA 15230.
USS	Fairfield Plant	412-433-1121	600 Grant St., Rm. 2316, Pittsburgh, PA 15320.
USS	Gary Plant	219-944-4657	1 North Broadway, Gary, IN 46401.
USS	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	USS Chemicals Div.	412-433-7622	600 Grant St., Rm. 2880, Pittsburgh, PA 15230.
UPJ	The Upjohn Co.	616-323-4000	7000 Portage Rd., Kalamazoo, MI 49001.
CWN	Fine Chemical Div.	203-281-2722	410 Sackett Point Rd., North Haven, CT 06473.
UPJ	Polymer Chemical Div.	713-479-1541	P. O. Box 685, LaPorte, TX 77571.
VAL	Valchem Div. of United Merchants & Manufacturers, Inc.	212-930-3900	1407 Broadway, New York, NY 10018.
VSV	Valentine Sugars, Inc., Valite Div.	504-943-2459	726 Whitney Bldg., New Orleans, LA 70130.
MNP	The Valspar Corp.	612-332-7371	1101 S. 3d St., Minneapolis, MN 55440.
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.
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.
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.
VTM	Vitamins, Inc.	312-861-0700	200 E. Randolph Dr., Chicago, IL 60601.
FRO	Vulcan Materials Co., Chemicals Div.	205-877-3000	P. O. Box 7689, Birmingham, AL 35223.
WJ	Warner-Jenkinson Co.	314-889-7600	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	11104 N.W. 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.
WVA	Westvaco Corp., Chemical Div.	803-554-8350	P. O. Box 70848, Charleston Heights, SC 29405.
WRD	Weyerhaeuser Co.	715-384-2141	118 S. Palmetto Ave., Marshfield, WI 54449.
WBG	The White & Bagley Co.	617-791-3201	P. O. Box 706, Worcester, MA 01613.
WHI	White & Hodges, Inc.	617-663-3689	576 Lawrence St., P. O. Box 1204, Lowell, MA 01852.
WCC	White Chemical Corp.	201-437-0050	Foot of E. 22d St., Bayonne, NJ 07002.
WHL	Whitmoyer Laboratories, Inc.	717-866-2151	19 N. Railroad St., Myerstown, PA 17067.
WTK	Whittaker Corp., Heico Div.	717-476-0353	Rt. 611, Delaware Water Gap, PA 18327.
WHW	Whittmore-Wright Co., Inc.	617-242-1180	62 Alford St., Boston, MA 02129.
WLN	Wilmington Chemical Corp.	302-658-3515	P. O. Box 66, Wilmington, DE 19899.
WTC	Witco Chemical Corp.	201-573-2800	155 Tice Blvd., Woodcliff Lake, NJ 07675.
WBC	Worthington Diagnostics Systems, Inc., A Flow General Co.	201-462-3838	Halls Mill Rd., Freehold, NJ 07728.
WCL	Wright Chemical Corp.	919-655-2263	Acme Station, Riegelwood, NC 28456.
WYK	Wyckott Chemical Co., Inc.	616-637-8474	1421 Kalamazoo St., South 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, Paoli, PA 19301

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, sub-parts B and C are analyzed by the U.S. International Trade Commission annually and published in detail in a separate report.¹ General imports of benzenoid items entered in parts 1B and 1C totaled 6,814 million pounds with an entered value of \$1,200.4 million in 1982 compared with 6,581 million pounds with an entered value of \$1,205.9 million in 1981. 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, 23.5 percent of all the benzenoid imports under part 1B in 1982 came from Japan; 23.1 percent, from West Germany; 18.3 percent, from the United Kingdom; and 7.9 percent, from Switzerland.

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 23.3 percent of all finished benzenoid imports under part 1C in 1982 came from West Germany; 19.1 percent, from Japan; 12.3 percent, from Switzerland; and 12.0 percent, from the United Kingdom.

¹*Imports of Benzenoid Chemicals and Products, 1982*, USITC Publication 1401, July 1983.

TABLE 2.--BENZENOID CHEMICALS AND PRODUCTS: SUMMARY OF U.S.
GENERAL IMPORTS ENTERED UNDER SCHEDULE 4,
PARTS 1B AND 1C, OF THE TSUS, 1982

Part	QUANTITY	PERCENT OF TOTAL QUANTITY	ENTERED VALUE	PERCENT OF ENTERED VALUE	UNIT ENTERED VALUE
	<u>1,000</u> <u>pounds</u>		<u>1,000</u> <u>pounds</u>		<u>Per</u> <u>pound</u>
Schedule 4, Part 1B and: 1C, total-----	681,433	100.0	1,200,372	100.0	\$1.76
Schedule 4, Part 1B--	378,465	55.5	427,275	35.6	1.13
Schedule 4, Part 1C--	302,968	44.5	773,097	64.4	2.55

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'-azodibzenesulfonic acid.
p-Aminobenzenesulfonic acid-----	Sulfanilic acid and salt.
m-Aminobenzoyl J acid-----	4-Hydroxy-7-(m-aminobenzamido)-2-naphthalenesulfonic acid.
Aminoepilson 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.
Broenmer'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 (Cassella 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.
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'-Dianthrime-----	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- ϕ^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'-(Phenylimino)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'-Iminobis[4-hydroxy-2-naphthalenesulfonic acid].
RR acid	3-Amino-5-hydroxy-2,7-naphthalenedisulfonic acid.
S Acid	4-Amino-5-hydroxy-1-naphthalenesulfonic acid.
Schaffer's acid	6-Hydroxy-2-naphthalenesulfonic acid.
Silver salt	9,10-Dihydro-9,10-dioxo-2-anthracenesulfonic acid and salt.
Solvent Yellow 1	p-Phenylazoaniline and hydrochloride.
Solvent Yellow 3	4-(o-Tolylazo)-o-toluidine.
SS Acid (Chicago acid)	4-Amino-5-hydroxy-1,3-naphthalenedisulfonic acid.
Sulfanilic acid	p-Aminobenzenesulfonic acid.
o-Sulfobenzaldehyde	o-Formylbenzenesulfonic acid.

TABLE 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.

