

UNITED STATES INTERNATIONAL TRADE COMMISSION

**S Y N T H E T I C
O R G A N I C C H E M I C A L S**

**United States Production
and Sales, 1975**

USITC Publication 804



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

- ***Synthetic Organic Chemicals, United States Production and Sales, 1970 (TC Publication 479, 1972), \$2.00**
- Synthetic Organic Chemicals, United States Production and Sales, 1971 (TC Publication 614, 1973), \$2.70**
- Synthetic Organic Chemicals, United States Production and Sales, 1972 (TC Publication 681, 1974), \$2.70**
- ***Synthetic Organic Chemicals, United States Production and Sales, 1973 (ITC Publication 728, 1975), \$3.25**
- Synthetic Organic Chemicals, United States Production and Sales, 1974 (USITC Publication 776, 1976), \$3.20**

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United States Production
and Sales, 1975

U.S. GOVERNMENT PRINTING OFFICE
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USITC Publication 804

UNITED STATES INTERNATIONAL TRADE COMMISSION

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C O N T E N T S

	<u>Page</u>
Introduction-----	1
Summary-----	3
General-----	4
Tar-----	7
Tar crudes-----	7
Crude products from petroleum and natural gas for chemical conversion-----	13
Cyclic intermediates-----	20
Dyes-----	46
Organic pigments-----	78
Medicinal chemicals-----	87
Flavor and perfume materials-----	107
Plastics and resin materials-----	120
Rubber-processing chemicals-----	129
Elastomers-----	138
Plasticizers-----	142
Surface-active agents-----	150
Pesticides and related products-----	179
Miscellaneous chemicals-----	191

APPENDIX

Directory of manufacturers-----	231
Cyclic intermediates: Glossary of synonymous names---	245

INTRODUCTION

This is the fifty-ninth annual report of the U.S. International Trade Commission (formerly the U.S. Tariff Commission) on domestic production and sales of synthetic organic chemicals and the raw materials from which they are made. The report consists of fourteen sections, each covering a specified group (based principally on use) of organic chemicals as follows: Tar and tar crudes; crude products from petroleum and natural gas; intermediates; dyes; pigments; medicinal chemicals; flavor and perfume materials; plastics and resin materials; rubber-processing chemicals; elastomers; plasticizers; surface-active agents; pesticides and related products; and miscellaneous organic chemicals. Data have been supplied by approximately 800 producers.

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 exceeds 1,000 pounds or the value of sales exceeds \$1,000. They are usually given in terms of undiluted materials; however, products of 95 percent or more purity are considered to be 100 percent pure. Commercial concentrations are applied to 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 which 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 includes their office addresses.

Information on the 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 Dyers and Colourists and the American Association of Textile Chemists and Colorists.

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. 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 when it is isolated from the reaction system and/or when it is weighed, analyzed, or otherwise measured. This includes byproducts and coproducts that are not classifiable as waste materials;

Produced and transferred to other plants or establishments of the same firm;

Produced and sold to other firms, including production for another under a toll agreement (i.e., an agreement, under which one firm furnishes the raw materials and pays the processing costs and the other firm prepares the finished product and returns it to the first firm).

Produced and held in stock.

¹ Title 18, U.S.C. 1905 and Title 44, U.S.C. 3508

INTRODUCTION

PRODUCTION EXCLUDES:

Purification of a commodity, 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, analysed, or otherwise measured;
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 and for export, or segregation in a warehouse when title has passed to the purchaser in a bona fide sale;
Shipments of a commodity produced by others under toll agreements;
Shipments to subsidiary or affiliated companies.

SALES EXCLUDE:

All intra-company transfers within a corporate entity;
All sales of purchased commodities;
All shipments of a commodity produced for others under toll agreements.

VALUE OF SALES is the net selling value f.o.b. plant or warehouse, or delivered value, whichever represents the normal industry practice.

SUMMARY

Combined production of all synthetic organic chemicals, tar, tar crudes, and crude products from petroleum and natural gas in 1975 was 246,587 million pounds--a decrease of 16.0 percent from the output in 1974 (see table 1). Sales of these materials in 1975, which totaled 135,778 million pounds valued at \$28,293 million, were 15.4 percent smaller than in 1974 in terms of quantity and 6.6 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 1975 production of all synthetic organic chemicals, including cyclic intermediates and finished products, totaled 155,246 million pounds, or 15.6 percent less than the output in 1974. Pesticides and related products (1,603 million pounds) with an increase of 13.1 percent over 1974 was the only category to show a gain in production during 1975. Organic pigments (50 million pounds) lead the decline with a decrease of 28.9 percent; plasticizers (1,352 million pounds) were 28.6 percent less than in 1974; elastomers (synthetic rubber) (4,579 million pounds) decreased 19.0 percent; flavor and perfume materials (101 million pounds) and dyes (206 million pounds) were both 25.1 percent smaller than in 1974. Production was less in the three largest groups as follows: miscellaneous chemicals (86,238 million pounds) 14.3 percent, cyclic intermediates (31,412 million pounds) 17.6 percent and plastics and resin materials (24,868 million pounds) 18.1 percent. Medicinal chemicals, rubber-processing chemicals and surface-active agents also showed production declines in 1975.

**TABLE 1.--SYNTHETIC ORGANIC CHEMICALS AND THEIR RAW MATERIALS:
U.S. PRODUCTION AND SALES, 1974 AND 1975**

Chemical	Production			Sales					
				Quantity			Value		
	1974	1975	Increase or decrease (-), 1975 over 1974 ¹	1974	1975	Increase or decrease (-), 1975 over 1974 ¹	1974	1975	Increase or decrease (-), 1975 over 1974 ¹
	Million pounds	Million pounds	Percent	Million pounds	Million pounds	Percent	Million dollars	Million dollars	Percent
Grand total ² -----	293,578	246,587	-16.0	160,591	135,778	-15.4	30,284	28,293	-6.6
Tar-----	6,774	6,455	-4.7	3,336	2,848	-14.6	104	99	-4.8
Tar crudes ³ -----	8,582	6,797	-20.8	4,768	4,378	-8.2	273	268	-1.8
Crude products from petroleum and natural gas-----	94,353	78,089	-17.2	50,222	44,562	-11.3	4,062	2,988	-26.4
Synthetic organic chemicals, total ² -----	183,869	155,246	-15.6	102,265	83,990	-17.9	25,845	24,939	-3.5
Cyclic intermediates-----	38,147	31,412	-17.6	17,638	14,780	-16.2	3,514	3,169	-9.8
Dyes-----	275	206	-25.1	263	209	-20.7	556	476	-14.5
Organic pigments-----	70	50	-28.9	58	42	-27.6	228	186	-18.4
Medicinal chemicals-----	246	208	-15.4	178	149	-16.2	815	772	-5.2
Flavor and perfume materials-----	135	101	-25.1	107	83	-23.0	167	143	-14.0
Plastics and resin materials-----	30,348	24,868	-18.1	26,128	20,955	-19.8	7,887	7,003	-11.2
Rubber-processing chemicals--	384	279	-27.3	286	204	-28.8	236	207	-12.4
Elastomers (synthetic rubber)-----	5,654	4,579	-19.0	4,601	3,948	-14.2	1,529	1,458	-4.7
Plasticizers-----	1,892	1,352	-28.6	1,707	1,338	-21.6	535	470	-12.1
Surface-active agents-----	4,696	4,349	-7.4	2,502	2,182	-12.8	746	717	-3.9
Pesticides and related products-----	1,417	1,603	13.1	1,365	1,328	-2.7	1,815	2,366	30.4
Miscellaneous chemicals-----	100,604	86,238	-14.3	47,431	38,774	-18.2	7,815	7,971	2.0

¹ Percentages calculated from figures rounded to thousands.

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

³ Estimated in part to avoid disclosing individual company operations.

SYNTHETIC ORGANIC CHEMICALS, 1975

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 materials, elastomers, plasticizers, surface-active agents, pesticides and related products and miscellaneous chemicals (acyclic intermediates and acyclic and cyclic finished products). Most of these groups are further subdivided either by use or by chemical composition. As intermediate 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 1975 was 155,246 million pounds or 15.6 percent less than the output of 183,869 million pounds reported for 1974 and 48.3 percent more than the output of 104,711 million pounds reported for 1967 (see table 2). Sales of synthetic organic chemicals in 1975 amounted to 83,990 million pounds, valued at \$24,939 million, compared with 102,265 million pounds, valued at \$25,845 million in 1974 and 55,177 million pounds, valued at \$10,438 million in 1967. Production of all cyclic products (intermediates and finished products combined) in 1975 totaled 49,963 million pounds or 17.2 percent less than the 60,331 million pounds reported for 1974 and 49.2 percent more than the 33,479 million pounds reported for 1967. Production of all acyclic products in 1975 totaled 105,283 million pounds, or 14.8 percent less than the 123,537 million pounds reported for 1974 and 47.8 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, 1974, 1975

[Production and sales in thousands of pounds; sales value in thousands of dollars]

Chemical	1967 ¹	1974	1975	Increase, or decrease (-)	
				1975 over 1967	1975 over 1974
Organic chemicals, cyclic and acyclic, grand total:				Percent	Percent
Production-----	104,711,357	183,868,858	155,245,961	48.3	-15.6
Sales-----	55,176,823	102,264,717	83,990,306	52.2	-17.9
Sales value-----	10,438,453	25,844,900	24,938,928	138.9	-3.5
Cyclic, total:					
Production-----	33,479,469	60,331,380	49,962,996	49.2	-17.2
Sales-----	19,328,628	34,339,420	28,562,903	47.8	-16.8
Sales value-----	4,610,293	12,014,301	11,316,374	145.5	-5.8
Acyclic, total:					
Production-----	71,231,888	123,537,478	105,282,965	47.8	-14.8
Sales-----	35,848,195	67,925,297	55,427,403	54.6	-18.4
Sales value-----	5,828,160	13,830,599	13,622,554	133.7	-1.5
1. Cyclic Intermediates					
Production-----	20,793,132	38,146,699	31,412,575	51.1	-17.6
Sales-----	9,461,180	17,638,158	14,779,570	56.2	-16.2
Sales value-----	1,000,359	3,514,211	3,169,243	216.8	-9.8
2. Dyes					
Production-----	206,240	275,036	206,034	-0.1	-25.1
Sales-----	198,592	263,143	208,768	5.1	-20.7
Sales value-----	332,049	556,226	475,609	43.2	-14.5
3. Organic Pigments					
Production-----	53,322	69,798	49,653	-6.9	-28.9
Sales-----	42,867	58,481	42,372	-1.2	-27.6
Sales value-----	108,354	227,812	185,990	71.6	-18.4
4. Medicinal Chemicals					
Cyclic:					
Production-----	110,129	143,646	123,624	12.3	-13.9
Sales-----	70,120	93,588	77,847	11.0	-16.8
Sales value-----	348,873	713,452	676,431	93.9	-5.2
Acyclic:					
Production-----	69,941	102,807	84,765	21.2	-17.5
Sales-----	56,804	83,927	70,966	24.9	-15.4
Sales value-----	36,402	101,315	95,674	162.8	-5.6

See footnotes at end of table.

TABLE 2.--SYNTHETIC ORGANIC CHEMICALS: SUMMARY OF U.S. PRODUCTION AND SALES
OF INTERMEDIATES AND FINISHED PRODUCTS, 1967, 1974, AND 1975--CONTINUED

[Production and sales in thousands of pounds; sales value in thousands of dollars]

Chemical	1967 ¹	1974	1975	Increase, or decrease (-)	
				1975 over 1967	1975 over 1974
5. Flavor and Perfume Materials					
Cyclic:				Percent	Percent
Production-----	57,978	55,729	44,751	-22.8	-19.7
Sales-----	47,285	42,721	33,044	-30.1	-22.7
Sales value-----	52,866	100,922	91,851	73.7	-9.0
Acyclic:					
Production-----	53,558	79,592	56,589	5.7	-28.9
Sales-----	49,311	64,726	49,639	0.7	-23.3
Sales value-----	40,495	65,804	51,580	27.4	-21.6
6. Plastics and Resin Materials					
Cyclic:					
Production-----	5,033,497	9,767,809	7,806,999	55.1	-20.1
Sales-----	4,224,121	8,341,509	6,696,592	58.5	-19.7
Sales value-----	1,036,940	3,243,405	2,763,341	166.5	-14.8
Acyclic:					
Production-----	8,759,452	20,580,321	17,060,723	94.8	-17.1
Sales-----	7,753,242	17,786,597	14,258,062	83.9	-19.8
Sales value-----	1,635,690	4,643,953	4,239,701	159.2	-8.7
7. Rubber-Processing Chemicals					
Cyclic:					
Production-----	220,139	324,643	224,997	2.2	-30.7
Sales-----	169,970	238,732	172,637	1.6	-27.7
Sales value-----	116,318	206,474	186,853	60.6	-9.5
Acyclic:					
Production-----	43,994	59,215	53,995	22.7	-8.8
Sales-----	30,878	47,603	31,198	1.0	-34.5
Sales value-----	15,477	29,773	20,040	29.5	-32.7
8. Elastomers (Synthetic Rubber)					
Cyclic:					
Production-----	2,297,637	3,209,876	2,778,884	20.9	-13.4
Sales-----	1,940,099	2,558,478	2,302,389	18.7	-10.0
Sales value-----	439,580	641,507	639,357	45.4	-0.3
Acyclic:					
Production-----	1,524,908	2,443,969	1,799,841	18.0	-26.4
Sales-----	1,321,945	2,042,076	1,645,726	24.5	-19.4
Sales value-----	434,657	887,481	818,335	88.3	-7.8
9. Plasticizers					
Cyclic:					
Production-----	929,871	1,411,437	1,038,204	11.6	-26.4
Sales-----	865,084	1,305,983	1,042,188	20.5	-20.2
Sales value-----	167,827	338,356	307,923	83.5	-9.0
Acyclic:					
Production-----	332,908	480,248	313,498	-5.8	-34.7
Sales-----	296,767	401,142	296,129	-0.2	-26.2
Sales value-----	93,142	196,891	162,467	74.4	-17.5
10. Surface-Active Agents					
Cyclic: ²					
Production-----	1,418,444	2,333,967	1,921,358	35.5	-17.7
Sales-----	852,238	1,468,753	1,084,899	27.3	-26.1
Sales value-----	95,810	329,529	211,449	120.7	-35.8
Acyclic:					
Production-----	2,060,851	2,362,533	2,428,039	17.8	2.8
Sales-----	897,786	1,032,919	1,096,680	22.2	6.2
Sales value-----	220,877	416,869	505,972	129.1	21.4

See footnotes at end of table.

SYNTHETIC ORGANIC CHEMICALS, 1975

TABLE 2.--SYNTHETIC ORGANIC CHEMICALS: SUMMARY OF U.S. PRODUCTION AND SALES
OF INTERMEDIATES AND FINISHED PRODUCTS, 1967, 1974, AND 1975--CONTINUED
[Production and sales in thousands of pounds; sales value in thousands of dollars]

Chemical	1967 ¹	1974	1975	Increase, or decrease (-)	
				1975 over 1967	1975 over 1974
11. Pesticides and Related Products					
Cyclic:				<i>Percent</i>	
Production-----	823,158	1,025,547	1,196,310	45.3	-16.6
Sales-----	681,532	971,078	964,739	41.6	-0.6
Sales value-----	627,742	1,468,494	1,891,064	201.2	28.8
Acyclic:				<i>Percent</i>	
Production-----	226,505	391,611	406,706	79.6	3.8
Sales-----	215,831	394,136	363,297	68.3	-7.8
Sales value-----	159,301	346,939	475,319	198.4	37.0
12. Miscellaneous chemicals					
Cyclic:				<i>Percent</i>	
Production-----	1,535,922	3,567,193	3,159,607	105.7	-11.4
Sales-----	775,540	1,358,796	1,157,858	49.3	-14.8
Sales value-----	283,575	673,913	717,263	152.9	6.4
Acyclic:				<i>Percent</i>	
Production-----	58,159,771	97,037,182	83,078,809	42.8	-14.4
Sales-----	25,225,631	46,072,171	37,615,706	49.1	-18.4
Sales value-----	3,192,119	7,141,574	7,255,466	127.2	1.6

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

² Includes ligninsulfonates.

The following tabulation shows, by chemical groups, the number of companies that reported production in 1975 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-----	195	Rubber-processing chemicals-----	32
Dyes-----	41	Elastomers (synthetic rubber)-----	38
Organic pigments-----	35	Plasticizers-----	58
Medicinal chemicals-----	102	Surface-active agents-----	184
Flavor and perfume materials-----	45	Pesticides and related products-----	84
Plastics and resin materials-----	249	Miscellaneous chemicals-----	330

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 tar produced in the United States in 1975 was almost entirely coal tar, which amounted to 646 million gallons (see table 1). Production in 1975 was 5 percent less than the 677 million gallons of coal tar produced in 1974. Sales of coal tar in 1975 amounted to 285 million gallons compared with 334 million gallons in 1974. U.S. production of water-gas and oil-gas tars was not reported to the Commission for 1974 or 1975; production of these tars in 1968 amounted to 21 million gallons, according to trade publications.

Consumption of tar in 1975 amounted to an estimated 617 million gallons, of which 73 percent was consumed in distillation. Tar used by the producers as fuel amounted to 162 million gallons; a lesser amount, 5.0 million gallons, was consumed by coke-oven operators in miscellaneous uses (see table 1A).

TAR CRUDES

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

Domestic production of industrial and specification grades of benzene reported by coke-oven operators and petroleum refinery operators in 1975 amounted to 1,024 million gallons--31.2 percent less than the 1,488 million gallons reported for 1974. These statistics include data for benzene produced from light oil and petroleum. Sales of benzene by coke-oven operators and petroleum refiners in 1975 amounted to 548 million gallons compared with 788 million gallons in 1974. In 1975 the output of toluene (including material produced for use in blending in aviation fuel) amounted to 705 million gallons--23.5 percent less than the 922 million gallons reported for 1974. Sales of toluene in 1975 were 441 million gallons

SYNTHETIC ORGANIC CHEMICALS, 1975

compared with 454 million gallons in 1974. The output of xylene in 1975 (including that produced for blending in motor fuels) was 639 million gallons, compared with 802 million gallons in 1974. Over 99 percent of the 639 million gallons of xylene produced in 1975 was obtained from petroleum sources.

Production (or sales) figures on crude naphthalene from coal-tar oils in 1975 could not be published without disclosing the operations of individual companies. Production of petroleum-derived naphthalene in 1975 amounted to 110 million pounds, compared with 201 million pounds in 1974. Production figures on road tar for 1975 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 1975 tar crudes were supplied by 13 companies and company divisions.

TAR AND TAR CRUDES

9

TABLE 1.--TAR AND TAR CRUDES: U.S. PRODUCTION AND SALES, 1975

[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 separately all products for which data on production and/or sales were reported and identifies the manufacturers of each]

Product	Unit of quantity	Production	Sales		
			Quantity	Value	Unit value ¹
				<i>1,000 dollars</i>	
Tar: ² Coke-oven operators-----	1,000 gal--	645,537	284,841	98,898	\$0.347
Crude light oil: ³ Coke-oven operators---	1,000 gal--	194,814	99,005	44,234	.447
Intermediate light oil: Coke-oven operators-----	1,000 gal--	4,943	1,634	575	.352
Light-oil distillates:					
Benzene, specification and industrial grades, total ⁴ -----	1,000 gal--	1,023,913	547,532	386,951	.707
Coke-oven operators-----	1,000 gal--	65,050	66,284	49,724	.750
Petroleum refiners-----	1,000 gal--	958,863	481,248	337,227	.701
Toluene, all grades, total ⁴ -----	1,000 gal--	705,067	441,059	204,570	.464
Coke-oven operators-----	1,000 gal--	9,841	10,455	5,539	.530
Petroleum refiners-----	1,000 gal--	695,226	430,604	199,031	.462
Xylene, all grades, total ⁴ -----	1,000 gal--	639,099	531,002	239,920	.452
Coke-oven operators-----	1,000 gal--	1,884	1,958	1,083	.553
Petroleum refiners-----	1,000 gal--	637,215	529,044	238,837	.452
Solvent naphtha: ³ Coke-oven operators-----	1,000 gal--	2,045	1,947	652	.335
Crude tar-acid oils: Coke-oven operators-----	1,000 gal--	5,294	5,333	2,088	.392
Creosote oil (Dead Oil) (tar distillers and coke-oven operators) (100% creosote basis), total-----	1,000 gal--	114,835	85,908	43,771	...
Distillate as such (100% creosote basis)-----	1,000 gal--	79,164	50,711	25,566	.504
Creosote content of coal tar solution (100% creosote basis)-----	1,000 gal--	35,671	35,197	⁵ 18,205	(⁵)
All other distillates, total-----	1,000 gal--	...	27,676	12,833	.464
Coke-oven operators, total-----	1,000 gal--	6,041	3,615	744	.206
From light oil-----	1,000 gal--	3,488	1,241	421	.339
Other-----	1,000 gal--	2,553	2,374	323	.136
Tar distillers ⁶ -----	1,000 gal--	...	24,061	12,089	.502
Tar, refined, for uses other than road tar-----	1,000 gal--	15,962	11,105	6,548	.590
Pitch of tar (tar distillers and coke- oven operators), total-----	1,000 tons-	1,227	888	90,261	101.645
Soft (water softening point less than 100° F): Coke-oven operators-----	1,000 tons-	466	200	18,634	93.170
Other ⁷ -----	1,000 tons-	761	688	71,627	104.109

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

² Includes only data for coal tar reported to the Division of Fuels Data, U.S. Bureau of Mines, (Mineral Industry Surveys, Coke and Coal Chemicals, Feb. 11, 1976). 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.

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

⁴ Includes data for material produced for use in blending motor fuels. The annual production statistics for petroleum refiners on benzene, toluene, and xylene are not comparable with the combined monthly production figures because of fiscal year revisions.

SYNTHETIC ORGANIC CHEMICALS, 1975

Footnotes for table 1--Continued

⁵ In 1975, production of coal-tar solution containing creosote (100% solution basis) amounted to 49,549 thousand gallons; sales were 34,608 thousand gallons valued at 18,205 thousand dollars, with a unit value of \$0.526 per gallon.

⁶ Includes data for crude light oil, solvent naphtha, pyridine crude bases, crude tar-acid oils, crude cresylic acid, methylnaphthalene, crude tar for other uses, unspecified tar distillates, road tar and refined anthracene.

⁷ Includes pitch emulsion, medium and hard pitch, and small amounts of soft pitch.

Note.--Statistics for materials produced in coke and gas-retort ovens are compiled by the Division of Fuels Data, U.S. Bureau of Mines, Department of the Interior. Statistics for materials produced in tar and petroleum refineries are compiled by the U.S. International Trade Commission.

TABLE 1A.--TAR: U.S. PRODUCTION AND CONSUMPTION, 1974 AND 1975

(In thousands of gallons)

Product	1974	1975
PRODUCTION		
Coal tar from coke-oven byproduct plants, total ¹ -----	677,447	645,537
CONSUMPTION		
Total-----	687,146	617,235
Tar consumed by distillation, total-----	502,683	450,159
Coal tar distilled or topped by coke-oven operators ¹ -----	185,476	178,147
Coal tar and water-gas tar distilled by tar distillers ² ---	317,207	272,012
Tar consumed by the producers chiefly as fuel ¹ -----	180,907	162,112
Coal tar consumed at coke-oven plants in miscellaneous uses ¹ -----	3,556	4,964

¹ Reported to the Division of Fuels Data, U.S. Bureau of Mines.

² Reported 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.

TAR AND TAR CRUDES

11

TABLE 1B.--TAR AND TAR CRUDES: SUMMARY OF U.S. PRODUCTION OF SPECIFIED PRODUCTS,
1967, 1974, AND 1975

[Leaders (...) are used where the reported data are accepted in confidence and may not be published or where no data were reported.]

Product	Unit of quantity	1967 ¹	1974	1975	Increase, or decrease (-)	
					1975 over 1967	1975 over 1974
Tar ²	1,000 gal--	780,334	677,447	645,537	-17.3	-4.7
Benzene: ³						
Coke-oven operators-----	1,000 gal--	90,642	82,149	65,050	-28.2	-20.8
Petroleum refiners-----	1,000 gal--	878,704	1,406,115	958,863	9.1	-31.8
Total-----	1,000 gal--	969,346	1,488,264	1,023,913	5.6	-31.2
Toluene: ³						
Coke-oven operators-----	1,000 gal--	19,357	13,567	9,841	-49.2	-27.5
Petroleum refiners-----	1,000 gal--	624,454	908,392	695,226	11.3	-23.5
Total-----	1,000 gal--	643,811	921,959	705,067	9.5	-23.5
Xylene: ³						
Coke-oven operators-----	1,000 gal--	5,488	3,135	1,884	-65.7	-39.9
Petroleum refiners-----	1,000 gal--	449,349	798,976	637,215	41.8	-20.2
Total-----	1,000 gal--	454,837	802,111	639,099	40.5	-20.3
Naphthalene:						
Crude ⁵	1,000 lb--	520,991	(⁶)	(⁶)	(⁶)	(⁶)
Petroleum naphthalene, all grades-----	1,000 lb--	376,679	200,842	109,919	-70.8	-45.3
Total-----	1,000 lb--	897,670	(⁶)	(⁶)	(⁶)	(⁶)
Creosote oil (Dead oil): ⁷						
Distillate as such (100% creosote basis)-----	1,000 gal--	108,832	114,574	79,164	-27.3	-30.9
Creosote content of coal tar solution (100% creosote basis)-----	1,000 gal--	17,402	26,419	35,671	105.0	35.0
Total-----	1,000 gal--	126,234	140,993	114,835	-9.0	-18.6

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

² Includes only data for coal tar reported to the Division of Fuels Data, U.S. Bureau of Mines.

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

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

⁵ Naphthalene 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.

⁶ Statistics for 1974 and 1975 cannot be published; to do so would disclose the operations of individual companies.

⁷ Includes data for creosote oil produced by tar distillers and coke-oven operators and used only in wood preserving.

SYNTHETIC ORGANIC CHEMICALS, 1975

TABLE 2.--TAR CRUDES FOR WHICH U.S. PRODUCTION OR SALES WERE REPORTED,
IDENTIFIED BY MANUFACTURERS, 1975

[Tar crudes for which separate statistics are given in table 1 are marked with an asterisk (*); products 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. Table 3 identifies all U.S. producers of tar crudes (except producers that report to the Division of Fuels Data, U.S. Bureau of Mines)]

Product	Manufacturers' identification codes (according to list in table 3)
*Crude light oil ¹	CBT.
*Light-oil distillates; Solvent naphtha ¹	NEV.
Pyridine, crude bases ¹	KPT.
Naphthalene, crude, solidifying at: ¹	
Less than 74° C-----	ASC, COP.
74° C. to less than 79° C.:	
74° C. to less than 76° C-----	KPT.
76° C. to less than 79° C-----	ASC, KPT.
Methylnaphthalene-----	KPT.
*Crude tar-acid oils: ¹	
Tar-acid content 5% to less than 24%	KPT.
Tar-acid content 24% to 50%	ASC.
Cresylic acid, crude-----	KPT, PRD.
*Creosote oil (Dead oil): ¹	
*Distillate as such-----	ASC, CBT, COP, HUS, KPT, RIL, WTC.
*Creosote in coal tar solution-----	ASC, KPT, RIL, WTC.
*All other distillate products ¹	ASC, KPT, WTC.
Tar, road-----	ASC, KPT, RIL.
Tar for other uses:	
Crude-----	KPT, RIL.
*Refined ¹	ASC, KPT, RIL.
*Pitch of tar: ¹	
*Soft (water softening point less than 110° F.)-----	ASC, KPT.
Medium (water softening point 110° F. to 160° F.)-----	ASC, CBT, COP, KPT, RIL.
Hard (water softening point above 160° F.)-----	ASC, HYS, KPT, RIL, WTC.
Pitch emulsion-----	JEN.

¹ Does not include manufacturers' identification codes for producers who report to the Division of Fuels Data, U.S. Bureau of Mines. Those producers are listed in the U.S. Bureau of Mines Mineral Industry Survey, November 6, 1975, entitled "Coke Producers in the U.S. in 1975."

TABLE 3.--TAR AND TAR CRUDES: DIRECTORY OF MANUFACTURERS, 1975

ALPHABETICAL DIRECTORY BY CODE

[Names of manufacturers that reported production or sales of tar and tar crudes to the U.S. International Trade Commission for 1975 are listed below in the order of their identification codes as used in table 2]

Code	Name of company	Code	Name of company
ASC	Allied Chemical Corp.	KPT	Koppers Co., Inc., Roads Materials Div.
CBT	Samuel Cabot, Inc.	NEV	Neville Chemical Co.
COP	Coopers Creek Chemical Corp.	PRD	Ferro Corp., Productol Chemical Div.
HUS	Husky Industries, Inc.	RIL	Reilly Tar & Chemical Corp.
JEN	Jennison-Wright Corp.	WTC	Witco Chemical Co., Inc.
KPT	Koppers Co., Inc., Organic Materials Div.		

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

CRUDE PRODUCTS FROM PETROLEUM AND NATURAL GAS FOR CHEMICAL CONVERSION

13

CRUDE PRODUCTS FROM PETROLEUM AND NATURAL GAS FOR CHEMICAL CONVERSION

Crude products that are derived from petroleum and natural gas¹ are related to the intermediates and finished products made from such crudes 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 crude 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 petroleum crudes because some of these crude chemicals are converted to other crude 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 crude products for which data are included in the statistics may be used either as fuel or as basic materials from which to derive other chemicals. 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 crude products derived from petroleum and natural gas as a group amounted to 78,089 million pounds in 1975, or 17.2 percent less than the 94,353 million pounds reported for 1974 (table 1). The smaller output in 1975 is the result of decreased production of most items. Sales of crude chemicals from petroleum in 1975 amounted to 44,562 million pounds, valued at \$2,988 million, compared with 50,222 million pounds, valued at \$4,062 million, in 1974.

The output of aromatic and naphthenic products from petroleum amounted to 20,605 million pounds in 1975, compared with 26,579 million pounds in 1974. Sales amounted to \$897 million in 1975 and \$1,165 million in 1974. The output of 1° and 2° benzene from petroleum in 1975 (7,019 million pounds) was 31.8 percent less than the 10,293 million pounds produced in 1974.

Production of all aliphatic hydrocarbons and derivatives from petroleum and natural gas was 57,484 million pounds in 1975, compared with 67,774 million pounds in 1974. Sales of these products were valued at \$2,091 million in 1975 compared with \$2,897 million in 1974. Production of ethylene was 20,499 million pounds in 1975--14.2 percent less than the 23,891 million pounds produced in 1974. The output of 1,3-butadiene in 1975 (2,597 million pounds) decreased from the record production of 1974 (3,682 million pounds).

Data for 1975 crude products from petroleum and natural gas for chemical conversion were supplied by 73 companies and company divisions.

¹ Statistics on aromatic chemicals from coal tar are given in the report on "Tar and Tar Crudes, 1975."

CRUDE PRODUCTS FROM PETROLEUM AND NATURAL GAS FOR CHEMICAL CONVERSION

15

TABLE 1.--CRUDE PRODUCTS FROM PETROLEUM AND NATURAL GAS FOR CHEMICAL CONVERSION:
U.S. PRODUCTION AND SALES, 1975

[Listed below are the crude 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 separately all 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]

Product	Production	Sales		
		Quantity	Value	Unit value ¹
		1,000 pounds	1,000 pounds	1,000 dollars
Grand total-----	78,088,893	44,562,051	2,987,660	\$0.067
AROMATICS AND NAPHTHENES ²				
Total-----	20,605,174	13,704,735	896,780	.065
Benzene (1° and 2°)-----	7,018,877	3,522,736	337,227	.096
Naphthalene, all grades-----	109,919	44,903	7,196	.160
Naphthenic acid-----	41,873	10,748	1,793	.167
Toluene, all grades, total-----	5,040,519	3,121,857	199,031	.064
Nitration grade, 1°-----	4,056,794	2,497,709	162,095	.065
Pure commercial grade, 2°-----	418,562	170,466	9,894	.058
All other ³ -----	565,163	453,682	27,042	.060
Xylenes, mixed, total-----	4,842,834	4,020,736	238,837	.059
3° grade-----	1,070,407	1,064,471	70,159	.066
5° grade-----	532,274	481,369	29,909	.062
All other ⁴ -----	3,240,153	2,474,896	138,769	.056
All other aromatics and naphthenes ⁵ -----	3,551,152	2,983,755	112,696	.038
ALIPHATIC HYDROCARBONS				
Total-----	57,483,719	30,857,316	2,090,880	.068
C ₂ hydrocarbons, total-----	27,076,818	11,611,593	693,735	.060
Acetylene ⁶ -----	272,914	...	...	...
Ethane-----	6,304,505	5,806,183	181,683	.031
Ethylene-----	20,499,399	5,805,410	512,052	.088
C ₃ hydrocarbons, total-----	14,558,129	9,228,010	555,866	.060
Propane-----	5,848,797	4,897,637	251,034	.051
Propylene ⁷ -----	8,709,332	4,330,373	304,832	.070
C ₄ hydrocarbons, total-----	9,163,093	5,497,197	513,214	.093
Butadiene and butylene fractions-----	756,178	284,774	29,408	.103
1,3-Butadiene, grade for rubber (elastomers)-----	2,596,975	1,887,267	310,574	.165
n-Butane-----	2,459,999	1,093,084	42,265	.039
1-Butene-----	57,495	45,656	5,714	.125
1-Butene and 2-butene, mixed ⁸ -----	1,393,735	1,142,718	68,102	.060
Isobutane-----	746,038	310,504	16,031	.052
Isobutylene, 2-butene and mixed butylenes-----	640,558	306,235	23,541	.077
All other ⁹ -----	512,115	426,959	17,579	.041
C ₅ hydrocarbons, total-----	730,353	485,922	37,919	.078
Amylenes and pentenes-----	278,834	168,539	15,606	.093
Isoprene (2-Methyl-1,3-butadiene)-----	243,586	110,347	11,559	.105
All other ¹⁰ -----	207,933	207,036	10,754	.052

See footnotes at end of table.

SYNTHETIC ORGANIC CHEMICALS, 1975

TABLE 1.--CRUDE PRODUCTS FROM PETROLEUM AND NATURAL GAS FOR CHEMICAL CONVERSION:
U.S. PRODUCTION AND SALES, 1975--CONTINUED

Product	Production	Sales		
		Quantity	Value	Unit value ¹
	1,000 pounds	1,000 pounds	1,000 dollars	Per pound
ALIPHATIC HYDROCARBONS--Continued				
All other aliphatic hydrocarbons, derivatives, and mixtures, total-----	5,955,326	4,034,594	290,146	\$0.072
Alpha olefins ¹¹ -----	327,754	262,273	45,907	.175
Dodecene (Tetrapropylene)-----	287,238	139,438	15,128	.108
Heptanes-----	224,262	94,459	6,551	.069
Heptenes, mixed-----	67,565	...	...	...
Hexane-----	251,552	239,698	16,592	.069
Nonene (Tripropylene)-----	287,702	157,581	12,999	.082
n-Paraffins, total-----	1,360,592	616,098	36,828	.060
Carbon chain length, C ₉ -C ₁₅ -----	315,357	...	...	...
Other ¹² -----	1,045,235	616,098	36,828	.060
Hydrocarbon derivatives ¹³ -----	77,583	65,918	15,293	.232
All other ¹⁴ -----	3,071,078	2,459,129	140,848	.057

¹ Calculated from rounded figures.

² The chemical raw materials designated as aromatics are in some cases identical with those obtained from the distillation of coal tar; however, the statistics given in the table above relate only to such materials as are derived from petroleum and natural gas. Statistics on production or sales of benzene, toluene, and xylene from all sources are given in tables 1 and 1B of the report "Tar and Tar Crudes, 1975."

³ Includes toluene, solvent grade, 90 percent.

⁴ Includes toluene and xylene used as solvents, as well as that which is blended in aviation and motor gasolines.

⁵ Includes data for alkyl aromatics, crude cresylic acid, distillates, solvents, and miscellaneous cyclic hydrocarbons.

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

⁷ Includes data for refinery propylene.

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

⁹ Includes data for butanes, 1-butene, and mixed C₄ streams.

¹⁰ Includes data for C₅ hydrocarbon mixtures, pentanes, and piperylenes.

¹¹ Includes data for the following molecular weight ranges: C₆-C₇; C₆-C₁₀; C₈-C₁₀; C₁₀-C₁₆; C₁₁-C₁₅; C₁₂-C₁₄; C₁₃-C₁₆; C₁₅-C₂₀; C₁₆-C₁₈; and C₁₆-C₃₀.

¹² Includes data for following chain lengths: C₆-C₈; C₆-C₉; C₁₀-C₁₄; C₁₀-C₁₆; C₁₅-C₁₇; and others.

¹³ Includes data for methyl, ethyl, propyl, butyl, octyl, nonyl, decyl, hexadecyl, and miscellaneous mercaptans, and other hydrocarbon derivatives.

¹⁴ Includes data for di-isobutylene, methane, octanes, mixtures of C₂ and C₃ hydrocarbons, polybutene, tri-isobutylene, and other hydrocarbons, and sales of acetylene, heptene, and C₉-C₁₅ hydrocarbons.

CRUDE PRODUCTS FROM PETROLEUM AND NATURAL GAS FOR CHEMICAL CONVERSION

17

TABLE 2.--CRUDE PRODUCTS FROM PETROLEUM AND NATURAL GAS FOR CHEMICAL CONVERSION FOR WHICH U.S. PRODUCTION OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1975

[Crude products from petroleum and natural gas for chemical conversion for which separate statistics are given in table 1 are marked below with an asterisk (*); products 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]

Product	Manufacturers' identification codes (according to list in table 3)
AROMATICS AND NAPHTHENES	
*Benzene (except motor grade):	
*Benzene, 1°-----	ACU, AMO, APF, APR, ASH, ATR, BRP, CCP, CSD, CSO, CSP, EKX, ENJ, GOC, GRS, HES, MOC, MON, PLC, PPR, SHC, SKO, SM, SNT, SOG, SUN, TBO, TOC, TX, UCC, UOC.
*Benzene, 2°-----	CPI, DOW, SOC.
Cresylic acid, crude-----	ASH, COL, MON, SUN, TID.
*Naphthalene, all grades-----	
*Naphthenic acids:	
Acid number lower than 150-----	ATR, SUN, TX.
Acid number 150-199-----	ATR, GOC, PRD, SOC, SUN.
Acid number 200-224-----	ATR, PRD, SOC.
Sodium carbolate and phenate, crude-----	ATR.
*Toluene:	
*Nitration grade, 1°-----	AMO, APF, ASH, ATR, CCP, CSD, ENJ, GOC, GRS, HES, KPP, MOC, MON, PLC, PPR, SHC, SNT, SOG, SUN, TOC, TX, UCC, UOC.
*Pure commercial grade, 2°-----	ATR, CPI, CSP, DOW, MON, UCC.
*Solvent grade, 90%-----	ACC, FG, SKO.
All other-----	CPI, GOC, SHO, SM.
*Xylenes, mixed:	
Aviation grade-----	CSO.
*3° grade-----	APF, CPI, CSD, MOC, PPR, SHC, UOC.
*5° grade-----	ASH, GOC, SOG.
All other-----	AMO, ATR, CCP, CSD, CSP, ENJ, GRS, HCR, HES, MON, PPR, SOC, STY, SUN, TOC, UCC.
All other aromatics, naphthenes, distillates and solvents-----	ACC, ACU, APR, ATR, CBN, CPX, DUP, EKX, ELP, ENJ, FG, GOC, JCC, MOC, MON, NWP, OMC, PLC, PRD, PUE, SHC, SOC, SOG, TOC, TX.
ALIPHATIC HYDROCARBONS	
C ₁ hydrocarbon: Methane-----	MOC, MON.
*C ₂ hydrocarbons:	
*Acetylene-----	DOW, MNO, RH, UCC.
*Ethane-----	ACU, DOW, ENJ, MOC, MON, OMC, PAN, PLC, PUE, SM, TX, UOC, USI.
*Ethylene-----	ACC, ACU, AMO, ATR, BFG, CBN, CO, CPX, DOW, DUP, EKX, ELP, ENJ, GOC, JCC, KPP, MOC, MON, NWP, OMC, PLC, PUE, SHC, SM, SNO, TX, UCC, USI.
C ₂ and C ₃ hydrocarbons, mixed-----	CSO, MON.
*C ₃ hydrocarbons:	
*Propane-----	AMO, ASH, ATR, CCP, COR, CPI, CSD, CSO, CSP, ENJ, GRS, OMC, PAN, PLC, SHO, SM, SNT, SOG, SUN, TBO, TX, UOC, USI.
*Propylene-----	ACC, ACU, AMO, ASH, ATR, BFG, BRP, CBN, CO, CPX, CSD, CSO, DOW, DUP, EKX, ELP, ENJ, GOC, JCC, KPP, MOC, MON, NWP, PLC, PUE, SHC, SIO, SM, SNT, SOG, SUN, TX, UCC.
*C ₄ hydrocarbons:	
*1,3-Butadiene, grade for rubbers (elastomers)-----	ATR, BFG, CPY, DOW, ELP, ENJ, FRS, MON, PLC, PTT, PUE, SHC, SM, TID, TUS, UCC.
Butadiene and butylene fractions-----	ACC, ACU, ATR, CO, CPX, DOW, EKX, GOC, NWP, UCC.
*n-Butane-----	APF, BFG, COR, CSD, CSP, ELP, MOC, OMC, PLC, SHO, SM, SNT, SUN, TBO, USI.
1-Butene-----	GOC, PLC, PTT.
2-Butene-----	MON, PLC.

TABLE 2.--CRUDE PRODUCTS FROM PETROLEUM AND NATURAL GAS FOR CHEMICAL CONVERSION FOR WHICH U.S. PRODUCTION OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1975--CONTINUED

Product	Manufacturers' identification codes (according to list in table 3)
ALIPHATIC HYDROCARBONS--Continued	
*C ₄ hydrocarbons--Continued	
*1-Butene and 2-butene mixture-----	AMO, ATR, CSO, DOW, ENJ, GOC, MOC, PLC, PTT, PUE, SHC, SHO.
*Isobutane-----	CSP, ELP, ENJ, GMC, MOC, PLC, SHO, SM, SUN, TBO, TX, USI.
*Isobutylene-----	ENJ, OCC, PTT.
All other-----	APR, BFG, CBN, ENJ, JCC, MON, PLC, PUE, SM.
*C ₅ hydrocarbons:	PLC.
Isopentane (2-Methylbutane)-----	BFG, ENJ, MON, SHC.
*Isoprene (2-Methyl-1,3-butadiene)-----	APR, ATR, MOC, PLC.
n-Pentane-----	MON, TX.
*Pentenes, mixed-----	BFG, MON, PLC, PUE, SHC, SOC, TBO, UCC.
All other-----	
*C ₆ hydrocarbons:	APR, ENJ, SOG, UOC.
*Hexane-----	PLC.
Neohexane (2,2-Dimethylbutane)-----	HCR, PLC, SWC.
All other-----	
C ₇ hydrocarbons:	EKX, SOG.
n-Heptane-----	AMO, ENJ, GOC, TID.
*Heptenes, mixed-----	ENJ, UOC.
All other-----	
C ₈ hydrocarbons:	BFG, PTT, TX.
Diisobutylene (Diisobutene)-----	SOG.
n-Octane-----	ENJ.
All other-----	
Hydrocarbons, C ₉ and above:	
*Nonene (Tripropylene)-----	ATR, ENJ, SUN, UOC.
*Polybutene-----	ACC, CSD, SOC.
*Tetrapropylene-----	ATR, CO, ENJ, SOC, SUN, TX, UOC.
Triisobutylene-----	PTT.
All other-----	ACC, ATR, CO, CPI, ENJ, SOC, TID, TNA, UCC.
*All other aliphatic hydrocarbons, derivatives and mixtures:	
Hydrocarbons:	
*Alpha olefins--Molecular weight ranges:	
*C ₆ -C ₇ -----	GOC, SHC, SOC.
C ₈ -C ₁₀ -----	GOC, SOC.
C ₁₁ -C ₁₅ -----	GOC, SOC.
All other-----	GOC, SOC, TNA.
*n-Paraffins--Carbon chain length:	
C ₆ -C ₉ -----	SOG, UCC.
*C ₉ -C ₁₅ -----	BFG, HCR, SOG, UCC.
C ₁₀ -C ₁₄ -----	ENJ, SOG.
C ₁₀ -C ₁₆ -----	CO.
All other-----	ENJ, GOC, PUE.
Hydrocarbon derivatives:	
tert-Butyl-mercaptopan (2-Methyl-2-propanethiol)-----	PAS.
Di-tert-butyl disulfide-----	PLC.
Ethyl mercaptan (Ethanethiol)-----	PAS, PLC.
n-Hexadecyl mercaptan-----	PAS.
Methyl mercaptan (Methanethiol)-----	ACC, DOW, PAS.
tert-Nonyl mercaptan-----	PAS.
n-Propyl mercaptan (1-Propanethiol)-----	PLC.
All other-----	PAS, PLC.

TABLE 3.--CRUDE PRODUCTS FROM PETROLEUM AND NATURAL GAS FOR CHEMICAL CONVERSION:
DIRECTORY OF MANUFACTURERS, 1975

ALPHABETICAL DIRECTORY BY CODE

[Names of manufacturers that reported production or sales of crude products from petroleum and natural gas for chemical conversion to the U.S. International Trade Commission for 1975 are listed below in the order of their identification codes as used in table 2]

Code	Name of company	Code	Name of company
ACC	Amoco Chemicals Corp.	MNO	Monochem, Inc.
ACU	Allied Chemical Corp., Union Texas Petroleum Div.	MOC	Marathon Oil Co., Texas Refining Div.
AIP	Air Products & Chemicals, Inc.	MON	Monsanto Co.
AMO	American Oil Co.	NWP	Northern Petrochemical Co.
APF	American Petrofina Co. of Texas	OCC	Oixrane Chemical Co.
APR	Atlas Processing Co.	OMC	Olin Corp.
ASH	Ashland Oil, Inc.	PAN	Amoco Production Co.
ATR	Atlantic Richfield Co.	PAS	Pennwalt Corp.
BFG	B. F. Goodrich Co., B. F. Goodrich Chemical Co. Div.	PLC	Phillips Petroleum Co.
BRP	BP Oil, Inc.	PPR	Phillips Puerto Rico Corp., Inc.
CBN	Cities Service Co., Petrochemical Div.	PRD	Ferro Corp., Productol Chemical Div.
CCP	Crown Central Petroleum Corp.	PTT	Petro-Tex Chemical Corp.
CO	Continental Oil Co.	PUE	Puerto Rico Olefins
COL	Collier Carbon & Chemical Corp.	RH	Rohm & Haas Co.
COR	Commonwealth Oil & Refining Co., Inc.	SHC	Shell Oil Co., Shell Chemical Co. Div.
CPI	Commonwealth Petrochemicals, Inc.	SHO	Shell Oil Co.
CPX	Chemplex Co.	SIO	Standard Oil Co. of Ohio
CPY	Copolymer Rubber & Chemical Corp.	SKO	Skelly Oil Co.
CSD	Cosden Oil & Chemical Corp.	SM	Mobil Chemical Co.
CSO	Cities Service Oil Co.	SM	Mobil Oil Corp.
CSP	Coastal States Petrochemical Co.	SNO	SunOlin Chemical Co.
DOW	Dow Chemical Co.	SNT	Suntide Refining Co.
DUP	E. I. duPont de Nemours & Co., Inc.	SOC	Standard Oil Co. of California, Chevron Chemical Co.
EKK	Eastman Kodak Co., Texas Eastman Co. Div.	SOG	Charter International Oil Co.
ELP	El Paso Products Co.	STY	Styrochem Corp.
ENJ	Exxon Chemical Co. U.S.A.	SUN	Sun Oil Co.
FG	Foster Grant Co., Inc.	SWC	Corco Cyclohexane, Inc.
FRS	Firestone Tire & Rubber Co., Firestone Synthetic Rubber & Latex Co. Div.	TBO	Tauber Oil Co.
GOC	Gulf Oil Corp., Gulf Oil Chemicals Co. - United States	TID	Getty Oil Co. (Eastern Operators, Inc.)
GRS	Champlin Petroleum Co.	TNA	Ethyl Corp.
HCR	Hercor Chemical Corp.	TOC	Tenneco Oil Co.
HES	Amerada Hess Corp. (Hess Oil Virgin Oil Corp.)	TUS	Texas-U.S. Chemical Co.
JCC	Jefferson Chemical Co., Inc.	TX	Texaco, Inc.
KPP	Arco/Polymers, Inc.	UCC	Union Carbide Corp.
		UOC	Union Oil Co. of California
		USI	National Distillers & Chemicals Corp., U.S. Industrial Chemicals Co.

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

CYCLIC INTERMEDIATES

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 1975 about 47 percent of the total output of cyclic intermediates was sold; the rest was consumed chiefly by the producing plants in the manufacture of more advanced intermediates and finished products.

Total production of cyclic intermediates in 1975 amounted to 31,413 million pounds, down 17.7 percent from the output of 38,147 million pounds reported for 1974. Sales of cyclic intermediates in 1975 were 14,780 million pounds, valued at \$3,169 million, compared with 17,638 million pounds, valued at \$3,514 million, in 1974.

Production of ethylbenzene in 1975 was 4,822 million pounds, or 20.3 percent less than the 6,048 million pounds produced in 1974. Output of styrene was 4,673 million pounds, representing a decrease of 21.5 percent from the 5,956 million pounds produced in 1974. Other intermediates whose production exceeded 1 billion pounds in 1975 were dimethyl terephthalate (4,614 million pounds), p-xylene (2,484 million pounds), cumene (2,003 million pounds), phenol (1,746 million pounds), and cyclohexane (1,734 million pounds). Other large-volume intermediates produced in 1975 were isocyanates (794 million pounds), o-xylene (703 million pounds), phthalic anhydride (702 million pounds), cyclohexanone (554 million pounds), straight-chain alkylbenzenes (495 million pounds), nitrobenzene (414 million pounds), aniline (407 million pounds), 2,4-dinitrotoluene (308 million pounds), monochlorobenzene (306 million pounds), Bisphenol A (293 million pounds), and 2,4 (and 2,6)-dinitrotoluene (273 million pounds). The 18 chemicals noted above accounted for 87 percent of the total output of intermediates in 1975.

CYCLIC INTERMEDIATES

21

TABLE 1.--CYCLIC INTERMEDIATES: U.S. PRODUCTION AND SALES, 1975

[Listed below are all cyclic intermediates for which any reported data on production and/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 alphabetically all cyclic intermediates for which data on production and/or sales were reported and identifies the manufacturers of each]

Chemical	Production	Sales		
		Quantity	Value	Unit value ¹
		1,000 pounds	1,000 pounds	1,000 dollars per pound
Grand total-----	31,412,575	14,779,570	3,169,243	\$0.21
Acetanilide, tech. grade-----	2,650	...	...	...
Acetophenone, tech. grade-----	2,680	2,210	882	.40
N-Acetylulfanilyl chloride-----	4,108	...	...	...
Alkylbenzenes ² -----	495,248	427,919	108,875	.25
1-Aminoanthraquinone and salt-----	151	...	...	...
1-Amino-2-bromo-4-hydroxyanthraquinone-----	643	...	...	...
4-Amino-4'-nitro-2,2'-stilbenedisulfonic acid-----	87	...	...	...
p-[(p-Aminophenyl)azo]benzenesulfonic acid-----	178	...	...	...
Aniline (Aniline oil)-----	406,930	150,875	34,480	.23
Anilinomethanesulfonic acid and salt-----	181	...	...	...
Benzaldehyde, tech-----	9,483	9,278	3,608	.39
7H-Benz[de]anthracen-7-one (Benzanthrone)-----	374	...	...	...
Benzoic acid, tech-----	63,416	30,297	6,475	.21
2-Benzothiazolethiol, sodium salt-----	10,590	...	...	...
Biphenyl-----	47,956	11,989	3,471	.29
3-Bromo-7H-benz[de]anthracen-7-one (3-Bromobenz-anthrone)-----	54	...	...	...
p-tert-Butylphenol-----	18,041	19,191	8,872	.46
Camphosulfonic acid-----	128	...	...	...
Chlorobenzene, mono-----	306,030	77,363	20,410	.26
1-Chloro-2-methylanthraquinone-----	13	...	...	...
4-Chloro-3-nitrobenzenesulfonamide-----	174	...	...	...
Cresols, total ³ -----	93,220	81,887	40,937	.50
o-Cresol-----	20,481	20,141	8,813	.44
All other ⁴ -----	72,739	61,746	32,124	.52
Cresylic acid, refined ³ -----	44,852	31,623	12,643	.40
Cumene-----	2,002,703	1,110,035	123,795	.11
Cyclohexane-----	1,733,650	1,722,625	210,732	.12
Cyclohexanone-----	553,663	28,473	9,881	.35
Cyclohexylamine-----	...	4,221	3,301	.78
1,4-Diamino-2,3-dihydroanthraquinone-----	470	...	...	...
4,4'-Diamino-2,2'-stilbenedisulfonic acid-----	7,623	...	...	...
2,6-Dibromo-4-nitroaniline-----	44	...	...	...
o-Dichlorobenzene-----	54,679	50,456	13,960	.28
p-Dichlorobenzene-----	45,755	34,099	8,371	.25
2,5-Dichloro-4-(3-methyl-5-oxo-2-pyrazolin-1-yl)-benzenesulfonic acid-----	...	53	146	2.76
Dicyclopentadiene (includes cyclopentadiene)-----	77,823	34,978	3,195	.09
N,N-Diethylaniline-----	1,356	866	848	.98
9,10-Dihydro-9,10-dioxo-1-anthracenesulfonic acid and salt (Gold salt)-----	406	...	...	...
1,4-Dihydroxyanthraquinone (Quinizarin)-----	1,335	...	...	...
16,17-Dihydroxyviolanthrone (Dihydroxydibenzanthrone)-----	47	...	...	...
p-(Dimethylamino)benzaldehyde-----	15	...	...	...
N,N-Dimethylaniline-----	10,123	4,654	2,620	.56
N,N-Dimethylbenzylamine-----	235	94	169	1.80
4,4'-Dinitrostilbene-2,2'-disulfonic acid-----	10,132	...	...	...
2,4-Dinitrotoluene-----	308,257	...	...	...
2,4 (and 2,6)-Dinitrotoluene-----	272,610	...	...	...
N-Ethylaniline, refined-----	1,062	...	...	...
2-(N-Ethylanilino)ethanol-----	151	...	...	...
Ethylbenzene ⁵ -----	4,822,071	489,963	43,401	.09

See footnotes at end of table.

SYNTHETIC ORGANIC CHEMICALS, 1975

TABLE 1.--CYCLIC INTERMEDIATES: U.S. PRODUCTION AND SALES, 1975--CONTINUED

Chemical	Production	Sales		
		Quantity	Value	Unit value ¹
		1,000 pounds	1,000 dollars	per pound
N-Ethyl-N-phenylbenzylamine-----	383	...	...	...
Hydroquinone, tech. grade-----	16,575	11,174	15,501	\$1.39
Isocyanic acid derivatives, total-----	794,268	726,799	287,322	.40
Polymethylene polyphenylisocyanate-----	247,242	220,384	91,410	.41
Toluene-2,4- and 2,6-diisocyanate (80/20 mixture)-----	478,790	442,056	151,709	.34
Other isocyanic acid derivatives-----	68,236	64,359	44,203	.69
4,4'-Isopropylidenediphenol (Bisphenol A)-----	292,909	96,762	31,807	.33
Melamine-----	85,894	48,273	16,186	.34
Metanilic acid (m-Aminobenzenesulfonic acid)-----	571	...	...	...
4,4'-Methylenedianiline-----	...	904	959	1.06
3-Methyl-1-phenyl-2-pyrazolin-5-one (Developer Z)-----	17	14	43	3.07
α-Methylstyrene-----	29,856	32,932	4,046	.12
p-Nitroaniline-----	8,649	...	...	...
1-Nitroanthraquinone-----	166	...	...	...
Nitrobenzene-----	414,288	13,652	2,946	.22
5-Nitro-o-toluenesulfonic acid [SO ₃ H=1]-----	6,436	...	...	...
Nonylphenol-----	67,799	25,651	8,401	.33
1[(7-Oxo-7H-benz[de]anthracene-3-yl)amino]anthraquinone-----	103	...	...	...
Phenol, total ³ -----	1,746,027	927,044	237,131	.26
From cumene-----	1,549,538	838,045	214,651	.26
Other-----	196,489	88,999	22,480	.25
p-Phenylazoaniline (C.I. Solvent Yellow 1) and hydrochloride-----	...	75	120	1.60
2,2'-(Phenylimino)diethanol (N-phenyldiethanol-amine)-----	...	128	83	.65
Phthalic anhydride-----	702,186	436,448	92,468	.21
2-Picoline (α-Picoline) ⁴ -----	380	385	359	.93
Piperidine-----	352	...	...	...
Propiophenone-----	770	809	1,036	1.28
Salicylaldehyde-----	4,629	3,348	8,514	2.54
Salicylic acid, tech. grade-----	30,605	6,558	5,349	.82
Styrene, all grades-----	4,673,095	1,964,316	367,579	.19
Terephthalic acid, dimethyl ester ⁶ -----	4,614,497	...	...	...
Toluene-2,4-diamine (4-m-Tolylendiamine)-----	191,009	...	...	...
4-(o-Tolylazo)-o-toluidine (C.I. Solvent Yellow 3)-----	...	12	17	1.42
2,2'-(m-Tolylimino)diethanol-----	128	...	...	...
7,7'-Ureylenebis[4-hydroxy-2-naphthalenesulfonic acid] (J Acid urea)-----	129	...	...	...
Violanthrone (Dibenzanthrone)-----	210	...	...	...
o-Xylene-----	702,923	696,890	58,240	.08
p-Xylene-----	2,483,521	1,879,318	266,949	.14
All other cyclic intermediates-----	3,132,803	3,584,929	1,103,115	.30

¹ Calculated from rounded figures.² Includes straight-chain dodecylbenzene, tridecylbenzene and other straight-chain alkylbenzenes. Branched-chain alkylbenzenes are included in "All other cyclic intermediates".³ Does not include data for coke ovens and gas-retort ovens, reported to the Division of Fuels Data, U.S. Bureau of Mines.⁴ Figures include (o,m,p)-cresol from coal tar and some m-cresol and p-cresol.⁵ Does not include ethylbenzene produced and consumed in continuous-process styrene manufacture.⁶ The figures for terephthalic acid, dimethyl ester (DMT) include both the acid itself and the dimethyl ester without double counting. The acid production and sales quantity figures were multiplied by the factor 1.16 to convert them to equivalent DMT.

CYCLIC INTERMEDIATES

23

TABLE 2.--CYCLIC INTERMEDIATES FOR WHICH U.S. PRODUCTION OR SALES WERE REPORTED,
IDENTIFIED BY MANUFACTURER, 1975

[Cyclic intermediates for which separate statistics are given in table 1 are marked with an asterisk (*); cyclic intermediates 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]

Chemical	Manufacturers' identification codes (according to list in table 3)
8-Acetamido-1-(4-acetamido-2-hydroxy-5-nitro-phenyl- azo)-2-naphthol.	TRC.
3-[(2-Acetamido-4-aminophenyl) azo]-1,5-naphthalene- disulfonic acid.	VAL.
2,2'-[(3-Acetamido-6-ethoxyphenyl)limino]diethanol-----	HST.
2,2'-[(5-Acetamido-2-ethoxyphenyl)imino]diethanol-----	TCH.
α -Acetylamino-p-toluenesulfonamine-----	SDW.
*Acetanilide, tech-----	ARA, MRK, SAL.
Acetanilide, N.F.-----	SAL.
Acetoacetanilide-----	EKT, FMP, HST.
α -Acetoacetanisidine-----	EKT, FMP, HST.
α -Acetoacetotoluuidide-----	EKT, FMP, HST.
2',4'-Acetoacetoxylidide-----	HST.
1'-Acetonaphthone-----	GIV.
Acetone phenylhydrazone-----	DUP.
Acetophenone, crude-----	ACS.
*Acetophenone, tech-----	CLK, SKO, UCC.
p-Aacetotoluuidide-----	EK.
N-Acetylanthranilic acid-----	SW.
p-Acetylbenzenesulfonamide-----	LIL.
p-Acetylbenzenesulfonic acid, sodium salt-----	LIL.
p-Acetylbenzenesulfonylurethane-----	LIL.
*N-Acetyl sulfonyl chloride-----	ACY, ARA, MRK, SAL.
*Alkylbenzenes:	
Dodecylbenzene (including tridecylbenzene):	
Straight chain-----	CO, MON, UCC, WTC.
Other-----	CO, SOC.
α -d1-5-Allyl-6-imino-1-methyl-5-(1-methyl-2-pentynyl) barbituric acid.	LIL.
α -d1-5-Allyl-5-(1-methyl-2-pentynyl)-1-methylbarbituric acid.	LIL.
3'-Aminoacetanilide-----	DUP.
4'-Aminoacetanilide (Acetyl-p-phenylenediamine)-----	GAF, SAL, TRC.
3'-Amino-p-acetanisidine-----	HST.
3'-Aminoacetophenone-----	ARA, MON.
3'-Amino-p-acetphenetidine-----	HST.
5'-Amino-2-(p-aminoanilino)benzenesulfonic acid-----	TRC.
1-Amino-4-(3-amino-4-sulfoanilino)-9,10-dihydro-9,10- dioxo-2-anthracenesulfonic acid.	TRC.
1-Amino-4-(4-amino-3-sulfoanilino)-9,10-dihydro-9,10- dioxo-2-anthracenesulfonic acid.	TRC.
2-(p-Aminoanilino)-5-nitrobenzenesulfonic acid-----	PCW.
3-Amino-p-anisanilide-----	ACY, MAY, TRC.
*1-Aminoanthraquinone and salt-----	ACY.
2-Aminoanthraquinone and salt-----	EK.
4-Aminoantipyrine and hydrochloride-----	TRC.
6-Amino-3,4'-azodibenzenesulfonic acid (C.I. Acid Yellow 9).	
α -Aminobenzamide-----	SW.
α -Aminobenzamide, tech-----	SW.
p-Aminobenzamide-----	SAL, SDH
1-Amino-4-benzamidoanthraquinone-----	ACY.
7-(p-Aminobenzamido)-4-hydroxy-2-naphthalenesulfonic acid.	VPC.
3'-Aminobenzanilide-----	X.
2-Amino-p-benzenedisulfonic acid [SO ₂ R ₂] ¹ -----	DUP.
α -Aminobenzenethiol-----	ASH, FMT.
p-Aminobenzoic acid-----	SAL.
p-Aminobenzoic acid, tech-----	PD.
2-Amino-6-benzothiazolecarboxylic acid-----	DUP.
5(and 8)-Amino-8(and 5)-bromo-9,10-dihydro-9,10- dioxo-1,6(and 1,7)-anthracenedisulfonic acid.	TRC.
1-Amino-4-bromo-9,10-dihydro-9,10-dioxo-2-anthracene- sulfonic acid and sodium salt.	TRC.
*1-Amino-2-bromo-4-hydroxyanthraquinone-----	AC, DUP, VPC.

SYNTHETIC ORGANIC CHEMICALS, 1975

TABLE 2.--CYCLIC INTERMEDIATES FOR WHICH U.S. PRODUCTION OR SALES WERE REPORTED,
IDENTIFIED BY MANUFACTURER, 1975--CONTINUED

Chemical	Manufacturers' identification codes (according to list in table 3)
1-Amino-2-bromo-4-p-toluidinoanthraquinone-----	ACS, TRC.
7-Aminocephalosporanic acid-----	LIL.
1-Amino-5-chloroanthraquinone-----	TRC.
2-Amino-1-chloroanthraquinone-----	DUP.
4-Amino-6-chloro-m-benzenedisulfonamide-----	ABB, NES.
4-Amino-6-chloro-m-benzenedisulfonamide hydrochloride-----	ABB.
2-Amino-6-chlorobenzothiazole hydrochloride-----	DUP.
2-Amino-5-chloro-4-ethylbenzenesulfonic acid-----	ACY.
1-Amino-2-chloro-4-hydroxyanthraquinone-----	TRC.
1-(2-Amino-5-chlorophenyl)-1-phenyl methylenimine-----	ABB.
2-Amino-6-chloropyrazine-----	ACY.
3-Amino-6-chloropyridazine-----	ACY.
2-Amino-5-chloro-p-toluenesulfonic acid [SO ₃ H=1]-----	ACY, HSC.
6-Amino-4-chloro-m-toluenesulfonic acid [SO ₃ H=1]-----	ACY, DUP, HSC.
2-Amino-p-cresol-----	TRC.
1-Amino-2,4-dibromoanthraquinone-----	DUP, TRC, VPC.
1-Amino-2,4-dichloroanthraquinone-----	TRC.
2-Amino-5,6-dichlorobenzothiazole-----	SAL.
2-Amino-4,6-dichloro-5-cresol-----	EK.
1-Amino-9,10-dihydro-9,10-dioxo-4-p-toluenesulfonamido-2-anthracenesulfonic acid, sodium salt.	DUP.
4-Amino-N,N-dihydroxyanisole-----	TCH.
5-Amino-4,5'-dihydroxy-3,4'-[(2-methoxy-5-methyl-p-phenylene)bis(azo)]-di-2,7-naphthalenedisulfonic acid, 5'-benzenesulfonate.	TRC.
3-Amino-9-ethylcarbazole-----	SDC.
3-Amino-a-ethylhydrocinnamic acid-----	SDW.
4-Amino-N-ethyl-N-(β-methylsulfonamidoethyl)-m-toluidine phosphate.	WAY.
N-Aminoethylpiperazine-----	UCC.
4-Amino-5-hydroxy-2,7-naphthalenedisulfonic acid, benzenesulfonate.	TRC.
4-Amino-5-hydroxy-2,7-naphthalenedisulfonic acid (H acid), monosodium salt.	ACS, SDH.
4-Amino-3-hydroxy-1-naphthalenesulfonic acid (1,2,4-acid).	ACY, TRC.
6-Amino-4-hydroxy-2-naphthalenesulfonic acid (Gamma acid), sodium salt.	TRC.
7-Amino-4-hydroxy-2-naphthalenesulfonic acid (J acid), sodium salt.	AC, TRC.
3-Amino-2-hydroxy-5-nitroacetanilide-----	TRC.
2-(2-Amino-5-hydroxy-7-sulfo-1-naphthylazo)-5-nitrobenzoic acid.	TRC.
3-Amino-2-mercaptopbenzoic acid-----	X.
4-Amino-3-(β-methanesulfonamidoethyl)-N,N-diethylaniline hydrochloride.	EKT.
3-Amino-4-methoxybenzenesulfonic acid-----	EK
5-Amino-6-methoxy-2-naphthalenesulfonic acid-----	TRC.
m-[(4-Amino-3-methoxyphenyl)azo]benzenesulfonic acid-----	AC, DUP, TRC.
2-Amino-4-methoxytoluene-----	HST.
4-[(4-Amino-5-methoxy-o-tolyl)azo]-4-hydroxy-2,7-naphthalenedisulfonic acid, benzenesulfonate.	TRC.
7-[(4-Amino-5-methoxy-o-tolyl)azo]-1,3-naphthalenedisulfonic acid.	TRC.
3-(4-Amino-5-methoxy-o-tolylazo)-1,5-naphthalenedisulfonic acid.	TRC.
2-Amino-4'-methyldiphenylsulfone-4-sulfonic acid-----	TRC.
4-Amino-4'-(3-methyl-5-oxo-2-pyrazolin-1-yl)-2,2'- stilbenedisulfonic acid.	TRC.
2-Amino-6-methylpyridine-----	RIL.
2-Amino-4-methylpyrimidine (2-Amino-4-methyl-1,3-diazine).	ACY.
2-Amino-4-(methylsulfonyl)phenol-----	TRC.
2-Amino-5-methyl-1,3,4-thiadiazole-----	ACY.
2-Amino-1,5-naphthalenedisulfonic acid-----	ACY, SDH.

TABLE 2.--CYCLIC INTERMEDIATES FOR WHICH U.S. PRODUCTION OR SALES WERE REPORTED,
IDENTIFIED BY MANUFACTURER, 1975--CONTINUED

Chemical	Manufacturers' identification codes (according to list in table 3)
3-Amino-1,5-naphthalenedisulfonic acid (C acid)-----	TRC.
6-Amino-1,3-naphthalenedisulfonic acid (Amino I acid)-----	AC, TRC.
7-Amino-1,3-naphthalenedisulfonic acid (Amino G acid)-----	AC, DUP, TRC.
1-Amino-2-naphthalenesulfonic acid (o-Naphthionic acid)-----	DUP.
2-Amino-1-naphthalenesulfonic acid (Tobias acid)-----	ACY, SW.
4-Amino-1-naphthalenesulfonic acid, sodium salt-----	DUP.
7-Amino-1,3,5-naphthalenetrisulfonic acid-----	TRC.
7-Amino-1,3,6-naphthalenetrisulfonic acid-----	AC.
8-Amino-1,3,6-naphthalenetrisulfonic acid (Koch's acid)-----	ACS.
3-Amino-2-napthoic acid-----	RSA.
5-Amino-1-naphthol-----	BUU.
5-Amino-2-naphthol-----	BUU.
8-Amino-2-naphthol-----	TRC.
2-(2-Amino-1-naphthylazo-4-(1,1,3,3-tetramethylbutyl)phenol.-----	GAF.
2-Amino-4-nitroacetanilide-----	SDC.
3-Amino-5-(m-nitrobenzamide)-p-toluenesulfonic acid-----	GAF, TRC.
2-Amino-5-nitrobenzenesulfonic acid [SO ₃ H=1]-----	TRC.
2-Amino-6-nitrobenzothiazole-----	SAL.
*4-Amino-4'-nitro-2,2'-stilbenedisulfonic acid-----	AC, GAF, TRC.
2-Amino-5-nitrothiazole-----	PCW.
3-Amino-2-oxazolidinone-----	NOR.
6-Aminopenicillanic acid-----	TRD.
o-Aminophenol-----	SDC, TRC.
p-Aminophenol-----	MAL, SDC.
2-(p-Aminophenoxy)ethanol hydrochloride-----	GAF.
m-[{(p-Aminophenyl)azo]benzenesulfonic acid-----	TRC.
*p-[{(p-Aminophenyl)azo]benzenesulfonic acid-----	ACY, DUP, TRC, VPC.
7-[{(4-Aminophenyl)azo]-1,3-naphthalenedisulfonic acid-----	TRC.
5-Amino-8-(phenylazo)-2-naphthol-----	ALL.
8-Amino-5-(phenylazo)-2-naphthol-----	ALL.
5-[(p-Aminophenyl)azo]salicylic acid-----	TRC.
2-(p-Aminophenyl)-6-methyl-7-benzothiazolesulfonic acid and salt.-----	DUP, TRC.
1-(m-Aminophenyl)-5-oxo-2-pyrazoline-3-carboxylic acid-----	TRC, VPC.
3-(Aminopropyl)cyclohexylamine-----	ABB.
2-Aminopyridine-----	NEP, RIL.
3-Aminopyridine-----	NEP.
4-Aminopyridine-----	RIL.
2-Aminopyrimidine-----	ACY.
3-Aminorhodanine-----	EK.
2-Amino-4-(1,1,3,3-tetramethylbutyl)phenol, crude-----	GAF.
2-Amino-4-(1,1,3,3-tetramethylbutyl)phenolhydrochloride-----	GAF.
2-Aminothiazole-----	MRK.
3-Amino-p-toluaamide-----	SDH.
α-Amino-p-toluenesulfonamide-----	SDW.
4-Amino-m-toluenesulfonic acid [SO ₃ H=1]-----	ACY, DUP.
6-Amino-m-toluenesulfonic acid [SO ₃ H=1]-----	DUP, HSC.
m-(4-Amino-3-tolylazo)benzenesulfonic acid-----	TRC.
7-[(4-Amino-o-tolyl)azo]-1,3-naphthalenedisulfonic acid-----	TRC.
3-[(4-Amino-o-tolyl)azo]-1,5-naphthalenedisulfonic acid-----	TRC.
*Aniline (Aniline oil)-----	ACY, DUP, FST, MAL, MOB, RUC, USR.
Aniline hydrochloride-----	ACY, EK.
2'-Anilino-6-diethylamino-3-methylfluoran-----	X.
1-Anilino-9,10-dihydro-9,10-dioxo-2-anthroic acid-----	UCC.
2-Anilinoethanol-----	MIL, TCH.
7-Anilino-4-hydroxy-2-naphthalenesulfonic acid (Phenyl J acid).-----	TRC.
*Anilinomethanesulfonic acid and salt-----	ACY, DUP, TRC.
m-Anilinophenol-----	GAF.
o-Anisaldehyde-----	ASL.
o-Anisidine-----	AC, DUP.
p-Anisidine-----	DUP.
o-Anisidinomethanesulfonic acid-----	AC, GAF, TRC.

TABLE 2.--CYCLIC INTERMEDIATES FOR WHICH U.S. PRODUCTION OR SALES WERE REPORTED,
IDENTIFIED BY MANUFACTURER, 1975--CONTINUED

Chemical	Manufacturers' identification codes (according to list in table 3)
m-Anisil-----	DUP.
Anisole, tech-----	DUP, GIV.
Anthracene-----	EK.
Anthranilic acid (o-Aminobenzoic acid) ¹ -----	SW.
Anthranilic acid, methyl ester-----	SW.
Anthraquinone, 100%-----	TRC.
Auramine o-----	EK.
4',4'''-Azobis[4-biphenylcarboxylic acid]-----	DUP.
*Benzaldehyde, tech-----	HN, KLM, MNR, UOP.
Benzamide hydrochloride (p-Nitro-n-2-diethylaminoethyl)-----	PD.
1-Benzamido-4-bromoanthraquinone-----	AC.
1-Benzamido-5-chloroanthraquinone-----	TRC.
7-Benzamido-4-hydroxy-2-naphthalenesulfonic acid-----	TRC.
Benzanilide-----	DUP.
*7H-Benz[de]anthracen-7-one (Benzanthrone)-----	AC, ACY, DUP, MAY, TRC.
m-Benzenedisulfonic acid-----	UPF.
Benzenesulfonic acid-----	UPF.
1,2,4,5-Benzenetetracarboxylic-1,2,:4,5-dianhydride-----	DUP.
1,2,4-Benzenetricarboxylic acid, 1,2-anhydride (Tri-mellitic anhydride).-----	ACC.
Benzhydrol (Diphenylmethanol)-----	UOP.
Benzidine base-----	ACS.
Benzil (Bibenzoyl)-----	LEM.
Benzilic acid-----	LEM.
*Benzoic acid, tech ¹ -----	HN, KLM, PFZ, VEL.
Benzoic acid, 3-[N-(2-hydroxyethyl)anilino]propionic nitrile ester.-----	x.
Benzoin-----	BPC.
Benzoinoxime-----	RSA.
Benzonitrile-----	VEL.
p-Benzoquinonedioxime-----	SDC.
2-Benzothiazolethiol-----	USR.
*2-Benzothiazolethiol, sodium salt-----	ACY, GYR, USR, x.
1H-Benzotriazole-----	SW.
2H-3,1-Benzoxazine-2,4(1H)-dione (Isotoic anhydride)-----	SW.
o-Benzoylbenzoic acid-----	ACY, GAF.
Benzoyl chloride-----	HK, VEL.
N-Benzylacetamide-----	SDW.
Benzylamine-----	ARS, x.
1-Benzyl-4,5-dimethyl-6-(p-methoxybenzyl)-1,2,3,6-tetrahydropyridine oxalate.-----	SDW.
Benzyl disulfide-----	CCW.
Benzyl ether (Dibenzyl ether)-----	UOP.
3-Benzyl-1,2,3',4,5,6-hexahydro-8-hydroxy-cis-6,11-dimethyl-2,6-methano-6-benzazocine hydrobromide.-----	SDW.
6-Benzylidineaminopenicillanic acid-----	TRD.
4,4'-Benzylidenedi-o-toluidine-----	ACY.
p-(Benzyoxy)phenol-----	EK.
1-Benzyl-4-phenylisonipeptic acid-----	SDW.
N-Benzyl-4-phenylisonipectonitrile-----	SDW.
Benzyltrimethylammonium chloride-----	x.
Benzyltrimethylammonium hydroxide-----	x.
Benzyltrimethylammonium methoxide-----	x.
[3,3'-Bianthra[1,9-cd]pyrazole]-6,6'-(2H,2'H)dione (Pyrazoleanthrone yellow).-----	DUP, TRC.
[4,4'-Bi-7H-benz[de]anthracene]-7,7'-dione-----	ACY, DUP.
*Biphenyl-----	DOW, GOC, MON, SNT.
(1,1-Biphenyl)-4,4'-diamine dihydrochloride-----	x.
3'-[Bis(2-acetoxyethyl)amino]-p-acetoaniside-----	TCH.
Bis-p-aminocyclohexylmethane-----	DUP.
1,4-Bis[1-anthraquinonylamino]anthraquinone-----	ACY, DUP, TRC.
1,4-Bis[1-anthraquinonylamino]anthraquinone and 1,4-Bis[S-chloro-1-anthraquinonylamino]anthraquinone (mixed).-----	TRC.
2,6-Bis(p-azidobenzylidene)-4-methylcyclohexanone-----	x.
α^2,α^6 -Bis[5-tert-butyl-6-hydroxy-m-tolyl]mesitol-----	ACY.

CYCLIC INTERMEDIATES

27

TABLE 2.--CYCLIC INTERMEDIATES FOR WHICH U.S. PRODUCTION OR SALES WERE REPORTED,
IDENTIFIED BY MANUFACTURER, 1975--CONTINUED

Chemical	Manufacturers' identification codes (according to list in table 3)
N,N-Bis[cyanoethyl]aniline-----	DUP.
4,4'-Bis[diethylamino]benzhydrol salt, 2,7-naphthalene-disulfonic acid, mixture.	TRC.
4,4'-Bis[diethylamino]benzophenone (Ethyl ketone base)-----	SDH.
4-Bis[(p-diethylaminophenyl)methyl]-2,7-naphthalene-disulfonic acid, leuco form.	TRC.
4,4'-Bis[dimethylamino]benzhydrol (Michler's hydrol)-----	x.
4,4'-Bis[dimethylamino]benzophenone (Michler's ketone)-----	DUP, x.
3,3'-Bis[3',3'-(1'-ethyl-2'-methyl)indolyl]phthalide-----	x.
3'-[Bis(2-hydroxyethyl)amino]acetanilide-----	GAF.
5-[Bis(2-hydroxyethyl)amino]-2,2'-chloro-4-nitro-phenylazobenzanilide.	DUP.
Bis-(o-nitrophenyl)sulfide-----	x.
2,4-Bis(xylozo)resorcinol-----	DUP.
1,2-Bis[tribromophenoxy]ethane-----	ADC.
2-Bromoacetophenone-----	EK.
3'-Bromoacetophenone-----	LIL.
p-Bromoaniline-----	EK.
p-Bromoanisole-----	OPC.
*3-Bromo-7H-benz[de]anthracen-7-one (3-Bromobenzanthrone)-----	ACY, DUP, TRC.
Bromobenzene, mono-----	DOW.
p-Bromobenzhydrol-----	PD.
o-Bromobenzoic acid-----	EK.
4-Bromobenzophenone-----	PD.
Bromochlorobenzene-----	DOW.
6-Bromo-5-chlorobenzoxazolone-----	SW.
2-Bromo-6-chloro-4-nitroaniline-----	DUP, HST.
2-Bromo-4,6-dinitroaniline-----	AC, HST, SDC, TRC.
Bromoethylbenzene-----	RSA.
3-(Bromomethyl)thiophene-----	SDW.
1-Bromonaphthalene-----	EK.
2-Bromo-4'-nitroacetophenone-----	GAF, RSA.
o-Bromo-p-nitrotoluene-----	BPC.
N-(4-Bromopentyl)phthalimide-----	SDW.
p-Bromophenol-----	EK.
(p-Bromophenyl)acetonitrile-----	BPC.
4-Bromoresorcylic acid-----	PCW.
o-Bromotoluene-----	EK.
o-Bromotoluene-----	RSA.
p-Bromotoluene-----	BPC, EK.
1-Bromo-2,4,6-triethylbenzene-----	DUP.
p-Butoxyphenol-----	ABB.
4-[3-(p-Butoxyphenoxy)propyl]morpholine-----	ABB.
3-(N-Butylanilino)propionitrile-----	TCH.
2-tert-Butylanthraquinone-----	DUP.
p-tert-Butylbenzaldehyde-----	GIV.
n-Butylbenzene-----	PLC.
sec-Butylbenzene-----	PLC.
tert-Butylbenzene-----	EK, PLC, UOP.
p-tert-Butylbenzoic acid-----	SHC.
2-tert-Butyl-p-cresol-----	ACY.
6-tert-Butyl-m-cresol-----	KPT.
2'-tert-Butyl-4',6'-dimethylacetophenone-----	GIV.
Butyl dimethylcresol-----	RH.
2-tert-Butyl-4-ethylphenol-----	ACY.
tert-Butylhydroquinone-----	x.
4,4'-Butyldenebis[6-tert-butyl-m-cresol]-----	DUP.
N-Butyl-4-methoxymetanilamide-----	ALL.
2-tert-Butyl-5-methylanisole-----	GIV.
o-sec-Butylphenol-----	TNA.
o-tert-Butylphenol-----	TNA.
*p-tert-Butylphenol-----	DOW, PRD, SCN, UCC.
Butylphenols, mixed-----	DOW, SCN.
p-tert-Butyltoluene-----	GIV, SHC.
5-tert-Butyl-1,2,3-trimethylbenzene-----	GIV.

SYNTHETIC ORGANIC CHEMICALS, 1975

TABLE 2.--CYCLIC INTERMEDIATES FOR WHICH U.S. PRODUCTION OR SALES WERE REPORTED,
IDENTIFIED BY MANUFACTURER, 1975--CONTINUED

Chemical	Manufacturers' identification codes (according to list in table 3)
5-tert-Butyl-m-xylene-----	GIV.
6-tert-Butyl-2,4-xylenol-----	PIT.
*Camphosulfonic acid-----	KF, LIL, OTC.
Carboxylated pyridene-----	STC.
Carboxymethylidimethyl 2-3 thru w-polyfluoroalkylthio- ethylammonium hydroxide, inner salt.	DUP.
[(o-carboxyphenyl)thio]ethyl mercury-----	LIL.
Catechol-bis(β-hydroxyethyl) ether-----	BJL.
Cedrene-----	GIV.
4'-Chloroacetophenone-----	LIL.
m-Chloroaniline-----	DUP.
o-Chloroaniline-----	DUP.
p-Chloroaniline-----	DUP, MON.
2-(o-chloroanilino)ethanol-----	TCH.
3-(o-Chloroanilino)propionitrile-----	DUP, TCH.
5-Chloro-o-anisidine [NH ₂ =1] (4-Chloro-o-anisidine [OCH ₂ =1].)	ALL.
1-Chloroanthraquinone-----	TRC.
2-Chloroanthraquinone-----	ACY.
o-Chlorobenzaldehyde-----	HN.
p-Chlorobenzaldehyde-----	HN.
o-Chlorobenzamide-----	PD.
*Chlorobenzene, mono-----	ACS, DOW, MON, MTO, PPG.
p-Chlorobenzenesulfinic acid-----	TRC.
p-Chlorobenzenesulfonamide-----	NES.
p-Chlorobenzenesulfonic acid-----	MTR, UPF.
p-Chlorobenzenesulfonyl chloride-----	NES.
o-Chlorobenzoic acid-----	HN.
m-Chlorobenzoic acid, methyl ester-----	VEL.
o-(p-Chlorobenzoyl)benzoic acid-----	ACY.
o-Chlorobenzoyl chloride-----	PD.
p-Chlorobenzoyl chloride-----	HN.
4,4'-(o-Chlorobenzylidene)di-2,5-xylidine-----	GAF.
Chloro(p-chlorophenyl)phenylmethane-----	OPC, UOP.
Chlorocyclohexane-----	ACY.
Chlorocyclopentane-----	PD.
4-Chloro-2-cyclopentylphenol-----	DOW.
1-Chloro-2,5-diethoxy-4-nitrobenzene-----	GAF.
2-Chloro-N,N-diethyl-4-nitroaniline-----	DUP.
2-Chloro-3',4'-dihydroxyacetophenone-----	SDW.
4'-Chloro-2',5'-dimethoxyacetooctanilide-----	PCW.
4-Chloro-2,5-dimethoxyaniline-----	PCW.
1-Chloro-2,4-dinitrobenzene (Dinitrochlorobenzene)-----	SDC.
3-Chloro-4,6-dinitrobenzenesulfonic acid-----	TRC.
4-Chloro-3,5-dinitrobenzenesulfonic acid, potassium salt.	SDC.
3-Chlorodiphenylamine-----	SK.
Chlorodiphenylmethane-----	UOP.
N-(2-Chloroethyl)-N-ethylaniline-----	GAF.
2-Chloro-4-ethylmetanilic acid-----	HSC.
p-[(Chloroethyl)methylamino]benzaldehyde-----	GAF.
3-Chloro-4-hydroxyquinoline-3,4-carbonic acid-----	SDH.
7-Chloro-4-hydroxyquinoline hydrochloride-----	PD.
4-Chlorometanilic acid-----	DUP, TRC.
p-(Chloromethyl)anisole-----	SDW.
*1-Chloro-2-methylanthraquinone-----	ACY, DUP, TRC.
6-Chloro-4-methylbenzo[b]thiophene-2-ol-----	ACY.
Chloromethyl diphenyl oxide-----	BPC.
α-Chloromethyl naphthalene, crude-----	BPC.
4-Chloro-N-methyl-3-nitrobenzenesulfonamide-----	TRC.
Chloronaphthalenes-----	KPT.
2-Chloro-4-nitroaniline (o-Chloro-p-nitroaniline)-----	DUP.
4-Chloro-2-nitroaniline (p-Chloro-o-nitroaniline)-----	DUP.
1-Chloro-5-nitroanthraquinone-----	TRC.
1-Chloro-2-nitrobenzene (Chloro-o-nitrobenzene)-----	DUP, MON.

CYCLIC INTERMEDIATES

29

TABLE 2.--CYCLIC INTERMEDIATES FOR WHICH U.S. PRODUCTION OR SALES WERE REPORTED,
IDENTIFIED BY MANUFACTURER, 1975--CONTINUED

Chemical	Manufacturers' identification codes (according to list in table 3)
1-Chloro-3-nitrobenzene (Chloro-m-nitrobenzene)-----	DUP.
1-Chloro-4-nitrobenzene (Chloro-p-nitrobenzene)-----	DUP, MON.
1-Chloro-2(and 4)-nitrobenzene (Chloronitrol-benzene, o- and p-).-----	DUP.
*4-Chloro-3-nitrobenzenesulfonamide-----	AC, DUP, TRC.
4-Chloro-3-nitrobenzenesulfonic acid-----	TRC.
2-Chloro-5-nitrobenzenesulfonic acid, sodium salt-----	DUP.
4-Chloro-3-nitrobenzenesulfonyl chloride-----	AC, SDC.
2-Chloro-4-nitrobenzoic acid-----	SAL.
2-Chloro-4-nitrobenzoic acid, potassium salt-----	SAL.
2-Chloro-5-nitrobenzoic acid-----	TRC.
2-Chloro-5-nitrobenzoic acid, methyl ester-----	EGR.
4-Chloro-3-nitrophenyl methyl sulfone-----	TRC.
2-Chloro-4-nitrotoluene-----	DUP.
o-Chlorophenol-----	DOW.
p-Chlorophenol-----	DOW, MON.
2-Chlorophenothiazine-----	SK.
(p-Chlorophenyl)acetoacetonitrile-----	BJL.
(p-Chlorophenyl)acetonitrile-----	OPC, UOP.
4-Chloro-o-phenyl-o-cresol-----	MON.
(m-Chlorophenyl)diethanolamine-----	HST.
4-Chloro-o-phenylenediamine-----	FMT.
2,2'-[(m-Chlorophenyl)imino]diethanol-----	TCH.
2,2'-[(m-Chlorophenyl)imino]diethanol, diacetate ester-----	SDC.
1-(p-Chlorophenyl)-3-methyl-n-ethylaniline-----	HST.
3-(o-Chlorophenyl)-5-methyl-4-isoxazole carbonyl chloride.-----	ARS.
1-(m-Chlorophenyl)-3-methyl-2-pyrazolin-5-one-----	TRC.
1-(o-Chlorophenyl)-3-methyl-2-pyrazolin-5-one-----	HST.
1-(p-Chlorophenyl)-3-methyl-2-pyrazolin-5-one-----	TRC.
p-Chlorophenyl methyl sulfone-----	TRC.
2-Chloro-4-phenylphenol-----	DOW.
4-Chlorophthalic acid, monosodium salt-----	HSC, SW.
3-Chloropropenylbenzene (Cinnamyl chloride)-----	SDW.
1-(3-Chloropropyl)-4-methylpiperazine-----	SK.
4-Chlororesorcinol-----	AC, GAF.
p-Chlorothiophenol-----	SFA.
m-Chlorotoluene-----	HN.
p-Chlorotoluene-----	HK, HN.
o-Chlorotoluene (Benzyl chloride)-----	BPC, MON.
3-Chloro-o-toluidine [NH ₂ =1]-----	DUP.
3-Chloro-p-toluidine [NH ₂ =1]-----	DUP.
4-Chloro-o-toluidine [NH ₂ =1] and hydrochloride-----	PCW.
5-Chloro-o-toluidine [NH ₂ =1] (4-Chloro-o-toluidine [CH ₃ =1]).-----	DUP.
N-[(5-Chloro-o-tolyl)azo]sarcosine-----	ALL.
1-(6-Chloro-o-tolyl)-3-methyl-2-pyrazolin-5-one-----	TRC.
[(4-Chloro-o-tolyl)thio]acetic acid-----	GAF.
p-Chloro-o,a,a-trifluorotoluene-----	HK.
o-Chloro-o-xylene-----	BPC.
o-Chloro-p-xylene-----	BPC.
4-Chloro-3,5-xlenol-----	FER.
Cholestyramine resin-----	MRK.
Cholic acid-----	WIL.
Cinnamic acid-----	BPC.
Cinnamoyl chloride-----	EK, UOP.
*Cresols: ²	KPT.
m-Cresol-----	KPT, PRD.
*o-Cresol:	MER, PRD, SW.
From coal tar-----	
From petroleum-----	SW.
p-Cresol-----	

SYNTHETIC ORGANIC CHEMICALS, 1975

TABLE 2.--CYCLIC INTERMEDIATES FOR WHICH U.S. PRODUCTION OR SALES WERE REPORTED,
IDENTIFIED BY MANUFACTURER, 1975--CONTINUED

Chemical	Manufacturers' identification codes (according to list in table 3)
*Cresols ² --Continued	
Cresols, mixed: ²	
(m,p)-Cresol:	
From coal tar-----	KPT, PRD.
From petroleum-----	MER, PRD.
(o,m,p)-Cresol:	
From coal tar-----	KPT.
Other-----	PIT.
*Cresylic acid, refined: ³	
From coal tar-----	KPT, PRD.
From petroleum-----	MER, NPC, PRD.
*Cumene-----	ASH, CLK, DOW, GOC, MOC, MON, SKO, SNT, SOC, TX, UCC.
2-[p-(Cyanoacetamido)phenyl]-6-methyl-7-benzothiazole-sulfonic acid.	DUP.
Cyanoacetic acid, 2-ethylhexyl ester-----	GAF.
4-[(2-Cyanoethyl)ethylamino]-o-tolualdehyde-----	DUP, GAF.
p-[(2-Cyanoethyl)methylamino]benzaldehyde-----	ACS, DUP.
2-Cyanopyridine-----	NEP.
4-Cyanopyridine-----	NEP.
1,5,9-Cyclododecatrine-----	DUP.
*Cyclohexane-----	CSD, ENJ, GOC, GRS, PLC, PPR, SWC, TX, UOC.
1,2-Cyclohexanedicarboxylic anhydride-----	ACS.
1,3-Cyclohexanedione-----	PD.
Cyclohexanol-----	ALF, DUP, MON.
*Cyclohexanone-----	ALF, CEL, CNP, DBC, DUP, MON, UCC.
Cyclohexanone oxime-----	CNP.
Cyclohexene-----	EK, PLC, USR.
4-Cyclohexene-1,2-dicarboximide-----	SFC.
Cyclohexene oxide-----	USR.
*Cyclohexylamine-----	ABB, MON, RBC, VGC.
Cyclohexyl-1-2-propanone-----	GIV.
Cyclopentamine base-----	LIL.
Cyclopentene-----	ARA.
(2-Cyclopenten-1-yl)-2-propanone-----	LIL.
2-(N-Cyclopropylmethyl-N-phthalimidoacetyl) amino-5-chlorobenzophenone.	PD.
p-Cymene-----	HPC.
Decabromo diphenol ether-----	DOW.
Decabromophenoxybenzene-----	ADC.
Deoxycholic acid-----	WIL.
-Diacenaphtho[1,2-j:1',2'-l]fluoranthene (Decacyclene)-----	SDC.
1,5(and 1,8)-Diacetamidoanthraquinone-----	AC.
3,5-Diacetamido-2,4,6-triodobenzoic acid-----	SDW.
3-[Di-(2-acetoxyethyl)amine]-p-acetophenetidide-----	TRC.
1,4-Diaminoanthraquinone-----	CMG, SDC, TRC.
1,5(and 1,8)-Diaminoanthraquinone-----	AC.
2,6-Diaminoanthraquinone-----	AC, TRC.
2,4-Diaminobenzenesulfonic acid [SO ₃ H] ⁻ -----	DUP, TRC.
2,5-Diaminobenzenesulfonic acid [SO ₃ H] ⁻ -----	TRC.
3,5-Diaminobenzoic acid-----	SAL.
4'4'-Diamino-1,1'-bianthraquinene-3,3'-disulfonic acid, disodium salt.	TRC.
4,4'-Diamino-2,2'-biphenyldisulfonic acid-----	ACY.
1,4-Diamino-2,3-dichloroanthraquinone-----	DUP, SDC.
*1,4-Diamino-2,3-dihydroanthraquinone-----	AC, ACY, DUP, TRC.
4,8-Diamino-9,10-dihydro-1,5-dihydroxy-9,10-dioxo-2,6-anthracenedisulfonic acid.	TRC.
1,4-Diamino-9,10-dihydro-9,10-dioxo-2,3-anthracenedi-carboximide.	DUP.
1,5-Diamino-4,8-dihydroxyanthraquinone-----	VPC.
2,4-Diamino-6-phenyl-s-triazine-----	RH, VEL.
2,6-Diaminopyridine-----	RIL.
*4,4'-Diamino-2,2'-stilbenedisulfonic acid-----	ACY, CGY, GAF, SDH, TRC.

CYCLIC INTERMEDIATES

31

TABLE 2.--CYCLIC INTERMEDIATES FOR WHICH U.S. PRODUCTION OR SALES WERE REPORTED,
IDENTIFIED BY MANUFACTURER, 1975--CONTINUED

Chemical	Manufacturers' identification codes (according to list in table 3)
3,5-Diamino-2,4,6-triiodobenzoic acid-----	SDW.
2-Diazo-1-naphthol-5-sulfonic acid, sodium salt-----	HST.
1,5-Dibenzamidoanthraquinone-----	TRC.
4,5'-Dibenzamido-1,1'-iminodianthraquinone-----	ACY, TRC.
1,5-Dibenzoylnaphthalene-----	GAF, TRC.
2-(N,N-Dibenzyl)amino-4-acetamidoanisole-----	SDC.
2'Dibenzylamino-6'-diethyl(aminofluoran)-----	X.
Dibenzylazodicarboxylate-----	NTL.
N,N'-Dibenzylethylenediamine-----	WTY.
N,N'-Dibenzylethylenediamine diacetate-----	SDH.
N,N'-Dibenzylidenetoluene- α , α -diamine-----	SDW.
3,4-Dibenzylxybutyrophenone-----	TRC.
3,9-Dibromo-7H-benz[de]anthracen-7-one-----	DOW.
p-Dibromobenzene-----	ARA.
1,3-Dibromo-5,5-dimethylhydantoin-----	HST, SAL, SDC.
2,6-Dibromo-4-nitroaniline-----	SW.
2,6-Dibromo-4-nitrophenol-----	DUP.
α , α -Dibromo-p-nitrotoluene-----	PCW.
3,5-Dibromo-3'-trifluoromethylsalicylanilide (Fluorophene).-----	
p-Dibutoxybenzene (DBB)-----	ALL.
2,5-Dibutoxy-4-morpholinobenzenediazonium sulfate-----	ALL.
2,6-Di-tert-butyl-4-nonylphenol-----	GAF.
2,4-Di-tert-butylphenol-----	DUP, PIT.
3,4-Dichloroaniline-----	DUP, EGR, MON.
2,5-Dichloroaniline and hydrochloride [NH ₂ =1]-----	DUP.
3-(2,4-Dichloroanilino)-1-(2,4,6-trichlorophenyl)-2-pyrazolin-5-one.-----	EK.
2,6-Dichlorobenzal chloride-----	DUP.
Dichlorobenzanthrone-----	ACY.
*o-Dichlorobenzene-----	ACS, DOW, MON, PPG.
o(and p)-Dichlorobenzene-----	MTO.
*p-Dichlorobenzene-----	ACS, DOW, DVC, PPG.
3,3'-Dichlorobenzidine base and salts-----	CWN, LAK, UPJ.
2,2'-Dichlorobenzil-----	MTO.
2,4-Dichlorobenzoic acid-----	HN.
2,4-Dichlorobenzoyl chloride-----	HN.
Dichlorobenzyl chloride-----	BPC.
Dichlorodiphenylsilane-----	DCC, UCC.
Di(chloromethyl)diphenyl oxide-----	BPC.
*2,5-Dichloro-4-(3-methyl-5-oxo-2-pyrazolin-1-yl)benzenesulfonic acid.-----	CMG, HST, TRC.
Dichloromethylphenylsilane-----	DCC.
2,6-Dichloro-4-nitroaniline-----	CWN.
1,2-Dichloro-4-nitrobenzene-----	DUP, EGR, MON.
1,4-Dichloro-2-nitrobenzene (Nitro-p-dichlorobenzene)-----	DUP, PCW.
2,4-Dichlorophenol-----	DOW, MON.
3-(2',6'-Dichlorophenyl)-5-methylisoxazole-4-carbonyl chloride.-----	OTC.
2,6-Dichloropyrazine-----	ACY.
3,6-Dichloropyridazine-----	ACY.
4,7-Dichloroquinoline-----	PD, SDW.
2,5-Dichlorosulfanilic acid [SO ₃ H=1]-----	CMG, DUP.
2,5-Dichloro-4-sulfobenzenediazonium sulfate-----	TRC.
p, α -Dichlorotoluene-----	HN.
α , α -Dichlorotoluene (Benzal chloride)-----	BPC.
2,6-Dichlorotoluene-----	DUP.
Dicyclohexylamine-----	ABB, MON, VGC.
*Dicyclopentadiene (includes cyclopentadiene)-----	ENJ, GOC, MON, VEL.
Dicyclopentadiene dioxide-----	VEL.
Didodecylbenzene-----	CO.
p-Diethoxybenzene-----	ALL.
3-Diethylaminoacetanilide-----	DUP.

TABLE 2.--CYCLIC INTERMEDIATES FOR WHICH U.S. PRODUCTION OR SALES WERE REPORTED,
IDENTIFIED BY MANUFACTURER, 1975--CONTINUED

Chemical	Manufacturers' identification codes (according to list in table 3)
p-(Diethylamino)benzaldehyde-----	DUP.
6'-Diethylamino-1',3'-dimethylfluoran-----	x.
3'-[2-(Diethylamino)ethyl]-4'-hydroxyacetanilide-----	PD.
α-[(2-Diethylamino)ethyl]-α-phenylcyclohexanemethanol hydrochloride.	ACY.
7'-Diethylamino-4-methylcoumarin-----	x.
7-Diethylamino-3-methyl-1-phenyl-spiro[1]-benzopyrano [2,3-C]pyrazole-4 [1H],1'[3'H]isobenzofuran-3'-one.	SDH.
m-(Diethylamino)phenol (N,N-Diethyl-3-aminophenol)-----	ACY.
3-[(4'-N,N-Diethylamino)phenylazo]-1H-1,2,4-triazole-----	TRC.
3-(Diethylamino)propiophenone-----	ACY.
4-(Diethylamino)-o-tolualdehyde-----	DUP.
*N,N-Diethylaniline-----	ACS, ACY, DUP.
N,N-Diethyl-m-anisidine-----	DUP.
Diethylbenzene-----	DOW, DUP.
p-Diethylbenzene-----	DOW.
N,N-Diethylcyclohexylamine-----	DUP.
N ¹ ,N ¹ -Diethyl-4-methoxymetanilamide-----	PCW.
N,N-Diethyl-4-nitroso-m-anisidine hydrochloride-----	DUP.
N,N-Diethyl-4-nitroso-m-phenetidine-----	GAF.
N,N-Diethyl-m-phenetidine-----	GAF.
N,N-Diethyl-m-toluidine-----	DUP.
Difurfurylidinepentaerythritol-----	SDC.
6'11-Dihydrobenz(b,e)oepin-11-one-----	SK.
10,11-Dihydro-5H-dibenzo[a,d]cyclohepten-5-one-----	LIL.
2,3-Dihydro-1,4-dihydroxyanthraquinone-----	DUP.
9,10-Dihydro-1,8-dihydroxy-4,5-dinitro-9,10-dioxo-2,6-anthracenedisulfonic acid.	AC.
9,10-Dihydro-1,4-dihydroxy-9,10-dioxo-2-anthracene-sulfonic acid (2-Quinizarinsulfonic acid).	MRT.
9,10-Dihydro-9,10-dioxo-1,5-anthracenedisulfonic acid-----	TRC.
9,10-Dihydro-9,10-dioxo-1,5-anthracenedisulfonic acid, disodium salt.	TRC.
9,10-Dihydro-9,10-dioxo-1,8-anthracenedisulfonic acid, potassium salt.	TRC.
9,10-Dihydro-9,10-dioxo-2,6-anthracenedisulfonic acid and salt.	AC, TRC.
9,10-Dihydro-9,10-dioxo-2,7-anthracenedisulfonic acid and salt.	TRC.
*9,10-Dihydro-9,10-dioxo-1-anthracenesulfonic acid and salt (Gold salt).	AC, ACY, TRC.
9,10-Dihydro-5-nitro-9,10-dioxo-1-anthracenesulfonic acid.	TRC.
1,2-Dihydrotriamcinolone-----	x.
*1,4-Dihydroxyanthraquinone (Quinizarin)-----	AC, ACY, DUP, HSH, ICC, TRC.
1,5-Dihydroxyanthraquinone (Anthrarufin)-----	TRC.
1,5(and 1,8)-Dihydroxyanthraquinone-----	ACY, TRC.
1,8-Dihydroxyanthraquinone (Chrysazin)-----	TRC.
2,4-Dihydroxybenzaldehyde-----	EK.
2,5-Dihydroxybenzenesulfonic acid, potassium salt-----	EK.
2,4-Dihydroxybenzophenone-----	DUP, GAF.
3,4-Dihydroxybutyrophenone-----	SOW.
1,4-Dihydroxy-5,8-dichloroanthraquinone-----	ICC.
1,5-Dihydroxy-4,8-dinitroanthraquinone-----	TRC, VPC.
1,8-Dihydroxy-4,5-dinitroanthraquinone (4,5-Dinitro-chrysazin).	DUP.
17 α ,21-Dihydroxy-16 α -methylpregna-1,4,9(11)-triene-3,20-dione.	x.
6,7-Dihydroxy-2-naphthalenesulfonic acid-----	WAY.
3,3-Dihydroxy-2-naphthanilide-----	WAY.
4,5-Dihydroxy-3-(p-sulfophenylazo)-2,7-naphthalene-disulfonic acid, trisodium salt.	EK.
*16,17-Dihydroxyviolanthrone (Dihydroxydibenzanthrone)-----	ACY, DUP, MAY.

TABLE 2.--CYCLIC INTERMEDIATES FOR WHICH U.S. PRODUCTION OR SALES WERE REPORTED,
IDENTIFIED BY MANUFACTURER, 1975--CONTINUED

Chemical	Manufacturers' identification codes (according to list in table 3)
Diisopropylbenzene-----	
2,5-Dimethoxyaniline-----	DOW.
1,5 (and 1,8)-Dimethoxyanthraquinone-----	EKT, PCW.
2,5-Dimethoxybenzaldehyde-----	TRC.
m-Dimethoxybenzene-----	UPJ.
3,3'-Dimethoxybenzidine (o-Dianisidine)-----	ACY, ARS.
3,3'-Dimethoxybenzidine hydrochloride-----	SDH, UOP.
2,6-Dimethoxybenzoyl chloride-----	CWN.
N,N'-[(3,3'-Dimethoxy-4,4'-biphenylene)bis(azo)]bis [N-methyltaurine].	ARS.
2,5-Dimethoxy- α -methylphenethylamine-----	GAF.
(3,4-Dimethoxy- α -methylphenethyl)-2-(4-ethoxy-3-methoxyphenyl)acetamide.	x. LIL.
1-(3',4'-Dimethoxyphenyl)-2-aminopropane-----	LIL.
1-(3',4'-Dimethoxyphenyl)-2-nitropropane-----	LIL.
2,5-Dimethoxytetrahydrofuran-----	HEX.
16,17-Dimethoxyviolanthrone-----	MAY.
*p-(Dimethylamino)benzaldehyde-----	DUP, EK, TRC.
m-(Dimethylamino)benzoic acid-----	SDH, SDW.
6-Dimethylamino-2-[2-(2,5-dimethyl-1-phenyl-3-pyrryl)-vinyl]-1-methyl-1-quinolinium methyl sulfate.	x.
2-[(2-(Dimethylamino)ethyl)-2-thenylamino]-pyridine-----	ABB.
2-(Dimethylaminoethyl)-3-(thenyl-amino)pyridine (Then-fadilbase).	SDW.
2-Dimethylaminomethyl-4-nitroethoxyphenol-----	ARA.
2-Dimethylaminomethyl-4-nitromethoxyphenol-----	ARA.
6-Dimethylamino-1-methylquinaldinium methyl sulfate-----	EK.
m-(Dimethylamino)phenol-----	ACY.
d1-3-Dimethylamino-4-phenyl-4-carbethoxy-----	PD.
11-[3-(Dimethylamino)propyl]-11-hydroxy-dibenz(b,e)oxepin.	SK.
6-Dimethylaminoquinaldine-----	EK.
*N,N-Dimethylaniline-----	ACS, ACY, DUP.
7,12-Dimethylbenz[a]anthracene-----	EK.
3,3'-Dimethylbenzidine (o-Tolidine)-----	CWN.
3,3'-Dimethylbenzidine hydrochloride-----	EK.
*N,N-Dimethylbenzylamine-----	ARS, RH, SW, x.
α,α -Dimethylbenzyl hydroperoxide-----	USS.
2,2'-Dimethyl-1,1'-bianthraquinone-----	TRC.
N,N-Dimethylcyclohexylamine-----	ABB, DUP, JCC.
N,N-Dimethyl-dibenzo(b,c)oxepin- Δ'' (6H) α -propylamine-----	SK.
5,5-Dimethylhydantoin-----	GLY.
2,3-Dimethylindole-----	DUP.
2,2-Dimethyl-3-(2-methylpropenyl)cyclopropanecarboxylic acid, ethyl ester.	BPC.
2,5-Dimethyl-4(2)-morpholinylmethylphenol hydrochloride-	WAY.
N,N-Dimethyl-1-naphthylamine-----	EK.
N,N-Dimethyl-p-nitrosoaniline-----	ACY.
N,N-Dimethyl-p-phenylenediamine-----	EK, EKT.
N,N-Dimethyl-p-phenylenediamine monohydrochloride-----	EK.
N,N-Dimethyl-p-phenylenediamine sulfate-----	EK.
2,5-Dimethyl-1-phenylpyrrole-----	EK.
2,5-Dimethyl-1-phenyl-3-pyrrolecarboxaldehyde-----	EK.
1,4-Dimethylpiperazine-----	JCC.
1,3-Dimethylpiperidone-----	RSA.
N,N-Dimethyl-o-toluidine-----	RSA.
N,N-Dimethyl-p-toluidine-----	EK, RSA.
2,4-Dinitroacetanilide-----	SDC.
2,4-Dinitroaniline-----	HST, SDC.
p-(2,4-Dinitroanilino)phenol-----	GAF.
1,5 (and 1,8)-Dinitroanthraquinone-----	SDC, TRC.
m-Dinitrobenzene-----	DUP.
2,4-Dinitrobenzenesulfonic acid-----	EK, TRC.

SYNTHETIC ORGANIC CHEMICALS, 1975

TABLE 2.--CYCLIC INTERMEDIATES FOR WHICH U.S. PRODUCTION OR SALES WERE REPORTED,
IDENTIFIED BY MANUFACTURER, 1975--CONTINUED

Chemical	Manufacturers' identification codes (according to list in table 3)
2,4-Dinitrobenzenesulfonic acid, sodium salt-----	EK.
3,5-Dinitrobenzoic acid-----	SAL.
3,5-Dinitrobenzoyl chloride-----	EK.
10,10'-Dinitro[3,3'-bi-7H-benz[de]anthracene]-7,7'-dione.	DUP.
Dinitrocaprylphenol-----	RH.
3,5-Dinitro-N ¹ ,N ⁵ -dipropylsulfanilamide-----	x.
3',5'-Dinitro-2'-hydroxyacetanilide-----	TRC.
1-(3,5-Dinitro-2-hydroxyphenylazo)-2-hydroxynaphthalene-----	TRC.
2,6-Dinitro-4-isopropylphenol-----	LIL, SDC.
2,4-Dinitrophenol, tech-----	SDC, VPC.
(2,4-Dinitrophenyl)hydrazine-----	EK.
3,5-Dinitrosalicylic acid-----	EK, SAL.
3,5-Dinitrosalicylic acid, 5-nitrohydrazide-----	LEM.
*4,4'-Dinitrostilbene-2,2'-disulfonic acid-----	AC, ACY, CGY, DUP, GAF, SDH, TRC.
*2,4-Dinitrotoluene-----	ACS, DUP, MOB, RUC.
*2,4(and 2,6)-Dinitrotoluene-----	AIP, DUP, UCC.
Dinonylphenol-----	GAF.
Di-tert-pentylphenol-----	PAS.
Di-tert-pentylphenoxyacetyl chloride-----	EK.
1,5-Diphenoxanthraquinone-----	VPC.
Diphenylacetonitrile, tech-----	ASH.
Diphenylamine-----	ACY, DUP, ORO, RUC, USR.
2,5-Diphenyl-p-benzoquinone-----	EK.
N,N'-Diphenylethylenediamine-----	RPC.
2,5-Diphenylhydroquinone-----	EK.
Diphenylmethane-----	PD.
2,5-Diphenyloxazole-----	EK.
1,3-Diphenyl-1,3-propanedione-----	EK.
5,5'-Dithiobis[2-nitrobenzoic acid]-----	LIL, SW.
2,2'-Dithiodibenzoic acid-----	DUP.
1,5-Di-p-toluidinoanthraquinone-----	DOW, FG.
Divinylbenzene-----	
Dodecylbenzene. (See Alkylbenzenes.)	
Dodecylbenzyl chloride-----	BPC.
Dodecylmethylbenzyl chloride-----	RH.
4-Dodecyloxy-2-hydroxybenzophenone-----	DUP.
p-Dodecylphenol-----	GAF, MCB, MON, x.
1,2-Epoxy-3-phenoxypropane-----	DUP.
N-(p-Ethoxybenzylidene)-p-butylaniline-----	EK.
1-(4-Ethoxy-3-methoxybenzyl)-3,7-dimethoxy-3-methylisoquinoline (Dioxylene base).	LIL.
2-Ethoxy-1-naphthoyl chloride-----	WYT.
N ¹ -(6-Ethoxy-3-pyridazinyl)sulfanilamide-----	ACY.
3-(Ethylamino)-p-cresol-----	DUP.
N-Ethyl-N-(β-aminoethyl)-m-toluidine-----	x.
3-(Ethylamino)-p-toluenesulfonic acid [SO ₃ H=1]-----	DUP.
*N-Ethylaniline, refined-----	ACS, ACY, DUP.
2-(N-Ethylanilino)ethanol-----	DUP, MIL, TCH.
[2-(N-Ethylanilino)ethyl]trimethylammonium chloride-----	DUP.
1-[2-(Ethylanilino)ethylene]pyridinium chloride-----	GAF.
3-(N-Ethylanilino)propionitrile-----	MIL, TCH.
α-(N-Ethylanilino)-m-toluenesulfonic acid-----	GAF, SDH.
α-(N-Ethylanilino)-p-toluenesulfonic acid-----	ACS.
*Ethylbenzene-----	ATR, CSD, DOW, ELP, FG, KPP, MCB, MON, PLC, SNT, SOG, STY, TOC, UCC.
Ethylbenzyl chloride-----	BPC.
N-Ethyl-N-(2-chloroethyl)aniline-----	TCH.
2-(N-Ethyl-N-β-cyanoethyl)-4-acetaminoanisole-----	SDC.
3,3'-Ethylenedioxydiphenol-----	WAY.
Ethylenimine-----	DOW.
3-Ethyl-2-[5-(3-ethyl-2-benzothiazolinylidene)-1,3-pentadienyl]-benzothiazolium iodide.	EK.

TABLE 2.--CYCLIC INTERMEDIATES FOR WHICH U.S. PRODUCTION OR SALES WERE REPORTED,
IDENTIFIED BY MANUFACTURER, 1975--CONTINUED

Chemical	Manufacturers' identification codes (according to list in table 3)
N-Ethyl-N-glycerol-m-toluidine-----	EKT.
Ethyliodophenylundecanoate-----	X.
2-[N-Ethyl-p-[(6-methoxy-2-benzothiazolyl)azo]anilino]-ethanol.	TRC.
N-Ethyl-N-(8-methylsulfonamidoethyl)-m-toluidine-----	x.
N-Ethylmorpholine-----	UCC.
N-Ethyl-1-naphthylamine-----	DUP.
α -Ethyl-3-nitrocinnamic acid-----	SDW.
p-Ethylphenol-----	ACY.
*N-Ethyl-N-phenylbenzylamine-----	ACS, DUP, SDH.
5-Ethyl-2-picoline (2-Methyl-5-ethylpyridine) (MEP)-----	UCC.
6-Ethyl-1,2,3,4-tetrahydro-1,1,4,4-tetramethyl-naphthalene.	GIV.
N-Ethyl-p-toluenesulfonamide-----	NES.
N-Ethyl-m-toluidine-----	DUP.
N-Ethyl-o-toluidine-----	DUP.
2-(N-Ethyl-m-toluidino)ethanol-----	TCH.
3-(N-Ethyl-m-toluidino)propionitrile-----	DUP, TCH.
α -(N-Ethyl-m-toluidino)-m-toluenesulfonic acid-----	GAF.
1-Fluoro-2,4-dinitrobenzene-----	EK.
d-2-Formamido-1-phenyl-1,3-propanediol-----	PD.
α -Formylbenzenesulfonic acid (α -Sulfobenzaldehyde)-----	SDH.
Furan-----	PLC, QKO.
Furfuryl alcohol-----	QKO.
Furfurylamine-----	x.
N-Glycolylarsanilic acid, sodium salt-----	SDW.
Glyoxanilide-2-oxime-----	DUP.
Hexabromobenzene-----	MCH.
Hexabromobiphenyl-----	MCH.
Hexachlorobenzene-----	DVC.
Hexachlorocyclopentadiene-----	HK, VEL.
1,4,5,6,7,7-Hexachloro-5-norbornene-2,3-dicarboxylic acid.	HK.
1,4,5,6,7,7-Hexachloro-5-norbornene-2,3-dicarboxylic anhydride.	VEL.
6-Hexadecylsulfonimidoindole-----	ARA.
Hexahydro-1-methyl-4-phenyl-1H-azepine-4-carbonitrile-----	WYT.
Hexamethyleneimide-----	DUP.
Hexamethylenimine-----	CEL.
Hippuric acid-----	BPC.
p-Hydrazinobenzenesulfonic acid-----	GAF, STG, WJ.
Hydrazobenzene-----	LAK.
*Hydroquinone, tech-----	CRS, EKT, GYR.
3'-Hydroxyacetophenone-----	ARA, SDH.
p-Hydroxybenzaldehyde-----	DOW.
p-Hydroxybenzenesulfonic acid-----	PRD, UPF.
p-Hydroxybenzoic acid-----	HN.
3'-Hydroxy-2-(N-benzyl-N-methylamino)acetophenone-----	SDW.
4-Hydroxycoumarin-----	ABB.
2-Hydroxy-3,5-diiodobenzoic acid-----	EK.
4-(2-Hydroxyethoxy)acetanilide-----	GAF, TRC.
m-(2-Hydroxyethoxy)phenol-----	BJL.
α -(2-Hydroxyethoxy)phenol-----	BJL.
3-[N-(2-Hydroxyethyl)amino]propionitrile-----	MIL, TCH.
3-[N-(2-Hydroxyethyl)amino]propionitrile, acetate-----	MIL, TCH.
3-[N-(2-Hydroxyethyl)amino]propionitrile, benzoate-----	DUP.
N-(2-Hydroxyethyl)-3,5-dihydroxybenzamide-----	WAY.
N-(2-Hydroxyethyl)piperazine-----	JCC.
N-[7-Hydroxy-8-[(2-hydroxy-5-nitrophenyl)azo]-1-naphthyl]acetamide.	TRC.
7-Hydroxy-8-[[4'-[(p-hydroxyphenyl)azo]-3,3'-dimethyl-4-biphenyl]azo]-1,3-naphthalene-disulfonic acid.	DUP, TRC.
4-Hydroxymetanilamide-----	

SYNTHETIC ORGANIC CHEMICALS, 1975

TABLE 2.--CYCLIC INTERMEDIATES FOR WHICH U.S. PRODUCTION OR SALES WERE REPORTED,
IDENTIFIED BY MANUFACTURER, 1975--CONTINUED

Chemical	Manufacturers' identification codes (according to list in table 3)
4-Hydroxymetanilic acid-----	TRC.
3-Hydroxy-2-methylcinchoninic acid-----	GAF, TRC.
4-Hydroxy-N ¹ -methylmetanilamide-----	TRC.
3-Hydroxy-N-(3-N-morpholino- α -propyl)-2-naphthamide-----	WAY.
3-Hydroxy-2,7-naphthalenedisulfonic acid, disodium salt-----	ACY, TRC.
7-Hydroxy-1,3-naphthalenedisulfonic acid-----	DUP, TRC.
7-Hydroxy-1,3-naphthalenedisulfonic acid, disodium salt-----	ACY.
8-Hydroxy-1-naphthalenesulfonic acid, γ -sultone-----	TRC.
6-Hydroxy-2-naphthalenesulfonic acid, and sodium salt-----	ACY, TRC, WJ.
3-Hydroxy-2-naphthoic acid (B.O.N.)-----	PCW.
3-Hydroxy-2-naphthoic acid, methyl ester-----	PCW.
2-Hydroxy-3-naphthoic acid, morpholinopropylamide-----	HST.
N-(7-Hydroxy-1-naphthyl)acetamide-----	GAF, TRC.
4-Hydroxy-7-(p-nitrobenzamido)-2-naphthalenesulfonic acid.	GAF.
2-Hydroxy-5-nitrometanilic acid-----	TRC.
1-Hydroxy-6-octadecyloxy-2-naphthoic acid-----	ARA.
2-Hydroxy-4-n-octoxybenzophenone-----	ACY, CCW.
2-Hydroxy-4-sulfo-1-naphthalenediazonium hydroxide, inner salt.	ACY.
2-Imidazolidinone-----	VAL.
1,1'-Iminobis[4-aminoanthraquinone]-----	ACY.
1,1'-Iminobis[4-benzamidoanthraquinone]-----	ACY.
1,1'-Iminobis[5-benzamidoanthraquinone]-----	TRC.
7,7'-Iminobis[4-hydroxy-2-naphthalenesulfonic acid]-----	GAF.
1,1'-Iminobis[4-nitroanthraquinone]-----	ACY, TRC.
1,1'-Iminodianthraquinone (1,1'-Dianthrimide)-----	ACY.
2-Indolecarboxylic acid-----	ARA.
Indole-2,3-dione-----	DUP, TRC.
p-Iidotoluene-----	UCC.
Isobutylbenzene-----	PLC, TNA.
*Isocyanic acid derivatives:	
Bitolylene diisocyanate (TODI)-----	CWN, UPJ.
p-Chlorophenyl isocyanate-----	MOB.
Dianisidine diisocyanate (DADI)-----	UPJ.
Diphenylmethane-4,4'-diisocyanate (MDI)-----	MOB, UPJ.
Phenylisocyanate-----	MOB, UPJ.
Polyisocyanates (complex)-----	MOB.
Polymethylene polyphenylisocyanate-----	JCC, MOB, RUC, UPJ.
Toluene 2,4-diisocyanate-----	DUP, MOB.
Toluene 2,4- and 2,6-diisocyanate (65/35 mixture)-----	DUP, MOB.
*Toluene,2,4- and 2,6-diisocyanate (80/20 mixture)-----	ACS, BAS, DUP, MOB, OMC, RUC, UCC.
p-Toluenesulfonyl isocyanate-----	CWN, UPJ.
Other-----	DUP, MOB, UCC.
2-Isonitrosoacetanilide-----	TRC.
Iooctylphenol-----	PRD.
Isophthalic acid (Benzene-1,3-dicarboxylic acid)-----	ACC, ATR.
Isophthalic acid, diallyl ester-----	FMP.
Isophthalic acid, dimethyl ester-----	MTR.
Isophthalonitrile-----	SW.
Isophthaloyl chloride-----	DUP.
N-Isopropylaniline-----	USR.
4,4'-Isopropylidenebis[2,6-dibromophenol] (Tetrabromo-bisphenol A).	DOW.
5,5'-Isopropylidenebis(2-hydroxy-m-xylene, α,α' -diol)-----	ARK.
*4,4'-Isopropylidenediphenol (Bisphenol A)-----	DOW, GE, SHC, UCC.
4,4'-Isopropylidenediphenol, ethoxylated-----	ICI.
4,4'-Isopropylidenediphenol, propoxylated-----	ICI.
o-Isopropylphenol-----	TNA.
Isopropylphenols, mixed-----	FMP.
4-Isopropyl-m-phenylenediamine-----	DUP.
Isoviolanthrone (Isodibenzanthrone)-----	TRC.
Leuco quinizarin (1,4,9,10-Anthratetrol)-----	EKT, ICC.

CYCLIC INTERMEDIATES

37

TABLE 2.--CYCLIC INTERMEDIATES FOR WHICH U.S. PRODUCTION OR SALES WERE REPORTED,
IDENTIFIED BY MANUFACTURER, 1975--CONTINUED

Chemical	Manufacturers' identification codes (according to list in table 3)
2,4-Lutidine-----	KPT.
3,4-Lutidine-----	UCC.
Malonanilide-----	PCW.
Mandelonitrile-----	KF.
Melamine-----	ACS, ACY, MLC.
p-Mentha-1,4(8)-diene-----	GIV.
d1-p-Mentha-1,8-diene (Limonene)-----	ARZ, GIV, HPC, NCI.
o-Mercaptobenzoic acid-----	AMB.
Mesitylene (1,3,5-Trimethylbenzene)-----	SNT.
*Metanilic acid (m-Aminobenzenesulfonic acid)-----	ACY, DUP, MRA, TRC.
2-Methoxy-5-acetamino-N,N-bis(acetoxyethyl)aniline-----	HST.
N-(p-Methoxybenzylidene)-p-butylaniline-----	EK.
4'-Methoxy-2-(p-methoxyphenyl)acetophenone-----	ARA.
8-Methoxy-6-methoxyquinoline-----	SDW.
Methoxymethyldiphenyl oxide-----	BPC.
N-(2-Methoxy-1-naphthyl)acetamide-----	TRC.
6-Methoxy-8-nitroquinoline-----	SDW.
(p-Methoxyphenyl)acetic acid-----	UOP.
6-Methoxyquinoline-----	DUP.
1-(Methylamino)anthraquinone-----	AC, ACY.
3-(N-Methylanilino)propionitrile-----	DUP, MIL, TCH.
5-Methyl-o-anisidine [NH ₂ =1]-----	SW.
5-Methyl-o-anisidinesulfonic acid-----	ACS.
m-Methylanisole-----	GIV.
N-Methylanthranilic acid-----	GIV.
2-Methylanthraquinone-----	ACY.
p-Methylbenzenethiol-----	CRZ.
Methylbenzoate-----	HPC.
3-Methylbenzol(f)quinoline-----	ACY.
2-Methylbenzothiazole-----	EK, FMT.
N-Methylbenzylamine-----	ABB, SDW, x.
Methylbiphenyl-----	DOW.
N-Methyl-N-carboxyanthranilic anhydride-----	SW.
3-Methylcholanthrene-----	EK.
Methylcyclohexane-----	PLC.
N-Methylcyclohexylamine-----	ABB.
Methylcyclopentadiene-----	ENJ.
N-Methyldicyclohexylamine-----	ABB.
N-Methyleneaniline-----	PCW.
4,4'-Methylenebis[2-chloroaniline]-----	ADC, DUP.
4,4'-Methylenebis[N,N-diethylaniline]-----	ACY, TRC.
*4,4'-Methylenebis[N,N-dimethylaniline] (Methane base)-----	ACY, DUP, SDH.
4,4'-Methylenebis(3-hydroxy-2-naphthoic acid) disodium salt.	PD.
2,2'-Methylenebis(4-methyl-6-nonylphenol)-----	ACY.
4,4'-Methylenediamine salt complex-----	DUP.
*4,4'-Methylenedianiline-----	ACS, DOW, MOB, RUC.
1,2-Methylenedioxy-4-nitrobenzene-----	PD.
5,5'-Methylenedisalicylic acid-----	HN.
Methylhydroquinone-----	EKT.
2-Methylindole-3-carboxaldehyde-----	GAF.
6-Methyl-2-(2-methyl-6-quinolyl)-7-benzothiazolesulfonic acid.	DUP.
4-Methyl-2-nitroanisole-----	SW.
2-Methyl-5-nitroimidazole-----	RDA.
N-Methyl-N-nitroso-p-toluenesulfonamide-----	EK.
2-Methyl-5-norbornene-2,3-dicarboxylic anhydride-----	VEL.
5-Methyl-5-norbornene-2,3-dicarboxylic anhydride-----	ACS.
m-(3-Methyl-5-oxo-2-pyrazolin-1-yl)benzenesulfonamide-----	VPC.
p-(3-Methyl-5-oxo-2-pyrazolin-1-yl)benzenesulfonic acid-----	GAF, TRC.
2-Methyl-5-phenylbenzoxazole-----	EK.
1-Methyl-1-phenylhydrazine-----	EK.
1-Methyl-4-phenylisonipeptic acid-----	SDW.

SYNTHETIC ORGANIC CHEMICALS, 1975

TABLE 2.--CYCLIC INTERMEDIATES FOR WHICH U.S. PRODUCTION OR SALES WERE REPORTED,
IDENTIFIED BY MANUFACTURER, 1975--CONTINUED

Chemical	Manufacturers' identification codes (according to list in table 3)
4-Methyl-1-phenyl-3-pyrazolidinone-----	EK.
*3-Methyl-1-phenyl-2-pyrazolin-5-one (Developer Z)-----	ACY, DUP, SDH, VPC.
1-Methylpiperazine-----	JCC, UCC.
Methyl-1-piperidinopropanol-----	LIL.
4'-[(4-Methyl-2-pyrimidinyl)sulfamoyl]acetanilide-----	DUP.
* α -Methylstyrene-----	ACS, CLK, DOW, GP, SKO, UCC, USS.
ar-Methylstyrene (Vinyltoluene)-----	DOW.
3-Methylthiophene-----	SDW.
1-Naphthalenesulfonic acid-----	TRC.
2-Naphthalenesulfonic acid-----	ACY, EK.
1-Naphthalenesulfonic acid, sodium salt-----	TRC.
2-Naphthalenesulfonic acid, sodium salt-----	ACY.
1,4,5,8-Naphthalenetetracarboxylic acid-----	TRC.
Naphthalimide-----	ACS.
1-Naphthol (α -Naphthol)-----	DUP, UCC.
2-Naphthol, tech. (β -Naphthol) ¹ -----	ACY.
p-Naphtholbenzene-----	EK.
Naphth[1,2-d][1,2,3]oxadiazole-5-sulfonic acid-----	TRC.
Naphth[2,1-d]-1,2,3-oxadiazole-6-sulfonic acid, sodium salt.	GAF.
2-(2H-Naphth[1,2-d]triazol-2-yl)-4-(1,1,3,3-tetramethylbutyl)phenol.	x.
1-Naphthylamine (α -Naphthylamine)-----	DUP.
p-(2-Naphthylamino)phenol (N-(p-Hydroxyphenyl)-2-naphthylamine).	SDC.
(2-Naphthylthio)acetic acid-----	ACY.
Nicotinonitrile (3-Cyanopyridine)-----	NEP.
3'-Nitroacetanilide-----	DUP.
4'-Nitroacetanilide-----	GAF, TRC.
3'-Nitro-p-acetaniside-----	HST.
4'-Nitro-o-acetaniside-----	DUP.
3'-Nitroacetophenone-----	SDH.
4'-Nitro-4-amino-3-methoxyazobenzene-----	SDC.
o-Nitroaniline-----	DUP, MON.
*p-Nitroaniline-----	AC, DUP, MON.
2-Nitro-p-anisidine [$NH_2=1$]-----	DUP.
4-Nitro-o-anisidine [$NH_2=1$]-----	DUP.
o-Nitroanisole-----	DUP, MON.
p-Nitroanisole-----	DUP.
5-Nitroanthranilic acid-----	TRC.
*1-Nitroanthraquinone-----	ACY, MAY, TRC.
m-Nitrobenzaldehyde-----	SDH.
*Nitrobenzene-----	ACY, DUP, FST, MOB, MON, RUC.
m-Nitrobenzenesulfonic acid-----	ACY, DUP, EK.
m-Nitrobenzenesulfonic acid, sodium salt-----	MON, MRA.
p-Nitrobenzenesulfonyl chloride-----	EK.
m-Nitrobenzoic acid-----	SAL.
o-Nitrobenzoic acid-----	SAL.
p-Nitrobenzoic acid-----	DUP.
m-Nitrobenzoic acid, sodium salt-----	SAL.
4'-Nitro-4-biphenylcarboxylic acid-----	DUP.
2-Nitro-p-cresol-----	SW.
2-Nitro-p-cymene-----	EK.
p-Nitrodimethylaminoethylbenzoate-----	SDW.
Nitrodiphenylamine-----	ACY, MON.
5-Nitro-2-furanmethanediol, diacetate-----	NOR.
1-Nitronaphthalene-----	DUP.
3-Nitro-1,5-naphthalenedisulfonic acid-----	TRC.
7 (and 8)-Nitronaphth[1,2-d][1,2,3]oxadiazole-5-sulfonic acid.	GAF, TRC.
p-Nitrophenethyl alcohol-----	PCW.
o-Nitrophenol-----	DUP, MON.
p-Nitrophenol-----	DUP, MON.

TABLE 2.--CYCLIC INTERMEDIATES FOR WHICH U.S. PRODUCTION OR SALES WERE REPORTED,
IDENTIFIED BY MANUFACTURER, 1975--CONTINUED

Chemical	Manufacturers' identification codes (according to list in table 3)
4'-(p-Nitrophenyl)acetophenone-----	ASH, DUP.
4-Nitro-o-phenylenediamine-----	FMT.
2-(o-Nitrophenylazo)-p-cresol [CH ₂ =1]-----	TRC.
2-o-Nitrophenylazo)-4,1-ditertamylphenol [OH=1]-----	TRC.
(p-Nitrophenyl)hydrazine-----	EK, RSA.
1-(m-Nitrophenyl)-5-oxo-2-pyrazoline-3-carboxylic acid.	DUP, VPC.
3-Nitrophthalic acid-----	EK.
3-Nitrophthalic anhydride-----	EK.
4-Nitrophthalimide-----	SDC.
5-Nitrosalicylaldehyde-----	EK.
4-Nitrosodiphenylamine-----	USR.
4-Nitroso-N-ethyl-N-(β-methylsulfonamidoethyl)-m-toluidine.	x.
p-Nitrosophenol-----	SDC.
β-Nitrostyrene-----	CWN.
4-Nitro-4'-(5-sulfo-2H-naphtho[1,2-d]triazol-2-yl)-2,2'-stilbenedisulfonic acid.	TRC.
3-Nitro-p-toluamide-----	x.
m-Nitrotoluene-----	DUP, FST.
o-Nitrotoluene-----	DUP, FST.
p-Nitrotoluene-----	DUP, FST.
Nitrotoluene mixtures-----	DUP, FST.
p-Nitrotoluenesulfonic acid-----	CGY.
*5-Nitro-o-toluenesulfonic acid [SO ₃ H=1]-----	ACY, DUP, GAF, SDH.
3-Nitro-p-toluenesulfonic acid [SO ₃ H=1]-----	TRC.
2-Nitro-m-tolui acid-----	SAL.
3-Nitro-p-tolui acid, methyl ester-----	SDH.
2-Nitro-p-toluidine [NH ₂ =1]-----	SW.
5-Nitro-o-toluidine [NH ₂ =1]-----	PCW, SDH.
4-Nitro-m-xylene-----	DUP.
*Nonylphenol-----	GAF, JCC, MCB, MON, PRD, RH, SCN, USR.
Norbornene-2,3-dicarboxylic acid, monomethyl ester-----	BJL.
Octylphenol-----	RH.
Oxalacetic acid, diethylester, (p-sulfophenyl)-hydrazone.	TRC.
Oxanilide-----	EK.
*1-[(7-Oxo-7H-benz[de]anthracene-3-yl)amino]anthraquinone.	ACY, DUP, MAY, TRC.
1,1'-[(7-Oxo-7H-benz[de]anthracen-3,9-ylene)diimino]-dianthraquinone.	MAY, TRC.
5-Oxo-1-phenyl-2-pyrazoline-3-carboxylic acid, ethyl ester.	FST, STG.
5-Oxo-1-(p-sulfophenyl)-2-pyrazoline-3-carboxylic acid (Pyrazolone T).	HST, STG.
4,4'-Oxydianiline-----	DUP.
Pentabromo-6-chlorocyclohexane-----	DOW.
Pentachloropyridine-----	DOW.
1,1,3,3,5-Pentamethylindan-----	GIV.
o-Pentylphenol (o-Amylphenol)-----	PAS.
p-Pentylphenol-----	EK.
p-tert-Pentylphenol-----	PAS.
3,4,9,10-Perylenetetracarboxylic-3,4:9,10-diimide-----	ACS.
Phenetethylamine-----	x.
p-Phenetidine-----	MON.
*Phenol:	
Natural:	
From coal tar: ²	
39°C., m.p.-----	KPT, PRD.
All other-----	KPT, SW.
From petroleum-----	MER, PRD.

SYNTHETIC ORGANIC CHEMICALS, 1975

TABLE 2.--CYCLIC INTERMEDIATES FOR WHICH U.S. PRODUCTION OR SALES WERE REPORTED,
IDENTIFIED BY MANUFACTURER, 1975--CONTINUED

Chemical	Manufacturers' identification codes (according to list in table 3)
*Phenol--Continued	
Synthetic:	
By caustic fusion: U.S.P-----	RCI.
From chlorobenzene by liquid-phase hydrolysis:	
U.S.P-----	DOW.
*From cumene by oxidation: U.S.P-----	ACS, CLK, DOW, GP, MON, SHC, SKO, SOC, UCC, USS.
Other-----	KLM.
Phenolsulfonaphthalein, sodium salt-----	EK.
Phenolsulfonic acid, lithium salt-----	SAL.
Phenolsulfonic acid, sodium salt-----	SAL.
Phenoxyacetic acid, sodium salt-----	LIL.
3'-Phenoxyacetophenone-----	LIL.
1-(3-Phenoxyphenyl)ethanol-----	LIL.
d1-2-(3-Phenoxyphenyl)propionic acid, calcium salt-dihydrate.	LIL.
Phenylacetic acid (α -Toluic acid)-----	BPC, GIV.
Phenylacetic acid, ethyl ester, tech-----	BPC.
Phenylacetic acid, potassium salt-----	BPC, OPC.
Phenylacetic acid, sodium salt-----	BPC, OPC.
Phenylacetonitrile (α -Tolunitrile)-----	BPC, UOP.
4'-Phenylacetophenone-----	DUP.
N-Phenylanthranilic acid-----	SDW.
*p-Phenylazoaniline (C. I. Solvent Yellow 1) and hydrochloride.	ACS, ACY, DUP.
4-(Phenylazo)diphenylamine-----	EK.
1-Phenyl-1,3-butanedione-----	EK.
4-Phenyl-2-buten-2-one-----	SDW.
α -Phenyl-o-cresol-----	RBC.
m-Phenylenediamine-----	DUP.
o-Phenylenediamine-----	DUP, EK, SW.
p-Phenylenediamine-----	DUP, SDC.
p-Phenylenediamine dihydrochloride-----	EK.
d-Phenylephrine-----	SDW.
d1-Phenylephrine-----	SDW.
Phenyl ether (Diphenyl oxide)-----	DOW.
d(-)-phenylglycine-----	OTC.
d(-)-2-Phenylglycine-----	KF, UPJ.
d-2-Phenylglycine hydrochloride-----	OTC.
d1-2-Phenylglycine-----	KF, OTC.
N-Phenylglycine-----	EK.
N-Phenylglycine, sodium and potassium salts-----	ACS.
d(-)-2-Phenylglycylchloride hydrochloride-----	KF, UPJ.
5-Phenylhydantoin-----	ABB.
Phenylhydrazine hydrochloride-----	EK.
*2,2'-[(Phenyl)imino]diethanol (N-Phenylmethanolamine)-----	EKT, MIL, TCH.
2,2'-[(Phenyl)imino]diethanol, diacetate ester-----	SDC.
3,3'-[(Phenyl)imino]dipropionitrile-----	DUP.
Phenylmalonic acid-----	X.
Phenylmalonic acid, diethyl ester-----	BPC.
3-Phenyl-5-methylisoxazole-4-carbonyl chloride-----	ARS.
N-Phenyl-2-naphthylamine-----	DUP.
α -Phenylphenol-----	DOW, RCI.
p-Phenylphenol-----	DOW.
α -Phenylphenol, chlorinated-----	DOW.
α -Phenylphenol, sodium salt-----	DOW.
N-Phenyl-p-phenylenediamine-----	USR.
Phenylphosphinic acid-----	SFS.
Phenylphosphonothioic dichloride-----	SFA.
Phenylphosphorous dichloride-----	SFA.
Phenylphosphorous dichloride, refined-----	SFA.
1-Phenylpiperazine-----	RSA.
1-Phenyl-1,2-propanedione, 2-oxime-----	ORT, PD.

CYCLIC INTERMEDIATES

41

TABLE 2.--CYCLIC INTERMEDIATES FOR WHICH U.S. PRODUCTION OR SALES WERE REPORTED,
IDENTIFIED BY MANUFACTURER, 1975--CONTINUED

Chemical	Manufacturers' identification codes (according to list in table 3)
Phenyl-2-propanone-----	ORT.
1-Phenyl-3-pyrazolidinone-----	EK.
d1-Phenylsuccinic acid-----	PD.
1-Phenyl-2-thiourea-----	EK.
Phenylundecanoic acid-----	EK.
1(2H)-Phthalazinone-----	x.
Phthalic acid-----	EK.
Phthalic acid, diallyl ester-----	FMP.
*Phthalic anhydride-----	ACS, BAS, ENJ, KPT, MON, PTO, SOC, STP, UCC, USS.
Phthalide-----	FMT.
Phthalimide-----	SW.
[Phthalocyaninato(2-)]copper-----	DUP.
[Phthalocyaninato(2-)]iron-----	DUP.
Phthalocyaninetetrasulfonyl chloride-copper derivative-----	DUP.
Phthaloyl chloride (Phthalyl chloride)-----	MON.
Picolines: ²	
*2-Picoline (α -Picoline)-----	KPT, RIL, UCC.
3-Picoline (β -Picoline)-----	NEP, RIL.
4-Picoline (γ -Picoline)-----	NEP, RIL, UCC.
Picoline (3,4-mixture)-----	KPT.
3-Picolylamine-----	RIL.
Picric acid (Trinitrophenol)-----	SDC.
2-Pipecoline-----	LIL.
*Piperidine-----	ABB, DUP, RIL.
3-Piperidinopropiophenone hydrochloride-----	ACY, SDW.
Polychlorobenzene-----	DOW.
Polychlorobiphenyl-----	MON.
Polyethylbenzene-----	UCC.
Potassium cyclohexanebutyrate-----	EK.
Potassium phthalimide-----	PD.
Propargylbenzenesulfonate-----	ABB.
*Propiophenone-----	ORT, PD, UCC, UOP.
8,16-Pyranthrenedione-----	TRC.
Pyridine, refined: ²	
2° Pyridine-----	KPT, NEP.
Other grades-----	KPT.
Pyridine hydrochloride-----	EK.
3-Pyridinemethanol-----	RIL.
2-(1H)-pyridone-----	FMT, OMC.
α -Pyridyl- α -thienylamine-----	ABB.
2-Pyrimidinol-----	CGY.
Pyrrolidine-----	DUP.
2-Pyrrolidinone-----	GAF.
Quinaldine-----	ACY.
Quinoline:	
1° and 2° Quinoline-----	KPT.
Quinoline (synthetic)-----	EK.
Other grades-----	KPT.
2,4-Quinolinediol-(2,4-dihydroxyquinoline)-----	PCW.
Resorcinol, tech ¹ -----	KPT.
Resorcinol, monoacetate (non-medicinal grade) ¹ -----	EK.
β -Resorcyclic acid-----	HST, KPT.
*Salicylaldehyde-----	DOW, DUP, MTR, RDA.
Salicylaldehyde oxime-----	EK.
*Salicylic acid, tech-----	DOW, HN, MON, SDH.
Salicylic acid, ammonium chromium complex-----	TRC.
Salicylic acid, phenyl ester-----	DOW.
Salicylic acid, sodium chromium complex-----	TRC.
Salicylideneaminoguanidine oleate-----	DUP.
*Styrene, all grades-----	ACC, CSD, DOW, ELP, FG, GOC, KPP, MCB, MON, SHC, SNT, TX, UCC.
Styrene oxide-----	UCC.
Sulfanilamide, tech-----	SAL.

SYNTHETIC ORGANIC CHEMICALS, 1975

TABLE 2.--CYCLIC INTERMEDIATES FOR WHICH U.S. PRODUCTION OR SALES WERE REPORTED,
IDENTIFIED BY MANUFACTURER, 1975--CONTINUED

Chemical	Manufacturers' identification codes (according to list in table 3)
Sulfanilic acid (p-Aminobenzenesulfonic acid) and salt-----	ACS, ACY, SAL.
Sulfanilic acid-----	SAL.
4-Sulfoanthranilic acid-----	TRC.
o-Sulfobenzoic acid, cyclic anhydride-----	EK.
5-Sulfoisophthalic acid, 1,3-dimethyl ester-----	x.
5-Sulfoisophthalic acid, lithium salt-----	PCW.
5-Sulfoisophthalic acid, sodium salt-----	PCW.
4,4'-Sulfonyldianiline-----	RSA.
4,4'-Sulfonyldiphenol (4,4'-Dihydroxydiphenylsulfone)-----	UPF.
4-Sulphophthalic acid-----	CWN, HSC.
Terephthalic acid-----	ACC, DUP, HPC, SDH.
*Terephthalic acid, dimethyl ester-----	ACC, DUP, EKT, HPC, HST.
Terephthalic acid, diphenyl ester-----	BJL.
Terephthaloyl chloride-----	DUP.
Terephthaloyldiacetic acid, diethyl ester-----	PCW.
Terphenyl (Phenylbiphenyl)-----	MON.
3,3',4,4'-Tetraaminobenzophenone-----	BJL.
[4,4',4'',4''']-Tetraaminophthalocyaninato(2-)copper-----	SDC.
3',3'',5'S'''-Tetrabromophenolphthalein, ethyl ester-----	EK.
Tetrabromophthalic anhydride-----	MCH.
1,2,4,5-Tetrachlorobenzene-----	DOW.
1,2,4,5-Tetrachloro-3-nitrobenzene-----	SDH.
Tetrachlorophthalic anhydride-----	x.
Tetrahydrofuran-----	DUP, QKO.
Tetrahydrofurfuryl dimethacrylate-----	SAR.
Tetrahydropthalic acid-----	PTT.
Tetrahydro-2-pyrimidone-----	VAL.
1,2,3,4-Tetrahydroquinoxaline-----	DUP.
1,4,5,8-Tetrahydroxyanthraquinone-----	ICC.
1,4,5,8-Tetrahydroxyanthraquinone, leuco derivative-----	ICC, TRC.
1,2,4,5-Tetramethylbenzene (Durene)-----	SNT.
p-(1,1,3,3-Tetramethylbutyl)phenol-----	GAP, SCN.
N,N,N',N'-Tetramethyl-p-phenylenediamine dihydrochloride.	EK.
[4,4',4'',4''']-Tetranitrophthalocyaninato(2-)copper-----	SDC.
2-(3-Thenylamino)pyridine-----	SDW.
1,1'-Thiobis(2-naphthol)-----	ACY.
2-Thiopheneacetyl chloride-----	LIL.
α -Thiophenealdehyde-----	ABB.
Thiophenol-----	SFA.
sym-Thymol-----	GIV, KPT.
*Toluene-2,4-diamine (4-m-Tolylendiamine)-----	ACS, ACY, DUP, OMC, RUC, UCC.
p-Toluenesulfinic acid-----	TRC.
p-Toluenesulfinic acid, sodium salt-----	NES.
o-Toluenesulfonamide-----	MON.
p-Toluenesulfonamide-----	MON.
o (and p)-Toluenesulfonic acid-----	MON.
p-Toluenesulfonic acid-----	NES, TEN, UPF.
p-Toluenesulfonic acid, monohydrate-----	NES, UPF.
o-Toluenesulfonyl chloride-----	MON.
p-Toluenesulfonyl chloride-----	MON.
α -Toluenesulfonyl fluoride-----	EK.
p-Toluic acid-----	BPC.
m-Toluidine-----	DUP.
o-Toluidine-----	DUP, FST.
p-Toluidine-----	DUP.
o-Toluidine hydrochloride-----	ACY.
p-Toluidine hydrochloride-----	EK.
Toluidines, mixed-----	DUP.
2-o-Toluidinoethanol-----	TCH.
o-Toluidinomethanesulfonic acid-----	TRC.
*4-(o-Tolylazo)-o-toluidine (C. I. Solvent Yellow 3)-----	ACY, ALL, DUP, SDH.
1-p-Tolyldecane-----	x.
2,2'-(m-Tolylimino)diethanol-----	EKT, MIL, TCH.
2,2'-(o-Tolylimino)diethanol-----	TCH.
2,2'-(m-Tolylimino)diethanol, diacetate ester-----	SDC.

CYCLIC INTERMEDIATES

43

TABLE 2.--CYCLIC INTERMEDIATES FOR WHICH U.S. PRODUCTION OR SALES WERE REPORTED,
IDENTIFIED BY MANUFACTURER, 1975--CONTINUED

Chemical	Manufacturers' identification codes (according to list in table 3)
Tolyltriazole-----	SW.
N,N,N-Tribenzylamine-----	x.
3,4',5-Tribromosalicylanilide-----	PCW.
1,2,3(and 1,2,4)-Trichlorobenzene-----	PPG.
1,2,4-Trichlorobenzene-----	DOW, HK.
2,4,5-Trichlorobenzenesulfonic acid, sodium salt-----	x.
N,2,6-Trichloro-p-benzoquinoneimine-----	EK.
1,1,1-Trichloro-2,2-diphenylethane-----	CWN.
Trichloromelamine-----	WTH.
1,2,4-Trichloro-5-nitrobenzene-----	ALL, PCW.
Trichlorophenylsilane-----	DCC, UCC.
α,α,α -Trichlorotoluene (Benzotrichloride)-----	HK, VEL.
$\alpha,2,4$ -Trichlorotoluene-----	HN.
2,4,6-Trichloro-s-triazine (Cyanuric chloride)-----	CGY, NIL.
1,3,5-Triethylbenzene-----	DUP.
4,4-Trifluoro-1-trifluoromethylmethylenediphenol-----	DUP.
Trimellitic anhydride, acid chloride-----	AMB.
Trimesic acid (1,3,5-Benzenetricarboxylic acid)-----	ARS.
1,2,4-Trimethylbenzene (Pseudocumene)-----	SNT.
3,5,5-Trimethylcyclohexanol (Homomenthol)-----	ARS.
2,3,3-Trimethyl-3H-indole-----	GAF.
1,3,3-Trimethyl- Δ^2 , α -indolineacetaldehyde-----	DUP, GAF.
1,3,3-Trimethyl-2-methyleneindoline (Trimethyl base)-----	DUP, GAF, VPC.
Trimethylphenylammonium chloride-----	x.
Trimethylphenylammonium iodide-----	EK, TRC.
2,4,6-Trimethylpyridine-----	KPT.
2,4,6-Trinitrobenzenesulfonic acid-----	EK.
2,4,7-Trinitrofluoren-9-one-----	EK, WAY.
Triphenylmethane-----	EK.
Triphenylmethanol-----	EK.
α,α',α'' -Tris(dimethylamino)mesitol-----	RH.
1,3,5-Tris[3-(dimethylamino)propyl] hexahydro-s-triazine.	ABB.
Tris(2-methyl-1-aziridinyl)phosphine oxide-----	ARS.
*7,7'-Ureylenebis[4-hydroxy-2-naphthalenesulfonic acid] (J Acid Urea).	DUP, GAF, TRC.
p-Vinylbenzenesulfonic acid, sodium salt styrene-sulfonate.	DUP.
4-Vinylcyclohexene-----	UCC.
5-Vinyl-2-picoline (MVP)-----	PLC.
2-Vinylpyridine-----	RIL.
4-Vinylpyridine-----	RIL.
Vinyltoluene (Fosta sol)-----	FG.
*Violanthrone (Dibenzanthrone)-----	ACS, ACY, DUP, GAF, MAY, TRC.
Xanthene-9-carboxylic acid-----	MAL.
*o-Xylene-----	ATR, CCP, CPI, CSD, CSO, ENJ, MON, PPR, SHC, SNT, SOC, TOC.
*p-Xylene-----	ACC, ATR, CSO, ENJ, HCR, PPR, SHC, SNT, SOC, SOG, TOC.
Xylenesulfonic acid, mixed isomers-----	NES.
Xylenols: not to be classified as to b.p.-----	GE.
2,6-Xylenol, synthetic-----	KPT.
Xylydines:	
2,4-Xylydine (m-4-Xylydine)-----	DUP.
2,6-Xylydine (p-Xylydine)-----	DUP.
Original mixture-----	DUP.
4-(2,5-Xylylazo)-o-toluidine-----	ACY.
All other cyclic intermediates-----	ABB, ACC, ACS, ACY, ADC, ALD, ALL, ARA, BJL, BPC, CMG, DUP, EK, FMP, GAF, HSC, HST, ICI, JCC, KF, LIL, MIL, MRA, MRK, PAS, PCW, PD, PRD, RH, SAR, SDC, SDW, SK, STC, SW, TCH, TRD, UCC, x, x, x.

¹ See report on Medicinal Chemicals for data on medicinal grade of this item.² Does not include manufacturers' identification codes for producers that report to the Division of Fuels Data, U.S. Bureau of Mines.

SYNTHETIC ORGANIC CHEMICALS, 1975

TABLE 3.--CYCLIC INTERMEDIATES: DIRECTORY OF MANUFACTURERS, 1975

ALPHABETICAL DIRECTORY BY CODE

[Names of manufacturers that reported production or sales of cyclic intermediates to the U.S. International Trade Commission for 1975 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	GAF	GAF Corp., Chemical Division
AC	American Color & Chemical Corp.	GE	General Electric Co.
ACC	Amoco Chemical Corp.	GIV	Givaudan Corp.
ACS	Allied Chemical Corp.: Specialty Chemicals Division	GLY	Glyco Chemicals, Inc.
ACY	American Cyanamid Co.	GNT	General Tire & Rubber Co., Chemical/Plastics Div.
ADC	Anderson Development Co.	GOC	Gulf Oil Corp., Gulf Oil Co., Chemical Co.-U.S.
AIP	Air Products & Chemicals, Inc.	GP	Georgia-Pacific Corp., Rebecca Chemical Division
ALD	Aldrich Chemical Co., Inc.	GRS	Champlin Petroleum Co.
ALF	Allied Chemical Corp., Fibers Div.	GYR	Goodyear Tire & Rubber Co.
ALL	Alliance Chemicals, Inc.	HCR	Hercor Chemical Corp.
AMB	American Bio-Synthetics Corp.	HEX	Hexagon Laboratories, Inc.
ARA	Arapahoe Chemical, Inc., Sub/Syntex Corp. (U.S.A.)	HK	Hooker Chemicals & Plastics Corp.
ARK	Armstrong Cork Co.	HN	Tenneco Chemicals, Inc.
ARS	Arsynco, Inc.	HPC	Hercules, Inc.
ARZ	Arizona Chemical Co.	HSC	Chemetron Corp., Pigments Division
ASH	Ashland Oil, Inc., and Ashland Chemical Co.	HSH	Harshaw Chemical Co., Div. of Kewanee Oil Co.
ASL	Ansol Chemical Co.	HST	American Hoechst Corp.: Hoechst Fibers Industries Rhode Island Works
ATR	Atlantic Richfield Co.	ICC	Inmont Corp.
BAS	BASF Wyandotte Corp.	ICI	ICI United States, Inc., Specialty Chemicals Group
BJL	Burdick & Jackson Laboratories, Inc.	JCC	Jefferson Chemical Co., Inc.
BPC	Stauffer Chemical Co., Specialty-Chemical Division, Benzol Products Dept.	KF	Kay-Fries Chemicals, Inc.
BUC	Synalloy Corp., Blackman-Uhler Chemical Div.	KLM	Kalama Chemical Co.
CCP	Crown Central Petroleum Corp.	KPP	Arco/Polymers, Inc.
CCW	Cincinnati Milacron Chemicals, Inc.	KPT	Koppers Co., Inc., Organic Materials Division
CEL	Celanese Corp., Celanese Chemical Co.	LAK	Lakeway Chemicals, Inc.
CGY	Ciba-Geigy Corp.	LEM	Napp Chemicals, Inc.
CHL	Chemol, Inc.	LIL	Eli Lilly & Co. and Puerto Rico
CLK	Clark Chemical Corp.	MAL	Mallinckrodt Chemical Works
CMG	Naanza, Inc.	MAY	Otto B. May, Inc.
CNP	Nipro, Inc.	MCB	Borg-Warner Corp., Marbon Chemical Division
CO	Continental Oil Co.	MCH	Michigan Chemical Corp.
CPI	Commonwealth Petrochemicals, Inc.	MER	Merichem Co.
CRS	Carus Chemical Co.	MIL	Deering Milliken, Inc., Milliken Chemical Div.
CRZ	Crown Zellerbach Corp., Chemical Products Div.	MLC	Melamine Chemicals, Inc.
CSD	Cosden Oil & Chemical Co.	MNR	Monroe Chemical Co.
CSO	Cities Service Oil Co.	MOB	Mobay Chemical Co.
CSP	Coastal States Petrochemical Co.	MOC	Marathon Oil Co., Texas Refining Division
CWN	Upjohn Co., Fine Chemicals Division	MON	Monsanto Co.
DBC	Dow Badische Co.	MRA	Bostik South, Inc.
DCC	Dow Corning Corp.	MRK	Merck & Co., Inc.
DOW	Dow Chemical Co.	MRT	Morton Chemical Co. Div. of Morton-Norwich Products, Inc.
DSC	Dye Specialties, Inc.	MTO	Montrose Chemical Corp. of California
DUP	E. I. duPont de Nemours & Co., Inc.	MTR	Sobin Chemicals, Inc.
DVC	Dover Chemical Co.	NCI	Union Camp Corp.
EGR	Eagle River Chemical Corp.	NEP	Nepera Chemical Co., Inc.
EK	Eastman Kodak Co.:	NES	Nease Chemical Co., Inc.
EKT	Tennessee Eastman Co. Division	NIL	Nilok Chemicals, Inc.
ELP	El Paso Products Co.	NOR	Norwich Parmacal Co.
ENJ	Exxon Chemical Co. U.S.A.	NPC	Northwest Petrochemical Corp.
FER	Ferro Corp., Ottawa Chemical Div.	NWP	Northern Petrochemical Co.
FG	Foster Grant Co., Inc.		
FIN	Hexcel Corp., Fine Organics Div.		
FMP	FMC Corp., Industrial Chemical Division		
FMT	Fairmount Chemical Co., Inc.		
FST	First Chemical Corp.		

TABLE 3.--CYCLIC INTERMEDIATES: DIRECTORY OF MANUFACTURERS, 1975--CONTINUED

Code	Name of company	Code	Name of company
OMC	Olin Corp.	SOC	Standard Oil Co. of California, Chevron Chemical Co.
OPC	Orbis Products Corp.	SOG	Charter International Oil Co.
ORO	Chevron Chemical Co.	STC	American Hoechst Corp., Sou-Tex Works
ORT	Roehr Chemicals, Inc.	STG	Stange Co.
OTC	Story Chemical Corp., Ott Division	STP	Stepan Chemical Co.
PAS	Pennwalt Corp.	STY	Styrochem Corp.
PCW	Pfister Chemical, Inc.	SW	Sherwin-Williams Co.
PD	Parke, Davis & Co.	SWC	Corco Cyclohexane, Inc.
PFZ	Pfizer, Inc.	TCH	Emery Industries, Inc., Trylon Chemical Division
PIT	Pitt-Consol Chemical Co.	TEN	Cities Service Co., Copperhill Operations
PLC	Phillips Petroleum Co.	TNA	Ethyl Corp.
PPG	PPG Industries, Inc.	TOC	Tenneco Oil Co.
PPR	Phillips Puerto Rico Corp., Inc.	TRC	Toms River Chemical Corp.
PRD	Ferro Corp., Productol Chemical Div.	TRD	Manufacturing Enterprises, Inc., Squibb Manufacturing, Inc., Trade Enterprise, Inc.
PTO	Puerto Rico Chemical Co., Inc.	TX	Texaco, Inc.
PTT	Petro-Tex Chemical Corp.	UCC	Union Carbide Corp.
QKO	Quaker Oats Co.	UOC	Union Oil Co. of California
RBC	Fike Chemicals, Inc.	UOP	UOP, Inc., UOP Chemical Div.
RCI	Reichhold Chemicals, Inc.	UPF	Jim Walter Resources, Inc.
RDA	Rhodia, Inc.	UPJ	Upjohn Co.
RH	Rohm & Haas Co.	USR	Uniroyal, Inc., Chemical Division
RIL	Reilly Tar & Chemical Corp.	USS	USS Chemicals Div. of U.S. Steel Corp.
RPC	Millmaster Onyx Corp., Refined-Onyx Division	VAL	Valchem Corp.
RSA	R.S.A. Corp.	VEL	Velsicol Chemical Corp.
RUC	Rubicon Chemicals, Inc.	VGC	Virginia Chemicals, Inc.
SAL	Salsbury Laboratories	VPC	Mobay Chemical Corp., Verona Division
SAR	Sartomer Industries, Inc.	WAY	Philip A. Hunt Chemical Corp., Organic Chemical Division
SCN	Schenectady Chemicals, Inc.	WIL	Inolex Corp., Inolex Pharmaceutical Division
SDC	Martin-Marietta Corp., Sodyeco Division	WJ	Warner-Jenkinson Manufacturing Co.
SER	Sterling Drug, Inc.:	WTC	Witco Chemical Co., Inc.
SDH	Hilton-Davis Chemical Co. Division	WTH	Union Camp Corp., Chemical Div., Dover Plant
SDW	Winthrop Laboratories Division	WTL	Pennwalt Corp., Lucidol Division
SFA	Stauffer Chemical Co.:	WYT	Wyeth Laboratories, Inc., Wyeth Laboratories Div. of American Home Products Corp.
SFC	Agricultural Division		
SFS	Calhio Chemicals, Inc.		
SHC	Specialty Chemical Division		
SK	Shell Oil Co., Shell Chemical Co. Division		
SKO	Smith, Klein & French Laboratories		
SLV	Skelly Oil Co.		
SNT	Sterwin Chemicals, Inc.		
	Suntide Refining Co.		

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

DYES

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 one or more domestic producers. 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 costs 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 a dye are determined largely by the use for which it is intended.

Total domestic production of dyes (revised) in 1975 amounted to 206 million pounds, or 25.1 percent less than the 275 million pounds produced in 1974 (table 1). Sales of dyes in 1975 amounted to 209 million pounds, valued at \$476 million, compared with 263 million pounds, valued at \$556 million, in 1974. In terms of quantity, sales of dyes in 1975 were 20.7 percent less than in 1974 and in terms of value, 14.5 percent less. The average unit value of sales of all dyes in 1975 was \$2.28 per pound, compared with \$2.11 per pound in 1974.

In general, the production of important dyes decreased substantially from 1974 to 1975. The production of Disperse Blue 79 decreased 38.4 percent from 4.9 million pounds in 1974 to 3.0 million pounds in 1975. The production of Vat Black 25 decreased 15.8 percent from 2.3 million pounds in 1974 to 2.0 million pounds in 1975. The production of other important dyes also decreased from 1974 to 1975 by the following percentages: Acid Yellow 151 (2.7 percent), Acid Blue 9 (29.3 percent), Direct Blue 218 (13.4 percent), Disperse Yellow 54 (17.7 percent), Disperse Red 60 (31.2 percent), Fluorescent Brightening Agent 28 (6.1 percent), FD&C Yellow No. 5 (29.8 percent), and Vat Green 3 (19.5 percent). The production of some important dyes increased from 1974 to 1975 by the following percentages: Disperse Yellow 3 (8.9 percent) and Direct Yellow 11 (25.0 percent).

Table 1A is a summary of production and sales of dyes in 1975 by class of application. Six application classes of dyes accounted for 83.1 percent of all dyes produced in 1975. Vat dyes accounted for 20.6 percent of total production; fluorescent brightening agents for 18.7 percent; disperse dyes for 16.7 percent; direct dyes for 12.3 percent; acid dyes for 9.1 percent; and basic dyes for 5.7 percent. The production of these six dye application classes decreased from 1974 to 1975 by the following percentages: vat dyes (21.6 percent), fluorescent brightening agents (6.4 percent), disperse dyes (32.3 percent), direct dyes (21.5 percent), acid dyes (28.7 percent), and basic dyes (41.6 percent). For the remaining dye classes, production also decreased from 1974 to 1975: solvent dyes (39.6 percent), FD&C colors (35.5 percent), fiber-reactive dyes (28.9 percent), mordant dyes (39.3 percent), azoic diazo components, bases (25.7 percent), and azoic diazo components, salts (19.6 percent).

TABLE 1.--DYES: U.S. PRODUCTION AND SALES, 1975

[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 or each]

Dye	Production	Sales		
		Quantity	Value	Unit value ¹
		1,000 pounds	1,000 pounds	Per pound
Grand total-----	206,034	208,768	475,609	\$2.28
ACID DYES				
Total-----	18,770	19,749	59,744	.3.03
Acid yellow dyes, total-----	5,545	5,526	15,929	2.88
Acid Yellow 11-----	11	12	36	3.00
Acid Yellow 17-----	100	118	286	2.42
Acid Yellow 19-----	65	162	342	2.11
Acid Yellow 23-----	271	251	886	3.53
Acid Yellow 34-----	...	10	34	3.40
Acid Yellow 36-----	74	116	330	2.85
Acid Yellow 38-----	...	18	66	3.67
Acid Yellow 40-----	...	56	219	3.91
Acid Yellow 42-----	26	53	108	2.04
Acid Yellow 54-----	...	17	42	2.47
Acid Yellow 65-----	...	20	95	4.75
Acid Yellow 99-----	...	34	115	3.38
Acid Yellow 151-----	1,738	1,624	3,785	2.33
Acid Yellow 159-----	291	282	823	2.92
All other-----	2,969	2,753	8,762	3.18
Acid orange dyes, total-----	2,527	2,842	7,214	2.54
Acid Orange 7-----	231	294	504	1.71
Acid Orange 8-----	175	184	363	1.97
Acid Orange 10-----	170	172	330	1.92
Acid Orange 24-----	613	664	1,121	1.69
Acid Orange 60-----	212	229	765	3.34
Acid Orange 64-----	...	24	81	3.38
Acid Orange 74-----	20	27	71	2.63
Acid Orange 116-----	279	283	879	3.11
All other-----	827	965	3,100	3.21
Acid red dyes, total-----	3,062	3,676	10,868	2.96
Acid Red 1-----	798	879	796	.91
Acid Red 4-----	39	49	141	2.88
Acid Red 18-----	...	19	33	1.74
Acid Red 37-----	...	18	42	2.33
Acid Red 73-----	87	193	687	3.56
Acid Red 85-----	67	65	195	3.00
Acid Red 88-----	...	13	35	2.69
Acid Red 99-----	...	45	121	2.69
Acid Red 114-----	258	288	810	2.81
Acid Red 137-----	62	70	300	4.29
Acid Red 151-----	418	602	1,473	2.45
Acid Red 182-----	38	58	204	3.52
Acid Red 186-----	...	7	35	5.00
Acid Red 266-----	...	138	597	4.33
Acid Red 337-----	380	402	1,670	4.15
All other-----	915	830	3,729	4.49

See footnotes at end of table.

TABLE 1.--DYES: U.S. PRODUCTION AND SALES, 1975--CONTINUED

Dye	Production	Sales		
		Quantity	Value	Unit value ¹
	1,000 pounds	1,000 pounds	1,000 dollars	Per pound
ACID DYES--Continued				
Acid violet dyes, total-----	138	124	447	\$3.60
Acid Violet 1-----	...	4	11	2.75
Acid Violet 3-----	...	29	74	2.55
Acid Violet 7-----	...	8	20	2.50
Acid Violet 12-----	...	10	21	2.10
Acid Violet 17-----	...	11	34	3.09
All other-----	138	62	287	4.63
Acid blue dyes, total-----	3,774	3,844	13,890	3.61
Acid Blue 9-----	1,370	1,197	1,916	1.60
Acid Blue 25-----	482	525	2,386	4.54
Acid Blue 27-----	97	123	495	4.02
Acid Blue 40-----	460	491	2,186	4.45
Acid Blue 41-----	...	20	86	4.30
Acid Blue 45-----	112	56	264	4.71
Acid Blue 62-----	5	...	...	...
Acid Blue 78-----	...	27	230	8.52
Acid Blue 92-----	...	29	104	3.59
Acid Blue 113-----	340	300	1,007	3.36
Acid Blue 158, 158:1, and 158:2-----	105	130	431	3.32
All other-----	803	946	4,785	5.06
Acid green dyes, total-----	277	407	1,611	3.96
Acid Green 3-----	...	71	188	2.65
Acid Green 16-----	...	33	250	7.58
Acid Green 20-----	38	56	131	2.34
Acid Green 25-----	...	171	672	3.93
All other-----	239	76	370	4.87
Acid brown dyes, total-----	1,201	1,117	3,580	3.20
Acid Brown 14-----	538	454	1,312	2.89
All other-----	663	663	2,268	3.42
Acid black dyes, total-----	2,246	2,213	6,205	2.80
Acid Black 1-----	427	383	957	2.50
Acid Black 107-----	138	195	795	4.08
All other-----	1,681	1,635	4,453	2.72
AZOIC DYES AND COMPONENTS				
<i>Azoic Diazo Components, Bases (Fast Color Bases)</i>				
Azoic Diazo Components, Bases (Fast Color Bases), total-----	492	335	933	2.79
<i>Azoic Diazo Components, Salts (Fast Color Salts)</i>				
Total-----	1,104	1,192	1,456	1.22
Azoic Diazo Component 1, salt-----	...	30	43	1.43
Azoic Diazo Component 3, salt-----	241	241	208	.86
Azoic Diazo Component 5, salt-----	25	46	62	1.35

See footnotes at end of table.

TABLE 1.--DYES: U.S. PRODUCTION AND SALES, 1975--CONTINUED

Dye	Production	Sales			
		Quantity	Value	Unit value ¹	
AZOIC DYES AND COMPONENTS--Continued					
<i>Azoic Diazo Components, Salts--Continued (Fast Color Salts)</i>					
Azoic Diazo Component 9, salt-----	1,000 pounds	1,000 pounds	1,000 dollars	Per pound	
Azoic Diazo Component 12, salt-----	155	152	141	\$0.93	
Azoic Diazo Component 13, salt-----	125	126	128	1.02	
Azoic Diazo Component 49, salt-----	191	269	336	1.25	
All other azoic diazo components, salts-----	...	19	56	2.95	
	367	309	482	1.56	
BASIC DYES					
Total-----	11,721	13,012	40,374	3.10	
Basic yellow dyes, total-----	3,943	4,427	11,562	2.61	
Basic Yellow 11-----	649	837	2,173	2.60	
Basic Yellow 13-----	139	191	472	2.47	
All other-----	3,155	3,399	8,917	2.62	
Basic orange dyes, total-----	1,150	1,186	3,068	2.59	
Basic Orange 2-----	265	317	605	1.91	
Basic Orange 21-----	550	475	1,270	2.67	
All other-----	335	394	1,193	3.03	
Basic red dyes, total-----	1,470	1,768	6,614	3.74	
Basic Red 13-----	...	9	22	2.44	
Basic Red 14-----	322	378	792	2.10	
Basic Red 15-----	163	216	620	2.87	
Basic Red 18-----	391	379	1,010	2.66	
Basic Red 49-----	37	...	...	...
All other-----	557	786	4,170	5.30	
Basic violet dyes, total-----	2,823	2,763	8,550	3.09	
Basic Violet 1-----	996	949	2,358	2.48	
Basic Violet 16-----	208	242	824	3.40	
All other-----	1,619	1,572	5,368	3.41	
Basic blue dyes, total-----	1,485	1,837	7,843	4.27	
Basic Blue 3-----	...	361	1,250	3.46	
Basic Blue 5-----	...	4	30	7.50	
Basic Blue 7-----	99	84	525	6.25	
All other-----	1,386	1,388	6,038	4.35	
Basic green dyes, total-----	...	561	1,687	3.01	
Basic Green 4-----	319	...	...	...
All other-----	...	561	1,687	3.01	
Basic Brown 1-----	20	55	92	1.67	
Basic Brown 4-----	212	306	623	2.04	
Basic black dyes-----	99	...	...	...
All other basic dyes-----	200	109	335	3.07	

See footnotes at end of table.

SYNTHETIC ORGANIC CHEMICALS, 1975

TABLE 1.--DYES: U.S. PRODUCTION AND SALES, 1975--CONTINUED

Dye	Production	Sales		
		Quantity	Value	Unit value ¹
DIRECT DYES		1,000 pounds	1,000 pounds	1,000 dollars
Total-----	25,342	27,388	53,493	Per pound \$1.95
Direct yellow dyes, total-----	11,547	11,362	20,178	1.78
Direct Yellow 4-----	502	419	896	2.14
Direct Yellow 6-----	142	218	536	2.46
Direct Yellow 8-----	...	6	19	3.17
Direct Yellow 11-----	2,664	3,139	3,643	1.16
Direct Yellow 12-----	32	42	201	4.79
Direct Yellow 28-----	27	68	254	3.74
Direct Yellow 44-----	262	403	932	2.31
Direct Yellow 84-----	504	592	1,320	2.23
Direct Yellow 106-----	591	512	1,092	2.13
All other-----	6,823	5,963	11,285	1.89
Direct orange dyes, total-----	1,269	1,392	3,186	2.29
Direct Orange 8-----	...	35	65	1.86
Direct Orange 15-----	365	387	558	1.44
Direct Orange 26-----	52	...	...	...
Direct Orange 29-----	76	86	280	3.26
Direct Orange 34-----	47	56	169	3.02
Direct Orange 37-----	...	8	20	2.50
Direct Orange 39-----	109	111	313	2.82
Direct Orange 72-----	79	151	345	2.28
Direct Orange 73-----	23	34	206	6.06
Direct Orange 102 ² -----	...	332	587	1.77
All other-----	518	192	643	3.35
Direct red dyes, total-----	2,886	2,982	8,068	2.71
Direct Red 1-----	132	114	341	2.99
Direct Red 2-----	53	55	198	3.60
Direct Red 23-----	155	141	516	3.66
Direct Red 24-----	152	150	444	2.96
Direct Red 26-----	...	47	140	2.98
Direct Red 37-----	63	65	254	3.91
Direct Red 39-----	43	32	124	3.88
Direct Red 72-----	138	135	420	3.11
Direct Red 75-----	...	3	18	6.00
Direct Red 80-----	335	385	1,068	2.77
Direct Red 81-----	518	491	1,529	3.11
Direct Red 83-----	86	102	259	2.54
All other-----	1,211	1,262	2,757	2.18
Direct violet dyes-----	...	146	341	2.34
Direct blue dyes, total-----	4,833	5,495	11,443	2.08
Direct Blue 1-----	156	174	665	3.82
Direct Blue 2-----	...	243	444	1.83
Direct Blue 8-----	30	20	72	3.60
Direct Blue 76-----	44	53	96	1.81
Direct Blue 78-----	...	13	55	4.23
Direct Blue 80-----	306	326	848	2.60
Direct Blue 86-----	505	550	1,430	2.60
Direct Blue 98-----	107	141	369	2.62
Direct Blue 120-----	70	85	307	3.61
Direct Blue 218-----	1,045	1,309	3,012	2.30
All other-----	2,570	2,581	4,145	1.61

See footnotes at end of table.

TABLE 1.--DYES: U.S. PRODUCTION AND SALES, 1975--CONTINUED

Dyes	Production	Sales		
		Quantity	Value	Unit value ¹
DIRECT DYES--Continued				
Direct green dyes, total-----	1,000 pounds	1,000 pounds	1,000 dollars	Per pound
Direct Green 1-----	...	493	1,930	\$3.91
All other-----	132	110	209	1.90
	...	383	1,721	4.49
Direct brown dyes, total-----	1,086	1,111	2,111	1.90
Direct Brown 2-----	125	/ 118	314	2.66
Direct Brown 31 ³ -----	73	73	321	4.40
Direct Brown 95 ³ -----	346	406	654	1.61
All other-----	542	514	822	1.60
Direct black dyes, total-----	3,046	4,407	6,236	1.41
Direct Black 22-----	329	403	477	1.18
Direct Black 38-----	2,168	...	...	...
All other-----	549	4,004	5,759	1.44
All other direct dyes-----	543	...	...	...
DISPERSE DYES				
Total-----	34,380	35,790	121,036	3.38
Disperse yellow dyes, total-----	7,293	7,550	18,373	2.43
Disperse Yellow 3-----	3,125	3,018	5,975	1.98
Disperse Yellow 5-----	56	...	...	...
Disperse Yellow 23-----	388	493	1,079	2.19
Disperse Yellow 33-----	146	167	347	2.08
Disperse Yellow 42-----	394	667	1,243	1.86
Disperse Yellow 54-----	1,073	957	3,188	3.33
All other-----	2,111	2,248	6,541	2.91
Disperse orange dyes, total-----	3,561	3,830	9,312	2.43
Disperse Orange 3-----	...	81	195	2.41
Disperse Orange 5-----	72	...	...	...
Disperse Orange 17-----	107	51	69	1.35
Disperse Orange 25-----	240	316	759	2.40
Disperse Orange 29-----	271	268	762	2.84
All other-----	2,871	3,114	7,527	2.42
Disperse red dyes, total-----	6,824	7,153	28,979	4.05
Disperse Red 1-----	89	186	407	2.19
Disperse Red 5-----	67	73	129	1.77
Disperse Red 15-----	...	43	189	4.40
Disperse Red 17-----	166	189	354	1.87
Disperse Red 50-----	14	...	...	...
Disperse Red 60-----	1,337	1,485	5,654	3.81
Disperse Red 65-----	176	126	382	3.03
Disperse Red 177-----	167	...	...	...
All other-----	4,808	5,051	21,864	4.33
Disperse violet dyes, total-----	256	368	1,740	4.73
Disperse Violet 1-----	45	42	195	4.64
Disperse Violet 27-----	...	47	218	4.64
All other-----	211	279	1,327	4.76
Disperse blue dyes, total-----	13,279	13,759	54,270	3.94
Disperse Blue 1-----	...	161	828	5.14
Disperse Blue 3-----	736	824	2,095	2.54
Disperse Blue 7-----	271	286	2,180	7.62
Disperse Blue 64-----	155	442	1,055	2.39
Disperse Blue 79-----	3,023	3,372	8,962	2.66
All other-----	9,094	8,674	39,150	4.51

See footnotes at end of table.

SYNTHETIC ORGANIC CHEMICALS, 1975

TABLE 1.--DYES: U.S. PRODUCTION AND SALES, 1975--CONTINUED

Dye	Production	Sales		
		Quantity	Value	Unit value ¹
DISPERSE DYES--Continued				
Disperse black dyes-----	1,000 pounds	1,000 pounds	1,000 dollars	Per pound
Disperse brown and green dyes-----	2,414 753	2,251 879	6,045 2,317	\$ 2.69 2.64
FIBER-REACTIVE DYES				
Fiber-reactive dyes, total-----	2,430	3,088	15,872	5.14
Reactive yellow dyes-----	578	620	3,442	5.55
All other reactive dyes-----	1,852	2,468	12,430	5.04
FLUORESCENT BRIGHTENING AGENTS				
Fluorescent brightening agent, total-----	38,449	35,819	56,299	1.57
Fluorescent Brightening Agent 28-----	1,579	2,182	3,061	1.40
Fluorescent Brightening Agent 61-----	33	32	351	10.97
All other fluorescent brightening agents-----	36,837	33,605	52,887	1.57
FOOD, DRUG, AND COSMETIC COLORS				
Total-----	3,694	3,420	21,897	6.40
<i>Food, Drug, and Cosmetic Dyes</i>				
Total-----	3,334	3,148	19,126	6.08
FD&C Blue No. 1-----	123	123	1,299	10.56
FD&C Blue No. 2-----	44	24	395	16.46
FD&C Red No. 2-----	680	632	3,293	5.21
FD&C Red No. 3-----	203	194	2,039	10.51
FD&C Red No. 40-----	364	433	3,544	8.18
FD&C Yellow No. 5-----	1,070	1,002	4,990	4.98
FD&C Yellow No. 6-----	804	714	3,255	4.56
All other food, drug, and cosmetic dyes-----	46	26	311	11.96
<i>Drug and Cosmetic and External Drug and Cosmetic Dyes</i>				
Total-----	360	272	2,771	10.19
D&C green dyes-----	23	22	435	19.77
D&C Orange No. 5-----	...	9	47	5.22
D&C red dyes, total-----	228	185	1,446	7.82
D&C Red No. 6-----	22	19	145	7.63
D&C Red No. 7-----	20	23	115	5.00
D&C Red No. 9-----	62	...	...	...
D&C Red No. 12-----	5	...	...	...
D&C Red No. 19-----	12	14	148	10.57
D&C Red No. 21-----	25	13	71	5.46
D&C Red No. 30-----	28	21	293	13.95
D&C Red No. 36-----	...	4	15	3.75
All other-----	54	91	659	7.24
All other drug & cosmetic and external drug & cosmetic dyes-----	109	56	843	15.05
MORDANT DYES				
Total-----	519	576	1,654	2.87
Mordant orange dyes, total-----	51	74	150	2.03
Mordant Orange 6-----	...	49	87	1.78
All other-----	51	25	63	2.52

See footnotes at end of table.

DYES

53

TABLE 1.--DYES: U.S. PRODUCTION AND SALES, 1975--CONTINUED

Dye	Production	Sales		
		Quantity	Value	Unit value ¹
	1,000 pounds	1,000 pounds	1,000 dollars	Per pound
MORDANT DYES--Continued				
Mordant Red 7-----	...	15	70	\$4.67
Mordant brown dyes-----	118	140	436	3.11
Mordant black dyes, total-----	268	283	764	2.70
Mordant Black 11-----	169	...	...	...
All other-----	99	283	764	2.70
All other mordant dyes-----	82	64	234	3.66
SOLVENT DYES				
Total-----	9,934	8,127	22,648	2.79
Solvent yellow dyes, total-----	1,651	1,241	3,532	2.85
Solvent Yellow 14-----	783	461	959	2.08
Solvent Yellow 33-----	87	62	335	5.40
Solvent Yellow 56-----	50	42	103	2.45
All other-----	731	676	2,135	3.16
Solvent orange dyes-----	793	654	1,740	2.66
Solvent red dyes, total-----	2,536	2,283	5,602	2.45
Solvent Red 49-----	64	67	598	8.93
All other-----	2,472	2,216	5,004	2.26
Solvent blue dyes-----	1,726	860	5,933	6.90
All other solvent dyes-----	3,228	3,089	5,841	1.89
VAT DYES				
Total-----	42,466	44,437	57,869	1.30
Vat yellow dyes, total-----	1,943	2,426	5,968	2.46
Vat Yellow 2, 8-1/2%-----	...	1,794	3,069	1.71
All other-----	1,943	632	2,899	4.59
Vat Orange 1, 20%-----	...	262	1,215	4.64
Vat Orange 2, 12%-----	...	282	978	3.47
Vat Orange 15, 10%-----	...	338	842	2.49
Vat red dyes, total-----	157	258	1,494	5.79
Vat Red 1, 13%-----	...	85	479	5.64
Vat Red 13, 11%-----	...	72	276	3.83
All other-----	157	101	739	7.32
Vat violet dyes-----	...	263	1,182	4.49
Vat green dyes, total-----	3,610	3,623	5,482	1.51
Vat Green 1, 6%-----	873	860	1,549	1.80
Vat Green 3, 10%-----	1,222	1,150	1,898	1.65
All other-----	1,515	1,613	2,035	1.26
Vat brown dyes, total-----	2,809	2,778	8,186	2.95
Vat Brown 3, 11%-----	310	286	1,291	4.51
All other-----	2,499	2,492	6,895	2.77
Vat black dyes, total-----	3,104	3,786	6,516	1.72
Vat Black 25, 12-1/2%-----	1,951	2,552	4,377	1.72
Vat Black 27, 12-1/2%-----	100	183	504	2.75
All other-----	1,053	1,051	1,635	1.56
All other vat dyes-----	30,843	30,421	26,006	.85
All other dyes ^b -----	16,733	15,835	22,334	1.41

See footnotes on following page.

SYNTHETIC ORGANIC CHEMICALS, 1975

Footnotes for table 1

- ¹ Calculated from rounded figures.
² The sales value for 1974 should have been \$528,000 and not \$706,000 as previously reported.
³ The data include dyes which are similar to, but not chemically identical with, the indicated Colour Index name.
⁴ The data include azoic compositions, azoic coupling components, oxidation bases, ingrain dyes, sulfur dyes, and miscellaneous dyes. Statistics for these 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, 1975

Class of application	Production	Sales		
		Quantity 1,000 pounds	Value 1,000 dollars	Unit value ¹ per pound
Total-----	206,034	208,768	475,609	\$2.28
Acid-----	18,770	19,749	59,744	3.03
Azoic dyes and components:				
Azoic diazo components, bases (Fast color bases)----	492	335	933	2.79
Azoic diazo components, salts (Fast color salts)----	1,104	1,192	1,456	1.22
Basic-----	11,721	13,012	40,374	3.10
Direct-----	25,342	27,388	53,493	1.95
Disperse-----	34,380	35,790	121,036	3.38
Fiber-reactive-----	2,430	3,088	15,872	5.14
Fluorescent brightening agents-----	38,449	35,819	56,299	1.57
Food, drug, and cosmetic colors-----	3,694	3,420	21,897	6.40
Mordant-----	519	576	1,654	2.87
Solvent-----	9,934	8,127	22,648	2.79
Vat-----	42,466	44,437	57,869	1.30
All other ² -----	16,733	15,835	22,334	1.41

¹ Calculated from rounded figures.

² The data include azoic composition, azoic coupling components, oxidation base, ingrain dyes, sulfur dyes, and miscellaneous dyes. Statistics for these groups of dyes may not be published separately because publication would disclose information received in confidence.

TABLE 2.--DYES FOR WHICH U.S. PRODUCTION OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1975

[Dyes for which separate statistics are given in table 1 are marked below with an asterisk (*); dyes 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]

Dye	Manufacturers' identification codes (according to list in table 3)
ACID DYES	
*Acid yellow dyes:	
Acid Yellow 1-----	ACY.
Acid Yellow 3-----	ACS, ACY.
*Acid Yellow 11-----	ATL, BDO, CMG, VPC.
Acid Yellow 14-----	TRC.
*Acid Yellow 17-----	AC, ACS, ALT, ATL, BDO, CMG, DUP, HSH, SDH, TRC, VPC.
*Acid Yellow 19-----	AC, ALT, BAS, ICI, VPC.
*Acid Yellow 23-----	AC, ACS, ACY, ALT, GAF, MRX, PDC, TRC, VPC, NJ.
Acid Yellow 25-----	GAF.
Acid Yellow 29-----	AC, ACS, ALT, PDC.
*Acid Yellow 34-----	ACS, DUP, GAF, TRC.
*Acid Yellow 36-----	ACS, ATL, GAF.
*Acid Yellow 38-----	ACY, ALT, ATL, TRC.
*Acid Yellow 40-----	AC, ACY, GAF, VPC.
*Acid Yellow 42-----	AC, GAF.
Acid Yellow 44-----	DUP, VPC.
Acid Yellow 49-----	AC, ACS, TRC, VPC.
*Acid Yellow 54-----	VPC.
Acid Yellow 59-----	AC.
Acid Yellow 63-----	ALT, ATL, FAB, TRC.
*Acid Yellow 65-----	ACS, SDH.
Acid Yellow 73-----	GAF, TRC.
Acid Yellow 76-----	VPC.
Acid Yellow 79-----	GAF, TRC, VPC.
*Acid Yellow 99-----	TRC.
Acid Yellow 114-----	GAF.
Acid Yellow 121-----	AC.
Acid Yellow 124-----	TRC.
Acid Yellow 127-----	TRC.
Acid Yellow 128-----	TRC.
Acid Yellow 129-----	TRC.
Acid Yellow 135-----	GAF.
*Acid Yellow 151-----	AC, ACY, DUP, FAB, GAF, TRC, VPC.
Acid Yellow 152-----	ACY.
*Acid Yellow 159-----	ACS, ALT, GAF, TRC, VPC.
Acid Yellow 174-----	AC, DUP, VPC.
Acid Yellow 175-----	DUP.
Acid Yellow 179-----	TRC.
Acid Yellow 190-----	HST.
Acid Yellow 198-----	DUP.
Acid Yellow 200-----	DUP.
Acid Yellow 216-----	VPC.
Other acid yellow dyes-----	AC, ACY, ALT, ATL, CMG, GAF, TRC.
*Acid orange dyes:	
Acid Orange 1-----	AC, GAF.
Acid Orange 5-----	ACY.
*Acid Orange 7-----	AC, ACS, ACY, ATL, BDO, GAF, PDC, TRC, VPC.
*Acid Orange 8-----	AC, ACY, ATL, DUP, GAF, TRC, VPC.
*Acid Orange 10-----	AC, ACS, ACY, ATL, BDO, DUP, GAF, PDC, TRC, VPC.
Acid Orange 12-----	PSC.
*Acid Orange 24-----	ACS, ACY, DUP, FAB, GAF, TRC.
Acid Orange 31-----	AC.
Acid Orange 45-----	ACS.
Acid Orange 50-----	AC.
Acid Orange 51-----	TRC.
Acid Orange 56-----	GAF.
*Acid Orange 60-----	AC, ALT, ATL, CMG, DUP, GAF, TRC, VPC.
Acid Orange 62-----	TRC.
Acid Orange 63-----	ATL, TRC.
*Acid Orange 64-----	ACS, ACY, DUP.

TABLE 2.--DYES FOR WHICH U.S. PRODUCTION OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1975--CONTINUED

Dye	Manufacturers' identification codes (according to list in table 3)
ACID DYES--Continued	
*Acid orange dyes--Continued	
Acid Orange 69-----	ACY.
*Acid Orange 74-----	CMG, GAF, TRC.
Acid Orange 76-----	TRC.
Acid Orange 85-----	ACS.
Acid Orange 86-----	TRC.
Acid Orange 101-----	VPC.
*Acid Orange 116-----	AC, ALT, CMG, FAB, GAF, TRC.
Acid Orange 128-----	DUP.
Acid Orange 132-----	DUP.
Acid Orange 136-----	DUP.
Acid Orange 152-----	DUP.
Other acid orange dyes-----	ALT, ATL, GAF, PDC, TRC, VPC.
*Acid red dyes:	
*Acid Red 1-----	ACS, ACY, ATL, BDO, DUP, GAF, SDH, TRC, VPC.
*Acid Red 4-----	AC, ATL, BDO, CMG, GAF, PDC, TRC, VPC.
Acid Red 14-----	ACS, ATL, GAF, PDC.
Acid Red 17-----	ATL.
*Acid Red 18-----	BDO, GAF, TRC.
Acid Red 26-----	ACY.
Acid Red 35-----	GAF.
*Acid Red 37-----	AC, ATL, DUP, GAF, TRC.
Acid Red 51-----	BDO.
Acid Red 57-----	ATL, CMG, TRC.
Acid Red 66-----	AC, ATL.
*Acid Red 73-----	ACS, ACY, ATL, DUP, GAF, HSH, PSC, TRC, VPC.
*Acid Red 85-----	ACS, FAB, GAF.
Acid Red 87-----	SDH.
*Acid Red 88-----	ACY, ATL, GAF.
Acid Red 89-----	AC, BDO, GAF.
Acid Red 97-----	ATL, GAF.
*Acid Red 99-----	AC, ATL, FAB.
Acid Red 111-----	VPC.
*Acid Red 114-----	ACS, ALT, ATL, DUP, GAF, TRC, VPC.
Acid Red 115-----	ATL, GAF.
Acid Red 119-----	ALT, ATL.
Acid Red 133-----	GAF.
Acid Red 134-----	TRC.
*Acid Red 137-----	AC, ATL, CMG, DUP, GAF, TRC.
*Acid Red 151-----	AC, ACY, ATL, CMG, DUP, HSH, TRC, VPC.
Acid Red 167-----	ATL, TRC.
Acid Red 179-----	CMG.
*Acid Red 182-----	AC, ALT, ATL, BDO, DUP, GAF, VPC.
Acid Red 183-----	CMG, TRC.
*Acid Red 186-----	ACY, CMG, GAF, VPC.
Acid Red 194-----	CMG, TRC.
Acid Red 213-----	TRC.
Acid Red 225-----	VPC.
*Acid Red 266-----	AC, DUP, TRC, VPC.
Acid Red 277-----	VPC.
Acid Red 278-----	VPC.
Acid Red 299-----	AC, ALT, FAB.
Acid Red 309-----	TRC.
*Acid Red 337-----	AC, DUP, TRC, VPC.
Acid Red 350-----	GAF.
Acid Red 388-----	DUP.
Other acid red dyes-----	AC, ALT, ATL, CMG, DUP, GAF, ICI, TRC, VPC.
*Acid violet dyes:	
*Acid Violet 1-----	BDO, CMG, GAF.
*Acid Violet 3-----	ACS, ACY, TRC.

TABLE 2.--DYES FOR WHICH U.S. PRODUCTION OR SALES WERE REPORTED, IDENTIFIED
BY MANUFACTURER, 1975--CONTINUED

Dye	Manufacturers' identification codes (according to list in table 3)
ACID DYES--Continued	
*Acid violet dyes--Continued	
Acid Violet 4-----	SDH.
*Acid Violet 7-----	ATL, BDO, CMG, GAF, TRC.
*Acid Violet 12-----	BDO, CMG, GAF.
*Acid Violet 17-----	DUP, GAF, SDH.
Acid Violet 29-----	HSH.
Acid Violet 34-----	ATL.
Acid Violet 43-----	ATL, HSH.
Acid Violet 49-----	ACS, ACY, SDH, TRC.
Acid Violet 56-----	CMG, GAF.
Acid Violet 76-----	ACS.
Other acid violet dyes-----	CMG.
*Acid blue dyes:	
Acid Blue 1-----	GAF.
Acid Blue 7-----	ACS, ACY, SDH.
*Acid Blue 9-----	ACS, GAF, SDH.
Acid Blue 15-----	GAF.
Acid Blue 22-----	AC, HSC.
*Acid Blue 25-----	AC, ATL, BDO, CMG, DUP, GAF, HSH, ICI, TRC, VPC.
*Acid Blue 27-----	ATL, BDO, CMG, GAF, VPC.
*Acid Blue 40-----	AC, ACS, ALT, ATL, BDO, CMG, DUP, GAF, ICI, TRC, -VPC.
*Acid Blue 41-----	ATL, CMG, GAF.
Acid Blue 43-----	TRC.
*Acid Blue 45-----	ACY, ATL, CMG, GAF, TRC, VPC.
*Acid Blue 62-----	ALT, BDO, CMG.
Acid Blue 67-----	BDO.
Acid Blue 69-----	GAF.
Acid Blue 74-----	ACS, DUP.
*Acid Blue 78-----	ACS, ATL, BDO, ICI, TRC.
Acid Blue 80-----	TRC.
Acid Blue 83-----	GAF.
*Acid Blue 92-----	ACS, ATL, FAB.
Acid Blue 104-----	GAF.
*Acid Blue 113-----	AC, ALT; ATL, DUP, FAB, GAF, PDC.
Acid Blue 118-----	AC, ACS, ATL.
Acid Blue 120-----	ATL.
Acid Blue 122-----	DUP.
Acid Blue 127-----	CMG.
Acid Blue 145-----	ACS.
*Acid Blue 158, 158:1 and 158:2-----	AC, BDO, GAF, TRC.
Acid Blue 166-----	CMG.
Acid Blue 198-----	VPC.
Acid Blue 203-----	VPC.
Acid Blue 205-----	VPC.
Acid Blue 221-----	VPC.
Acid Blue 230-----	ACS, DUP.
Acid Blue 231-----	TRC.
Acid Blue 298-----	DUP.
Other acid blue dyes-----	ACY, ALT, ATL, GAF, TRC.
*Acid green dyes:	
Acid Green 1-----	ACY.
*Acid Green 3-----	ACS, GAF, TRC.
Acid Green 5-----	WJ.
*Acid Green 16-----	ACS, DUP, TRC.
Acid Green 19-----	ALT.
*Acid Green 20-----	ATL, BDO, GAF, TRC.
*Acid Green 25-----	ACS, ATL, GAF, HSH, ICI, TRC.
Acid Green 35-----	TRC.
Acid Green 41-----	ICI.
Acid Green 50-----	ACY, GAF.
Acid Green 70-----	TRC.
Other acid green dyes-----	ALT.

SYNTHETIC ORGANIC CHEMICALS, 1975

TABLE 2.--DYES FOR WHICH U.S. PRODUCTION OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1975--CONTINUED

Dye	Manufacturers' identification codes (according to list in table 3)
ACID DYES--Continued	
*Acid brown dyes:	
Acid Brown 1-----	GAF.
Acid Brown 6-----	GAF.
*Acid Brown 14-----	AC, ACS, ACY, DUP, FAB, GAF, TRC.
Acid Brown 19-----	TRC.
Acid Brown 31-----	GAF.
Acid Brown 45-----	TRC.
Acid Brown 85-----	VPC.
Acid Brown 96-----	ACY.
Acid Brown 97-----	ACY.
Acid Brown 98-----	ACY, TRC.
Acid Brown 152-----	GAF.
Acid Brown 158-----	GAF.
Acid Brown 223-----	VPC.
Acid Brown 354-----	ACY.
Other acid brown dyes-----	ALT, BAS, DUP, GAF, VPC.
*Acid black dyes:	
*Acid Black 1-----	AC, ACS, ACY, ATL, BDO, DUP, FAB, GAF, PDC, TRC, VPC.
Acid Black 2-----	ACS, ACY.
Acid Black 24-----	AC, GAF.
Acid Black 26-----	ATL, DUP.
Acid Black 29-----	GAF.
Acid Black 41-----	PDC.
Acid Black 48-----	ICI.
Acid Black 52-----	AC, ATL, FAB, GAF, TRC, VPC.
Acid Black 58-----	CMG, DUP, TRC.
Acid Black 60-----	BDO, TRC.
Acid Black 92-----	ACY.
*Acid Black 107-----	ACS, ALT, GAF, TRC, VPC.
Acid Black 108-----	GAF.
Acid Black 139-----	VPC.
Acid Black 140-----	CMG.
Acid Black 172-----	VPC.
Other acid black dyes-----	ALT, ATL, DUP, HSH, PDC, VPC.
AZOIC DYES AND COMPONENTS	
<i>Azoic Compositions</i>	
Azoic yellow dyes:	
Azoic Yellow 1-----	ATL, SDH.
Azoic Yellow 2-----	ALL, ATL, BUC, x.
Azoic Yellow 3-----	ATL.
Azoic orange dyes:	
Azoic Orange 3-----	ALL, BUC, x.
Azoic Orange 10-----	BUC.
Azoic red dyes:	
Azoic Red 1-----	ALL, BUC, x.
Azoic Red 2-----	BUC.
Azoic Red 6-----	ALL, BUC, SDH, x.
Azoic Red 74-----	GAF.
Other azoic red dyes-----	ALL.
Azoic violet dyes:	
Azoic Violet 1-----	BUC.
Other azoic violet dyes-----	ALL.
Azoic blue dyes:	
Azoic Blue 3-----	ALL, BUC, GAF, HST, SDH, x.
Azoic Blue 5-----	BUC.
Other azoic blue dyes-----	ALL, GAF.

TABLE 2.--DYES FOR WHICH U.S. PRODUCTION OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1975--CONTINUED

Dye	Manufacturers' identification codes (according to list in table 3)
AZOIC DYES AND COMPONENTS--Continued	
<i>Azoic Compositions--Continued</i>	
Azoic green dyes-----	ALL, BUC.
Azoic brown dyes:	
Azoic Brown 9-----	ALL, BUC, GAF, x.
Azoic Brown 10-----	BUC.
Azoic black dyes:	
Azoic Black 1-----	HST.
Azoic Black 4-----	BUC.
Azoic Black 15-----	GAF.
Other azoic black dyes-----	ALL, GAF.
<i>Azoic Diazo Components, Bases (Fast Color Bases)</i>	
Azoic Diazo Component 4, base-----	AC, BUC, GAF.
Azoic Diazo Component 5, base-----	GAF.
Azoic Diazo Component 8, base-----	SDH.
Azoic Diazo Component 10, base-----	GAF.
Azoic Diazo Component 12, base-----	BUC, PCW.
Azoic Diazo Component 13, base-----	BUC.
Azoic Diazo Component 14, base-----	AC.
Azoic Diazo Component 32, base-----	ALL.
Azoic Diazo Component 48, base-----	GAF.
Other azoic diazo components, bases-----	ALL.
<i>Azoic Diazo Components, Salts (Fast Color Bases)</i>	
*Azoic Diazo Component 1, salt-----	AC, ALL, BUC, SDH.
Azoic Diazo Component 2, salt-----	BUC.
*Azoic Diazo Component 3, salt-----	AC, ALL, BUC, GAF, SDH.
*Azoic Diazo Component 5, salt-----	AC, ALL, BUC, GAF, SDH.
Azoic Diazo Component 6, salt-----	BUC, GAF.
Azoic Diazo Component 8, salt-----	AC, ALL, BUC.
*Azoic Diazo Component 9, salt-----	AC, ALL, BUC, SDH.
Azoic Diazo Component 10, salt-----	ALL, BUC, GAF.
Azoic Diazo Component 11, salt-----	AC, ALL.
*Azoic Diazo Component 12, salt-----	AC, ALL, BUC.
*Azoic Diazo Component 13, salt-----	AC, ALL, BUC, GAF, SDH.
Azoic Diazo Component 14, salt-----	ALL, BUC, GAF.
Azoic Diazo Component 20, salt-----	ALL.
Azoic Diazo Component 32, salt-----	ALL.
Azoic Diazo Component 34, salt-----	ALL.
Azoic Diazo Component 36, salt-----	GAF.
Azoic Diazo Component 41, salt-----	ALL, x.
Azoic Diazo Component 42, salt-----	ALL.
Azoic Diazo Component 44, salt-----	ALL, x.
Azoic Diazo Component 48, salt-----	SDH.
*Azoic Diazo Component 49, salt-----	ALL, GAF, x.
Azoic Diazo Component 121, salt-----	GAF.
<i>Azoic Coupling Components (Naphthol AS and Derivatives)</i>	
Azoic Coupling Component 2-----	ATL, PCW.
Azoic Coupling Component 3-----	BUC, PCW.
Azoic Coupling Component 7-----	BUC, PCW, SDH.
Azoic Coupling Component 8-----	BUC.
Azoic Coupling Component 10-----	PCW.
Azoic Coupling Component 11-----	BUC, PCW.
Azoic Coupling Component 12-----	PCW.

SYNTHETIC ORGANIC CHEMICALS, 1975

TABLE 2.--DYES FOR WHICH U.S. PRODUCTION OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1975--CONTINUED

Dye	Manufacturers' identification codes (according to list in table 3)
AZOIC DYES AND COMPONENTS--Continued	
<i>Azoic Coupling Components (Naphthol AS and Derivatives)</i>	
Azoic Coupling Component 13-----	HST.
Azoic Coupling Component 14-----	BUC, PCW.
Azoic Coupling Component 15-----	BUC, GAF.
Azoic Coupling Component 16-----	BUC.
Azoic Coupling Component 17-----	BUC, PCW.
Azoic Coupling Component 18-----	BUC, GAF, PCW.
Azoic Coupling Component 19-----	GAF.
Azoic Coupling Component 20-----	BUC, GAF, PCW.
Azoic Coupling Component 21-----	BUC, PCW.
Azoic Coupling Component 29-----	BUC, PCW.
Azoic Coupling Component 34-----	BUC, PCW.
Azoic Coupling Component 35-----	PCW.
Azoic Coupling Component 43-----	ATL, BUC, GAF.
Azoic Coupling Component 44-----	HST.
Other azoic coupling components-----	ATL, VPC.
BASIC DYES	
*Basic yellow dyes:	
Basic Yellow 1-----	DUP.
Basic Yellow 2-----	ACY.
*Basic Yellow 11-----	ACY, ALT, ATL, DUP, GAF, TRC, VPC.
*Basic Yellow 13-----	ALT, ATL, DUP, GAF, VPC.
Basic Yellow 15-----	DUP.
Basic Yellow 16-----	VPC.
Basic Yellow 21-----	VPC.
Basic Yellow 24-----	BAS.
Basic Yellow 25-----	BAS.
Basic Yellow 28-----	GAF, VPC.
Basic Yellow 29-----	DUP, VPC.
Basic Yellow 31-----	DUP.
Basic Yellow 37-----	ACY.
Basic Yellow 41-----	ACY.
Basic Yellow 50-----	EKT.
Basic Yellow 52-----	DUP.
Basic Yellow 53-----	DUP.
Basic Yellow 58-----	DUP.
Other basic yellow dyes-----	ATL, DUP, EKT, GAF, SDH, VPC.
*Basic orange dyes:	
Basic Orange 1-----	ACS, ACY, DUP, GAF, PSC, TRC.
*Basic Orange 2-----	ACY, DSC, DUP, GAF, PSC, TRC.
*Basic Orange 21-----	ATL, DUP, GAF, TRC, VPC.
Basic Orange 24-----	DUP.
Basic Orange 25-----	DUP.
Basic Orange 26-----	DUP.
Basic Orange 28-----	VPC.
Basic Orange 31-----	ACY.
Basic Orange 39-----	DUP.
Basic Orange 40-----	BAS.
Basic Orange 41-----	BAS.
Other basic orange dyes-----	DUP.
*Basic red dyes:	
Basic Red 1-----	BAS, DUP.
Basic Red 2-----	DUP.
Basic Red 9-----	DSC.
Basic Red 12-----	ACY, DUP, VPC.
*Basic Red 13-----	GAF, TRC, VPC.

TABLE 2.--DYES FOR WHICH U.S. PRODUCTION OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1975--CONTINUED

Dye	Manufacturers' identification codes (according to list in table 3)
BASIC DYES--Continued	
Basic Red dyes--Continued	
*Basic Red 14-----	ACY, ALT, ATL, DUP, GAF, VPC.
*Basic Red 15-----	ATL, DUP, GAF, HSH, TRC.
Basic Red 16-----	DUP.
Basic Red 17-----	DUP.
*Basic Red 18-----	ATL, DUP, GAF, VPC.
Basic Red 22-----	ACY, TRC.
Basic Red 23-----	VPC.
Basic Red 29-----	BAS.
Basic Red 30-----	ACY.
*Basic Red 49-----	DUP, GAF, VPC.
Basic Red 51-----	BAS.
Basic Red 65-----	EKT.
Basic Red 73-----	DUP.
Other basic red dyes-----	ATL, BAS.
*Basic violet dyes:	
*Basic Violet 1-----	ACS, ACY, DSC.
Basic Violet 2-----	DSC.
Basic Violet 3-----	DSC, DUP, SDH.
Basic Violet 4-----	DSC, DUP.
Basic Violet 7-----	ATL, GAF.
Basic Violet 10-----	ACY, DUP, GAF.
Basic Violet 11-----	DUP.
Basic Violet 13-----	DSC.
Basic Violet 14-----	DSC.
Basic Violet 15-----	DUP.
*Basic Violet 16-----	ATL, DUP, GAF, TRC, VPC.
Basic Violet 18-----	ACY.
Basic Violet 24-----	DUP.
Basic Violet 66-----	VPC.
Other basic violet dyes-----	ACY, ATL, DUP.
*Basic blue dyes:	
Basic Blue 1-----	DSC, GAF, SDH, VPC.
Basic Blue 2-----	DSC.
*Basic Blue 3-----	ALT, DUP, GAF, HST.
*Basic Blue 5-----	DSC, SDH, VPC.
Basic Blue 6-----	ACY.
*Basic Blue 7-----	DSC, DUP, SDH.
Basic Blue 9-----	ACS, ACY.
Basic Blue 11-----	DSC.
Basic Blue 21-----	DUP.
Basic Blue 22-----	ACS, DUP, VPC.
Basic Blue 26-----	DSC, DUP.
Basic Blue 35-----	DUP.
Basic Blue 41-----	BAS, TRC.
Basic Blue 45-----	VPC.
Basic Blue 47-----	VPC.
Basic Blue 54-----	ACY.
Basic Blue 60-----	GAF.
Basic Blue 69-----	VPC.
Basic Blue 75-----	EKT.
Basic Blue 76-----	ACY.
Basic Blue 77-----	DUP.
Basic Blue 87-----	DUP.
Basic Blue 90-----	EKT.
Basic Blue 94-----	DUP.
Basic Blue 97-----	DUP.
Other basic blue dyes-----	ACS, ATL, BAS, DUP, SDH.

SYNTHETIC ORGANIC CHEMICALS, 1975

TABLE 2.--DYES FOR WHICH U.S. PRODUCTION OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1975--CONTINUED

Dye	Manufacturers' identification codes (according to list in table 3)
BASIC DYES--Continued	
*Basic green dyes:	
Basic Green 1-----	ACS, DSC.
Basic Green 3-----	DUP.
*Basic Green 4-----	ACS, ACY, DSC, VPC.
Basic Green 7-----	DSC.
Other basic green dyes-----	VPC.
Basic brown dyes:	
*Basic Brown 1-----	ACY, DUP, GAF, PSC, TRC.
Basic Brown 2-----	GAF.
*Basic Brown 4-----	ACS, ACY, DSC, DUP, GAF, PSC, TRC.
Other basic brown dyes-----	BAS, DUP.
*Basic black dyes:	
Basic Black 9-----	VPC.
Other basic black dyes-----	ALT, DSC, VPC.
DIRECT DYES	
*Direct yellow dyes:	
*Direct Yellow 4-----	AC, ACY, ATL, DUP, GAF, SDH, TRC, VPC.
Direct Yellow 5-----	ACY, GAF.
*Direct Yellow 6-----	ACS, ACY, DUP, GAF, TRC.
Direct Yellow 7-----	ATL.
*Direct Yellow 8-----	ACS, ATL, GAF.
Direct Yellow 9-----	ATL.
*Direct Yellow 11-----	AC, ACS, ACY, DUP, GAF, SDH, TRC.
*Direct Yellow 12-----	ACS, ACY, ATL, CMG, DUP, GAF, TRC.
Direct Yellow 26-----	ATL.
*Direct Yellow 28-----	ACS, ATL, DUP, GAF, PDC, TRC.
Direct Yellow 29-----	ATL, GAF.
Direct Yellow 34-----	AC, ALT.
Direct Yellow 39-----	TRC.
Direct Yellow 41-----	ATL.
*Direct Yellow 44-----	AC, ACS, ATL, DUP, FAB, GAF, HSH, TRC, VPC.
Direct Yellow 50-----	AC, ALT, ATL, DUP, GAF, HSH, TRC, VPC.
Direct Yellow 59-----	ATL.
Direct Yellow 81-----	ATL.
*Direct Yellow 84-----	AC, ATL, GAF, TRC.
Direct Yellow 103-----	ACS.
Direct Yellow 105-----	AC, ALT, TRC.
*Direct Yellow 106-----	AC, ALT, GAF, HSH, TRC.
Direct Yellow 107-----	ACS, ATL, GAF, TRC.
Direct Yellow 114-----	ACY.
Direct Yellow 117-----	TRC.
Direct Yellow 118-----	TRC.
Direct Yellow 119-----	DUP.
Direct Yellow 120-----	AC.
Direct Yellow 127-----	DUP, TRC.
Direct Yellow 131-----	DUP.
Direct Yellow 132-----	VPC.
Direct Yellow 137-----	DUP.
Direct Yellow 147-----	DUP.
Other direct yellow dyes-----	AC, ACY, ALT, ATL, DUP, FAB, GAF, TRC, VPC.
*Direct orange dyes:	
Direct Orange 1-----	ACS.
Direct Orange 6-----	AC.
*Direct Orange 8-----	ACS, FAB, GAF.
Direct Orange 10-----	AC.
*Direct Orange 15-----	AC, ACY, DUP, GAF, TRC.
*Direct Orange 26-----	ATL, CMG, GAF, TRC.
*Direct Orange 29-----	AC, ATL, FAB, TRC, VPC.
*Direct Orange 34-----	ATL, CMG, DUP, GAF, HSH.

TABLE 2.--DYES FOR WHICH U.S. PRODUCTION OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1975--CONTINUED

Dye	Manufacturers' identification codes (according to list in table 3)
DIRECT DYES--Continued	
*Direct orange dyes--Continued	
*Direct Orange 37-----	ACY, ATL, CMG, GAF.
*Direct Orange 39-----	AC, ACY, ALT, DUP, FAB, GAF.
Direct Orange 59-----	DUP, GAF.
Direct Orange 61-----	TRC.
Direct Orange 67-----	VPC.
*Direct Orange 72-----	AC, ACS, ATL, FAB, HSH, TRC, VPC.
*Direct Orange 73-----	DUP, TRC, VPC.
Direct Orange 74-----	DUP.
Direct Orange 78-----	VPC.
Direct Orange 80-----	DUP.
Direct Orange 81-----	VPC.
Direct Orange 83-----	DUP.
Direct Orange 88-----	GAF.
*Direct Orange 102-----	DUP.
Other direct orange dyes-----	ACS, ACY, ATL, DUP, GAF.
*Direct red dyes:	ALT, ATL, GAF.
*Direct Red 1-----	ACS, FAB, GAF.
*Direct Red 2-----	AC, ATL, DUP, TRC.
Direct Red 4-----	ACS, ATL, TRC.
Direct Red 7-----	ATL.
Direct Red 10-----	ATL.
Direct Red 13-----	ACS.
Direct Red 16-----	ATL, TRC.
*Direct Red 23-----	AC, ACY, ATL, DUP, FAB, GAF, HSH, TRC, VPC.
*Direct Red 24-----	AC, ATL, HSH, TRC, VPC.
*Direct Red 26-----	AC, ACS, ATL, DUP, GAF, HSH, TRC, VPC.
Direct Red 27-----	CMG.
Direct Red 28-----	ACS, FAB.
Direct Red 31-----	ATL, GAF, HSH.
*Direct Red 37-----	ACS, ACY, FAB, GAF.
*Direct Red 39-----	ATL, GAF, TRC.
Direct Red 52-----	CMG.
Direct Red 62-----	ATL, TRC.
*Direct Red 72-----	ATL, DUP, GAF, TRC.
Direct Red 73-----	ATL.
*Direct Red 75-----	ATL, CMG, GAF.
Direct Red 76-----	GAF.
Direct Red 79-----	ATL, TRC.
*Direct Red 80-----	AC, ALT, ATL, BDO, FAB, HSH, SDH, TRC, VPC.
*Direct Red 81-----	AC, ACY, ATL, CMG, DUP, GAF, HSH, SDH, TRC, VPC.
*Direct Red 83-----	AC, ALT, ATL, FAB, HSH, TRC.
Direct Red 95-----	VPC.
Direct Red 100-----	ATL.
Direct Red 117-----	DUP.
Direct Red 122-----	TRC, VPC.
Direct Red 123-----	GAF.
Direct Red 127-----	ATL, CMG.
Direct Red 139-----	ATL.
Direct Red 149-----	ATL, CMG.
Direct Red 152-----	CMG.
Direct Red 153-----	ATL.
Direct Red 209-----	TRC, VPC.
Direct Red 212-----	VPC.
Direct Red 236-----	DUP.
Direct Red 238-----	DUP.
Other direct red dyes-----	AC, ALT, ATL, GAF, HSH, SDH.
*Direct violet dyes:	
Direct Violet 1-----	ATL.
Direct Violet 7-----	ATL.
Direct Violet 9-----	ACS, ATL, DUP, GAF, TRC.

SYNTHETIC ORGANIC CHEMICALS, 1975

TABLE 2.--DYES FOR WHICH U.S. PRODUCTION OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1975--CONTINUED

Dye	Manufacturers' identification codes (according to list in table 3)
DIRECT DYES--Continued	
*Direct violet dyes--Continued	
Direct Violet 14-----	ATL.
Direct Violet 47-----	GAF.
Direct Violet 51-----	ATL, DUP.
Direct Violet 66-----	TRC.
Direct Violet 67-----	DUP.
Direct Violet 99-----	DUP.
Other direct violet dyes-----	ALT, ATL.
*Direct blue dyes:	
*Direct Blue 1-----	AC, ACS, ACY, ATL, DUP, FAB, GAF, HSH, SDH, TRC, VPC.
*Direct Blue 2-----	ACS, FAB, GAF.
Direct Blue 6-----	ACS, FAB, GAF.
*Direct Blue 8-----	ATL, DUP, GAF.
Direct Blue 14-----	ATL, TRC.
Direct Blue 15-----	ACS, ATL, DUP, GAF, VPC.
Direct Blue 22-----	ATL.
Direct Blue 25-----	ATL, TRC.
Direct Blue 67-----	ATL.
Direct Blue 71-----	ACS, ATL.
Direct Blue 75-----	TRC.
*Direct Blue 76-----	AC, ACS, ALT, ATL, GAF, TRC.
*Direct Blue 78-----	ACS, ALT, ATL, CMG.
*Direct Blue 80-----	AC, ACS, ALT, ATL, DUP, FAB, GAF, HSH, TRC, VPC.
Direct Blue 81-----	ATL.
*Direct Blue 86-----	AC, ALT, ATL, DUP, FAB, GAF, ICC, SDH, TRC, VPC.
Direct Blue 91-----	TRC.
Direct Blue 93-----	HSH.
*Direct Blue 98-----	ALT, ATL, FAB, GAF, TRC, VPC.
Direct Blue 100-----	ALT, FAB.
Direct Blue 104-----	DUP.
*Direct Blue 120-----	AC, ATL, FAB, TRC.
Direct Blue 126-----	ATL, HSH.
Direct Blue 136-----	GAF.
Direct Blue 143-----	DUP.
Direct Blue 151-----	ATL, TRC.
Direct Blue 160-----	TRC.
Direct Blue 189-----	TRC.
Direct Blue 191-----	ALT, GAF.
Direct Blue 199-----	DUP, GAF.
*Direct Blue 218-----	AC, ATL, DUP, FAB, GAF, SDH, TRC, VPC.
Direct Blue 263-----	DUP.
Other direct blue dyes-----	AC, ALT, ATL, DUP, GAF, HSH, VPC.
*Direct green dyes:	
*Direct Green 1-----	ACS, FAB, GAF.
Direct Green 6-----	ACS, FAB, GAF.
Direct Green 26-----	TRC.
Direct Green 27-----	DUP, TRC.
Direct Green 28-----	TRC.
Direct Green 38-----	GAF.
Direct Green 45-----	VPC.
Direct Green 47-----	DUP, GAF.
Direct Green 51-----	TRC.
Direct Green 69-----	TRC.
Other direct green dyes-----	DUP, TRC.
*Direct brown dyes:	
Direct Brown 1-----	GAF.
*Direct Brown 2-----	ACS, FAB, GAF.
Direct Brown 6-----	FAB.
*Direct Brown 31-----	ACS, ATL, FAB, GAF.
Direct Brown 32-----	GAF.

TABLE 2.--DYES FOR WHICH U.S. PRODUCTION OR SALES WERE REPORTED, IDENTIFIED
BY MANUFACTURER, 1975--CONTINUED

Dye	Manufacturers' identification codes (according to list in table 3)
DIRECT DYES--Continued	
*Direct brown dyes--Continued	
Direct Brown 44-----	GAF.
Direct Brown 74-----	ACS.
*Direct Brown 95-----	ACS, ATL, FAB, GAF.
Direct Brown 106-----	GAF.
Direct Brown 111-----	DUP, GAF, VPC.
Direct Brown 112-----	ATL.
Direct Brown 154-----	ACS, FAB.
Other direct brown dyes-----	AC, ALT, ATL, VPC.
*Direct black dyes:	
Direct Black 2-----	ACS.
Direct Black 4-----	FAB, GAF.
Direct Black 9-----	ACS, ATL, DUP.
Direct Black 17-----	GAF.
Direct Black 19-----	ATL, TRC.
*Direct Black 22-----	AC, ALT, ATL, GAF, TRC, VPC.
*Direct Black 38-----	ACS, FAB, GAF.
Direct Black 51-----	GAF.
Direct Black 56-----	ACS.
Direct Black 75-----	GAF.
Direct Black 78-----	AC.
Direct Black 80-----	AC, ATL, FAB.
Direct Black 95-----	ACS.
Direct Black 190-----	AC.
Other direct black dyes-----	AC, ALT, ATL, FAB, HSH, TRC.
DISPERSE DYES	
*Disperse yellow dyes:	
Disperse Yellow 1-----	GAF.
*Disperse Yellow 3-----	AC, ATL, DUP, FAB, GAF, HSH, TRC, VPC.
*Disperse Yellow 5-----	BAS, GAF, ICC.
Disperse Yellow 8-----	ATL, TRC.
*Disperse Yellow 23-----	AC, DUP, EKT, GAF, HSH, TRC.
Disperse Yellow 31-----	GAF.
*Disperse Yellow 33-----	AC, ACY, EKT, GAF, TRC.
Disperse Yellow 34-----	AC, EKT.
*Disperse Yellow 42-----	AC, BUC, DUP, EKT, GAF, ICC, SDC, TRC.
Disperse Yellow 50-----	TRC.
*Disperse Yellow 54-----	AC, BAS, DUP, GAF, ICC, SDC, TRC, VPC.
Disperse Yellow 56-----	BAS.
Disperse Yellow 63-----	HST.
Disperse Yellow 64-----	BAS, DUP.
Disperse Yellow 67-----	DUP, VPC.
Disperse Yellow 68-----	HST.
Disperse Yellow 74-----	VPC.
Disperse Yellow 77-----	VPC.
Disperse Yellow 85-----	EKT.
Disperse Yellow 86-----	AC, EKT.
Disperse Yellow 87-----	EKT.
Disperse Yellow 88-----	EKT.
Disperse Yellow 89-----	VPC.
Disperse Yellow 93-----	VPC.
Disperse Yellow 95-----	VPC.
Disperse Yellow 96-----	VPC.
Disperse Yellow 108-----	EKT.
Disperse Yellow 118-----	AC.
Disperse Yellow 125-----	SDC.
Disperse Yellow 131-----	DUP.

SYNTHETIC ORGANIC CHEMICALS, 1975

TABLE 2.--DYES FOR WHICH U.S. PRODUCTION OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1975--CONTINUED

Dye	Manufacturers' identification codes (according to list in table 3)
DISPERSE DYES--Continued	
*Disperse yellow dyes--Continued	
Disperse Yellow 136-----	DUP.
Disperse Yellow 137-----	DUP.
Disperse Yellow 138-----	DUP.
Other disperse yellow dyes-----	ATL, EKT, GAF, HST, MAY, SDC, VPC.
*Disperse orange dyes:	
*Disperse Orange 3-----	EKT, GAF, HSH, TRC.
*Disperse Orange 5-----	ATL, BUC, EKT, GAF.
*Disperse Orange 17-----	AC, EKT, FAB, GAF, HSH, ICC.
Disperse Orange 21-----	TRC.
*Disperse Orange 25-----	ATL, DUP, EKT, TRC, VPC.
*Disperse Orange 29-----	AC, GAF, HSH, VPC.
Disperse Orange 30-----	ICC, TRC.
Disperse Orange 33-----	BAS.
Disperse Orange 37-----	EKT.
Disperse Orange 38-----	TRC.
Disperse Orange 41-----	AC, DUP.
Disperse Orange 42-----	HST.
Disperse Orange 44-----	DUP.
Disperse Orange 55-----	HSH.
Disperse Orange 57-----	EKT.
Disperse Orange 58-----	EKT.
Disperse Orange 59-----	HSH.
Disperse Orange 62-----	BUC, DUP.
Disperse Orange 65-----	VPC.
Disperse Orange 66-----	VPC.
Disperse Orange 75-----	DUP.
Disperse Orange 77-----	MAY.
Disperse Orange 78-----	MAY.
Disperse Orange 79-----	MAY.
Disperse Orange 80-----	MAY.
Disperse Orange 89-----	AC.
Disperse Orange 90-----	AC.
Disperse Orange 91-----	AC.
Disperse Orange 94-----	SDC.
Disperse Orange 95-----	DUP.
Disperse Orange 98-----	DUP.
Disperse Orange 125-----	DUP.
Other disperse orange dyes-----	AC, ALT, ATL, BUC, DUP, EKT, GAF, HSH, HST, SDC, VPC.
*Disperse red dyes:	
*Disperse Red 1-----	AC, ATL, DUP, EKT, GAF, HSH, ICC, TRC.
Disperse Red 4-----	GAF, TRC.
*Disperse Red 5-----	AC, EKT, GAF, HSH, ICC.
Disperse Red 7-----	AC, GAF.
Disperse Red 9-----	ATL.
Disperse Red 11-----	AC, DUP, GAF.
Disperse Red 13-----	AC, ATL, GAF.
*Disperse Red 15-----	GAF, HSH, ICC, TRC.
*Disperse Red 17-----	AC, EKT, GAF, HSH, TRC.
Disperse Red 21-----	EKT.
Disperse Red 30-----	EKT, TRC.
Disperse Red 32-----	VPC.
Disperse Red 35-----	EKT.
*Disperse Red 50-----	FAB, ICC, TRC.
Disperse Red 54-----	BAS.
Disperse Red 55-----	DUP, GAF, TRC, VPC.
Disperse Red 59-----	ACY, DUP, GAF.
*Disperse Red 60-----	AC, BAS, DUP, EKT, GAF, SDC, TRC, VPC.
*Disperse Red 65-----	AC, ALT, DUP, EKT, ICC, TRC.
Disperse Red 68-----	FAB.

TABLE 2.--DYES FOR WHICH U.S. PRODUCTION OR SALES WERE REPORTED, IDENTIFIED
BY MANUFACTURER, 1975--CONTINUED

Dye	Manufacturers' identification codes (according to list in table 3)
DISPERSE DYES--Continued	
*Disperse red dyes--Continued	
Disperse Red 73-----	TRC.
Disperse Red 76-----	BAS.
Disperse Red 82-----	MAY, VPC.
Disperse Red 86-----	EKT, GAF, HSH.
Disperse Red 88-----	EKT.
Disperse Red 90-----	VPC.
Disperse Red 91-----	BAS.
Disperse Red 92-----	BAS.
Disperse Red 96-----	ACY.
Disperse Red 105-----	VPC.
Disperse Red 106-----	VPC.
Disperse Red 108-----	VPC.
Disperse Red 117-----	EKT.
Disperse Red 118-----	BAS.
Disperse Red 133-----	VPC.
Disperse Red 135-----	AC, DUP.
Disperse Red 136-----	EKT.
Disperse Red 137-----	EKT.
Disperse Red 138-----	EKT.
Disperse Red 139-----	VPC.
Disperse Red 140-----	AC, DUP.
Disperse Red 159-----	VPC.
Disperse Red 161-----	DUP.
Disperse Red 162-----	DUP.
Disperse Red 163-----	EKT.
Disperse Red 167-----	GAF.
Disperse Red 176-----	ICC.
*Disperse Red 177-----	ICC, SDC, VPC.
Disperse Red 178-----	ICC.
Disperse Red 179-----	ICC.
Disperse Red 180-----	ICC.
Disperse Red 187-----	AC.
Disperse Red 211-----	DUP.
Disperse Red 217-----	DUP.
Disperse Red 219-----	DUP.
Disperse Red 220-----	DUP.
Disperse Red 271-----	DUP.
Other disperse red dyes-----	ALT, BUC, DUP, EKT, GAF, HSH, ICC, ICI, MAY, SDC, TRC, VPC.
*Disperse violet dyes:	
*Disperse Violet 1-----	AC, GAF, HSH, ICC, TRC.
Disperse Violet 4-----	AC.
Disperse Violet 8-----	GAF.
Disperse Violet 17-----	DUP, VPC.
Disperse Violet 26-----	DUP.
*Disperse Violet 27-----	AC, ACY, DUP, EKT, ICC, TRC.
Disperse Violet 28-----	DUP, TRC.
Disperse Violet 40-----	VPC.
Disperse Violet 41-----	EKT.
Disperse Violet 42-----	EKT.
Disperse Violet 43-----	EKT.
Disperse Violet 44-----	EKT.
Disperse Violet 64-----	DUP.
Other disperse violet dyes-----	EKT, GAF, HSH, SDC, VPC.
*Disperse blue dyes:	
*Disperse Blue 1-----	AC, GAF, ICC, TRC.
*Disperse Blue 3-----	AC, EKT, GAF, HSH, ICC, TRC.
*Disperse Blue 7-----	AC, DUP, ICC, TRC.
Disperse Blue 27-----	EKT.
Disperse Blue 31-----	VPC.

TABLE 2.--DYES FOR WHICH U.S. PRODUCTION OR SALES WERE REPORTED, IDENTIFIED
BY MANUFACTURER, 1975--CONTINUED

Dye	Manufacturers' identification codes (according to list in table 3)
DISPERSE DYES--Continued	
*Disperse blue dyes--Continued	
Disperse Blue 35-----	MAY.
Disperse Blue 54-----	ICC.
Disperse Blue 55-----	TRC.
Disperse Blue 56-----	ICC, VPC.
Disperse Blue 60-----	DUP.
Disperse Blue 61-----	DUP.
Disperse Blue 62-----	DUP, EKT.
*Disperse Blue 64-----	AC, DUP, EKT, GAF, TRC.
Disperse Blue 73-----	ACY, TRC.
Disperse Blue 77-----	EKT, GAF.
*Disperse Blue 79-----	EKT, HSH, ICC, MAY, TRC.
Disperse Blue 81-----	VPC.
Disperse Blue 87-----	BAS.
Disperse Blue 94-----	BAS.
Disperse Blue 95-----	HST.
Disperse Blue 102-----	EKT.
Disperse Blue 109-----	DUP, MAY.
Disperse Blue 112-----	EKT.
Disperse Blue 117-----	EKT.
Disperse Blue 118-----	AC, EKT.
Disperse Blue 121-----	EKT.
Disperse Blue 122-----	ICI.
Disperse Blue 125-----	TRC.
Disperse Blue 132-----	DUP.
Disperse Blue 138-----	VPC.
Disperse Blue 152-----	HST.
Disperse Blue 165-----	DUP, VPC.
Disperse Blue 166-----	ICC.
Disperse Blue 173-----	AC.
Disperse Blue 174-----	AC.
Disperse Blue 191-----	DUP.
Disperse Blue 192-----	DUP.
Disperse Blue 194-----	DUP.
Other disperse blue dyes-----	ALT, ATL, BUC, DUP, EKT, GAF, HSH, MAY, SDC, TRC, VPC.
Disperse green dyes:	
Disperse Green 7-----	DUP.
Disperse Green 8-----	DUP.
Other disperse green dyes-----	HSH.
Disperse brown dyes:	
Disperse Brown 1-----	AC, ICI, SDC, TRC.
Disperse Brown 2-----	DUP, EKT, GAF.
Disperse Brown 11-----	AC.
Disperse Brown 14-----	DUP.
Disperse Brown 15-----	DUP.
Other disperse brown dyes-----	AC, ALT, ATL, BAS, DUP, GAF, HSH, ICC, SDC, TRC.
*Disperse black dyes:	
Disperse Black 1-----	AC, ATL, GAF.
Disperse Black 2-----	ATL.
Disperse Black 6-----	ATL.
Disperse Black 9-----	AC, EKT.
Disperse Black 33-----	AC, EKT.
Disperse Black 34-----	EKT.
Other disperse black dyes-----	AC, ATL, BAS, GAF, HSH, ICC, SDC, VPC.

TABLE 2.--DYES FOR WHICH U.S. PRODUCTION OR SALES WERE REPORTED, IDENTIFIED
BY MANUFACTURER, 1975--CONTINUED

Dye	Manufacturers' identification codes (according to list in table 3)
FIBER-REACTIVE DYES	
*Reactive yellow dyes:	
Reactive Yellow 1-----	ICI.
Reactive Yellow 2-----	TRC.
Reactive Yellow 4-----	ICI.
Reactive Yellow 7-----	ICI.
Reactive Yellow 15-----	HST.
Reactive Yellow 17-----	HST.
Reactive Yellow 18-----	HST.
Reactive Yellow 24-----	HST.
Reactive Yellow 25-----	VPC.
Reactive Yellow 27-----	VPC.
Reactive Yellow 37-----	HST.
Reactive Yellow 42-----	ICI, HST.
Reactive Yellow 86-----	ICI.
Other reactive yellow dyes-----	HST, ICI.
Reactive orange dyes:	
Reactive Orange 1-----	FAB, ICI.
Reactive Orange 4-----	ICI.
Reactive Orange 12-----	ICI.
Reactive Orange 13-----	ICI.
Reactive Orange 14-----	ICI.
Reactive Orange 16-----	HST.
Reactive Orange 50-----	HST.
Other reactive orange dyes-----	HST.
Reactive red dyes:	
Reactive Red 1-----	ICI.
Reactive Red 2-----	FAB, ICI, VPC.
Reactive Red 3-----	ICI.
Reactive Red 5-----	ICI.
Reactive Red 8-----	ICI.
Reactive Red 11-----	FAB, ICI.
Reactive Red 21-----	HST.
Reactive Red 27-----	ICI.
Reactive Red 31-----	ICI.
Reactive Red 33-----	ICI.
Reactive Red 40-----	VPC.
Reactive Red 41-----	VPC.
Reactive Red 43-----	ICI.
Reactive Red 58-----	ICI.
Reactive Red 94-----	HST.
Reactive Red 105-----	HST.
Other reactive red dyes-----	HST, ICI, VPC.
Reactive violet dyes:	
Reactive Violet 1-----	ICI.
Reactive Violet 4-----	HST.
Reactive Violet 5-----	HST.
Other reactive violet dyes-----	HST.
Reactive blue dyes:	
Reactive Blue 3-----	ICI.
Reactive Blue 4-----	ICI.
Reactive Blue 5-----	ICI, TRC.
Reactive Blue 19-----	HST.
Reactive Blue 21-----	HST.
Reactive Blue 25-----	ICI.
Reactive Blue 29-----	VPC.
Reactive Blue 36-----	HST.
Reactive Blue 38-----	HST.
Reactive Blue 71-----	ICI.
Reactive Blue 88-----	ACY.
Reactive Blue 89-----	HST.

SYNTHETIC ORGANIC CHEMICALS, 1975

TABLE 2.--DYES FOR WHICH U.S. PRODUCTION OR SALES WERE REPORTED, IDENTIFIED
BY MANUFACTURER, 1975--CONTINUED

Dye	Manufacturers' identification codes (according to list in table 3)
FIBER-REACTIVE DYES--Continued	
Reactive blue dyes--Continued	
Reactive Blue 90-----	HST.
Reactive Blue 109-----	ICI.
Other reactive blue dyes-----	HST.
Reactive green dyes-----	HST, ICI.
Reactive brown dyes:	
Reactive Brown 9-----	ICI.
Reactive Brown 10-----	ICI.
Reactive Brown 17-----	ICI.
Other reactive brown dyes-----	HST.
Reactive black dyes:	
Reactive Black 5-----	HST.
Reactive Black 9-----	ICI.
FLUORESCENT BRIGHTENING AGENTS	
Fluorescent Brightening Agent 9-----	SDH.
Fluorescent Brightening Agent 22-----	CGY.
Fluorescent Brightening Agent 24-----	CGY.
Fluorescent Brightening Agent 25-----	GAF.
*Fluorescent Brightening Agent 28-----	ACY, CCW, CGY, SDH, VPC.
Fluorescent Brightening Agent 46-----	CGY.
Fluorescent Brightening Agent 49-----	S.
Fluorescent Brightening Agent 52-----	S.
Fluorescent Brightening Agent 59-----	CGY.
*Fluorescent Brightening Agent 61-----	ACY, CCW, GAF.
Fluorescent Brightening Agent 71-----	ACY, CGY.
Fluorescent Brightening Agent 75-----	GAF.
Fluorescent Brightening Agent 102-----	DUP, VPC.
Fluorescent Brightening Agent 103-----	CGY.
Fluorescent Brightening Agent 108-----	GAF.
Fluorescent Brightening Agent 109-----	GAF.
Fluorescent Brightening Agent 114-----	VPC.
Fluorescent Brightening Agent 125-----	ACY.
Fluorescent Brightening Agent 126-----	SDH.
Fluorescent Brightening Agent 128-----	SDH.
Fluorescent Brightening Agent 130-----	ACY, SDH.
Fluorescent Brightening Agent 148-----	VPC.
Fluorescent Brightening Agent 159-----	ACY.
Fluorescent Brightening Agent 191-----	VPC.
Other fluorescent brightening agents-----	ACY, CCW, CGY, DGO, GAF, S, VPC.
FOOD, DRUG, AND COSMETIC COLORS	
<i>Food, Drug, and Cosmetic Dyes</i>	
*FD&C Blue No. 1-----	ACS, ALT, KON, SDH, WJ.
*FD&C Blue No. 2-----	ALT, KON, SDH, WJ.
FD&C Green No. 3-----	WJ.
*FD&C Red No. 2-----	ACS, ALT, KON, SDH, STG, WJ.
*FD&C Red No. 3-----	ALT, KON, SDH, STG, WJ.
FD&C Red No. 4-----	ALT, KON, WJ.
*FD&C Red No. 40-----	ACS, KON, WJ.
*FD&C Yellow No. 5-----	ACS, ALT, KON, SDH, STG, WJ.
*FD&C Yellow No. 6-----	ACS, ALT, KON, SDH, STG, WJ.
Other food, drug, and cosmetic dyes-----	STG.

TABLE 2.--DYES FOR WHICH U.S. PRODUCTION OR SALES WERE REPORTED, IDENTIFIED
BY MANUFACTURER, 1975--CONTINUED

Dye	Manufacturers' identification codes (according to list in table 3)
FOOD, DRUG, AND COSMETIC COLORS--Continued	
<i>Drug and Cosmetic Dyes</i>	
D&C Blue No. 1-----	KON.
D&C Blue No. 6-----	KON.
D&C Green No. 5-----	ACS, KON.
D&C Green No. 6-----	KON.
D&C Green No. 8-----	KON, SDH.
D&C Orange No. 4-----	ACS, KON, MRX, TMS.
*D&C Orange No. 5-----	MRX, SNA, TMS.
D&C Orange No. 10-----	TMS.
D&C Orange No. 17-----	SNA.
D&C Red No. 2-----	KON.
D&C Red No. 3-----	KON, TMS.
*D&C Red No. 6-----	KON, MRX, SNA, TMS.
*D&C Red No. 7-----	KON, MRX, SNA, TMS.
D&C Red No. 8-----	KON, SNA.
*D&C Red No. 9-----	KON, MRX, SNA, TMS.
D&C Red No. 10-----	KON, SNA.
D&C Red No. 11-----	KON, MRX, SNA.
*D&C Red No. 12-----	KON, SNA, TMS.
D&C Red No. 13-----	SNA, TMS.
D&C Red No. 17-----	KON.
*D&C Red No. 19-----	ACS, KON, MRX, SNA, TMS.
*D&C Red No. 21-----	MRX, SNA, TMS.
D&C Red No. 22-----	SDH.
D&C Red No. 27-----	MRX, TMS.
D&C Red No. 28-----	SDH.
*D&C Red No. 30-----	KON, MRX, SNA, TMS.
D&C Red No. 31-----	KON.
D&C Red No. 33-----	ACS, KON.
D&C Red No. 34-----	KON, SNA.
*D&C Red No. 36-----	ALT, KON, TMS.
D&C Red No. 37-----	ACS.
D&C Red no. 39-----	SDH.
D&C Violet No. 2-----	ACS.
D&C Yellow No. 5-----	KON, MRX.
D&C Yellow No. 6-----	KON.
D&C Yellow No. 7-----	ALT.
D&C Yellow No. 10-----	KON.
D&C Yellow No. 11-----	ACS, KON.
<i>Drug and Cosmetic Dyes, External</i>	
Ext. D&C Green No. 1-----	ACS, KON.
Ext. D&C Violet No. 2-----	KON.
Ext. D&C Yellow No. 1-----	ACS, KON.
Ext. D&C Yellow No. 7-----	KON, SDH.
MORDANT DYES	
<i>Mordant yellow dyes:</i>	
Mordant Yellow 1-----	GAF, PDC.
Mordant Yellow 8-----	PDC.
Mordant Yellow 14-----	PDC.
Mordant Yellow 16-----	ACY.
Mordant Yellow 20-----	ACS.
Mordant Yellow 26-----	PDC, VPC.
Mordant Yellow 29-----	GAF.
Mordant Yellow 30-----	TRC.

SYNTHETIC ORGANIC CHEMICALS, 1975

TABLE 2.--DYES FOR WHICH U.S. PRODUCTION OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1975--CONTINUED

Dye	Manufacturers' identification codes (according to list in table 3)
MORDANT DYES--Continued	
*Mordant orange dyes:	
Mordant Orange 1-----	ACY, PDC, TRC.
Mordant Orange 4-----	GAF.
*Mordant Orange 6-----	ATL, GAF, PDC, TRC.
Mordant Orange 8-----	TRC.
Mordant red dyes:	
*Mordant Red 7-----	ACY, BDO, GAF, PDC.
Mordant Red 9-----	MRX.
Mordant Red 11-----	ACY.
Mordant violet dyes: Mordant Violet 5-----	PDC.
Mordant blue dyes:	
Mordant Blue 1-----	GAF.
Mordant Blue 9-----	GAF.
Mordant Blue 13-----	HSH.
Mordant green dyes: Mordant Green 36-----	PDC.
*Mordant brown dyes:	
Mordant Brown 1-----	GAF, PDC, TRC.
Mordant Brown 12-----	PDC.
Mordant Brown 15-----	GAF.
Mordant Brown 18-----	ACS, PDC.
Mordant Brown 33-----	GAF, PDC, TRC.
Mordant Brown 40-----	CMG.
Mordant Brown 70-----	PDC.
*Mordant black dyes:	
Mordant Black 9-----	VPC.
*Mordant Black 11-----	GAF, TRC, VPC.
Mordant Black 13-----	HSH.
Mordant Black 17-----	GAF, TRC.
Mordant Black 19-----	PDC.
Mordant Black 38-----	CMG.
OXIDATION BASES	
Oxidation bases-----	PDC.
SOLVENT DYES	
*Solvent yellow dyes:	
Solvent Yellow 2-----	DUP.
Solvent Yellow 3-----	PSC.
Solvent Yellow 13-----	ACY, GAF.
*Solvent Yellow 14-----	AC, ACY, DUP, GAF, PSC.
Solvent Yellow 16-----	PSC.
Solvent Yellow 19-----	GAF.
Solvent Yellow 29-----	ACY.
Solvent Yellow 30-----	PSC.
*Solvent Yellow 33-----	AC, ACS, ACY.
Solvent Yellow 34-----	ACY, DSC.
Solvent Yellow 40-----	ACS.
Solvent Yellow 43-----	DGO, GAF.
Solvent Yellow 44-----	DGO.
Solvent Yellow 47-----	ACY, DUP, GAF.
*Solvent Yellow 56-----	AC, ACY, PSC.
Solvent Yellow 71-----	ACY.
Solvent Yellow 72-----	AC, ACY.
Solvent Yellow 77-----	AC.
Solvent Yellow 87-----	ACY.
Solvent Yellow 107-----	MRT.
Solvent Yellow 131-----	DGO.
Other solvent yellow dyes-----	AC, ATL, DSC, MRT.

TABLE 2.--DYES FOR WHICH U.S. PRODUCTION OR SALES WERE REPORTED, IDENTIFIED
BY MANUFACTURER, 1975--CONTINUED

Dye	Manufacturers' identification codes (according to list in table 3)
SOLVENT DYES--Continued	
*Solvent orange dyes:	
Solvent Orange 2-----	PSC.
Solvent Orange 3-----	ACY, DSC, GAF, PSC.
Solvent Orange 5-----	GAF.
Solvent Orange 7-----	ACY, GAF, PSC.
Solvent Orange 20-----	ACY, GAF.
Solvent Orange 23-----	ACS.
Solvent Orange 24-----	DUP.
Solvent Orange 25-----	ACY, DUP.
Solvent Orange 31-----	ACS. PSC.
Solvent Orange 48-----	ACY.
Solvent Orange 51-----	ACY.
Solvent Orange 60-----	AC.
Other solvent orange dyes-----	AC, ACY, DSC, DUP.
*Solvent red dyes:	
Solvent Red 1-----	PSC.
Solvent Red 8-----	GAF.
Solvent Red 22-----	GAF.
Solvent Red 24-----	ACY, DUP, GAF, PSC.
Solvent Red 26-----	AC, ACY, PSC.
Solvent Red 27-----	PSC.
Solvent Red 33-----	DUP, GAF.
Solvent Red 35-----	GAF.
Solvent Red 40-----	GAF.
Solvent Red 41-----	DSC.
*Solvent Red 49-----	ACY, DSC, DUP, GAF.
Solvent Red 68-----	ACS.
Solvent Red 69-----	DSC, DUP.
Solvent Red 74-----	ACS.
Solvent Red 105-----	ACY.
Solvent Red 108-----	AC, ACY
Solvent Red 111-----	ACY.
Solvent Red 115-----	ACY.
Solvent Red 126-----	MRT.
Solvent Red 164-----	MRT.
Solvent Red 166-----	ACY, ATL, DSC, DUP, MRT.
Other solvent red dyes-----	
Solvent violet dyes:	
Solvent Violet 8-----	ACY, DSC.
Solvent Violet 9-----	DSC.
Solvent Violet 11-----	AC.
Solvent Violet 13-----	AC, ATL, HSH.
Solvent Violet 14-----	AC.
Solvent Violet 26-----	AC.
Other solvent violet dyes-----	AC, DSC, MRT.
*Solvent blue dyes:	
Solvent Blue 3-----	ACY, SW.
Solvent Blue 4-----	DSC, DUP.
Solvent Blue 5-----	DSC.
Solvent Blue 6-----	DSC.
Solvent Blue 7-----	ACY.
Solvent Blue 9-----	GAF.
Solvent Blue 23-----	HSC.
Solvent Blue 32-----	AC.
Solvent Blue 34-----	AC.
Solvent Blue 36-----	AC, DUP.
Solvent Blue 37-----	DUP.
Solvent Blue 38-----	ACY, ATL, DUP.
Solvent Blue 43-----	ACS.
Solvent Blue 58-----	ACY.
Solvent Blue 59-----	AC, ACY.
Solvent Blue 74-----	ACS.
Solvent Blue 98-----	MRT.
Other solvent blue dyes-----	AC, ACY, DSC, GAF, x.

SYNTHETIC ORGANIC CHEMICALS, 1975

TABLE 2.--DYES FOR WHICH U.S. PRODUCTION OR SALES WERE REPORTED, IDENTIFIED
BY MANUFACTURER, 1975--CONTINUED

Dye	Manufacturers' identification codes (according to list in table 3)
SOLVENT DYES--Continued	
Solvent green dyes:	
Solvent Green 1-----	ACY, DSC.
Solvent Green 2-----	GAF.
Solvent Green 3-----	AC, ACS, ATL, HSH.
Other solvent green dyes-----	ACY, DSC.
Solvent brown dyes:	
Solvent Brown 11-----	GAF.
Solvent Brown 12-----	ACY, DSC, GAF., PSC.
Solvent Brown 19-----	DUP.
Solvent Brown 20-----	ACY, DUP.
Solvent Brown 22-----	DUP, PSC.
Solvent Brown 38-----	ACY.
Other solvent brown dyes-----	DSC.
Solvent black dyes:	
Solvent Black 5-----	ACS, ACY, DSC.
Solvent Black 7-----	ACS, ACY, DSC.
Solvent Black 13-----	ACS.
Solvent Black 26-----	ACY.
Other solvent black dyes-----	ATL, DSC, MRT, PSC.
SULFUR DYES	
Sulfur yellow dyes:	
Leuco Sulfur Yellow 1-----	SDC.
Leuco Sulfur Yellow 2-----	ACY, SDC.
Leuco Sulfur Yellow 4-----	SDC.
Leuco Sulfur Yellow 9-----	STC.
Other sulfur yellow dyes-----	SDC.
Sulfur orange dyes-----	SDC.
Sulfur red dyes:	
Leuco Sulfur Red 5-----	STC.
Other sulfur red dyes-----	SDC.
Sulfur blue dyes:	
Sulfur Blue 7-----	SDC.
Leuco Sulfur Blue 7-----	ACY, SDC.
Sulfur Blue 8-----	SDC.
Leuco Sulfur Blue 8-----	SDC.
Leuco Sulfur Blue 13-----	ACY.
Other sulfur blue dyes-----	SDC.
Sulfur green dyes:	
Leuco Sulfur Green 2-----	SDC.
Leuco Sulfur Green 3-----	SDC.
Leuco Sulfur Green 14-----	SDC.
Leuco Sulfur Green 16-----	SDC.
Other sulfur green dyes-----	SDC.
Sulfur brown dyes:	
Solubilized Sulfur Brown 1-----	STC.
Leuco Sulfur Brown 3-----	SDC.
Leuco Sulfur Brown 10-----	SDC.
Sulfur Brown 14-----	SDC.
Leuco Sulfur Brown 14-----	SDC.
Leuco Sulfur Brown 20-----	STC.
Leuco Sulfur Brown 26-----	STC.
Sulfur Brown 52-----	SDC.
Other sulfur brown dyes-----	ACY, SDC.
Sulfur black dyes:	
Sulfur Black 1-----	ACY, SDC.
Leuco Sulfur Black 1-----	ACY, SDC.
Sulfur Black 2-----	SDC.

TABLE 2.--DYES FOR WHICH U.S. PRODUCTION OR SALES WERE REPORTED, IDENTIFIED
BY MANUFACTURER, 1975--CONTINUED

Dye	Manufacturers' identification codes (according to list in table 3)
SULFUR DYES--Continued	
Sulfur black dyes--Continued	
Leuco Sulfur Black 2-----	ACY, SDC.
Solubilized Sulfur Black 2-----	SDC.
Leuco Sulfur Black 10-----	ACY.
Sulfur Black 11-----	SDC.
Leuco Sulfur Black 11-----	SDC.
Other sulfur black dyes-----	SDC.
VAT DYES	
*Vat yellow dyes:	
Vat Yellow 1, 12-1/2%-----	ATL.
*Vat Yellow 2, 8-1/2%-----	AC, GAF, TRC, VPC.
Vat Yellow 4, 12-1/2%-----	HST, VPC.
Vat Yellow 10, 10%-----	GAF.
Vat Yellow 14, 12-1/2%-----	TRC.
Vat Yellow 15, 11-1/2%-----	ACY.
Vat Yellow 22, 10%-----	DUP.
Vat Yellow 33-----	TRC, VPC.
Other vat yellow dyes-----	VPC.
Vat orange dyes:	
*Vat Orange 1, 20%-----	ACY, ATL, HST, TRC, VPC.
*Vat Orange 2, 12%-----	ACY, BAS, CMG, DUP, TRC.
Vat Orange 3, 13-1/2%-----	GAF, HST.
Vat Orange 4, 6%-----	DUP.
Vat Orange 5, 10%-----	DUP, HST.
Vat Orange 7, 11%-----	HST, TRC.
Vat Orange 9, 12%-----	ACY, TRC.
Vat Orange 11, 6%-----	DUP.
*Vat Orange 15, 10%-----	AC, ACY, ATL, GAF, TRC, VPC.
Other vat orange dyes-----	SDC.
*Vat red dyes:	
*Vat Red 1, 13%-----	AC, ACY, ATL, HST.
Solubilized Vat Red 1, 37%-----	HST.
Vat Red 10, 18%-----	BAS, GAF.
Vat Red 12, 8-1/2%-----	DUP.
*Vat Red 13, 11%-----	DUP, GAF, TRC.
Vat Red 14, 10%-----	HST.
Vat Red 15, 10%-----	HST.
Vat Red 16, 11%-----	DUP.
Vat Red 29, 18%-----	GAF.
Vat Red 32, 20%-----	DUP, GAF.
Vat Red 41, 20%-----	HST.
Vat Red 52, 10%-----	DUP.
*Vat violet dyes:	
Vat Violet 1, 11%-----	ATL, DUP, GAF.
Vat Violet 2, 20%-----	ACY, HST.
Vat Violet 3, 15%-----	HST.
Vat Violet 9, 12%-----	DUP, GAF, TRC.
Vat Violet 13, 6-1/4%-----	BAS, GAF, TRC.
Vat Violet 21-----	VPC.
Other vat violet dyes-----	MAY.
Vat blue dyes:	
Vat Blue 1, 20%-----	ACS.
Vat Blue 4, 10%-----	ACY.
Vat Blue 5, 16%-----	ATL, HST.
Vat Blue 6, 8-1/3%-----	ACY, BAS, DUP, GAF, TRC.
Vat Blue 12, 6-1/2%-----	DUP.

TABLE 2.--DYES FOR WHICH U.S. PRODUCTION OR SALES WERE REPORTED, IDENTIFIED
BY MANUFACTURER, 1975--CONTINUED

Dye	Manufacturers' identification codes (according to list in table 3)
VAT DYES--Continued	
Vat blue dyes--Continued	
Vat Blue 14, 8-1/3%	DUP.
Vat Blue 16, 16%	BAS, DUP.
Vat Blue 18, 13%	AC, ACY, ATL, DUP, MAY, TRC.
Vat Blue 20, 14%	AC, ACY, ATL, DUP, MAY, TRC.
Vat Blue 39, 12%	GAF.
Vat Blue 43	SDC.
Vat Blue 60	DUP.
Vat Blue 67	HST.
*Vat green dyes:	
*Vat Green 1, 6%	ACY, ATL, BAS, DUP, MAY.
*Vat Green 3, 10%	AC, ACY, ATL, DUP, GAF, MAY, TRC.
Vat Green 8, 8-1/2%	ATL, DUP.
Vat Green 9, 12-1/2%	HST, MAY, TRC.
Vat Green 19, 13%	DUP.
Vat Green 32	VPC.
Other vat green dyes	SDC.
*Vat brown dyes:	
Vat Brown 1, 11%	ACY, DUP, GAF, TRC.
*Vat Brown 3, 11%	AC, ACY, DUP, GAF, TRC, VPC.
Vat Brown 5, 13%	ACY, HST.
Vat Brown 6, 17-1/2%	AC.
Vat Brown 11, 12%	MAY, TRC.
Vat Brown 13, 17%	MAY.
Vat Brown 20, 10-1/2%	GAF.
Vat Brown 57	HST, VPC.
Other vat brown dyes	AC, SDC, VPC.
*Vat black dyes:	
Solubilized Vat Black 1, 27-1/2%	HST.
Vat Black 9, 16%	MAY.
Vat Black 13, 14%	DUP.
Vat Black 16	ACS.
Vat Black 22, 19%	ACY, TRC.
*Vat Black 25, 12-1/2%	AC, ACY, DUP, MAY, TRC.
*Vat Black 27, 12-1/2%	ACY, BDO, DUP, GAF, TRC.
Vat Black 38, 20%	GAF.
Other vat black dyes	AC, ATL, DUP, GAF, SDC, TRC, VPC.
All other dyes	GAF, ICI, MRT, SDC.

TABLE 3.--DYES: DIRECTORY OF MANUFACTURERS, 1975

ALPHABETICAL DIRECTORY BY CODE

[Names of dye manufacturers that reported production or sales to the U.S. International Trade Commission for 1975 are listed below in order of their identification codes as used in table 2]

Code	Name of company	Code	Name of company
AC	American Color & Chemical Corp.	ICC	Inmont Corp.
ACS	Allied Chemical Corp., Specialty Chemicals Div.	ICI	ICI United States, Inc., Specialty Chemicals Group
ACY	American Cyanamid Co.		
ALL	Alliance Chemical, Inc.	KON	H. Kohnstamm & Co., Inc.
ALT	Crompton & Knowles Corp., Dyes & Chemicals Div.	MAY	Otto B. May, Inc.
ATL	Atlantic Chemical Corp.	MRT	Morton Norwich Products, Morton Chemical Co. Div.
BAS	BASF Wyandotte Corp.	MRX	Max Marx Color & Chemical Co.
BDO	Benzoid Organics, Inc.		
BUC	Synalloy Corp., Blackman-Uhler Chemical Div.	PCW	Pfister Chemical Works
		PDC	Berncolors-Poughkeepsie, Inc.
CCW	Cincinnati Milacron Chemicals, Inc.	PSC	Passaic Color & Chemical Co.
CGY	Ciba-Geigy Corp.	S	Sandoz, Inc.
CMG	Nyanza, Inc.	SDC	Martin-Marietta Corp., Sodyeco Div.
DGO	Day-Glo Color Corp.	SDH	Sterling Drug, Inc., Hilton-Davis Chemical Co. Div.
DSC	Dye Specialties, Inc.	SNA	Sun Chemical Corp.
DUP	E. I. duPont de Nemours & Co., Inc.	STC	American Hoechst Corp., Sou-Tex Works
EKT	Eastman Kodak Co., Tennessee Eastman Co. Div.	STG	Stange Co.
FAB	Fabricolor Manufacturing Corp.	SW	Sherwin-Williams Co.
GAF	GAF Corp., Chemical Div.	TMS	Sterling Drug, Inc., Thomasset Colors Div.
		TRC	Toms River Chemical Corp.
HSC	Chemetron Corp., Pigments Div.	VPC	Mobay Chemical Corp, Verona Div.
HSH	Marshaw Chemical Co., Div. of Kewanee Oil Co.		
HST	American Hoechst Corp., Rhode Island Works	WJ	Warner-Jenkinson Manufacturing Co.

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

SYNTHETIC ORGANIC CHEMICALS, 1975

ORGANIC PIGMENTS

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

Statistics on production and sales of all organic pigments in 1975 are given in table 1.¹ 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 1975 was 49.7 million pounds--28.9 percent less than the 69.8 million pounds produced in 1974 and 28.4 percent less than the 69.4 million pounds produced in 1973. Total sales of organic pigments in 1975 amounted to 42.4 million pounds, valued at \$185.0 million, compared with 58.5 million pounds, valued at \$227.8 million, in 1974 and 61.5 million pounds, valued at \$182.2 million, in 1973. In terms of quantity, sales of organic pigments in 1975 were 27.5 percent smaller than in 1974 and 31.1 percent smaller than in 1973; in terms of value, sales in 1975 were 18.4 percent smaller than in 1974 and 2.1 percent greater than in 1973.

Production of toners in 1975 amounted to 47.7 million pounds--29.3 percent less than the 67.5 million pounds reported in 1974. Sales in 1975 were 40.8 million pounds, valued at \$182.1 million, compared with 56.3 million pounds, valued at \$222.8 million, in 1974. Sales in 1975 were 27.6 percent smaller than those in 1974 in terms of quantity, and 18.3 percent smaller in terms of value. The individual toners listed in the report which were produced in the largest quantities in 1975 were Pigment Yellow 12, 6.0 million pounds; Pigment Blue 15, beta form, 4.9 million pounds; Pigment Red 49, barium toner, 4.0 million pounds, and Pigment Red 53, barium toner, 2.7 million pounds.

Production of lakes totaled 1.9 million pounds in 1975--17.3 percent less than the 2.3 million pounds reported for 1974. Sales of lakes in 1975 amounted to 1.6 million pounds, valued at \$3.9 million, compared with sales in 1974 of 2.2 million pounds, valued at \$5.0 million. Sales in 1975 were 26.4 percent less than those in 1974 in terms of quantity, and 21.6 percent smaller in terms of value.

For each of 10 selected pigments, or groups of pigments, table 1A gives data on sales by commercial forms. Pigment Yellow 12, Pigment Red 53, barium toner, and Pigment Blue 15, beta form, were sold principally in the flushed form. The remaining 7 pigments, or groups of pigments, for which statistics are published were sold principally in the dry full-strength form. Statistics on sales by commercial forms could not be published for Pigment Red 49, calcium toner, Pigment Red 49, sodium toner, Pigment Red 90, Pigment Violet 3, fugitive, Pigment Blue 19, and Pigment Blue 24 without revealing the operations of individual companies.

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

ORGANIC PIGMENTS

79

TABLE 1.--ORGANIC PIGMENTS: U.S. PRODUCTION AND SALES, 1975

[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.) Table 2 lists separately all organic pigments for which data on production or sales were reported and identifies the manufacturers of each]

Pigment	Production	Sales		
		Quantity	Value ¹	Unit ² value
Grand total-----	1,000 pounds dry basis ³ 49,653	1,000 pounds dry basis ³ 42,372	1,000 dollars 185,990	Per pound \$4.39
TONERS				
Total-----	47,723	40,779	182,067	4.46
Yellow toners, total-----	11,646	8,997	36,337	4.04
Acetoacetarylides yellows:				
Pigment Yellow 1, C.I. 11 680-----	338	264	963	3.65
Pigment Yellow 3, C.I. 11 710-----	192	...	...	...
Pigment Yellow 73, C.I. 11 738-----	389	295	1,207	4.09
Pigment Yellow 74, C.I. 11 741-----	947	945	4,261	4.51
Benzidine yellows, total-----	8,610	6,036	20,781	3.44
Pigment Yellow 12, C.I. 21 090-----	6,028	3,906	13,080	3.35
Pigment Yellow 13, C.I. 21 100-----	240	166	576	3.47
Pigment Yellow 14, C.I. 21 095-----	1,840	1,646	5,736	3.49
Pigment Yellow 17, C.I. 21 105-----	415	280	1,153	4.12
All other benzidine yellows-----	87	38	236	6.21
All other-----	1,170	1,457	9,125	6.26
Orange toners, total-----	1,377	1,082	5,022	4.64
Pigment Orange 5, C.I. 12 075-----	523	386	1,311	3.40
Pigment Orange 13, C.I. 21 110-----	209	168	859	5.11
Pigment Orange 16, C.I. 21 160-----	377	279	1,232	4.42
Pigment Orange 34, C.I. 21 115-----	99	97	526	5.42
All other-----	169	152	1,094	7.20
Red toners, total-----	20,057	17,319	65,605	3.79
Naphthol reds, total-----	1,019	691	4,655	6.74
Pigment Red 2, C.I. 12 310-----	73	32	175	5.47
Pigment Red 5, C.I. 12 490-----	60	31	276	8.90
Pigment Red 17, C.I. 12 390-----	81	27	183	6.78
Pigment Red 22, C.I. 12 315-----	68	56	360	6.43
Pigment Red 23, C.I. 12 355-----	228	210	1,622	7.72
All other naphthol reds-----	509	335	2,039	6.09
Pigment Red 3, C.I. 12 120-----	1,660	1,287	4,262	3.31
Pigment Red 4, C.I. 12 085-----	144	134	413	3.08
Pigment Red 6, C.I. 12 090-----	34	...	...	...
Pigment Red 48, C.I. 15 865-----	2,167	1,664	6,556	3.94
Pigment Red 49, C.I. 15 630:				
Barium toner-----	4,015	3,876	8,224	2.12
Calcium toner-----	1,297	1,265	3,072	2.43
Pigment Red 52, C.I. 15 860-----	1,930	1,533	5,617	3.66
Pigment Red 53, C.I. 15 585, barium toner-----	2,736	2,335	6,302	2.70
Pigment Red 57, C.I. 15 850, calcium toner-----	1,496	1,247	5,049	4.05
Pigment Red 63, C.I. 15 880-----	43	39	158	4.05
Pigment Red 81, C.I. 45 160, PMA-----	505	479	3,847	8.03
Pigment Red 81, C.I. 45 160, PTA-----	55	47	532	11.32
All other-----	2,956	2,722	16,918	6.22

See footnotes at end of table.

TABLE 1.--ORGANIC PIGMENTS: U.S. PRODUCTION AND SALES, 1975--CONTINUED

Pigments	Production	Sales		
		Quantity	Value ¹	Unit value ²
TONERS--Continued				
Violet toners, total-----				
Pigment Violet 1, C.I. 45 170, PMA-----	1,000 pounds dry basis ³	1,000 pounds dry basis ³	1,000 dollars	Per pound
Pigment Violet 1, C.I. 45 170, PTA-----	2,195	1,914	19,955	\$10.43
Pigment Violet 3, C.I. 42 535, fugitive-----	48	51	421	8.26
Pigment Violet 3, C.I. 42 535, PMA-----	72	59	566	9.59
Pigment Violet 3, C.I. 42 535, PTA-----	260	288	876	3.04
All other-----	431	349	1,672	4.79
Blue toners, total-----	...	28	225	8.04
Pigment Blue 1, C.I. 42 595, PMA-----	171	175	3,009	17.19
Pigment Blue 15, C.I. 74 160, alpha form-----	1,213	964	13,186	13.68
Pigment Blue 15, C.I. 74 160, beta form-----	9,397	8,786	39,964	4.55
All other-----	65	62	540	8.71
Green toners, total-----	2,199	2,135	11,281	5.28
Pigment Green 2, C.I. 42 040 and 49 005, PMA-----	4,866	4,305	21,050	4.89
Pigment Green 2, C.I. 42 040 and 49 005, PTA-----	2,267	2,284	7,093	3.11
Pigment Green 7, C.I. 74 260-----	2,723	2,410	14,313	5.94
Pigment Green 36, C.I. 74 265-----	...	25	165	6.60
All other-----	33	32	359	11.22
Brown and black toners, total-----	2,271	2,036	11,702	5.75
Pigment Brown 5, C.I. 15 800-----	147	167	1,107	6.63
All other-----	272	150	980	6.53
Brown and black toners, total-----	328	271	871	3.21
Pigment Brown 5, C.I. 15 800-----	123	69	312	4.52
All other-----	205	202	559	2.77
LAKES				
Total-----	1,930	1,593	3,923	2.46
Red lakes:				
Pigment Red 60, C.I. 16 105-----	209	223	803	3.60
Pigment Red 83, C.I. 58 000-----	41	38	216	5.68
(Acid Red 26), C.I. 16 150-----	84	60	109	1.82
Violet lake: Pigment Violet 5, C.I. 58 055-----	83	63	278	4.41
Blue lakes-----	1,143	1,099	2,267	2.06
All other lakes-----	370	110	250	2.27

¹ The value of sales for toners are reported on a dry full-strength basis and the value of sales for lakes are 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 forms.

² Calculated from rounded figures.

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

Note.--The C.I. (*Colour Index*) 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.

ORGANIC PIGMENTS

81

TABLE 1A.--U.S. SALES OF SELECTED DRY FULL-STRENGTH COLORS, DRY EXTENDED COLORS, DRY DISPERSIONS, AQUEOUS DISPERSIONS, AND FLUSHED COLORS, 1975

[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
Pigment Yellow 12, C.I. 21 090, total-----			
Dry full-strength toner-----	3,906	13,551	\$3.47
Flushed color-----	1,066	3,569	3.35
Aqueous dispersions ⁴ and dry dispersions ⁵ -----	2,749	9,688	3.52
91		294	3.24
Pigment Yellow 13, C.I. 21 100; Pigment Yellow 14, C.I. 21 095;			
Pigment Yellow 17, C.I. 21 105; and other benzidine yellows, total-----	2,130	7,721	3.63
Dry full-strength toner-----	1,129	3,979	3.53
Aqueous dispersions ⁴ -----	681	2,479	3.64
Flushed color-----	300	1,189	3.97
Dry extended toner and dry dispersions ⁵ -----	20	74	3.67
Pigment Red 3, C.I. 12 120, total-----	1,287	4,491	3.49
Dry full-strength toner-----	860	2,819	3.28
Dry extended toner, aqueous dispersions ⁴ , and flushed color ⁵ -----	427	1,672	3.91
Pigment Red 48, C.I. 15 865, total-----	1,664	6,558	3.94
Dry full-strength toner-----	1,465	5,763	3.94
Dry extended toner, dry dispersions, and flushed color ⁵ -----	161	632	3.92
Aqueous dispersions ⁴ -----	38	163	4.29
Pigment Red 49, barium toner, C.I. 15 630, total-----	3,876	8,360	2.16
Dry full-strength toner, dry extended toner, and aqueous dispersions ⁴ ; ⁵ -----	3,647	7,763	2.13
Flushed color-----	229	597	2.61
Pigment Red 53, C.I. 15 585, barium toner, total-----	2,335	6,354	2.72
Dry full-strength toner-----	657	1,735	2.64
Flushed color-----	1,659	4,568	2.75
Dry dispersions, dry extended toners, and aqueous dispersions ⁴ , ⁵ -----	19	51	2.70
Pigment Violet 3, C.I. 42 535, PMA and PTA, total-----	377	1,910	5.07
Dry full-strength toner-----	283	1,496	5.29
Dry extended toner, aqueous dispersions ⁴ , and flushed color ⁵ -----	94	414	4.38
Pigment Blue 15, C.I. 74 160, alpha form, total-----	2,135	11,301	5.29
Dry full-strength toner-----	971	5,310	5.47
Aqueous dispersions ⁴ -----	740	3,383	4.57
Flushed color-----	60	288	4.81
Dry dispersions and dry extended toner ⁵ -----	364	2,320	6.38
Pigment Blue 15, C.I. 74 160, beta form, total-----	4,305	21,388	4.97
Dry full-strength toner-----	1,362	7,037	5.17
Dry extended toner and dry dispersions ⁵ -----	43	244	5.70
Aqueous dispersions ⁴ -----	660	2,940	4.46
Flushed color-----	2,240	11,167	4.98
Pigment Green 7, C.I. 74 260, total-----	2,036	11,864	5.83
Dry full-strength toner-----	912	5,214	5.71
Flushed color-----	234	1,685	7.19
Aqueous dispersions ⁴ -----	742	4,079	5.50
Dry extended toner and dry dispersions ⁵ -----	148	886	5.98

¹ Sales quantities are identical in tables 1 and 1A; the sales value data in table 1A generally exceed the values in table 1 because table 1A includes the additional processing and packaging costs of the various commercial forms.

² Calculated from whole figures.

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

⁴ Includes presscake.

⁵ Separate data on these commercial forms may not be published without revealing the operation 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.

SYNTHETIC ORGANIC CHEMICALS, 1975

TABLE 2.--ORGANIC PIGMENTS FOR WHICH U.S. PRODUCTION OR SALES WERE REPORTED,
IDENTIFIED BY MANUFACTURER, 1975

[Organic pigments for which separate statistics are given in table 1 are marked below with an asterisk (*); products 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]

Pigment	Manufacturers' identification codes (according to list in table 3)
TONERS	
*Yellow toners:	
Acetoacetarylides yellows:	
*Pigment Yellow 1, C.I. 11 680-----	ACS, ACY, AMS, CPC, DUP, HPC, HSC, HSH, HST, KON, ROM, SDH, SNA.
Pigment Yellow 2, C.I. 11 730-----	KCW.
*Pigment Yellow 3, C.I. 11 710-----	ACS, BNS, HPC, HSC, HSH, HST, KCW, KON, ROM.
Pigment Yellow 4, C.I. 11 665-----	ACS.
Pigment Yellow 5, C.I. 11 660-----	HPC.
Pigment Yellow 6, C.I. 11 670-----	HPC.
Pigment Yellow 65-----	ACS, HPC.
*Pigment Yellow 73, C.I. 11 738-----	ACS, CIK, HPC, HSC, HSH, HST, KCW, SNA.
*Pigment Yellow 74, C.I. 11 741-----	ACS, DUP, HPC, HSC, HSH, SDH, SNA.
Pigment Yellow 75, C.I. 11 770-----	HPC.
All other acetoacetarylides yellows-----	DUP, KCW.
Benzidine yellow:	
*Pigment Yellow 12, C.I. 21 090-----	ACS, AMS, APO, BOR, HPC, HSC, HSH, HST, ICC, ROM, SDH, SNA.
*Pigment Yellow 13, C.I. 21 100-----	AMS, BUC, GAF, HPC, HSC, HST, ICC, MRA, ROM, SDH, SNA.
*Pigment Yellow 14, C.I. 21 095-----	ACS, AMS, BNS, BUC, GAF, HPC, HSC, HSH, HST, ICC, MRA, ROM, SDH, SNA, x.
*Pigment Yellow 17, C.I. 21 105-----	ACS, BUC, HPC, HSC, HSH, HST, ICC, MRA, ROM, SDH, SNA.
Pigment Yellow 55, C.I. 21 096-----	HPC.
Pigment Yellow 83, C.I. 21 108-----	HST, ICC, SNA.
All other benzidine yellows-----	ICC, ROM, S, SDH.
Pigment Yellow 16, C.I. 20 040-----	HST, ICC.
Pigment Yellow 60, C.I. 12 705-----	HSH.
Pigment Yellow 97, C.I. 11 767-----	HST.
Pigment Yellow 108, C.I. 68 420-----	ICC.
Pigment Yellow 109-----	ACS.
Pigment Yellow 110-----	ACS.
Pigment Yellow 112 (Vat Yellow 1), C.I. 70 600-----	ICC.
Pigment Yellow 124-----	LVR, MRX.
(Basic Yellow 2), C.I. 41 000, fugitive-----	LVR.
(Basic Yellow 37), C.I. 41 001-----	LVR.
(Direct Yellow 6), C.I. 40 001-----	LVR.
(Direct Yellow 11), C.I. 40 000-----	LVR.
All other-----	S,
*Orange toners:	
Pigment Orange 1, C.I. 11 725-----	ACS, KCW.
Pigment Orange 2, C.I. 12 060-----	HPC, UHL.
*Pigment Orange 5, C.I. 12 075-----	ACY, HPC, HSC, HSH, HST, SDH, SNA.
*Pigment Orange 13, C.I. 21 110-----	ACS, AMS, HPC, HSC, HSH, ICC, KON, MRX.
Pigment Orange 15, C.I. 21 130-----	ACS.
*Pigment Orange 16, C.I. 21 160-----	ACS, BNS, GAF, HPC, HSH, HST, ICC, MRA, MRX, ROM, SDH, SNA.
*Pigment Orange 34, C.I. 21 115-----	BUC, ICC, MRA, ROM, SDH.
Pigment Orange 43 (Vat Orange 7), C.I. 71 105-----	ACS, HST.
Pigment Orange 46, C.I. 15 602-----	HSC.
All other-----	KON.
*Red toners:	
*Naphthol reds:	
*Pigment Red 2, C.I. 12 310-----	ACS, HPC, HSH, KCW, S.
*Pigment Red 5, C.I. 12 490-----	GAF, HPC, HSH, ICC, ROM, S, SDH.
Pigment Red 7, C.I. 12 420-----	HST, S.

TABLE 2.--ORGANIC PIGMENTS FOR WHICH U.S. PRODUCTION OR SALES WERE REPORTED,
IDENTIFIED BY MANUFACTURER, 1975--CONTINUED

Pigment	Manufacturers' identification codes (according to list in table 3)
TONERS--Continued	
*Red toners--Continued	
*Naphthol reds--Continued	
Pigment Red 9, C.I. 12 460-----	HPC, HST, MRX.
Pigment Red 13, C.I. 12 395-----	HPC, KCW.
Pigment Red 15, C.I. 12 465-----	DUP.
*Pigment Red 17, C.I. 12 390-----	ACY, BNS, HPC, ICC, SNA, UHL.
Pigment Red 21, C.I. 12 300-----	BNS.
*Pigment Red 22, C.I. 12 315-----	ACY, DUP, GAF, HPC, MRX, SNA.
*Pigment Red 23, C.I. 12 355-----	ACY, BUC, DUP, HPC, HSH, ICC, MRA, ROM, S, SDH, UHL.
Pigment Red 31, C.I. 12 360-----	MRA.
Pigment Red 112, C.I. 12 370-----	HPC, HST.
(Direct Red 81), C.I. 28 160-----	LVR.
All other naphthol reds-----	ICC, KCW, MRA, ROM, SDH, SNA.
Pigment Red 1, C.I. 12 070, dark-----	HPC, HSH, KON.
Pigment Red 1, C.I. 12 070, light-----	HPC, HSH, SDH.
*Pigment Red 3, C.I. 12 120-----	ACY, CIK, CPC, DUP, HPC, HSC, HSH, KCW, KON, SDH, SNA, UHL.
*Pigment Red 4, C.I. 12 085-----	ACY, AMS, HPC, HSC, KON, MRX, SDH, UHL.
*Pigment Red 6, C.I. 12 090-----	DUP, HSH, KCW, KON.
Pigment Red 38, C.I. 21 120-----	ACS, HSH, ICC, SNA.
Pigment Red 41, C.I. 21 200-----	ACS.
*Pigment Red 48, C.I. 15 865-----	ACS, ACY, AMS, BOR, DUP, GAF, HPC, HSC, HSH, ICC, MRX, S, SNA.
Pigment Red 49, C.I. 15 630:	
*Barium toner-----	ACY, AMS, BNS, BOR, CIK, HSC, KON, SDH, SNA, UHL.
*Calcium toner-----	ACY, AMS, BNS, BOR, HSC, SDH.
Sodium toner-----	BNA, HSC, SDH.
*Pigment Red 52, C.I. 15 860-----	AMS, HPC, HSC, HSH, SNA.
*Pigment Red 53, C.I. 15 585, barium toner-----	ACY, AMS, BOR, CIK, HSC, HSH, ICC, KON, MGR, MRX, SDH, SNA.
Pigment Red 53, C.I. 15 585, sodium toner-----	KON.
Pigment Red 54, C.I. 14 830, calcium toner-----	HSH, SDH.
*Pigment Red 57, C.I. 15 850, calcium toner-----	APO, BNS, BOR, CIK, DUP, HPC, HSC, HSH, KON, MGR, SDH, SNA, UHL.
Pigment Red 58, C.I. 15 825-----	DUP, HPC.
*Pigment Red 63, C.I. 15 880-----	HSC, HSH, KON, SNA.
*Pigment Red 81, C.I. 45 160, PMA-----	AMS, CPC, DUP, GAF, HPC, KON, MGR, MRX, SNA, UHL.
*Pigment Red 81, C.I. 45 160, PTA-----	DUP, GAF, HPC, HSC, KON, MGR, MRX, UHL.
Pigment Red 88, C.I. 73 312-----	ACS.
Pigment Red 90, C.I. 45 380-----	AMS, BOR, SDH.
Pigment Red 122, C.I. 73 915-----	ACS, HST, SNA.
Pigment Red 123, C.I. 71 145-----	ACS, HSC.
Pigment Red 146-----	HST.
Pigment Red 149-----	HST.
Pigment Red 168 (Vat Orange 3), C.I. 59 300-----	ACS.
Pigment Red 170-----	HST.
Pigment Red 179, C.I. 71 130-----	ACS.
Pigment Red 181 (Vat Red 1), C.I. 73 360-----	HST.
Pigment Red 188-----	HST.
Pigment Red 190 (Vat Red 29), C.I. 71 140-----	ACS, HSC.
Pigment Red 194 (Vat Red 15), C.I. 71 100-----	HST.
Pigment Red 197 (Vat Orange 4), C.I. 59 710-----	ACS.
Pigment Red 224-----	ACS.
(Disperse Red 88)-----	ICC.
(Vat Red 41), C.I. 73 300-----	HST.
All other-----	DUP, x.

TABLE 2.--ORGANIC PIGMENTS FOR WHICH U.S. PRODUCTION OR SALES WERE REPORTED,
IDENTIFIED BY MANUFACTURER, 1975--CONTINUED

Pigment	Manufacturers' identification codes (according to list in table 3)
TONERS--Continued	
*Violet toners:	
Pigment Violet 1, C.I. 45 170, fugitive-----	UHL.
*Pigment Violet 1, C.I. 45 170, PMA-----	GAF, HPC, MGR, MRX, SNA, UHL.
*Pigment Violet 1, C.I. 45 170, PTA-----	AMS, DUP, GAF, HPC, HSC, MGR, MRX, SNA.
*Pigment Violet 3, C.I. 42 535, fugitive-----	ACY, AMS, HSC, KON, MGR, UHL.
*Pigment Violet 3, C.I. 42 535, PMA-----	CIK, DUP, GAF, HPC, HSC, KON, MGR, MRX, SDH, UHL.
*Pigment Violet 3, C.I. 42 535, PTA-----	ACY, AMS, HPC, HSC, KON, MRX.
Pigment Violet 19, C.I. 46 500-----	ACS, DUP, SNA.
*Pigment Violet 23, C.I. 51 319-----	ACS, BUC, GAF, HSC, HST, SDC, SNA.
Pigment Violet 25, C.I. 12 321-----	ICC.
Pigment Violet 36 (Vat Violet 2), C.I. 73 385-----	HST.
(Basic Violet 1), C.I. 42 535-----	LVR.
(Vat Violet 1), C.I. 60 010-----	DUP.
All other-----	ACY, BUC, HPC, HST, ROM.
*Blue toners:	
Pigment Blue 1, C.I. 42 595, PMA-----	BNS, DUP, GAF, HPC, KON, LVR, MGR, MRX, UHL.
Pigment Blue 1, C.I. 42 595, PTA-----	KON, MGR.
Pigment Blue 2, C.I. 44 045, PMA-----	GAF, LVR.
Pigment Blue 2, C.I. 44 045, PTA-----	KON, LVR.
Pigment Blue 9, C.I. 42 025, PMA-----	KON, MRX, UHL.
Pigment Blue 9, C.I. 42 025, PTA-----	MGR.
Pigment Blue 10, C.I. 44 040, PMA-----	HSC, SDH.
Pigment Blue 14, C.I. 42 600, PMA-----	DUP, GAF, HPC, LVR.
*Pigment Blue 15, C.I. 74 160, alpha form-----	ACS, ACY, CIK, DUP, GAF, HPC, HSC, HSH, ICC, MGR, MRA, SNA, TMS.
*Pigment Blue 15, C.I. 74 160, beta form-----	ACY, AMS, APO, BAS, BOR, BUC, DUP, GAF, HPC, HSC, ICC, MGR, MRA, SNA, POP, SDH, SNA.
Pigment Blue 19, C.I. 42 750A-----	HSC, SW.
Pigment Blue 22, C.I. 69 810-----	ACS, DUP.
Pigment Blue 25, C.I. 21 180-----	ICC.
Pigment Blue 27, C.I. 77 510-----	CPC.
All other-----	DUP, GAF, SDH, TNI, UHL.
*Green toners:	
Pigment Green 1, C.I. 42 040, PMA-----	S, UHL.
Pigment Green 1, C.I. 42 040, PTA-----	MGR.
*Pigment Green 2, C.I. 42 040 and 49 005, PMA-----	GAF, KON, MGR, MRX, S.
*Pigment Green 2, C.I. 42 040 and 49 005, PTA-----	ACY, DUP, HPC, KON, MRX, UHL.
Pigment Green 4, C.I. 42 000, fugitive-----	GAF, MRX.
Pigment Green 4, C.I. 42 000, PMA-----	KON.
Pigment Green 4, C.I. 42 000, PTA-----	ACY, MGR.
*Pigment Green 7, C.I. 74 260-----	ACS, ACY, AMS, BAS, CIK, DUP, GAF, HPC, HSC, HST, POP, SDH, SNA, TMS.
Pigment Green 8, C.I. 10 006-----	HPC, KCW.
Pigment Green 10, C.I. 12 775-----	DUP, HPC.
*Pigment Green 36, C.I. 74 265-----	ACS, ACY, DUP, GAF, HST, SNA.
*Brown and black toners:	
Pigment Brown 1, C.I. 12 480-----	S.
Pigment Brown 3, C.I. 21 010, PMA-----	KCW, KON.
*Pigment Brown 5, C.I. 15 800-----	ACS, BUC, ICC, ROM.

TABLE 2.--ORGANIC PIGMENTS FOR WHICH U.S. PRODUCTION OR SALES WERE REPORTED,
IDENTIFIED BY MANUFACTURER, 1975--CONTINUED

Pigment	Manufacturers' identification codes (according to list in table 3)
TONERS--Continued	
*Brown and black toners--Continued (Acid Brown 14), C.I. 20 195----- All other-----	LVR. DUP, GAF, SDH, UHL.
LAKES	
Yellow lakes: (Acid Yellow 23), C.I. 19 140----- (Basic Yellow 2), C.I. 41 000-----	KON, MRX. BNS.
Orange lakes: Pigment Orange 7, C.I. 15 530----- Pigment Orange 17, C.I. 15 510-----	CPC. KCW, KON.
Red lakes: *Pigment Red 60, C.I. 16 105----- Pigment Red 81, C.I. 45 160, PMA----- *Pigment Red 83, C.I. 58 000----- (Acid Red 17), C.I. 16 180----- *(Acid Red 26), C.I. 16 150----- (Basic Red 1), C.I. 45 160----- (Basic Red 2), C.I. 50 240----- All other-----	HSH, KON, MRX, SDH, SNA. LVR. HPC, HSH, KON, MRX, UHL. HPC. CPC, HPC, KCW. BNS. BNS. BNS.
Violet lakes: *Pigment Violet 5, C.I. 58 055----- (Basic Violet 1), C.I. 42 535----- (Basic Violet 4), C.I. 42 600----- (Basic Violet 10), C.I. 45 170-----	ACS, DUP, HPC, HSH, KON, MRX, S, UHL. BNS. BNS. BNS.
*Blue lakes: Pigment Blue 17, C.I. 74 180----- Pigment Blue 24, C.I. 42 090----- (Acid Blue 93), C.I. 42 780----- Brown lakes-----	CPC, GAF. BOR, KON, SDH. LVR. KON.

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

When the name of a color is enclosed in parentheses, it indicates that this name is that of the dye from which the pigment can be made and that no name for the pigment itself is given in the *Colour Index*.

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

SYNTHETIC ORGANIC CHEMICALS, 1975

TABLE 3.--ORGANIC PIGMENTS: DIRECTORY OF MANUFACTURERS, 1975

ALPHABETICAL DIRECTORY BY CODE

[Names of organic pigment manufacturers that reported production or sales to the U.S. International Trade Commission for 1975 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 Chemical Corp., Specialty Chemicals Div.	KCW	Keystone Color Works, Inc.
ACY	American Cyanamid Co.	KON	H. Kohnstamm & Co., Inc.
AMS	Ridgway Color & Chemical	LVR	C. Lever Co., Inc.
APO	Apollo Colors, Inc.		
BAS	BASF Wyandotte Corp.	MGR	Magruder Color Co., Inc.
BNS	Binney and Smith, Inc.	MRA	Bostik South, Inc.
BOR	Borden, Inc., Printing Ink Div.	MRX	Max Marx Color & Chemical Co.
BUC	Synalloy Corp., Blackman-Uhler Chemical Div.	POP	Pope Chemical Corp.
CIK	Flint Ink Corp., Cal/Ink Div.	ROM	United Merchants & Manufacturers, Inc., Roma Chemical Div.
CPC	Hampden Color & Chemical Co.	S	Sandoz, Inc., Colors & Chemicals Div.
DUP	E. I. duPont de Nemours & Co., Inc.	SDC	Martin-Marietta Corp., Sodyeco Div.
GAF	GAF Corp., Chemical Div.	SDH	Sterling Drug, Inc., Hilton-Davis Chemical Co. Div.
HPC	Hercules, Inc.	SNA	Sun Chemical Corp.
HSC	Chemetron Corp., Pigments Div.	SW	The Sherwin-Williams Co.
HSH	Harshaw Chemical Co., Div. of Kewanee Oil Co.	TMS	Sterling Drug, Inc., Thomasset Colors Div.
HST	American Hoechst Corp., Rhode Island Works	TNI	Gillette Co., Chemical Div.
ICC	Inmont Corp.	UHL	Paul Uhlich & Co., Inc.

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

MEDICINAL CHEMICALS

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 of medicinal grade products used as intermediates, e.g., penicillin G salts used as intermediates in the manufacture of semi-synthetic penicillins. All quantities are given in terms of 100-percent content of the pure bulk drug.

Total U.S. production of bulk medicinal chemicals in 1975 amounted to 208.4 million pounds, or 15.4 percent less than the 246.5 million pounds produced in 1974 and 10.8 percent less than the 233.6 million pounds produced in 1973. Total sales of bulk medicinal chemicals in 1975 amounted to 148.8 million pounds, valued at \$772.0 million, compared with sales in 1974 of 177.5 million pounds, valued at \$814.8 million, and sales in 1973 of 179.2 million pounds, valued at \$582.4 million. In terms of quantity, sales in 1975 were thus 16.2 percent less than in 1974 and 16.9 percent less than in 1973. In terms of value, sales in 1975 were 5.3 percent less than in 1974 and 32.6 percent larger than in 1973.

Production of the more important groups of medicinal chemicals in 1975 was as follows: Antibiotics, 18.3 million pounds (10.8 percent less than in 1974), of which 9.4 million pounds was for medicinal use and 8.9 million pounds was for other uses; anti-infective agents other than antibiotics,

¹ Complementary statistics on the dollar value of manufacturers' shipments of finished pharmaceutical preparations, except biologicals, are published annually by the U.S. Department of Commerce, Bureau of the Census, in Current Industrial Reports, Series MA-28G. Many pharmaceutical manufacturers who 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.

28.6 million pounds (27.2 percent less than in 1974); central nervous system depressants and stimulants, 47.7 million pounds (9.7 percent less); and vitamins, 30.0 million pounds (26.7 percent less).

Production of some of the more important individual products listed in the table was as follows: Choline chloride, 38.7 million pounds (2.7 percent smaller than in 1974); aspirin, 25.4 million pounds (23.6 percent less); penicillins (except semi-synthetic), 3,818 trillion units (27.1 percent less); tetracyclines, 2.1 million kilograms (16.2 percent less); and vitamin E, 1,098 billion units (40.6 percent less).

MEDICINAL CHEMICALS

89

TABLE 1.--MEDICINAL CHEMICALS: U.S. PRODUCTION AND SALES, 1975

[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]

Chemical	Production ¹	Sales ¹		
		Quantity	Value	Unit value ²
Grand total-----	1,000 pounds 208,389	1,000 pounds 148,813	1,000 dollars 772,105	Per pound \$5.19
Acyclic-----	84,765	70,966	95,674	1.35
Benzoid ³ -----	100,317	61,153	398,072	6.51
Cyclic nonbenzenoid ⁴ -----	23,307	16,694	278,359	16.67
Antibiotics, total ⁵ -----	18,324	7,134	287,849	40.35
Antifungal and antitubercular antibiotics, for medicinal use-----	...	518	20,861	40.27
Penicillins (except semisynthetic), total-----	5,902	2,834	37,612	13.27
Penicillin G, potassium for medicinal use-----	2,183	...	...	...
All other, for all uses-----	3,719	2,834	37,612	13.27
Semisynthetic penicillins, for medicinal use, total-----	996	382	36,847	96.46
Ampicillin-----	707	277	27,577	99.56
All other-----	289	105	9,270	88.29
Tetracyclines, for all uses-----	4,673	...	...	...
Other antibiotics, total-----	6,753	3,400	192,529	56.63
For medicinal use-----	2,488	1,014	155,424	153.28
For nonmedicinal uses ⁷ -----	4,265	2,386	37,105	15.55
Antihistamines, total-----	455	284	8,932	31.45
Chlorpheniramine maleate-----	36	...	...	...
All other-----	419	284	8,932	31.45
Anti-infective agents (except antibiotics), total-----	28,571	18,206	83,473	4.58
Anthelmintics, total-----	10,864	7,240	38,261	5.28
Piperazine-----	3,292	1,902	2,268	1.19
Piperazine dihydrochloride-----	1,573	1,586	1,969	1.24
All other-----	5,999	3,752	34,024	9.07
Antifungal agents-----	685	456	487	1.07
Antiprotozoan agents-----	8,332	6,517	21,889	3.36
Sulfonamides-----	⁸ 4,677	1,508	9,128	6.05
Urinary antiseptics-----	290	...	...	...
Other anti-infective agents ⁹ -----	3,723	2,485	13,708	5.52
Autonomic drugs, total-----	987	781	19,045	24.39
Parasympatholytic (anticholinergic) tertiary amines (except tropane derivatives)-----	71	40	2,360	59.00
Sympathomimetic (adrenergic) agents, total-----	874	722	12,692	17.58
Phenylpropanolamine hydrochloride-----	318	343	2,651	7.73
All other-----	556	379	10,041	26.49
Other autonomic drugs-----	42	19	3,993	210.16
Cardiovascular and hematological agents, total-----	2,136	270	13,516	50.06
Sodium heparin-----	8	3	7,987	2,662.33
All other-----	2,128	267	5,529	20.71

See footnotes at end of table.

SYNTHETIC ORGANIC CHEMICALS, 1975

TABLE 1.--MEDICINAL CHEMICALS: U.S. PRODUCTION AND SALES, 1975--CONTINUED

Chemical	Production ¹	Sales ¹		
		Quantity	Value	Unit value ²
		1,000 pounds	1,000 pounds	1,000 dollars
				Per pound
Central depressants and stimulants, total-----	47,667	34,965	97,538	\$2.79
Analgesics and antipyretics, total-----	39,712	29,283	54,096	1.85
Acetanilide derivatives-----	9,835	9,445	25,447	2.69
Aspirin-----	25,434	...	...	...
All other-----	4,443	19,838	28,649	1.44
Antidepressants-----	311	...	...	...
Hypnotics and sedatives (including barbiturates)-----	849	432	3,906	9.04
Skeletal muscle relaxants and tranquilizers-----	998	...	...	...
Other central depressants and stimulants ¹⁰ -----	5,797	5,250	39,536	7.53
Dermatological agents (except salicylic acid) and local anesthetics-----	1,354	588	2,001	3.40
Diagnostic agents, total-----	1,517	...	...	...
Roentgenographic contrast media-----	1,515	...	...	...
All other-----	2	...	...	...
Expectorants and mucolytic agents, total-----	1,811	1,364	6,290	4.61
Ethylenediamine dihydriodide-----	905	947	3,648	3.85
All other-----	906	417	2,642	6.34
Gastrointestinal agents (except methionine, hydroxy analog), total-----	40,137	34,355	19,709	.57
Choline chloride (all grades)-----	38,702	32,471	16,637	.51
All other-----	1,435	1,884	3,072	1.63
Hormones and synthetic substitutes, total-----	1,133	146	62,893	430.77
Estrogens and progestogens-----	23	...	...	...
Synthetic hypoglycemic agents-----	991	...	...	...
Thyroid hormone and antithyroid agents-----	43	...	...	...
All other-----	76	146	62,893	430.77
Renal-acting and edema-reducing agents, total-----	1,587	415	7,581	18.27
Benzothiadiazine derivatives-----	...	167	4,736	28.36
Theophylline derivatives-----	182	...	...	...
All other-----	1,405	248	2,845	11.47
Therapeutic nutrients-----	936	949	2,751	2.90
Vitamins, total-----	29,952	19,079	123,551	6.48
Nicotinic acid and derivatives-----	5,555	3,666	7,388	2.02
Pantothenic acid and derivatives, total-----	1,380	1,345	2,698	2.01
Calcium pantothenate (racemic)-calcium chloride complex-----	964	978	1,779	1.82
All other-----	416	367	919	2.50

See footnotes at end of table.

MEDICINAL CHEMICALS

91

TABLE 1.--MEDICINAL CHEMICALS: U.S. PRODUCTION AND SALES, 1975--CONTINUED

Chemical	Production ¹	Sales ¹		
		Quantity	Value	Unit value ²
		1,000 pounds	1,000 pounds	1,000 dollars
				Per pound
Vitamins--Continued				
Vitamin D ¹¹ -----	12	8	2,782	\$347.75
Vitamin E, total ¹¹ -----	2,173	2,210	32,486	14.70
d and dl-Alpha tocopherol-----	212	227	4,412	19.44
All other-----	1,961	1,983	28,074	14.16
All other vitamins-----	20,832	11,850	78,197	6.60
Miscellaneous medicinal chemicals ¹² -----	31,822	30,277	36,976	1.22

¹ The data on production and sales are for bulk medicinal chemicals only; they exclude finished preparations and dosage-form products, which are manufactured from bulk chemicals. All quantities are given in terms of 100% active ingredient.

² Calculated from rounded figures.

³ The term "benzenoid," as used in this report, describes any cyclic medicinal chemical whose molecule contains either a six-membered carbocyclic ring with conjugated double bonds (e.g., the benzene ring or the quinone ring) or a six-membered heterocyclic ring with 1 or 2 hetero atoms and conjugated double bonds, except the pyrimidine ring (e.g., the pyridine ring or the pyrazine ring.)

⁴ Includes antibiotics of unknown structure.

⁵ With the exception of bacitracin, the penicillins (except semisynthetic), and a few other antibiotics which were reported in terms of U.S.P. units, all quantities for antibiotics were reported as grams of antibiotic base. (Thus production of 480,900 grams of tetracycline hydrochloride, for example, would have been reported as 444,430 grams of tetracycline base.) For inclusion in the main statistical table, all quantities were converted from grams of antibiotic base to pounds of antibiotic base (453.6 grams = 1 pound), or from U.S.P. units to pounds (22.7 million units of bacitracin, 458 million units of procaine penicillin G, 723 million units of potassium penicillin G, etc. = 1 pound). The following tabulation shows statistics for all individually publishable antibiotics in terms of kilograms of antibiotic base (kg) or billions of U.S.P. units (BU):

Antibiotic	Unit of quantity	Production	Sales		
			Quantity	Value	Unit value
			1,000 dollars		
Antifungal and antitubercular antibiotics, for medicinal use-----	----kg----	...	234,869	20,861	\$88.82
Penicillins (except semisynthetic), total-----	---BU---	3,817,616	1,718,314	37,612	21.89
Penicillin G, potassium, for medicinal use-----	---BU---	1,578,662	...	...	...
All other, for all uses-----	---BU---	2,238,954	1,718,314	37,612	21.89
Semisynthetic penicillins, for medicinal use, total-----	---kg----	451,363	173,535	36,847	212.33
Ampicillin-----	---kg----	320,498	125,785	27,577	219.24
All other-----	---kg----	130,865	47,750	9,270	194.14
Tetracyclines, for all uses-----	---kg----	2,119,782	...	...	...

⁶ Production of all antibiotics for medicinal use amounted to 9,393,000 pounds, sales amounted to 3,650,000 pounds, valued at \$240,424,000.

⁷ Production of all antibiotics for animal feeds and other nonmedicinal uses amounted to 8,931,000 pounds, sales amounted to 3,484,000 pounds, valued at \$47,425,000.

⁸ In order to avoid disclosure, the previously published 1975 production total for sulfa drugs is used in this report, and adjustments for two producers who did not report monthly data are included in the figure shown for other anti-infective agents.

⁹ Includes sales of urinary antiseptics.

¹⁰ Includes production and sales of amphetamines, anticonvulsants, antitussives, general anesthetics, and stimulants; also includes sales of antidepressants, skeletal muscle relaxants, and tranquilizers.

SYNTHETIC ORGANIC CHEMICALS, 1975

Footnotes--Continued

¹¹ All quantities for vitamins A, B₁₂, D, and E were reported in terms of grams or units, but were converted to pounds for inclusion in the main statistical table (1.317 billion units of vitamin A acetate, 0.824 billion units of vitamin A palmitate, 453.6 grams of vitamins B₁₂, 18.14 billion units of vitamin D, 617,000 units of d-alpha tocopheryl acetate, 454,000 units of dl-alpha tocopheryl acetate, etc. = 1 pound). The following tabulation shows statistics for vitamins D and E (vitamins A and B₁₂ were not separately publishable) in terms of millions of international units (MU) or billions of U.S.P. units (BU), as appropriate:

Vitamin	Unit of quantity	Production	Sales		
			Quantity	Value	Unit value
				<i>1,000 dollars</i>	
Vitamin D-----	----BU----	225,541	140,565	2,782	\$19.79
Vitamin E, total-----	----MU----	1,098,089	1,112,928	32,486	29.19
d- and dl-Alpha tocopherol-----	----MU----	136,971	143,212	4,412	30.81
All other-----	----MU----	961,118	969,716	28,074	28.95

¹² Includes vitamin A palmitate, vitamin A acetate and other A vitamins; inositol, pyridoxine, riboflavin and other B vitamins; vitamin C (ascorbic acid, calcium ascorbate and sodium ascorbate); menadione sodium bisulfite and other K vitamins.

¹³ Includes production and sales of antineoplastic agents, methionine (hydroxy analog, calcium salt), salicylic acid, smooth muscle relaxants, and unclassified medicinal chemicals; also includes sales of diagnostic agents.

TABLE 2.--MEDICINAL CHEMICALS FOR WHICH U.S. PRODUCTION OR SALES WERE REPORTED,
IDENTIFIED BY MANUFACTURER, 1975

[Medicinal chemicals for which separate statistics are given in table 1 are marked below with an asterisk (*); medicinal 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]

Chemical	Manufacturers' identification codes (according to list in table 3)
*Antibiotics: ¹	
*Antifungal and antitubercular antibiotics:	
Antifungal and antibiotics:	
Amphotericin B-----	OMS, TRD.
Candidicidin-----	PEN.
Nystatin-----	ACY, BRS, OMS, TRD.
Antitubercular antibiotics:	
Cycloserine-----	COM.
Dihydrostreptomycin-----	MRK, PFZ.
Streptomycin-----	MRK, PFZ.
Viomycin-----	PFZ.
*Penicillins (except semisynthetic):	
Penicillin G, benzathine-----	WYT.
Penicillin G, potassium-----	MRK, OMS, PFZ, WYT.
Penicillin G, procaine-----	OMS, PFZ, WYT.
Penicillin G, procaine, for nonmedicinal uses-----	MRK, OMS.
Penicillin G, sodium-----	OMS.
Penicillin O, sodium-----	PFZ.
Phenoxymethylenicillin (Penicillin V)-----	BRS, LIL, OMS.
Phenoxymethylenicillin, benzathine-----	WYT.
Phenoxymethylenicillin, potassium-----	LIL.
*Semisynthetic penicillins:	
*Ampicillin-----	BEE, BOC, BRS, TRD, WYT.
Ampicillin, sodium-----	BEE, OMS, WYT.
Amoxicillin-----	BEE.
Carbenicillin, disodium-----	BEE, PFZ.
Cloxacillin, sodium-----	BEE, BRS.
Dicloxacillin, sodium-----	BEE, BRS, WYT.
Hetacillin-----	BRS.
Methicillin, sodium-----	BEE, BRS.
Nafticillin, sodium-----	WYT.
Oxacillin, sodium-----	BEE, BRS.
Phenethicillin, potassium-----	BRS.
*Tetracyclines:	
Chlortetracycline-----	ACY, RLS.
Chlortetracycline, for nonmedicinal uses-----	ACY.
Demeclocycline-----	ACY.
Doxycycline-----	PFZ.
Methacycline-----	PFZ.
Minocycline-----	ACY.
Oxytetracycline-----	PFZ.
Tetracycline-----	ACY, BRS, PFZ, RLS.
*Other antibiotics:	
*For medicinal use:	
Bacitracin-----	COM, PEN.
Cefazolin-----	LIL.
Cephalexin-----	LIL, SK.
Cephaloglycin-----	LIL.
Cephalexidine-----	LIL.
Cephalothin-----	LIL.
Cephradine-----	SK.
Chloramphenicol-----	PD, RLS.
Clindamycin-----	UPJ.
Erythromycin-----	ABB, BRS, LIL, UPJ.
Fumagillin-----	ABB.
Gentamycin-----	SCH.
Kanamycin-----	BRS.

See footnotes at end of table.

TABLE 2.--MEDICINAL CHEMICALS FOR WHICH U.S. PRODUCTION OR SALES WERE REPORTED,
IDENTIFIED BY MANUFACTURER, 1975--CONTINUED

Chemical	Manufacturers' identification codes (according to list in table 3)
*Antibiotics: ¹ --Continued	
*Other antibiotics--Continued	
*For medicinal uses--Continued	
Lincomycin-----	UPJ.
Neomycin-----	OMS, PEN, PFZ, UPJ.
Novobiocin-----	MRK, UPJ.
Polymyxin B-----	PFZ.
Spectinomycin-----	ABB, UPJ.
Thiostrepton-----	OMS.
Tyrothricin-----	PEN.
*For nonmedicinal uses:	
Bacitracin-----	COM, PEN.
Cycloheximide-----	UPJ.
Hygromycin B-----	LIL.
Lincomycin-----	UPJ.
Monensin, sodium-----	LIL
Neomycin-----	PFZ.
Novobiocin-----	UPJ
Nystatin-----	OMS.
Spectinomycin-----	UPJ.
Streptomycin-----	MRK, PFZ.
Tylosin-----	LIL.
*Antihistamines:	
Antinauseants:	
Cyclizine hydrochloride-----	BUR.
Dimenhydrinate-----	HEX, SRL.
Meclizine hydrochloride-----	PFZ.
Trimethobenzamide hydrochloride-----	BRS, HOF.
Bromodiphenhydramine hydrochloride-----	PD.
Brompheniramine maleate-----	SCH.
Carbinoxamine-----	SCH.
Chlorcyclizine hydrochloride-----	BUR.
Chlorothen citrate-----	ACY.
*Chlorpheniramine maleate-----	HEX, SCH, SK.
Chlorpheniramine tannate-----	MAL.
Cyproheptadine hydrochloride-----	MRK.
Dexbrompheniramine maleate-----	SCH.
Dexchlorpheniramine maleate-----	SCH.
Dimethindene maleate-----	CGY.
Diphenhydramine hydrochloride-----	BJL, GAN, PD.
Doxylamine succinate-----	BJL, BKC.
Methapyrilene fumarate-----	ABB.
Methapyrilene hybenzate-----	LIL.
Methapyrilene hydrochloride-----	ABB, MON.
Methdilazine hydrochloride-----	BJL.
Phenindamine tartrate-----	HOF.
Pheniramine maleate-----	HEX, SCH.
Phenyltoloxamine citrate-----	GAN.
Pyrilamine maleate-----	HEX, MRK.
Pyrilamine resin adsorbate-----	MRK.
Pyrilamine tannate-----	MAL.
Pyrrobutamine phosphate-----	LIL.
Thenyldiamine hydrochloride-----	SDW.
Trimeprazine tartrate-----	SK.
Tripeleannamine-----	CGY.
Tripeleannamine citrate-----	CGY.
Tripeleannamine hydrochloride-----	CGY.
Triprolidine hydrochloride-----	BAX, BUR.

See footnotes at end of table.

TABLE 2.--MEDICINAL CHEMICALS FOR WHICH U.S. PRODUCTION OR SALES WERE REPORTED,
IDENTIFIED BY MANUFACTURER, 1975--CONTINUED

Chemical	Manufacturers' identification codes (according to list in table 3)
*Anti-infective agents (except antibiotics):	
*Anthelmintics:	
Dichlorvos-----	SHC.
Diethylcarbamazine citrate-----	ACY.
Gentian violet-----	SDH.
Hexylresorcinol-----	MRK.
Phenothiazine-----	WAG.
*Piperazine-----	DOW, JCC, UCC.
Piperazine citrate-----	LEM.
*Piperazine dihydrochloride-----	DOW, FLM, JCC, WHL.
Piperazine hexahydrate-----	JCC.
*Piperazine hydrochloride-----	DOW, FLM, JCC.
Piperazine phosphate-----	BUR, JCC.
Piperazine sulfate-----	JCC.
Thiabendazole-----	MRK.
*Antifungal agents:	
Benzoinic acid-----	MON.
Calcium undecylenate-----	WTL.
Sodium caprylate-----	LEM.
Undecylenic acid-----	NTL.
Zinc undecylenate-----	NTL, WTL.
*Antiprotozoan agents:	
Aklomide-----	SAL.
Amodiaquin-----	PD.
Amodiaquin hydrochloride-----	PD.
Amprolium-----	MRK.
*Arsenic and bismuth compounds:	
Arsanilic acid-----	ABB, FLM, WHL.
Bismuth dipropylacetate-----	ARA.
Bismuth subsalicylate-----	MAL, NOR, PEN.
Carbarsone-----	WHL.
Glycobiarsol-----	SDW.
Nitarsone-----	SAL.
Roxarsone-----	SAL.
Chloroquine phosphate-----	SDW.
Clopidol-----	DOW.
Diiodohydroxyquin-----	RSA, SRL.
Dimetridazole-----	RDA.
3,5-Dinitro-o-toluamide-----	DOW.
Furazolidone-----	NOR.
Hydroxychloroquine sulfate-----	SDW.
Iodochlorhydroxyquin-----	CGY.
Ipronidazole-----	HOF.
Metronidazole-----	RDA.
Primaquine phosphate-----	SDW.
Pyrimethamine-----	BUR.
*Sulfonamides:	
Acetyl sulfisoxazole-----	HOE.
Azosulfamide-----	SDW.
Dinsed-----	SAL.
Mafenide acetate-----	SDW.
Mafenide hydrochloride-----	SDW.
Phthalylsulfacetamide-----	LEM.
Phthalylsulfathiazole-----	MRK.
Sulfabenzamide-----	ACY.
Sulfabenzamide, sodium-----	ACY.
Sulfabromomethazine, sodium-----	MRK.
Sulfacetamide-----	LEM.
Sulfacetamide, sodium-----	LEM.
Sulfachloropyrazine, sodium-----	ACY.
Sulfachloropyridazine, sodium-----	ACY.
Sulfadiazine-----	ACY.

SYNTHETIC ORGANIC CHEMICALS, 1975

TABLE 2.--MEDICINAL CHEMICALS FOR WHICH U.S. PRODUCTION OR SALES WERE REPORTED,
IDENTIFIED BY MANUFACTURER, 1975--CONTINUED

Chemical	Manufacturers' identification codes (according to list in table 3)
*Anti-infective agents (except antibiotics)--Continued	
*Sulfonamides--Continued	
Sulfadimethoxine-----	HOF.
Sulfaguanidine-----	SAL.
Sulfamerazine-----	ACY.
Sulfamerazine, sodium-----	ACY.
Sulfamethazine-----	ACY, LEM, RLS, SAL.
Sulfamethazine, sodium-----	ACY, LEM.
Sulfamethizole-----	ACY.
Sulfamethoxazole-----	HOF.
Sulfanilamide-----	SAL.
Sulfanitran-----	SAL.
Sulfapyridine-----	ACY, LEM, SAL.
Sulfaquinoxaline-----	LEM, MRK.
Sulfaquinoxaline, sodium-----	LEM.
Sulfasalazine (salicylazosulfapyridine)-----	SAL.
Sulfathiazole-----	MRK, SAL.
Sulfathiazole, sodium-----	MRK.
Sulfisoxazole-----	HOF.
*Urinary antiseptics:	
Methenamine hippurate-----	RIK.
Methenamine mandelate-----	ARN, NEP.
Methylene blue-----	ACY.
Nitrofurantoin-----	NOR.
Phenazopyridine hydrochloride-----	HOF, NEP.
*Other anti-infective agents:	
Aminacrine hydrochloride-----	SDW.
Antileprotic and antitubercular agents:	
Aminosalicylic acid-----	x.
Isoniazid-----	RIL.
Sodium aminosalicylate-----	x.
Sodium sulfoxone-----	ABB.
Antiviral agent: Amantadine-----	ALD.
Betanaphthol-----	ACY.
Bromoform-----	DOW.
Cetalkonium chloride-----	FIN, SDW.
Cetylpyridinium chloride-----	FIN, HEX.
Chlorobutanol-----	BPC, PD.
Cresol acetate-----	ADC.
Iodoform ² -----	MAL, PEN.
Mercury compounds:	
Merbromin-----	HYN.
Nitromersol-----	ABB.
Nitromersol chloride-----	ABB.
Thimersal-----	LIL.
Nalidixic acid-----	SDH.
Nitrofurathiazide-----	SCH.
Nitrofurazone-----	NOR.
Nitromide-----	SAL.
Ormetoprim-----	HOF.
Oxolinic acid-----	NEP.
Oxyquinoline-----	ASH, MRK.
Oxyquinoline benzoate-----	ASH, LEM.
Oxyquinoline citrate-----	ASH, MRK.
Oxyquinoline sulfate-----	ASH, LEM.
Povidone - iodine complex-----	GAF.
Praqmatar-----	SK.
Resorcinol ³ -----	KPT.
Thymol-----	GIV.
Thymol iodide-----	MAL, RSA, SK.
Trimethoprim-----	BUR.
Zinc oxyquinoline-----	MRK.

See footnotes at end of table.

TABLE 2.--MEDICINAL CHEMICALS FOR WHICH U.S. PRODUCTION OR SALES WERE REPORTED,
IDENTIFIED BY MANUFACTURER, 1975--CONTINUED

Chemical	Manufacturers' identification codes (according to list in table 3)
*Autonomic drugs:	
*Parasympatholytic (anticholinergic) tertiary amines (except tropane derivatives):	
Adiphenine hydrochloride-----	CGY
Cyclamine hydrochloride-----	LIL.
Dicyclomine hydrochloride-----	BKC.
Orphenadrine citrate-----	RIK.
Oxyphencyclimine hydrochloride-----	PFZ.
Piperidolate hydrochloride-----	LKL.
Thiophenami hydrochloride-----	BJL.
Trihexyphenidyl hydrochloride-----	ACY, SDW.
*Sympathomimetic (adrenergic) agents:	
Clorprenaline hydrochloride-----	LIL.
Cyclopentamine hybenzate-----	LIL.
Cyclopentamine hydrochloride-----	LIL.
Ephedrine-----	UPJ.
Epinephrine (levo)-----	BLP.
Epinephrine bitartrate (levo)-----	BLP, SDW.
Epinephrine hydrochloride (racemic)-----	BLP, ECL.
Hydroxyamphetamine hydrobromide-----	SK.
Isometheptene mucate-----	GAN:
Isoproterenol hydrochloride-----	SDW.
Isoproterenol sulfate-----	ABB.
Levarterenol bitartrate-----	SDW.
Mephentermine-----	ARA.
Mephentermine sulfate-----	ARA.
Metaraminol-----	MRK.
Methoxyphenamine hydrochloride-----	x.
Naphazoline hydrochloride-----	CGY.
Nordefrin hydrochloride-----	SDW.
Nylidrin hydrochloride-----	BKL.
Phenylephrine-----	GAN, SDW.
Phenylephrine bitartrate-----	GAN.
Phenylephrine tannate-----	x.
Phenylephrine hydrochloride-----	ARA, GAN, HEX, SDW.
*Phenylpropanolamine hydrochloride-----	ARS, NEP, ORT, PD.
Protokylol hydrochloride-----	LKL.
Pseudoephedrine hydrochloride-----	BUR, GAN, SDW, UPJ.
Pseudoephedrine sulfate-----	GAN.
Tetrahydrozoline hydrochloride-----	PFZ.
Other autonomic drugs:	
Parasympatholytic (anticholinergic) quaternary ammonium compounds (except tropane derivatives):	
Diphemanil methylsulfate-----	SCH.
Hexocyclium methylsulfate-----	ABB.
Isopropamide iodide-----	SK.
Mepenzolate bromide-----	LKL.
Pipenzolate bromide-----	LKL.
Tridihexethyl iodide-----	ACY.
Parasympatholytic (anticholinergic) tropane derivatives.	
Anisotropine methylbromide-----	ARA.
Benztropine mesylate-----	ARA.
Homatropine-----	ARA.
Homatropine hydrobromide-----	ARA.
Homatropine methylbromide-----	ARA.
Parasympathomimetic (cholinergic) agents:	
Bromocholine chloride-----	RSA.
Carbachol-----	RSA.
Methacholine chloride-----	RSA.
Pyridostigmine bromide-----	HOF.
Sympatholytic (antiadrenergic) agents:	
Timolol maleate-----	MRK.

TABLE 2.--MEDICINAL CHEMICALS FOR WHICH U.S. PRODUCTION OR SALES WERE REPORTED,
IDENTIFIED BY MANUFACTURER, 1975--CONTINUED

Chemical	Manufacturers' identification codes (according to list in table 3)
*Cardiovascular agents and hematological agents:	
Cardiovascular agents:	
Antihypertensive agents:	
Alkavervir-----	RIK.
Diazoxide-----	SCH.
Guanadrel sulfate-----	ARA.
Guanethidine sulfate-----	CGY.
Hydralazine hydrochloride-----	CGY.
Methyldopa-----	MRK.
Phenoxybenzamine hydrochloride-----	SK.
Reserpine-----	PEN.
Bioflavonoids:	
Hesperidin-----	SKG.
Lemon bioflavonoid complex-----	SKG.
Naringin-----	SKG.
Vasodilators:	
Amyl nitrite-----	MAL.
Dioxyline phosphate-----	LIL.
Nicotinyl alcohol tartrate-----	HOF.
Other cardiovascular agents:	
N-Acetylprocquinamide-----	LEM.
Diquitoxin-----	PEN.
Procainamide hydrochloride-----	OMS, PD.
Quinidine polygalacturonate-----	LEM.
Hematological agents:	
Anticoagulants:	
Ammonium heparin-----	ABB, RIK, WIL.
Anisindione-----	SCH.
Bishydroxycoumarin-----	ABB.
Calcium heparin-----	RIK.
Diphenadione-----	UPJ.
Lithium heparin-----	RIK.
*Sodium heparin-----	ABB, RIK, WIL.
Warfarin-----	SDW.
Warfarin potassium-----	RSA.
Other hematological agents:	
Cellulose, oxidized-----	EKT.
Dextran-----	PHR.
Protamine-----	LIL.
*Central depressants and stimulants:	
*Analgesics and antipyretics:	
*Acetanilide derivatives:	
Acetaminophen-----	ATP, MAL, NEP, PEN, SDH, SDW, x.
Phenacetin-----	MON.
*Aspirin:	DOW, MON, NOR, SDG, x.
*Other analgesics and antipyretics:	
p-Aminobenzoic acid and salts:	
Aminobenzoic acid-----	GAN, PD.
Potassium aminobenzoate-----	GAN.
Sodium aminobenzoate-----	GAN.
Anileridine-----	MRK.
Anileridine hydrochloride-----	MRK.
Aurothioglucose-----	SCH.
Calcium succinate-----	LEM.
Dextropropoxyphene napsylate-----	LIL.
Ethoheptazine citrate-----	WYT.
Ibuprofen-----	CWN, UPJ.
Indomethacin-----	MRK.
Mefenamic acid-----	PD.
Meperidine hydrochloride-----	PEN, SDW, WYT.
Methadone hydrochloride-----	MAL, PEN.
Morphine sulfate-----	MRK.

MEDICINAL CHEMICALS

99

TABLE 2.--MEDICINAL CHEMICALS FOR WHICH U.S. PRODUCTION OR SALES WERE REPORTED,
IDENTIFIED BY MANUFACTURER, 1975--CONTINUED

Chemical	Manufacturers' identification codes (according to list in table 3)
*Central depressants and stimulants--Continued	
*Analgesics and antipyretics--Continued	
*Other analgesics and antipyretics--Continued	
Naproxen (racemic)-----	ARA.
Oxycodone hydrochloride-----	EN.
Oxyphenbutazone-----	CGY.
Pentazocine hydrochloride-----	SDW.
Phenylbutazone-----	CGY.
Propoxyphene hydrochloride-----	LEM, LIL.
Salicylates:	
Aluminum aspirin-----	ABB.
Phenyl salicylate-----	DOW.
Potassium salicylate-----	HN.
Salicylamide-----	PEN.
Salsalate (salicylsalicylic acid)-----	PD.
Sodium salicylate-----	HN.
*Antidepressants:	
Amitriptyline-----	MRK.
Desipramine hydrochloride-----	CGY, LKL.
Doxepin hydrochloride-----	PFZ, SK.
Imipramine hydrochloride-----	CGY.
Isocarboxazid-----	HOF.
Molindone hydrochloride-----	x.
Nortriptyline-----	LIL.
Protriptyline hydrochloride-----	MRK.
*Hypnotics and sedatives (including barbiturates):	
Barbiturates:	
Allylbarbituric acid-----	GAN.
Allylbarbituric acid, sodium-----	GAN.
Amobarbital-----	GAN, LIL.
Amobarbital, sodium-----	LIL.
Barbital-----	GAN.
Barbital, sodium-----	GAN.
Butabarbital-----	ABB, GAN.
Butabarbital, sodium-----	ABB, GAN.
5-sec-Butyl-5-ethyl-2-thiobarbituric acid, sodium derivative-----	ABB.
Hexobarbital-----	GAN.
Hexobarbital, sodium-----	SDW.
Mephobarbital-----	SDW.
Metharbital-----	ABB.
Methohexital, sodium-----	LIL.
Pentobarbital-----	ABB, GAN.
Pentobarbital, sodium-----	ABB, GAN.
Phenobarbital-----	GAN.
Phenobarbital, sodium-----	GAN.
Secobarbital-----	GAN.
Secobarbital, sodium-----	GAN, LIL.
Talbutal-----	SDW.
Thiamylal, sodium-----	PD.
Thiopental, sodium-----	ABB.
Other hypnotics and sedatives:	
Carbromal-----	PD.
Ethchlorvynol-----	ABB.
Flurazepam hydrochloride-----	HOF.
Glutethimide-----	BKL, CGY, GAN.
Methaqualone hydrochloride-----	x.
Methyprylon-----	HOF.
Triclofos, sodium-----	LKL.

TABLE 2.--MEDICINAL CHEMICALS FOR WHICH U.S. PRODUCTION OR SALES WERE REPORTED,
IDENTIFIED BY MANUFACTURER, 1975--CONTINUED

Chemical	Manufacturers' identification codes (according to list in table 3)
*Central depressants and stimulants--Continued	
*Skeletal muscle relaxants and tranquilizers:	
Skeletal muscle relaxants:	
Carisoprodol-----	BKL.
Chlorphenesin carbamate-----	UPJ.
Succinylcholine chloride-----	ABB, BUR.
Tubocurarine-----	ABB, OMS.
Tranquilizers:	
Buclizine hydrochloride-----	PFZ.
Chlorazepate dipotassium-----	ABB.
Chlordiazepoxide hydrochloride-----	HOF.
Chlormezanone-----	SDW.
Diazepam-----	HOF.
Ethoxybutamoxane-----	LIL.
Hydroxyzine hydrochloride-----	PFZ.
Hydroxyzine pamoate-----	PFZ.
Meprobamate-----	BKL, x.
Oxazepam-----	WYT.
Phenothiazine derivatives:	
Acetophenazine dimaleate-----	SCH.
Chlorpromazine hydrochloride-----	SK.
Fluphenazine hydrochloride-----	SCH.
Perphenazine-----	SCH.
Prochlorperazine edisylate-----	SK.
Prochlorperazine maleate-----	SK.
Promazine hydrochloride-----	WYT.
Promethazine hydrochloride-----	WYT.
Thiothixene hydrochloride-----	PFZ.
*Other central depressants and stimulants:	
Amphetamines:	
Amphetamine (racemic)-----	ARN.
Amphetamine sulfate (racemic)-----	ARN.
Dextroamphetamine-----	ARN.
Methamphetamine (levo)-----	ARN.
Methamphetamine hydrochloride (dextro)-----	ARN.
Anticonvulsants:	
Diphenylhydantoin-----	PD.
Diphenylhydantoin, sodium-----	PD.
Ethosuximide-----	PD.
Ethotoin-----	ABB.
Methsuximide-----	PD.
Phenacemide-----	ABB.
Phensuximide-----	PD.
Antitussives:	
Benzonatate-----	CGY.
Caramiphehen edisylate-----	SK.
Carbetapentane citrate-----	PFZ.
Chlophedianol hydrochloride-----	RIK.
Codeine-----	MRK.
Dextromethorphan hydrobromide-----	HOF.
Ethylmorphine hydrochloride-----	MRK.
Hydrocodone bitartrate-----	MAI, MRK, PEN.
Noscapine-----	MRK.
Thebaine-----	MRK.
General anesthetic: Ketamine hydrochloride-----	PD.

TABLE 2.--MEDICINAL CHEMICALS FOR WHICH U.S. PRODUCTION OR SALES WERE REPORTED,
IDENTIFIED BY MANUFACTURER, 1975--CONTINUED

Chemical	Manufacturers' identification codes (according to list in table 3)
*Central depressants and stimulants--Continued	
*Other central depressants and stimulants--Continued	
Stimulants:	
Benzphetamine hydrochloride-----	UPJ.
Caffeine:	
Natural-----	CPR, GNF.
Synthetic-----	CPR, PFZ.
Deanol acetamidobenzoate-----	RIK.
Diethylpropion hydrochloride-----	BKC, GAN.
Nikethamide-----	CGY.
Phendimetrazine tartrate-----	BAX, GAN.
Phentermine-----	HEX.
*Dermatological agents (except salicylic acid) and local anesthetics:	
Dermatological agents:	
Allantoin-----	HFT.
Aluminum phenolsulfonate-----	SAL.
Ammonium phenolsulfonate-----	SAL.
Bismuth subgallate-----	MAL, PEN.
Glycol salicylate-----	RDA.
Podophyllum resin-----	PEN.
Sodium phenolsulfonate-----	SAL.
Zinc phenolsulfonate-----	MAL, SAL.
Local anesthetics:	
Butacaine sulfate-----	ABB.
Butamben picrate-----	ABB.
Butyl aminobenzoate (Butamben)-----	ABB.
p-Butylaminobenzoic acid, ethyl ester-----	GAN.
Chloroprocaine hydrochloride-----	ARA.
Cocaine-----	MRK.
Dibucaine-----	CGY.
Dibucaine hydrochloride-----	CGY.
Ethyl aminobenzoate (Benzocaine)-----	LEM, PD, RSA.
Hexylcaine hydrochloride-----	MRK.
Isobutyl aminobenzoate-----	RSA.
Lidocaine-----	AST, RLS, SDW.
Lidocaine hydrochloride-----	SDW.
Mepivacaine hydrochloride-----	SDW.
Oxethazaine-----	WYT.
Pramoxine hydrochloride-----	ABB.
Procaine hydrochloride-----	PFZ.
Proparacaine hydrochloride-----	OMS.
Tetracaine-----	SDW.
Tetracaine hydrochloride-----	SDW.
*Diagnostic agents:	
*Roentgenographic contrast media:	
Acetrizoate, sodium-----	MAL.
Diatrizoate, meglumine-----	OMS, SDW.
Diatrizoate, sodium-----	OMS, SDW.
Iodipamide, meglumine-----	OMS.
Iopanoic acid-----	SDW.
Iothalamate, meglumine-----	MAL.
Iothalamate, sodium-----	MAL.
Methiodal, sodium-----	SDW.
Trypanoate, sodium-----	SDW.
*Other diagnostic agents:	
Dithioerythritol (Cardiac output test)-----	CDY.
Fluorescein, sodium (corneal trauma indicator)-----	SDH.
Glutamyl-p-nitroanilide (liver function test)-----	CDY.
Ketodase-----	NEP.
Metyrapone (pituitary function test)-----	CGY.
D-Xylose (internal malabsorption test)-----	PFN.

TABLE 2.--MEDICINAL CHEMICALS FOR WHICH U.S. PRODUCTION OR SALES WERE REPORTED,
IDENTIFIED BY MANUFACTURER, 1975--CONTINUED

Chemical	Manufacturers' identification codes (according to list in table 3)
*Expectorants and mucolytic agents:	
Acetylcysteine-----	CDY.
Ethylenediamine dihydriodide-----	HPT, MAL, WAG, WHL.
Glyceryl guaiacolate-----	GAN, PEN.
Iodinated glycerol-----	GAN.
Lobeline sulfate-----	ABB.
Potassium guaiacolsulfonate-----	HN.
Terpin hydrate-----	HPC, PEN.
*Gastrointestinal agents (except methionine, hydroxy analog:	
*Choleretics and hydrocholeretics:	
Bile acids, oxidized-----	SRL, WIL.
Dehydrocholic acid-----	WIL.
Florantyrene-----	SRL.
Iron bile salts-----	LIL, WIL.
Ox bile extract-----	ABB, WIL.
Sodium dehydrocholate-----	WIL.
*Choline chloride:	
Feed grade-----	COM, DA, DOW, HFT, TMH.
Medicinal grade-----	HFT.
Technical grade-----	HFT.
*Other gastrointestinal agents:	
Apomorphine hydrochloride-----	MRK.
Betaine base-----	HFT, MAL.
Betaine hydrate-----	HFT.
Betaine hydrochloride-----	HFT.
Choline bicarbonate-----	COM.
Choline bitartrate-----	ACY, HFT.
Choline citrate (Tricholine citrate)-----	ACY, HFT.
Choline dihydrogen citrate-----	HFT.
Colestipol hydrochloride-----	x.
Dextrothyroxine, sodium-----	BAX.
Magnesium citrate-----	MAL.
Pectin-----	SKG.
Phenolphthalein, yellow-----	SCH.
Podophyllin-----	ABB.
Sitosterols-----	LIL, UPJ.
Sodium tartrate-----	MAL.
*Hormones and synthetic substitutes:	
*Estrogens and progestogens:	
Estrogens:	
Chlorotrianisene-----	BJL, BKC.
Diethylstilbestrol-----	ARA, DLI.
Diethylstilbestrol diphosphate-----	ARA.
Estradiol cypionate-----	UPJ.
Estrogenic substances, conjugated-----	ORG.
Natural estrogenic substance-----	ORG.
Piperazine estrone sulfate-----	ABB.
Progestogens:	
11 α -Hydroxyprogesterone-----	UPJ.
17-Hydroxyprogesterone-----	UPJ.
Medroxyprogesterone acetate-----	UPJ.
Melengestrol acetate-----	UPJ.
Norgestrel-----	WYT.
Progesterone-----	UPJ.
*Synthetic hypoglycemic agents:	
Acetohexamide-----	LIL.
Chlorpropamide-----	PFZ.
Tolazamide-----	UPJ.
Tolbutamide-----	UPJ.

TABLE 2.--MEDICINAL CHEMICALS FOR WHICH U.S. PRODUCTION OR SALES WERE REPORTED,
IDENTIFIED BY MANUFACTURER, 1975--CONTINUED

Chemical	Manufacturers' identification codes (according to list in table 3)
*Hormones and synthetic substitutes--Continued	
*Thyroid hormones and antithyroid agents:	
Levothyroxine, sodium-----	BAX.
Methimazole-----	LIL.
Propylthiouracil-----	ARA.
2-Thiouracil-----	ACY.
Thyroglobulin-----	NEP.
Thyroid hormone-----	LIL.
*Other hormones and synthetic substitutes:	
Anabolic agents and androgens:	
Fluoxymesterone-----	UPJ.
Testosterone cypionate-----	UPJ.
Zeranol-----	COM.
Corticosteroids:	
Betamethasone-----	SCH.
Betamethasone benzoate-----	x.
Betamethasone dipropionate-----	SCH.
Betamethasone phosphate-----	SCH.
Betamethasone valerate-----	SCH.
Cortisone-----	SCH.
Cortisone acetate-----	MRK, UPJ.
Dexamethasone-----	MRK, SCH.
Fludrocortisone acetate-----	UPJ.
Fluorometholone-----	UPJ.
9α-Fluoroprednisolone acetate-----	UPJ.
Fluprednisolone-----	UPJ.
Halcinonide-----	TRD.
Hydrocortisone-----	MRK, UPJ.
Hydrocortisone acetate-----	MRK, UPJ.
Hydrocortisone phosphate-----	PFZ.
Medrysone-----	UPJ.
Methylprednisolone-----	UPJ.
Prednisolone-----	MRK, UPJ.
Prednisolone acetate-----	UPJ.
Prednisone-----	UPJ.
Triamcinolone-----	TRD, x.
Triamcinolone diacetate-----	OMS.
Corticotropin (ACTH)-----	ARP, ORG.
Glucagon-----	LIL.
Insulin-----	ARP, LIL.
*Renal-acting and edema-reducing agents:	
*Benzothiadiazine derivatives:	
Benzthiazide-----	PFZ.
Chlorothiazide-----	LEM, MRK.
Hydrochlorothiazide-----	ABB, CGY, MRK.
Hydroflumethiazide-----	x.
Polythiazide-----	PFZ.
Trichlormethiazide-----	SCH.
*Theophylline derivatives:	
Aminophylline-----	GAN, SRL.
Oxtriphylline-----	NEP.
Theophylline sodium glycinate-----	CHT.
*Other renal-acting and edema-reducing agents:	
Acetazolamide-----	ACY.
Chlorthalidone-----	CGY.
Dichlorphenamide-----	MRK.
Ethacrynic acid-----	MRK.
Ethoxzolamide-----	ARA.
Probenecid-----	GAN, MRK.
Sodium mercaptomerin-----	WYT.
Triamterene-----	ACY, SK.

SYNTHETIC ORGANIC CHEMICALS, 1975

TABLE 2.--MEDICINAL CHEMICALS FOR WHICH U.S. PRODUCTION OR SALES WERE REPORTED,
IDENTIFIED BY MANUFACTURER, 1975--CONTINUED

Chemical	Manufacturers' identification codes (according to list in table 3)
*Therapeutic nutrients:	
Amino acids:	
Amino acid mixtures-----	MDJ.
Arginine aspartic acid-----	LEM.
Glutamic acid and salts:	
Glutamic acid-----	LEM.
Glutamic acid hydrochloride-----	LEM.
Potassium glutamate-----	LEM.
L-Tyrosine-----	MJD.
Other therapeutic nutrients:	
Calcium glucoheptonate-----	PFN.
Calcium gluconate-----	PFZ.
Copper gluconate-----	PFZ.
Ferrous gluconate-----	PFZ, SDW.
Magnesium gluconate-----	PFZ.
Manganese gluconate-----	PFZ.
Potassium gluconate-----	PFZ.
Tonophosphan, sodium salt-----	RSA.
Zinc glucoheptonate-----	PFN.
Zinc gluconate-----	PFZ.
*Vitamins:	
*Niacin and niacinamide (all grades):	
Niacin (nicotinic acid) (feed grade)-----	MRK, NEP, RIL.
Niacin (nicotinic acid) (medicinal grade)-----	MRK, RIL.
Niacinamide-----	MRK, NEP, RIL.
Niacinamide hydrochloride-----	NEP.
*Pantothenic acid and derivatives:	
Calcium pantothenate (dextro)-----	HFT.
Calcium pantothenate (racemic) (feed grade)-----	CKL, DA, HFT.
Calcium pantothenate (racemic) (medicinal grade)-----	HFT.
*Calcium pantothenate (racemic) - calcium chloride complex-----	CKL, DA, DLT, HFT.
Dexpanthenol-----	HOF.
Panthenol (racemic)-----	HOF.
Pantothenic acid-----	PD.
Sodium pantothenate-----	PD
*Vitamin D:	
Cholecalciferol (Vitamin D ₃)-----	DA, DLI, TMH, VTM.
7-Dehydrocholesterol (Provitamin D ₂)-----	JUL.
*Vitamin E:	
d-Alpha tocopherol-----	EKT, GNM.
d1-Alpha tocopherol-----	GNM, HOF.
d-Alpha tocopheryl acetate-----	EKT, GNM.
d1-Alpha tocopheryl acetate-----	DA, EKT, GNM, HOF.
d-Alpha tocopheryl acetate (feed grade)-----	HOF.
d-Alpha tocopheryl acid succinate-----	EKT, GNM.
*Other Vitamins:	
Ascorbic acid and salts:	
Ascorbic acid-----	HOF, MRK, PFZ.
Calcium ascorbate-----	PFZ.
Sodium ascorbate-----	HOF, MRK, PFZ.
Biotin-----	HOF.
Cyanocobalamin (feed grade)-----	MRK.
Cyanocobalamin (medicinal grade)-----	MRK.
Cyanocobalamin (U.S.P. crystalline)-----	MRK.
Inositol-----	STA.
Menadione-----	ABB, HET.
Menadione sodium bisulfite-----	ABB, HET, HFT.
Phytanadione-----	MRK.
Pyridoxine-----	HOF, MRK.
Riboflavin (feed grade)-----	HOF, MRK.
Riboflavin (medicinal grade)-----	HOF, MRK.
Riboflavin-5-phosphate, sodium-----	HOF.

MEDICINAL CHEMICALS

105

TABLE 2.--MEDICINAL CHEMICALS FOR WHICH U.S. PRODUCTION OR SALES WERE REPORTED,
IDENTIFIED BY MANUFACTURER, 1975--CONTINUED

Chemical	Manufacturers' identification codes (according to list in table 3)
*Vitamins--Continued	
*Other vitamins--Continued	
Thiamine hydrochloride-----	HOF.
Thiamine mononitrate-----	HOF.
Vitamin A:	
Beta-carotene (Provitamin A)-----	HOF.
Vitamin A acetate:	
Feed grade-----	HOF.
Medicinal grade-----	HOF.
Vitamin A acid-----	EK.
Vitamin A alcohol-----	HOF.
Vitamin A palmitate:	
Feed grade-----	HOF.
Medicinal grade-----	HOF.
*Miscellaneous medicinal chemicals:	
Antineoplastic agents:	
Azathioprine-----	BUR.
Calusterone-----	UPJ.
Megestrol acetate-----	x.
Mercaptopurine-----	BUR.
Streptozotocin-----	PFN, UPJ.
Thioguanine-----	BUR.
Vinblastine sulfate-----	LIL.
Vincristine sulfate-----	LIL.
Methionine, hydroxy analog, calcium salt-----	DUP, MON.
Salicylic acid ³ -----	DOW, HN.
Smooth muscle relaxants:	
Alverine citrate-----	ARA.
Alverine hydrochloride-----	ARA.
Flavoxate hydrochloride-----	SK.
Papaverine hydrochloride-----	LIL, PEN.
Unclassified medicinal chemicals:	
Allopurinol-----	BUR.
Berberine hydrochloride-----	PEN.
Hydrastine hydrochloride-----	PEN.
Nalorphine-----	MRK.
Penicillamine-----	MRK.

SYNTHETIC ORGANIC CHEMICALS, 1975

TABLE 3.--MEDICINAL CHEMICALS: DIRECTORY OF MANUFACTURERS, 1975

ALPHABETICAL DIRECTORY BY CODE

[Names of manufacturers that reported production or sales of medicinal chemicals to the U.S. International Trade Commission for 1975 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	KPT	Koppers Co., Inc., Organic Material Div.
ACY	American Cyanamid Co.	LEM	Napp Chemicals, Inc.
ADC	Anderson Development Co.	LIL	Eli Lilly & Co. and Puerto Rico
ALD	Aldrich Chemical Co.	LKL	Richardson-Merrill, Inc., Merrill-
ARA	Arapahoe Chemicals, Inc., Sub/Syntex Corp., (U.S.A.)	MAL	National Laboratories Div.
ARN	Arenol Chemical Corp.	MDJ	Mallinckrodt Chemical Works
ARP	Armour Pharmaceutical Co.	MON	Mead Johnson & Co.
ARS	Arsynco, Inc.	MRK	Monsanto Co.
ASH	Ashland Oil, Inc., Ashland Chemical Co.	NEP	Merck & Co., Inc.
AST	Astra Pharmaceutical Products, Inc.	NES	Nepera Chemical Co., Inc.
ATP	Northern Fine Chemicals, Inc.	NOR	Nease Chemical Co., Inc.
BAX	Baxter Laboratories, Inc.	NTL	Norwich Pharmacal Co.
BEE	Beecham, Inc.	OMS	NL Industries, Inc.
BJL	Burdick & Jackson Laboratories, Inc.	ORG	E.R. Squibb & Sons, Inc.
BKC	J.T. Baker Chemical Co.	ORT	Organics, Inc.
BKL	Millmaster Onyx Corp., Millmaster Chemical Div., Berkeley Chemical Dept.	PD	Roehr Chemicals, Inc.
BLP	Belport Co., Inc., Vermilye-Bell Div.	PEN	Parke, Davis & Co.
BOC	Biocraft Laboratories, Inc.	PFN	CPC International, Inc., S.B. Penick Co.
BPC	Stauffer Chemical Co., Specialty Chemical Div., Benzol Products	PFZ	Pfanstiehl Laboratories, Inc.
BRS	Bristol-Myers Co., Bristol Laboratories Div.	PHR	Pfizer, Inc. and Pfizer Pharmaceuticals, Inc.
BUR	Burroughs-Wellcome Co.	RDA	Pharmachem Corp.
CDY	Chemical Dynamics Corp.	RIK	Rhodia, Inc.
CGY	Ciba-Geigy Corp. and Ciba Pharmaceutical Co.	RIL	Riker Laboratories, Inc., Sub. of 3M Co.
CHT	Chattem Drug & Chemical Co., Chattem Chemicals Div.	RLS	Reilly Tar & Chemical Corp.
CKL	Chemlek Laboratories, Inc.	RSA	Rachelle Laboratories, Inc.
COM	Commercial Solvents Corp.	SAL	R.S.A. Corp.
CPR	Certified Processing Corp.	SCH	Salsbury Laboratories
CWN	Upjohn Co., Fine Chemical Div.	SDG	Schering Corp.
DA	Diamond Shamrock Corp.	SDH	Sterling Drug Corp.:
DLI	Dawe's Laboratories, Inc.	SDW	Glenbrook Laboratories Div.
DOW	Dow Chemical Co.	SHC	Hilton-Davis Chemical Co. Div.
DUP	E.I. duPont de Nemours & Co., Inc.	SK	Winthrop Laboratories Div.
ECL	Eastside Chemical Laboratory	SKG	Shell Oil Co., Shell Chemical Co. Div.
EK	Eastman Kodak Co.:	SRL	Smith Klein Chemicals
EKT	Tennessee Eastman Co. Div.	STA	Sunkist Growers, Inc.
EN	Endo Laboratories, Inc.	TMH	G.D. Searle & Co.
FIN	Hexcel Corp., Fine Organics Div.	TRD	A.E. Staley Manufacturing Co.
FLM	Fleming Laboratories, Inc.	UCC	Thompson-Hayward Chemical Co.
GAF	GAF Corp., Chemical Div.	UPJ	Manufacturing Enterprises, Inc., Squibb
GAN	Gane's Chemical Works, Inc.	VTM	Manufacturing Inc., Trade Enterprises, Inc.
GIV	Givaudan Corp.	WAG	Union Carbide Corp.
GNF	General Foods Corp., Maxwell House Div.	WHL	Upjohn Co.
GNM	General Mills Chemicals, Inc.	WIL	Vitamins, Inc.
HET	Heterochemical Corp.	WTL	West Agro-Chemicals, Inc.
HEX	Hexagon Laboratories, Inc.	WYT	Whitmoyer Laboratories, Inc.
HFT	Syntex Agribusiness, Inc., Nutrition & Chemical Div.		Inolex Corp., Inolex Pharmaceutical Div.
HN	Tenneco Chemicals, Inc.		Pennwalt Corp., Lucidol Div.
HOF	Hoffmann-LaRoche, Inc.		Wyeth Laboratories, Inc., Wyeth Laboratories
HYN	Hynson, Westcott & Dunning, Inc.		Div. of American Home Products Corp.
JCC	Jefferson Chemical Co., Inc.		
JUL	Julian Associates, Inc.		

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

FLAVOR AND PERFUME MATERIALS

Flavor and perfume materials are organic chemicals used to impart flavors and odors to foods, beverages, cosmetics, and soaps. These aromatic 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 1975 amounted to 101.3 million pounds (table 1).¹ Sales of these materials in 1975 amounted to 82.7 million pounds, valued at \$143.4 million, compared with 107.4 million pounds, valued at \$166.7 million, in 1974. 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 1975 decreased 25.1 percent as compared with 1974 and the quantity of sales declined by 23.0 percent.

Production of cyclic flavor and perfume materials in 1975 amounted to 44.8 million pounds; sales amounted to 33.0 million pounds, valued at \$91.9 million. The individual chemical in the cyclic group produced in the greatest volume in 1975 was methyl salicylate (5 million pounds).

U.S. output of acyclic flavor and perfume materials in 1975 amounted to 56.6 million pounds; sales of these materials amounted to 49.6 million pounds, valued at \$51.9 million. Monosodium glutamate was by far the most important of the acyclic chemicals with sales in 1975 of 37.0 million pounds valued at \$25.4 million.

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

FLAVOR AND PERFUME MATERIALS

109

TABLE 1.--FLAVOR AND PERFUME MATERIALS: U.S. PRODUCTION AND SALES, 1975

[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 separately all flavor and perfume materials for which data on production and/or sales were reported and identifies the manufacturers of each]

Material	Production	Sales		
		Quantity	Value	Unit value ¹
		1,000 pounds	1,000 dollars	Per pound
Grand total-----	101,340	82,683	143,431	\$1.73
FLAVOR AND PERFUME MATERIALS, CYCLIC				
Total-----	44,751	33,044	91,851	2.78
Benzoid and Naphthalenoid				
Total-----	37,193	26,861	70,257	2.62
4-Allyl-1,2-dimethoxybenzene (4-Allylveratrole)-----	15	...	...	...
4-Allyl-2-methoxyphenol (Eugenol)-----	223	204	1,011	4.94
Anisyl acetate-----	...	5	40	7.38
Benzophenone ² -----	684	510	1,035	2.03
Benzyl acetate-----	1,292	1,448	1,324	.91
Benzyl benzoate-----	737	959	686	.72
Benzyl butyrate-----	...	6	12	2.08
Benzyl propionate-----	35	35	54	1.56
Benzyl salicylate-----	...	575	916	1.59
Cinnamyl acetate-----	...	6	25	4.50
Cinnamyl alcohol-----	340	281	789	2.81
Cinnamyl anthranilate-----	...	1	10	17.49
1,2-Dimethoxy-4-propenylbenzene (4-Propenyl-veratrole)-----	16	...	...	...
Ethyl phenylglycidate-----	17	...	...	...
Hydrocoumarin-----	23	19	139	7.26
Isobutyl phenylacetate-----	...	14	40	2.89
Isobutyl salicylate-----	...	6	10	1.57
Isopentyl salicylate-----	585	642	676	1.05
Methyl anthranilate-----	201	152	281	1.85
α -Methylcinnamaldehyde-----	...	4	10	2.35
Methyl phenylacetate-----	39	24	61	2.60
Methyl salicylate-----	5,136	4,029	3,653	.91
α -Pentylcinnamaldehyde-----	462	449	812	1.81
Phenethyl acetate-----	...	62	159	2.57
Phenethyl isovalerate-----	...	9	33	4.25
2-Phenethyl phenylacetate-----	30	17	84	4.95
Phenylacetaldehyde, dimethyl acetal-----	...	44	217	4.91
3-Phenyl-1-propanol (Hydrocinnamic alcohol)-----	18	24	73	3.03
p-Propenylanisole (Anethole)-----	1,758	1,435	6,148	4.29
All other benzoid and naphthalenoid materials-----	25,573	15,902	51,959	3.27
Terpenoid, Heterocyclic, and Alicyclic				
Total-----	7,558	6,183	21,594	3.49
Cedryl acetate-----	315	169	820	4.85
4-Hydroxyundecanoic acid, γ -lactone (γ -undecalactone)-----	29	22	139	6.18
α -Ionone-----	35	27	269	9.99
Ionone (α - and β -)-----	31	26	177	6.82
Lavandin, acetylated-----	4	...	...	...

See footnotes at end of table.

TABLE 1.--FLAVOR AND PERFUME MATERIALS: U.S. PRODUCTION AND SALES, 1975--CONTINUED

Material	Production	Sales			
		Quantity	Value	Unit value ¹	
FLAVOR AND PERFUME MATERIALS, CYCLIC--Continued					
<i>Terpenoid, Heterocyclic, and Alicyclic--Continued</i>					
Methylionones-----	1,000 pounds 466	1,000 pounds 259	1,000 dollars 2,012	Per pound \$ 7.77	
Terpineols-----	2,059	2,030	1,346	.66	
α -Terpinylacetate-----	688	605	678	1.12	
Vetivenyl acetate-----	22	6	347	56.32	
All other terpenoid, heterocyclic, and alicyclic materials-----	3,909	3,039	15,806	5.20	
FLAVOR AND PERFUME MATERIALS, ACYCLIC					
Total-----	56,589	49,639	51,580	1.04	
Allyl hexanoate-----	...	17	42	2.49	
Butyl butyryl lactate-----	39	36	134	3.73	
Citral dimethyl acetal-----	...	2	19	7.80	
Citronellyl acetate-----	41	38	183	4.88	
Citronellyl formate-----	33	22	139	6.20	
Citronellyl isobutyrate-----	14	...	...	...
3,7-Dimethyl-cis-2,6-octadien-1-ol (Nerol)-----	...	63	269	4.25	
3,7-Dimethyl-trans-2,6-octadien-1-ol (Geraniol)-----	2,896	2,054	3,826	1.86	
3,7-Dimethyl-1,6-octadien-3-ol (Linalool; Linalyl alcohol)-----	1,930	1,570	3,178	2.02	
3,7-Dimethyl-6-octen-1-al (Citronellal)-----	628	...	...	...
3,7-Dimethyl-6-octen-1-ol (Citronellool)-----	1,080	833	2,636	3.16	
Ethyl butyrate-----	575	442	361	.82	
Ethyl heptanoate-----	13	11	26	2.30	
Ethyl hexanoate (Ethyl caproate)-----	17	7	15	2.27	
Ethyl octanoate-----	6	3	9	3.11	
Ethyl oxyhydrate-----	14	14	18	1.29	
Ethyl propionate-----	165	86	85	.99	
Geranyl acetate-----	74	74	274	3.69	
Glutamic acid, monosodium salt (Monosodium glutamate)-----	...	36,978	25,417	.69	
7-Hydroxy-3,7-dimethyl-1-octanal (Hydroxy-citronellal)-----	332	363	2,063	5.68	
Isopentyl butyrate-----	66	76	87	1.14	
Isopentyl formate-----	3	3	6	2.01	
Isopentyl isovalerate-----	...	9	26	2.75	
Octanal-----	7	9	39	4.58	
Rodinol-----	12	...	...	...
All other acyclic materials-----	48,644	6,929	12,728	1.84	

¹ Calculated from the unrounded figures.² Includes significant quantities having other end uses.

TABLE 2.--FLAVOR AND PERFUME MATERIALS FOR WHICH U.S. PRODUCTION OR SALES WERE
REPORTED, IDENTIFIED BY MANUFACTURER, 1975

[Flavor and perfume materials for which separate statistics are given in table 1 are marked below with an asterisk (*); those 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 are taken from table 3. An x signifies that the manufacturer did not consent to his identification with the designated product]

Material	Manufacturers' identification codes (according to list in table 3)
FLAVOR AND PERFUME MATERIALS, CYCLIC	
<i>Benzoid and Naphthalenoid</i>	
2'-Acetonaphthone-----	GIV.
1-Acetoxy-2-sec-butyl-1-ethenylcyclohexane-----	GIV.
5-Acetyl-1,1,2,3,3,6-hexamethylindan (Phantolid)-----	PFW.
p-Allylanisole-----	GIV, GLD, NCI.
Allyl cyclohexyl propionate-----	GIV.
*4-Allyl-1,2-dimethoxybenzene (4-Allylveratrole)-----	FB, GIV, UOP.
*4-Allyl-2-methoxyphenol (Eugenol)-----	CI, FB, GIV, IFF, PEN, UNG, UOP.
4-Allyl-2-methoxyphenol acetate (Eugenol acetate)-----	CI, GIV.
4-Allyl-1,2-(methylenedioxy)benzene (Safrole)-----	FB, GIV.
Allyl phenoxyacetate-----	GIV.
o-Anisaldehyde-----	FB.
*p-Anisaldehyde-----	GIV, OPC, UOP.
Anisole (Methoxybenzene)-----	GIV.
*Anisyl acetate-----	ELN, GIV, UOP.
Benzaldehyde-----	FB.
*Benzophenone-----	GAF, NEO, PD, UOP.
*Benzyl acetate-----	FB, GIV, MON, OPC, UOP.
Benzyl alcohol-----	GIV.
*Benzyl benzoate-----	MON, OPC, PFZ, UOP, VEL.
*Benzyl butyrate-----	ELN, FB, GIV.
*Benzyl cinnamate-----	FB, GIV, UOP.
Benzyl ether-----	FB, VEL.
Benzyl formate-----	GIV, UOP.
Benzyl glyceryl acetal-----	GIV.
Benzyl isobutyrate-----	GIV.
Benzyl isopentyl ether-----	GIV.
Benzyl laurate-----	GIV.
1-(Benzoyloxy)-2-methoxy-4-propenylbenzene (Benzyl isoeugenyl ether).-----	GIV.
Benzyl phenylacetate-----	ELN, GIV.
*Benzyl propionate-----	ELN, FB, GIV, OPC.
*Benzyl salicylate-----	GIV, MON, UNG, UOP.
Bois de rose oil, acetylated-----	FB.
α -Bromostyrene-----	UOP.
2-sec-Butylcyclohexanone-----	GIV.
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, UOP.
Butyl phenylacetate-----	GIV.
1-tert-Butyl-3,4,5-trimethyl-2,6-dinitrobenzene (Musk Tibetene).-----	GIV, UOP.
5-tert-Butyl-2,4,6-trinitro-m-xylene (Musk xylool)-----	GIV.
Cinnamaldehyde-----	CI, FB, UOP.
*Cinnamyl acetate-----	ELN, FB, GIV.
*Cinnamyl alcohol-----	FB, GIV, NEO, UOP.
*Cinnamyl anthranilate-----	FEL, GIV, RT.
Cinnamyl cinnamate-----	FB.
*Cinnamyl propionate-----	ELN, FB, GIV.
Cinnamyl tiglate-----	FB.
Coumarin-----	RDA.

TABLE 2.--FLAVOR AND PERFUME MATERIALS FOR WHICH U.S. PRODUCTION OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1975--CONTINUED

Material	Manufacturers' identification codes (according to list in table 3)
FLAVOR AND PERFUME MATERIALS, CYCLIC--Continued	
<i>Benzeneoid and Naphthalenoid--Continued</i>	
Cuminal alcohol-----	GIV.
Cyclohexylcyclohexanone-----	CI, GIV.
trans-Decahydro-β-naphthol-----	IFF.
2,4-Dibromo-6-nitro-m-cresyl methyl ether-----	GIV.
Diethyl fumarate-----	FB.
1,2-Dimethoxy-4-propenylbenzene (4-Propenylveratrole)-----	FB, GIV, UOP.
2,4-Dimethyl-3-cyclohexene-1-carboxaldehyde (Aldehyde AA).-----	IFF.
3,7-Dimethyl-1,6-octadien-3-yl, anthranilate (Linalyl anthranilate).-----	FMT.
trans-3,7-Dimethyl-1,6-octadien-1-ol, benzoate (Geranyl benzoate).-----	GIV.
3,7-Dimethyl-1,6-octadien-3-ol, benzoate (Linalyl benzoate).-----	HOF.
3,7-Dimethyl-2,6-octadienylphenylacetate (Geranyl phenylacetate).-----	GIV.
α,α-Dimethylphenethyl acetate-----	IFF.
α,α-Dimethylphenethyl alcohol-----	IFF.
α,α-Dimethylphenethyl alcohol, tech-----	IFF.
α,α-Dimethylphenethyl butyrate-----	IPF.
3,6-Dimethyl β-Resorcylic acid (Veramoss)-----	IFF.
Diphenylmethane (Benzylbenzene)-----	UOP.
1,3-Diphenyl-2-propanone (Dibenzyl ketone)-----	GIV.
p-Ethoxybenzaldehyde-----	GIV.
3-Ethoxy-4-hydroxybenzaldehyde (Ethylvanillin)-----	MON, SLV.
2-Ethoxynaphthalene-----	GIV.
Ethyl anthranilate-----	FB.
Ethyl benzoate-----	ELN.
Ethyl cinnamate-----	ELN, GIV.
Ethyl α,β-epoxy-β-methylhydrocinnamate-----	ELN.
2-Ethylhexyl salicylate-----	FEL.
Ethyl phenylacetate-----	GIV.
*Ethyl phenylglycidate-----	GIV, PFW, UOP.
Ethyl salicylate-----	FB.
3'-Ethy-5',6',7',8'-tetrahydro-5',5',8',8'-tetramethyl-2'-acetonaphthone.-----	GIV, UOP.
1,3,4,6,7,8-Hexahydro-4,6,6,7,8,8-hexamethyl cyclopenta-γ-2-benzopyran (Galaxolide).-----	IFF.
α-Hexylcinnamaldehyde-----	CI, IFF.
Hydratropaldehyde-----	GIV, IFF.
Hydratropaldehyde, dimethyl acetal-----	GIV.
Hydrocinnamic acid-----	ARS.
*Hydrocoumarin-----	ARS, GIV, UOP.
Hydroxycitronellalmethyl anthranilate-----	GIV.
3-Hydroxy-4-methoxybenzaldehyde (Isovanillin)-----	SLV.
4-Hydroxy-3-methoxybenzaldehyde (Vanillin)-----	MON, SLV.
4-(4-Hydroxy-3-methoxyphenyl)-2-butanone-----	GIV.
4-(4-Hydroxyphenyl)-2-butanone-----	BJL.
Indole-----	GIV.
Isoamyl phenylacetate-----	ELN.
Isobutyl benzoate-----	RDA.
p-Isobutyl-α-methylhydrocinnamaldehyde (Rhodial)-----	

TABLE 2.--FLAVOR AND PERFUME MATERIALS FOR WHICH U.S. PRODUCTION OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1975--CONTINUED

Material	Manufacturers' identification codes (according to list in table 3)
FLAVOR AND PERFUME MATERIALS, CYCLIC--Continued	
<i>Bensenoid and Naphthalenoid--Continued</i>	
*Isobutyl phenylacetate-----	ELN, FB, GIV.
Isobutylquinoline-----	IFF.
*Isobutyl salicylate-----	FB, GIV, UOP.
Isohexenyl tetrahydrobenzaldehyde-2,3,7,8 (Myrac aldehyde).-----	IFF.
*Isopentyl salicylate-----	FB, GIV, MON, OPC, UOP.
p-Isopropylbenzaldehyde (Cumaldehyde)-----	GIV.
p-Isopropylcyclohexanol-----	GIV.
p-Isopropylcyclohexanone-----	CI.
p-Isopropyl- α -methylhydrocinnamaldehyde (Cyclamen aldehyde).-----	GIV, RDA.
p-Mentha-1,8-diene (Limonene)-----	RT, SKG.
Menthyl anthranilate-----	PFW.
4'-Methoxyacetophenone (Acetanisole)-----	GIV, UOP.
p-Methoxybenzyl alcohol (Anisyl alcohol)-----	GIV, UOP.
α -Methoxycinnamaldehyde-----	CI, FB.
2-Methoxynaphthalene-----	GIV.
1-(p-Methoxyphenyl)-1-penten-3-one-----	GIV.
2-Methoxy-4-propenylphenol (Isoeugenol)-----	CI, GIV, UOP.
2-Methoxy-4-propenylphenol, acetate-----	UOP.
4'-Methylacetophenone-----	UOP.
p-Methylanisole-----	GIV, SW, UOP.
Methyl anthranilate-----	FB, OPC, PFW, SW, UNG.
Methyl benzoate-----	HN.
α -Methylbenzyl acetate (Styralyl acetate)-----	CI, FB, ELN, GIV.
α -Methylcinnamaldehyde-----	CI, FB, GIV.
Methyl cinnamate-----	FB, UOP.
6-Methylcoumarin-----	GIV.
Methylcyclohexyl propionate-----	GIV.
1,2-(Methylenedioxy)-4-propenylbenzene (Isosafrole)-----	GIV.
4-Methyl-7-ethoxycoumarin-----	GIV.
Methyl eugenol-----	CI.
p-Methylhydratropaldehyde-----	GIV.
Methyl isoeugenol-----	CI.
1-Methyl-4-isohexyl-hexahydrobenzaldehyde (Vernaldehyde).-----	GIV.
α -Methyl-p-isopropyl hydrocinnamaldehyde methyl anthranilate (Orangeol N).-----	RDA.
2-Methyl-5-isopropylphenol (Carvacrol)-----	GIV.
Methyl-N-methylantranilate-----	GIV, SW.
*Methyl phenylacetate-----	BPC, ELN, GIV, OPC.
*Methyl salicylate-----	DOW, HN, MON.
1H-Naphtho-[2,3-c]pyran-3,4,6,7,8,9-hexahydro-4,6,6,9,9-pentamethyl (Musk 89).-----	IFF.
1,1,3,3,5-Pentamethyl 1-4,6-dinitroindan-----	GIV.
* α -Pentylcinnamaldehyde-----	CI, FB, GIV, IFF, UOP.
*Phenethyl acetate-----	GIV, IFF, NEO.
Phenethyl alcohol-----	IFF, NEO.
Phenethyl formate-----	ELN, IFF.
Phenethyl isobutyrate-----	ELN, GIV, IFF.
*Phenethyl isovalerate-----	ELN, FB, GIV, OPC, RT.
*2-Phenethyl phenylacetate-----	CI, ELN, FB, GIV, IFF.
Phenethyl propionate-----	ELN, GIV, IFF.
Phenethyl salicylate-----	GIV.
2-Phenoxyethyl isobutyrate-----	ELN, GIV, IFF.
Phenoxyethyl propionate-----	IFF.
Phenylacetaldehyde-----	GIV.

TABLE 2.--FLAVOR AND PERFUME MATERIALS FOR WHICH U.S. PRODUCTION OR SALES WERE
REPORTED, IDENTIFIED BY MANUFACTURER, 1975--CONTINUED

Material	Manufacturers' identification codes (according to list in table 3)
FLAVOR AND PERFUME MATERIALS, CYCLIC--Continued	
<i>Benzoid and Naphthalenoid--Continued</i>	
Phenylacetaldehyde, dimethyl acetal-----	ELN, GIV, UOP.
o-Phenylanisole (2-Methoxybiphenyl)-----	GIV.
4-Phenyl-3-buten-2-one (Benzylideneacetone)-----	FB, UOP.
Phenylethyl acetal-----	GIV.
Phenylethyl tiglate-----	FB.
*3-Phenyl-1-propanol (Hydrocinnamic alcohol)-----	ELN, FB, GIV, UOP.
3-Phenylpropyl acetate-----	ELN, GIV.
3-Phenylpropyl cinnamate-----	FB.
Piperonal (Heliotropin)-----	AMB, GIV.
*p-Propenylanisole (Anethole)-----	ARZ, GLD, FB, HPC, NCI.
p-Propylanisole (Dihydroanethole)-----	FB, GIV.
N-Propylphenylethyl alcohol-----	GIV.
Sassafras oil, hydrogenated-----	GIV.
Sweeteners, synthetic:	
Cyclohexanesulfamic acid-----	ABB.
Cyclohexanesulfamic acid, calcium salt-----	ABB.
Cyclohexanesulfamic acid, sodium salt-----	ABB.
Saccharin (1,2-Benzisothiazolin-3-one, 1,1-dioxide)-----	SW.
Saccharin, sodium salt-----	SW.
p-Tolualdehyde-----	FB, GIV, TCC.
p-Tolylacetaldehyde-----	GIV.
p-Tolyl acetate-----	ELN, GIV.
p-Tolyl phenylacetate-----	GIV.
α-(Trichloromethyl)benzyl acetate (Rosetone)-----	NEO.
Veratraldehyde (3,4-Dimethoxybenzaldehyde)-----	GIV, SLV.
<i>Terpenoid, Heterocyclic, and Alicyclic</i>	
Acetyl cedrene (Vertofix)-----	IFF.
p-tert-Amyl cyclohexanone (Orivone)-----	IFF.
Amyris acetate-----	GIV.
p-tert-Butylcyclohexyl acetate-----	CI, IFF.
β-Caryophyllene-----	CI, FB, GIV.
Caryophyllene acetate-----	CI.
Caryophyllene alcohol-----	FB.
L-Carvyl acetate-----	FB.
Cedarwood acetate-----	GIV, UNG.
α-Cedrene epoxide (Andrane)-----	IFF.
Cedrene-8-ol-----	IFF.
Cedrenol-----	GIV.
Cedrol-----	ELN, GIV, IFF, NEO.
*Cedryl acetate-----	ELN, GIV, IFF, NEO.
Cedryl methyl ether (Cedramber)-----	IFF.
Chemically modified butter oil-----	RT.
Clove leaf oil terpenes-----	FB.
Cyclohexadecanolide-----	OTC.
Cyclopentadecanolide-----	OTC.
Cyclopentadecanone-----	OTC.
Cyclopentanone-----	FB.
α-Dihydrocarvone-----	GLD.
Dihydroiso jasmone-----	FB.
Dihydronordicyclobutylate (Cyclabute)-----	IFF.
Dihydronordicyclopentadienyl acetate-----	GIV, IFF.
Dihydronordicyclopentadienyl propionate (Cyclaprop)-----	GIV, IFF.
Dihydroterpinyl acetate-----	GIV, NCI.
Ethyl furoate-----	RT.

TABLE 2.--FLAVOR AND PERFUME MATERIALS FOR WHICH U.S. PRODUCTION OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1975--CONTINUED

Material	Manufacturers' identification codes (according to list in table 3)
FLAVOR AND PERFUME MATERIALS, CYCLIC--Continued	
<i>Terpenoid, Heterocyclic, and Alicyclic--Continued</i>	
Furyl acrolein (Furfural acrolein)-----	RT.
Furfural acetone (4-(2 Furyl)-3-buten-2-one)-----	RT.
Guaiacwood acetate-----	ELN, FB, NEO, UNG.
Guaiene-----	FB.
3,4,5,8,9,10-Hexahydro-4-isopropyl-1,6-dimethyl-naphthalene (Cadinene).-----	FB.
2-Hexyl-2-cyclopenten-1-one (Isojasmone)-----	FB.
3-Hydroxy-2-ethyl-4-pyrone (Ethyl maltol)-----	PFZ.
4-(4-Hydroxy-4-methylpentyl)-3-cyclohexene-10-carboxaldehyde (Lyrail).-----	PFZ.
3-Hydroxy-2-methyl-4-pyrone (Maltol)-----	GIV, UOP.
4-Hydroxynonanoic acid, γ -lactone (γ -Nonalactone)-----	GIV, RT.
4-Hydroxyoctanoic acid, γ -lactone (γ -Octalactone)-----	ELN, FB, UOP.
*4-Hydroxyundecanoic acid, γ -lactone (γ -Undecalactone)-----	GIV, IFF, MYW.
Ionones:	
* α -Ionone-----	HOF.
β -Ionone-----	GIV, MYW, NEO.
*Ionone (α - and β -)-----	NCI, RDA.
Isobornyl acetate-----	GIV.
Isobornyl propionate-----	GIV.
Isocamphyl cyclohexanol (Terpinyl cyclohexanol)-----	GIV.
Isomenthone-----	IFF.
Jasmal-----	FEL, GIV, UNG.
*Lavandin, acetylated-----	FB.
p-Mentha-6,8-dien-2-ol (L-Carveol)-----	FB, NEO.
p-Mentha-6,8-dien-2-one (Carvone; Carvol)-----	GLD.
p-Menth-1,4-diene (γ -Terpinene)-----	FB, GIV, NEO.
p-Menth-3-one (Menthone)-----	GIV.
p-Menth-1-en-3-one-----	GIV.
p-Menth-4(8)-en-3-one (d-Pulegone)-----	GIV.
p-Menth-8-en-3-ol (Isopulegol)-----	GIV.
1,1-p-Menth-6-yl-1-propanone-----	GIV.
Menthol, synthetic:	
Tech-----	GIV.
U.S.P-----	GIV, GLD, NEO.
Methyl acetate-----	FB, GIV.
5-Methyl-2,3-hexanedione (acetyl-iso-valeryl)-----	FB.
*Methyliionones:	
6-Methyl- α -ionone-----	GIV.
Methyliionone (α - and β -)-----	GIV, IFF, MYW, NEO, RDA, UNG.
γ -Methyliionone-----	GIV.
Nopyl acetate-----	FEL, NEO.
3-Pentyl-tetrahydro-4-pyranol (Jessemal)-----	IFF.
Propyl-furyl-acrylate-----	RT.
Rose oxide-----	FB.
Santalol-----	GIV, IFF.
Santalyl acetate-----	GIV.
*Terpineols:	
α -Terpineol-----	GLD, HPC, NCI.
Terpineol (α - and β -)-----	GIV, NEO.
* α -Terpinyl acetate-----	GIV, NCI, NEO, PFW, UNG.
Terpinyl acetate (mixed α - and β -)-----	RDA.
α -Terpinyl propionate-----	ELN, GIV.
Tetrahydropseudoionone-----	CI.
Tricyclodecanyl propionate-----	CI.
Tricyclonyl acetate-----	CI.
3,3,5-Trimethyl cyclohexanol (Homomenthol)-----	ARS.
1-(2,6,6-Trimethyl-1-2-cyclohexen-1-yl)-1,6-heptadien-3-one (Allyl- α -ionone).-----	IFF.
Vetivenol-----	GIV.
*Vetivenyl acetate-----	ELN, FB, GIV, IFF, NEO, UOP.

TABLE 2.--FLAVOR AND PERFUME MATERIALS FOR WHICH U.S. PRODUCTION OR SALES WERE
REPORTED, IDENTIFIED BY MANUFACTURER, 1975--CONTINUED

Material	Manufacturers' identification codes (according to list in table 3)
FLAVOR AND PERFUME MATERIALS, ACYCLIC	
Acetylbutyryl (2,3-hexanedione)-----	FB.
Acetylpropionyl (2,3-pentanedione)-----	FB.
Allo-ocimene-----	NCI.
Allyl caprylate-----	RT.
Allyl disulfide-----	RT.
Allyl heptanoate-----	FB, RT.
*Allyl hexanoate-----	ELN, FB, GIV, PFW.
Allyl isovalerate-----	RT.
Allyl sulfide-----	RSA
Ammonium-iso-valerate-----	GIV.
Amyl propionate-----	PFW.
Amyl valerate (n-pentyl-n-pentanoate)-----	ARS, BJL, RT.
*Butyl butyryl lactate-----	CI.
Butyl undecylenate-----	x.
1-Butyne-----	FB.
Butyraldehyde diethyl acetal-----	FB.
Butyric acid-----	FB.
Citraconic anhydride-----	FB.
Citral dimethyl acetal-----	GIV, IFF, RDA.
*Citronellyl acetate-----	ELN, GIV, IFF.
Citronellyl butyrate-----	ELN.
Citronellyl crotonate-----	IFF.
Citronellyl ethyl ether-----	IFF.
*Citronellyl formate-----	ELN, GIV, IFF, NEO.
*Citronellyl isobutyrate-----	ELN, GIV, IFF.
Citronellyl oxyacetaldehyde-----	IFF.
Citronellyl propionate-----	GIV, IFF.
Decanal (Capraldehyde)-----	CI, GIV.
9-Decenol-1-; Decen-9-ol-1 (Rosalva)	IFF, RSA.
Decyl acetate-----	GIV.
Diethyl acetal-----	FB.
Diethyl sebacate-----	ELN, UOP.
Diethyl succinate-----	UCC.
Dihydromyrcenol-----	IFF.
Dimethyl citraconate-----	FB.
2,6-Dimethyl-5-hepten-1-ol-----	GIV.
3,6-Dimethyl-5-hepten-2-ol and 7-methyl-6-octen-3-ol (Brazinol).-----	RDA.
2,6-Dimethyl-5-hepten-2-one-----	RDA.
Dimethylhexanediol-----	x.
Dimethylhexynediol-----	x.
3,7-Dimethyl-1,6-nonadien-3-ol (Ethyl linalool)-----	HOF.
3,7-Dimethyl-1,6-nonadien-3-ol, acetate (Ethyl linalyl acetate).-----	HOF.
3,7-Dimethyl-2,6-nonadienenitrile-----	GIV.
*3,7-Dimethyl-cis-2,6-octadien-1-ol (Nerol)-----	ELN, FB, GIV, GLD, IFF, NCI.
3,7-Dimethyl-trans-2,6-octadienal (Citral a; Geraniol)-----	FB, FEL, GIV, GLD, NCI, RDA, UOP.
3,7-Dimethyl-2,6-octadienal (mixture of cis and trans isomers).-----	CI.
3,7-Dimethyl-trans-2,6-octadienal dimethyl acetate-----	CI.
*3,7-Dimethyl-trans-2,6-octadien-1-ol (Geraniol)-----	CI, ELN, FB, FEL, GIV, GLD, IFF, NCI, NEO, UOP.
*3,7-Dimethyl-1,6-octadien-3-ol (Linalool; Linalyl alcohol).-----	ELN, FB, FEL, GIV, GLD, HOF, NCI, RDA, UNG.
3,7-Dimethyl-1,6-octadien-3-ol acetate (Linalyl acetate).-----	ELN, FB, GIV, HOF, NCI, NEO, RDA, UNG.
3,7-Dimethyl-1,6-octadien-3-ol, formate-----	HOF.
3,7-Dimethyl-1,6-octadien-3-yl isobutyrate (Linalyl isobutyrate).-----	HOF.

TABLE 2.--FLAVOR AND PERFUME MATERIALS FOR WHICH U.S. PRODUCTION OR SALES WERE
REPORTED, IDENTIFIED BY MANUFACTURER, 1975--CONTINUED

Material	Manufacturers' identification codes (according to list in table 3)
FLAVOR AND PERFUME MATERIALS, ACYCLIC--Continued	
3,7-Dimethyl-1,6-octadien-3-yl propionate (Linalyl propionate).	FB, GIV, HOF.
3,7-Dimethyl-1,7-octanediol-----	GIV.
3,7-Dimethyl-3-octanol-----	GIV.
3,7-Dimethyloctan-3-ol (Tetrahydrolinalool)-----	HOF.
Dimethyloctanol-----	IFF.
3,7-Dimethyl-1-octanol (Dihydrocitronellol)-----	GIV.
Dimethyloctanyl acetate-----	FB, IFF.
*3,7-Dimethyl-6-octen-1-al (Citronellal)-----	CI, FB, GIV, GLD, NEO, RDA.
*3,7-Dimethyl-6-octen-1-ol (Citronellol)-----	CI, ELN, FB, GIV, GLD, IFF, NCI, NEO.
2,6-Dimethyl-2-octene-7-yne-6-ol-----	RDA.
3,7-Dimethyl-7-octenol and 6-octenol isomer-----	GIV.
Dimethyloctynol-----	x.
Dimyracetol-----	IFF.
*Ethyl butyrate-----	FB, NW, UOP.
Ethyl caprate-----	FB.
Ethyl formate-----	FB.
*Ethyl heptanoate-----	ELN, FEL, RT, UOP.
6-Ethyl-5 hepten-2-one-----	HOF.
*Ethyl hexanoate (Ethyl caproate)-----	ELN, FB, NW, PFW, RT.
Ethyl isovalerate-----	FB.
Ethyl laurate-----	ELN, FB.
Ethyl 2-methylbutyrate-----	PFW.
Ethyl-2-methylpentanoate-----	PFW.
Ethyl myristate-----	ELN, RT.
Ethyl nonanoate-----	ELN, FB, GIV.
*Ethyl octanoate-----	ELN, FB, RT.
*Ethyl oxyhydrate-----	FEL, FLO, RT.
*Ethyl propionate-----	FB, NW, UOP.
Ethyl valerate-----	PFW.
Geranic acid-----	FB.
*Geranyl acetate-----	CI, ELN, FB, FEL, GIV, IFF.
Geranyl butyrate-----	ELN, GIV.
Geranyl crotonate-----	FB.
Geranyl dimethyl lacrylate-----	FMT.
Geranyl formate-----	ELN, CI, GIV.
Geranyl isobutyrate-----	IFF.
Geranyl isovalerate-----	FB.
Geranyl neryl formate-----	IFF.
Geranyl nitrile (Geranonitrile)-----	CI, IFF.
Geranyl propionate-----	FB.
Geranyl tiglate (Geranyl dimethylacrylate)-----	FB.
*Glutamic acid, monosodium salt (Monosodium glutamate)-----	COM, GRW, SFF.
Hexenal-----	GLD.
2-Hexenal-----	FB, GIV.
2-Hexenoic acid-----	RT.
2-Hexenol-----	FB.
trans-2-Hexenol-----	GLD.
cis-3-Hexen-1-ol-----	GIV, x.
cis-3-Hexen-1-yl acetate-----	GIV.
Hexyl caproate-----	FB.
3-Hexyn-1-ol-----	HOF, x.
3-Hydroxy-2-butanone (Acetoin)-----	FMT.
*7-Hydroxy-3,7-dimethyl-1-octanal (Hydroxycitronellal)-----	CI, GIV, GLD, IFF, RDA, UOP.
7-Hydroxy-3,7-dimethyl octanal, dimethyl acetal (Hydroxycitronellal, dimethyl acetal).-----	GIV, UOP.
Hydroxy-2-propan one (Acetol)-----	FB.
Isoamyl acetate (Isopentyl acetate)-----	FB, NW.
Isoamyl caproate-----	FB.
Isoamyl geranate-----	FB.

TABLE 2.--FLAVOR AND PERFUME MATERIALS FOR WHICH U.S. PRODUCTION OR SALES WERE
REPORTED, IDENTIFIED BY MANUFACTURER, 1975--CONTINUED

Material	Manufacturers' identification codes (according to list in table 3)
FLAVOR AND PERFUME MATERIALS, CYCLIC--Continued	
Isoamyl propionate-----	FB.
Isobutyl acetate-----	FB.
Isodihydro lavandulol-----	FB.
Isodihydro lavandulyl acetate-----	FB.
Isodihydro lavandulyl aldehyde-----	FB.
Isononyl acetate-----	CI.
*Isopentyl butyrate-----	FB, GIV, NW, UOP.
*Isopentyl formate-----	ELN, FB, GIV, RT.
*Isopentyl isovalerate-----	ELN, FB, RT.
Lauraldehyde-----	GIV.
3-Methyl butyl acetate-----	FB.
Methyl butynol-----	x.
Methyl crotonate-----	FB.
Methyl heptadienone-----	HOF.
3-Methyl-5-heptanone oxime-----	GIV.
2-Methyl-2-hepten-6-one-----	RDA.
6-Methyl-5-hepten-2-one-----	HOF.
Methyl isobutyrate-----	PFW.
Methyl isovalerate-----	FB.
3-Methyl-2-(and 3) nonenitrile-----	GIV.
Methyl-2-nonenolate-----	GIV.
3-Methyl thiopropionaldehyde-----	RT.
Methylol methyl hexyl ketone-----	GIV.
Methyl pentynol-----	x.
2-Methylundecanal-----	GIV.
Muguol (Alloocimenol)-----	IFF.
Myrcenyl acetate-----	IFF.
Myristaldehyde-----	GIV.
Neryl acetate-----	GIV.
Nonanal-----	GIV.
Nonane diacetate-----	CI.
Nonane-1,3-diol monoacetate-----	GIV.
Nonanol (Nonyl alcohol)-----	GIV.
2-Nonanone-----	HOF.
Nonyl acetate-----	GIV.
Ocimenol-----	IFF.
Ocimenyl acetate-----	IFF.
*Octanal-----	CI, GIV, IFF.
3-Octanol-----	GIV.
3-Octanone (Ethyl amyl ketone)-----	GIV.
n-Octyl acetate-----	FB, GIV.
Octyl alcohol (1-Octanol)-----	GIV.
Octyl isovalerate-----	RT.
Pentyl acetate (Amyl acetate)-----	PFW, UOP.
Pseudo ionone-----	GLD.
Pseudolinalyl acetate-----	IFF.
Pyrolysate ester (Aconitic ester)-----	GIV.
*Rhodinol-----	FB, FEL, GIV, IFF, NEO.
Rhodinyl acetate-----	GIV, IFF.
Tetyl acetate-----	UOP.
Tetrahydromuguol (Tetrahydro-allo-ocimenol)-----	IFF.
3,7,11-Trimethyl-1,6,10-dodecatriene-3-ol-----	HOF.
2,6,10-Trimethyl-9-undecen-1-al-----	GIV.
2,6,6-Trimethyl-2-vinyl-5-hydroxytetrahydropyrahe (Linalool oxide).-----	HOF.
Undecanal-----	GIV, IFF.
9-Undecenal-----	GIV.
γ-Valerolactone-----	GIV.

FLAVOR AND PERFUME MATERIALS

119

TABLE 3.--FLAVOR AND PERFUME MATERIALS: DIRECTORY OF MANUFACTURERS, 1975

ALPHABETICAL DIRECTORY BY CODE

[Names of manufacturers that reported production or sales of flavor and perfume materials to the U.S. International Trade Commission for 1975 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	MYW	Stepan Chemical Co.
AIP	Air Products & Chemicals, Inc.	NCI	Union Camp Corp.
AMB	American Bio-Synthetics Corp.	NEO	Norda Inc.
ARS	Arsync, Inc.	NW	Northwestern Chemical Co.
ARZ	Arizona Chemical Co.	OPC	Orbis Products Corp.
BJL	Burdick & Jackson Labs., Inc.	OTC	Story Chemical Corp.
CI	Chem-Fleur, Inc.	PD	Parke, Davis & Co.
COM	Commercial Solvents Corp.	PEN	CPC International, Inc., Penick Division
DOW	Dow Chemical Co.	PFW	Polak's Frutal Works, Inc.
ELN	Elan Chemical Co.	PFZ	Pfizer, Inc.
FB	Fritzsche, Dodge & Olcott, Inc.	RDA	Rhodia, Inc.
FEL	Felton International, Inc.	RSA	R.S.A. Corp.
FLO	Florasynth, Inc.	RT	Ritter International
FMT	Fairmount Chemical Co., Inc.	SFF	Stauffer Chemical Co., Food Ingredients Div.
GAF	GAF Corp., Chemical Division	SKG	Sunkist Growers, Inc.
GIV	Givaudan Corp.	SLV	Sterwin Chemicals, Inc.
GLD	SCM Corp., Glidden-Durkee Division	SW	Sherwin-Williams Co.
GRW	Great Western Sugar Co.	TCC	Tanatex Chemical Corp.
HN	Tenneco Chemicals, Inc.	UCC	Union Carbide Corp.
HOF	Hoffman-LaRoche, Inc.	UNG	Ungerer & Co.
HPC	Hercules, Inc.	UOP	UOP, Inc., Chemical Div.
IFF	IFF	VEL	Velsicol Chemical Corp.
MON	Monsanto Co.		

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

PLASTICS AND RESIN MATERIALS

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. Depending on the chemical composition, manufacturing process or intended use, the commercial products may contain plasticizers, fillers, extenders, stabilizers, coloring agents, or other additives. Plastics materials may be molded, cast, or extruded into semi-finished 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. These statistics also cover polyether and polyester polyols for urethanes which are not plastics materials themselves, but are precursors.

Statistics on U.S. production and sales of synthetic plastics and resin materials for 1975 are given in table 1. U.S. production of plastics and resin materials in 1975 totaled 24,868 million pounds, or 18.1 percent less than the 30,348 million pounds produced in 1974. Sales in 1975 totaled 20,955 million pounds, valued at \$7,003 million compared with 26,128 million pounds, valued at \$7,887 million in 1974.

Thermosetting materials are those which harden with a change in composition in the final treatment so that they cannot again be softened by heat or solvents. U.S. production of thermosetting materials totaled 5,140 million pounds in 1975 compared with 6,119 million pounds in 1974. Production of the most important products in 1975 included phenolic resins (1,275 million pounds), amino (or urea and melamine) resins (1,057 million pounds), polyester resins, (unsaturated) (802 million pounds) and alkyd resins (674 million pounds).

Thermoplastic materials are those which can be repeatedly softened by heat and shaped. U.S. production of thermoplastic materials totaled 19,728 million pounds in 1975 compared with 24,229 million pounds in 1974. Production of the most important products in 1975 included polyethylene (7,483 million pounds), vinyl resins (4,536 million pounds), and styrene type materials (3,877 million pounds).

PLASTICS AND RESIN MATERIALS

121

TABLE 1.--PLASTICS AND RESIN MATERIALS: U.S. PRODUCTION AND SALES, 1975

[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 and/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]

Material	Production	Sales		
		Quantity	Value	Unit value ¹
		<i>1,000 pounds dry basis²</i>	<i>1,000 pounds dry basis²</i>	<i>1,000 dollars</i>
Grand total-----	.24,867,722	20,954,652	7,003,042	\$0.33
Plastics and resin materials, benzenoid ³ -----	7,806,999	6,696,591	2,763,341	.41
Plastics and resin materials, nonbenzenoid-----	17,060,723	14,258,061	4,239,701	.30
THERMOSETTING RESINS				
Total-----	5,139,661	4,025,004	1,577,932	.39
Alkyd resins, total ⁴ -----	674,150	379,507	166,809	.44
Phthalic anhydride type-----	614,776	342,342	149,079	.44
Polybasic acid type-----	32,638	23,830	11,997	.50
Styrene alkyd polyesters-----	26,736	13,335	5,733	.43
Polyester resins, unsaturated ⁵ -----	802,126	710,947	283,012	.40
Amino resins, total-----	1,057,095	803,866	179,881	.22
Melamine-formaldehyde resins-----	147,852	108,469	57,465	.53
Urea-formaldehyde resins-----	909,243	695,397	122,416	.18
Dicyandiamide resins-----	1,672	1,459	.1,106	.76
Epoxy resins: ⁶ ⁷ -----	182,807 (37,067)	181,538 (24,361)	124,467 (24,860)	.69 1.02
Unmodified-----	7,579	...	...	...
Advanced-----	1,274,869	990,882	398,695	.40
Furfuryl type resins-----	177,141	144,925	132,367	.91
Phenolic and other tar acid resins-----	118,966 58,175	89,958 54,967	61,089 71,278	.68 1.30
Polyurethane and diisocyanate resins (excluding foam) and urethane type elastomers ⁸ , total-----	931,985	783,051	254,420	.32 ³³
Polyurethane and diisocyanate resins-----	12,298	7,724	19,003	2.46
Urethane type elastomers ⁹ -----	17,939	21,107	18,172	.86
Polyether and polyester polyols for urethanes ¹⁰ -----				
Silicone resins-----				
Other thermosetting resins ¹¹ -----				
THERMOPLASTIC RESINS				
Total-----	19,728,061	16,929,648	5,425,110	.32
Acrylic resins ¹² ¹³ -----	773,342	...	...	...
Cellulosic plastics and resins ¹² ¹⁴ -----	156,840	138,782	117,717	.85
Coumarone-indene resins-----	60,949	...	...	...
Engineering plastics ¹⁵ -----	266,007	231,574	206,217	.89
Petroleum hydrocarbon resins-----	299,030	280,817	55,418	.20
Polyamide resins, nylon type ¹² ¹⁶ -----	119,719	98,773	110,282	1.12
Polyamide resins, non-nylon type-----	24,362	22,723	25,345	1.12
Polyester resins, saturated ¹² ¹⁷ -----	76,765	74,162	89,497	1.21
Polyethylene and copolymers resins, total-----	7,482,746	6,554,619	1,730,484	.26
Density 0.940 and below ¹⁸ -----	4,889,008	4,419,056	1,177,345	.27
Density over 0.940-----	2,593,738	2,135,563	553,139	.26

See footnotes at end of table.

SYNTHETIC ORGANIC CHEMICALS, 1975

TABLE 1.--PLASTICS AND RESIN MATERIALS: U.S. PRODUCTION AND SALES, 1975--CONTINUED

Material	Production	Sales		
		Quantity	Value	Unit value ¹
THERMOPLASTIC RESINS--Continued				
Polypropylene resins-----	1,000 pounds dry basis ²	1,000 pounds dry basis ²	1,000 dollars	Per pound
Polyterpene resins-----	1,903,429	1,725,796	438,418	\$0.25
Polytetrafluoroethylene (PTFE)-----	10,865	10,401	5,366	.52
	13,026	10,880	37,472	3.44
Rosin modifications, total-----	64,196	50,363	22,069	.44
Rosin and rosin esters, unmodified (ester gums)-----	28,934	19,715	8,795	.45
Rosin and rosin esters, modified-----	35,262	30,648	13,274	.43
Styrene plastics materials, total-----	3,877,292	3,564,080	1,214,572	.34
Acrylonitrile-butadiene-styrene (ABS) resins-----	670,373	638,185	276,187	.43
Styrene-acrylonitrile (SAN) resins-----	121,099	71,715	27,014	.38
Styrene and other styrene copolymer resins-----	3,085,820	2,854,180	911,371	.32
Vinyl resins, total ¹⁹ -----	4,536,061	3,439,021	954,611	.28
Polyvinyl chloride and copolymers-----	3,694,648	2,767,800	666,256	.24
Polyvinyl acetate ²⁰ -----	526,348	438,084	147,431	.34
Polyvinyl alcohol ²¹ -----	118,368	81,618	49,697	.61
Polyvinylidene chloride latex resins-----	19,804	18,898	10,961	.58
Other vinyl and vinylidene resins ²² -----	176,893	132,621	80,266	.61
All other thermoplastic resins ²³ -----	63,432	727,657	417,642	.57

¹ Calculated from rounded figures.² Dry weight basis unless otherwise specified. Dry weight basis is the total weight of the materials including resin and coloring agents, extenders, fillers, plasticizers, and other additives, but excluding water and other liquid diluents unless they are an integral part of the materials.³ Includes benzenoid plastics and resin materials as defined in part 1 of schedule 4 of the Tariff Schedules of the United States; also includes urethane type elastomers which are not defined in part 1 of schedule 4 of the TSUS.⁴ The total now includes data for styrene alkyd polyesters.⁵ Polyester resins are unsaturated alkyd resins, later to be copolymerized with a monomer (such as styrene or methyl methacrylate), and polyallyl resins (such as diallyl phthalate and diglycol carbonate). Data are on an "as sold" basis, including monomer if part of the resin system.⁶ 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.⁷ Data 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.⁸ In view of the very large number of producers of both flexible and rigid urethane foams, these data are not collected as such by the U.S. International Trade Commission.⁹ Data for urethane type elastomers are now included in this section of the Synthetic Organic Chemicals report; these statistics previously were reported under the elastomers (synthetic rubber) section. The data on urethane elastomers are believed to be not fully representative of the total urethane market in view of the very large number of urethane elastomer producers.¹⁰ In addition to the polyols, the other principal starting materials used in the production of urethane products are the isocyanic acid derivatives, mainly the 80/20 mixture of toluene-2,4- and 2,6-diisocyanate. Statistics for the isocyanic acid derivatives are reported in the cyclic intermediates section of the Synthetic Organic Chemicals report.¹¹ Includes acetone formaldehyde resins, diallyl phthalate (DAP), furfuryl type resins (sales only), glyoxal resins, polybutadiene resins, polyesteramides (wire enamel), toluenesulfonamide resins, triazine resins, and other thermosetting resins.¹² Does not include production or sales for fiber use.¹³ Includes data for acrylic resins reported to the U.S. International Trade Commission as thermosetting resins.¹⁴ Now includes data on certain cellulosic plastics and resins which were transferred from the miscellaneous acyclic chemicals and chemical products section of the Synthetic Organic Chemicals report.¹⁵ Engineering plastics: Acetals, polycarbonate, polyimide, polyphenylene sulfide (added in 1974), polysulfone, and polyphenylene oxide. Engineering plastics are defined in Whittington's Dictionary of Plastics, (First edition, published by Technomic Publishing Co., Inc.), as "Those [plastics] 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. The other plastics named in Whittington's Dictionary as engineering plastics, ABS resins and nylon resins, are not included in the above list as they are published separately.

Footnotes for table 1--Continued

¹⁶ Statistics for nylon 6 and nylon 6/6 which are used in plastic applications (e.g., molding, etc.) are included here.

¹⁷ Statistics for polyethylene terephthalate which is used in plastics applications (e.g., molding, etc.) are included here.

¹⁸ Includes data for ethylene copolymers which were collected in the aggregate and which could not be published separately; these data were combined with statistics for low density polyethylene resins as the copolymers are predominately low density materials.

Ethylene accounts for 50 percent or more (by weight) of these copolymers. The low-density polyethylene copolymers includes those produced from ethylene and other non-hydrocarbon co-monomers (e.g., vinyl acetate, ethylene acetate, and acrylic acid), while the high-density copolymers includes those products from ethylene and other hydrocarbon monomers (e.g., butene or hexene).

¹⁹ Data are on the basis of dry resin content, excluding the weight of plasticizers, extenders, fillers, coloring agents, stabilizers, or impact modifiers, unless otherwise noted.

²⁰ Data for polyvinyl acetate produced and sold in latex form includes the weight of any protective colloids which are used as emulsion stabilizers and form an integral part of the resin system. Production and sales do not include polyvinyl acetate used as a reactive intermediate for polyvinyl alcohol or other vinyl resins.

²¹ Production and sales do not include polyvinyl alcohol used as a reactive intermediate for polyvinyl butyral or other vinyl resins.

²² Includes polyvinyl butyral, polyvinyl formal, polyvinylidene chloride (solid resin).

²³ Includes acrylic resins (sales only), coumarone-indene resins (sales only), fluorocarbon resins except PTFE, α -methyl styrene polymers, phenoxy resins, polybutylene and polyisobutylene type resins, and other thermoplastics 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.

In order to expedite release of this report it was necessary to estimate the data for three firms, two of which are medium-sized producers, while the third is a major producer of plastics and resin materials.

TABLE 2.--PLASTICS AND RESIN MATERIALS FOR WHICH U.S. PRODUCTION OR SALES WERE REPORTED,
IDENTIFIED BY MANUFACTURER, 1975

[Plastics and resin materials for which separate statistics are given in table 1 are marked below with an asterisk (*), as are the urethane elastomers; 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]

Material	Manufacturers' identification codes (according to list in table 3)
THERMOSETTING RESINS	
Acetone-formaldehyde resins-----	ACY, AMR.
*Alkyd resins, domestic: *Phthalic anhydride type-----	ACY, ACS, APT, ASH, AZS, BAL, BEN, BRU, CEL, CGL, CNE, COM, CPV, DEG, DSO, DUP, EW, FAR, FCD, FLW, FOC, FRE, FSH, GIL, GLD, GRV, HAN, ICF, JOB, JSC, KMC, KMP, KPT, MCC, MID, MNP, NCI, NPV, OBC, PER, PPP, PPG, PRT, RCI, RED, REL, RH, SCN, SED, SKT, SM, STT, SW, x.
*Polybasic acid type-----	ACY, ASH, BEN, CNE, COM, DSO, EW, FAR, FCD, FOC, GRV, HAN, ICF, KMC, KMP, MCC, MID, MNP, MOB, PLS, PPG, RCI, RED, REL, RH, SCN, SKT, SM, SW.
*Styrene-alkyd polyesters-----	APT, ASH, CGL, CPV, DSO, EW, FLW, GLD, GRV, HAN, ICF, JOB, MCC, PPG, SM, SW.
*Amino resins: *Melamine-formaldehyde resins-----	ACS, ACY, AMR, BOR, CBD, CEL, CGL, CNE, CPV, DAN, DGO, DSO, DUP, ENJ, FOM, GLD, GOC, GRV, HAN, ICF, JSC, KPT, MID, MON, MRA, PMC, PPG, PPL, QCP, RCI, REL, RH, SED, SM, SNW, STC, SW, USO, VAL, WRD.
*Urea-formaldehyde resins-----	ACS, ACY, AMR, APX, BOR, CBD, CBM, CEL, CGL, CMP, CNE, CPV, DAN, DUP, EFH, GAF, GLD, GOC, GP, GRV, HAN, HNC, HRT, JSC, KPT, MMM, MON, MRA, NTC, PC, PMC, PPG, PPL, RCI, REL, RH, RPC, SAC, SED, SM, SNW, SOR, SW, UNO, USO, VAL, x.
Diallyl phthalate (DAP)-----	ACS, FMP.
*Dicyandiamide resins-----	APX, CGY, DUP, ECC, JSC, MRA, RPC, S, SNW, STC.
Epoxy resins: *Unmodified-----	CEL, CGY, DOW, RCI, RSY, SHC, UCC, WLN.
*Modified-----	ACS, ASH, BEN, CNE, DSO, EW, GLD, GRV, HAN, HYC, ICF, JOB, MCC, MID, MMM, MRT, NPV, OCF, POL, PPG, RCI, REL, REZ, RSY, SCN, SED, SM, STT, WLN.
*Furfuryl-type resins-----	ACR, HVG, SM, STC, UNO, WRD.
Glyoxal resins-----	USO, VAL.
*Phenolic and other tar acid resins-----	ABS, ACR, ACS, AMR, ASH, BME, BOR, CBD, CRM, CGL, CLK, ENY, EW, FAR, FOM, GE, GEI, GIL, GOC, GP, GRG, HER, HKD, HPC, HVG, ICF, INL, IRI, KND, KPT, KYN, MCA, MID, MMM, MON, MRB, NCI, NTC, OCF, PLS, PPG, PPL, PYZ, RAB, RCI, RGC, RH, RPC, SCN, SHA, SIM, SKT, SM, SPL, STC, SW, UCC, UNO, USR, VSV, WCA, WRD.
*Polyester resins, unsaturated-----	ACY, APH, APT, ASH, AZS, CGL, CNE, CPV, DA, DOW, DSO, EPC, EW, FAR, FRE, GEI, GLD, GRG, HAN, HKD; ICF, ICI, IPC, KMC, KPT, MCC, MFG, MMM, MNP, MOB, MRB, OBC, OCF, POL, PPG, PPL, RCI, RSC, RH, SCN, SIC, SM, SW, WLN.
*Polyether and polyester polyols, for urethanes-----	APT, ARK, BAS, CHC, CPV, DOW, DSO, DUP, GPM, HPC, ICI, JCC, MOB, OMC, PPG, RCI, UCC, USM, UNO, UPJ, WTC,
*Polyurethane and diisocyanate resins (excluding foam) and urethane type elastomers: *Polyurethane and diisocyanate resins-----	APT, ASH, BAS, CGL, CNE, CPV, DSO, DUP, EW, FAR, FRE, GLD, GPM, ICF, ICI, JOB, KMC, MCC, MID, MNP, MOB, MRT, OMC, PEL, PPP, PPG, PRT, QUN, RCI, REZ, SCN, SLC, SM, SW, UPJ, VSM, WLN, WTC.
*Urethane type elastomers-----	ACY, BAS, BFG, CNI, DA, DNS, DUP, EPI, HMP, INP, MMM, MOB, PPP, PLN, PRC, RUB, TKL, UPJ, USR, WTC, x.
*Silicone resins-----	ASH, CGL, DCC, GLD, MCC, MID, PPG, SPD, SWS, UCC, VPC.
Toluenesulfonamide resins-----	DGO, MON.
Triazole resins-----	USO.
All other thermosetting resins-----	AMR, APX, CGL, DUP, EW, HAN, MCC, MID, PPG, S, SM, USR, VAL.

TABLE 2.--PLASTICS AND RESIN MATERIALS FOR WHICH U.S. PRODUCTION OR SALES WERE REPORTED,
IDENTIFIED BY MANUFACTURER, 1975--CONTINUED

Materials	Manufacturers' identification codes (according to list in table 3)
THERMOPLASTICS RESINS	
*Acrylic resins-----	ACY, ASH, AZS, BAS, CEL, CHP, CNE, CPV, DSO, DUP, EFH, FLH, GLC, GLD, GNM, GRD, GRV, ICF, IOC, JNS, JOB, JSC, JWC, KMC, MID, NPV, OBC, PPG, PVI, QUN, RH, RPC, SAR, SCO, SED, SM, SNW, UBS, VAL, VPC, x.
*Cellulosic plastics and resins-----	DOW, DUP, EKT, ICF, x.
*Coumarone-indene resins-----	DUP, HPC, NEV, VEL.
*Engineering plastics:	
Acetal resins-----	CEL, DUP.
Polycarbonate resins-----	GE, MOB.
Polyimides and amide-imide polymers-----	ACC, DUP.
Polyphenylene oxide type resins-----	EW, GE.
Polyphenylene sulfide-----	PLC.
Polysulfone resins-----	UCC, VPC.
Fluorocarbon resins-----	ACS, DUP, MMM, PAS.
*Petroleum hydrocarbon resins-----	EKX, ENJ, GRV, GYR, HPC, ICF, NEV, NPV, PPG, RCI, SM, VEL, ZGL.
Phenoxy-----	UCC.
Polyamide resins:	
*Nylon type-----	ALF, BCM, CEL, CTR, DGO, DUP, FG, FRF, GNM, MON, POL, RSN, SKP, USM.
*Non-nylon type-----	AZS, CBY, CNE, COO, DSO, EMR, GNM, MCC, SM, SNW, USM, x. ENJ, WTC.
Polybutylene and polyisobutylene resins-----	CEL, CNE, COO, DEG, DSO, EKT, FRF, GE, GLD, GNM, ICF, ICI, MID, MRT, OCF, REL, RUB, STT, USM.
*Polyester resins, saturated-----	
Polyethylene and copolymers:	
*Density 0.940 and below-----	ACS, CBN, CPX, DOW, DUP, EKX, ENJ, GOC, KPP, MON, NWP, PLC, RCC, UCC, USI.
*Density over 0.940-----	ACC, ACS, CPX, DOW, DUP, GOC, HPC, KPP, MON, PLC, SHC, SLT, UCC, UST.
*Ethylene copolymers-----	DUP, ORO, UCC, USI, VPC.
*Polypropylene resins-----	ACC, DA, EKX, ENJ, FRF, HPC, NVT, PLC, RCC, SHC.
Polyterpene resins-----	CBY, HPC, SCN.
*Polytetrafluoroethylene (PTFE)-----	ACS, DUP, ICI.
*Rosin modifications:	
*Rosin and rosin esters, unmodified (ester gums)-----	ASH, CBY, CNE, DPP, EW, FRP, RCI, SHA.
*Rosin and rosin esters, modified-----	ASH, CBY, CNE, DPP, FAR, FLW, FRP, GRV, ICF, MCC, RCI, SM, STC, SW, ZGL.
Modified rosin, unesterified-----	DPP, FOC.
*Styrene type plastics materials:	
*Acrylonitrile-butadiene-styrene (ABS) resins-----	BFG, DOW, FG, FRS, GRD, MCB, MON, RCC, USR.
*Styrene-acrylonitrile resins (SAN)-----	BFG, DOW, MON, SKT, UCC.
*Styrene and styrene copolymer resins other than ABS AND SAN.	ACC, AEP, ATR, BAS, BFG, BOR, CEL, CNE, CSD, DEG, DOW, DSO, DUP, FG, FIR, GAF, GNT, GOR, GRD, GYR, HIM, HPC, IOC, JNS, JSC, KPP, MMM, MON, MPT, PLC, RCC, RCD, REL, RH, SHC, SKT, SOL, STT, UBS, UCC, UOC, USR, USS, VEL.
α-Methylstyrene polymers-----	ACC, DOW, JNS.
Vinyl resins:	
*Polyvinyl chloride and copolymer resins-----	AIP, AME, BFG, BOR, CNT, CO, DA, FIR, GNT, GP, GRA, GYR, HN, KYS, MON, NSC, PNT, RBT, RUB, SFP, TNA, UCC, USR.
*Polyvinyl acetate resins-----	AIP, AZS, BAL, BEN, BLS, BOR, CEL, CNE, DAN, DSO, FAR, FLH, FLN, FLW, FSH, GLC, GLD, GOC, GRD, JOB, JSC, KMC, KMP, MCC, MNP, MON, NPV, NSC, OBC, QCP, RCI, RPC, SBI, SCO, SED, SH, SPC, UBS, UCC, UOC, x.
*Polyvinyl alcohol resins-----	AIP, DUP, MON.
*Polyvinyl butyral resins-----	DUP, MON, UCC.
*Polyvinylidene chloride latex resins-----	BAS, BFG, DOW, GRD, MRT, UBS.
All other vinyl resins (including polyvinylidene chloride solid resins).	DOW, DSO, DUP, EW, MON, RH, SM, UCC.
All other thermoplastic resin-----	DSO, EKX, CLC, HPC, RPC, SM.

SYNTHETIC ORGANIC CHEMICALS, 1975

TABLE 3.--PLASTICS AND RESIN MATERIALS: DIRECTORY OF MANUFACTURERS, 1975

ALPHABETICAL DIRECTORY BY CODE

[Names of manufacturers that reported production or sales of plastics and resin materials to the U.S. International Trade Commission for 1975 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	ECC	Eastern Color & Chemical Co.
ACC	Amoco Chemical Corp.	EFH	E.F. Houghton & Co.
ACR	CPC International, Inc., Acme Resin Co. Div.	EKT	Eastman Kodak Co.:
ACS	Allied Chemical Corp., Specialty Chemical Div.	EKX	Tennessee Eastman Co. Division
ACY	American Cyanamid Co.	EMR	Texas Eastman Co. Division
AEP	A & E Plastics Pak Co., Inc.	ENJ	Emery Industries, Inc.
AIP	Air Products & Chemicals, Inc.	EPC	Exxon Chemical Co. U.S.A.
ALF	Allied Chemical Corp., Fibers Div.	EPI	Epoxylite Corp.
AME	Stauffer Chemical Co., Polymer West	EW	Eagel Pitcher Industries, Inc.,
AMR	Pacific Resins & Chemical Co.		Ohio Rubber Co.
APH	Alpha Chemical Co.	FAR	Westinghouse Electric Corp., Industrial
APT	Whittaker Corp., Whittaker Coatings &	FCD	Plastics Div., Chemical Products Plant
	Chemical, Mol Rez Resins	FG	
APX	Apex Chemical Co., Inc.	FIR	Syncon, Inc., Farnow Div.
ARK	Armstrong Cork Co.	FLH	Synres Chemical Corp.
ASH	Ashland Oil, Inc., Ashland Chemical Co. Div.	FLN	Foster Grant Co., Inc.
ATR	Atlantic Richfield Co.	FLW	Firestone Tire & Rubber Co., Firestone
AZS	AZS Corp., AZ Products Co. Div.	FMP	Plastics Co. Div.
		FOC	H.B. Fuller Co.
BAL	Baltimore Paint & Chemical Corp.	FORM	Franklin Chemical Corp.
BAS	BASF Wyandotte Corp.	FRE	Fuller-O'Brien Corp.
BCM	Belding Chemical Industries	FRF	FMC Corp., Industrial Chemical Div.
BEN	Bennett's	FRP	Hanschey Chemical Co., Farac Oil & Chemical
BFG	B.F. Goodrich Co., B.F. Goodrich Chemical	FRS	Co. Div.
	Co. Division	GAF	Formica Corp.
BLS	Dobbs-Life Savers, Inc.	GE	Freeman Chemical Corp.
BME	Bendix Corp., Friction Materials Division	GEI	Firestone Tire & Rubber Co., Firestone
BOR	Borden Co., Borden Chemical Co. Division	GIL	Synthetic Fibers Co.
BRU	M.A. Bruder & Sons, Inc.	GLC	FRP Company
		GLD	Firestone Tire & Rubber Co., Firestone
CBD	Chembond Corp.	GMM	Synthetic Rubber & Latex Co. Div.
CBM	Carborundum Co.	GNT	Insilco Inc., Frisch & Co. Div.
CBN	Cities Service Co., Plastics Div.	GOC	GAF Corp., Chemical Division
CBY	Crosby Chemicals, Inc.	GE	General Electric Co.:
CEL	Celanese Corp.:	GIL	Insulating Materials Dept.
	Celanese Coatings & Specialties Co.	GLC	Gilman Paint & Varnish Co.
	Celanese Plastics Co.	GLD	General Latex & Chemical Corp.
CGL	Cargill, Inc.	GMM	SCM Corp., Glidden-Durkee Division
CGY	Ciba-Geigy Corp.	GNT	General Mills Chemicals, Inc.
CHP	C.H. Patrick & Co., Inc.	GOC	General Tire & Rubber Co., Chemical/
CLK	Clark Chemical Corp.	GOR	Plastics Div.
CMP	Commercial Products Co., Inc.	GP	Gulf Oil Corp., Gulf Oil Chemicals
CNE	Conchemco, Inc., Chemical Coatings	GPM	Co.-U.S.
CNI	Conap, Inc.	GRA	Carl Gordon Industries, Inc.
CNT	Certain-Teed Products Corp.	GRD	Georgia-Pacific Corp., and Rebecca Chemical
CO	Continental Oil Co.	GRG	Div.
COM	Commercial Solvents Corp.	GRV	General Plastics Manufacturing Co.
COO	Coopers Polymers, Inc.	GYR	Great American Chemical Corp.
CPV	Cook Paint & Varnish Co.	HAN	W.R. Grace & Co., Polymers Chemicals
CPX	Chemplex Co.	HER	Division
CSD	Cosden Oil & Chemical Co.	HKD	P.D. George Co.
CTR	Customs Resins, Inc.	HLM	Guardsman Chemical Coatings, Inc. and
			Louisville Div.
DA	Diamond Shamrock Corp.		Goodyear Tire & Rubber Co.
DAN	Dan River, Inc.		
DCC	Dow Corning Corp.		Hanna Chemical Coating Corp.
DEG	Degan Oil & Chemical Co.		Heresite & Chemical Co.
DGO	Day-Glo Color Corp.		Hooker Chemical Corp., Durez Division
DOW	Dow Chemical Co.		U.S. Industries, Inc., E. Helman Co.
DPP	Dixie Pine Products Co., Inc.		Division
DSO	DeSoto, Inc.		
DUP	E.I. duPont de Nemours & Co., Inc.		

PLASTICS AND RESIN MATERIALS

127

TABLE 3.--PLASTICS AND RESIN MATERIALS: DIRECTORY OF MANUFACTURERS, 1975--CONTINUED

Code	Name of company	Code	Name of company
HN	Tenneco Chemicals, Inc.	PER	Perry & Derrick Co.
HNC	H & N Chemical Co.	PPF	Midwest Manufacturing Corp.
HPC	Hercules, Inc.	PLC	Phillips Petroleum Co.
HRT	Hart Products Corp.	PLS	Plastics Engineering Co.
HVG	Haveg Industries	PMC	Plastics Manufacturing Co.
HYC	Dexter Corp., Hysol Co. Division	PNT	Pantasote Co.
ICF	Immont Corp.	POL	Polymer Corp.
ICI	ICI United States Inc. & Specialty Chemicals Div.	PPG	PPG Industries, Inc.
INL	Inland Steel Co., Inland Steel Container Co. Division	PPL	Pioneer Plastics Corp.
IOC	Ionac Chemical Co. Div. of Sybron Corp.	PRT	Pratt & Lambert, Inc.
IPC	Interplastic Corp.	PVI	Polyvinyl Chemical Ind. Div. of Beatrice Foods Co.
IRI	Ironsides Resins, Inc.	PYZ	Polyrez Co., Inc.
JCC	Jefferson Chemical Co.	QCP	Quaker Chemical Corp.
JNS	S.C. Johnson & Son, Inc.	QUN	K.J. Quinn & Co., Inc.
JOB	Jones-Blair Paint Co.	RAB	Raybestos-Manhattan, Inc., R.M. Friction Materials Co. Div.
JSC	Jersey State Chemical Co.	RBT	Robintech, Inc.
JWC	J.W. Carroll & Sons Div. of U.S. Industries Inc.	RCC	Dart Industries, Inc., Rexene Polymers Co. Div.
KMC	Kohler-McLister Paint Co.	RCD	Richardson Co., Polymeric Septems Div.
KMP	Kelly-Moore Paint Co.	RCI	Reichhold Chemicals, Inc.
KND	Knoedler Chemical Co.	RED	Red Spot Paint and Varnish Co., Inc.
KPP	Arco/Polymers, Inc.	REL	Reliance Universal, Inc., Resin Div.
KPT	Koppers Co., Organic Materials Division	REZ	Hexcel Corp., Rezolin Division
KYN	Kyanize Paints, Inc.	RGC	Rogers Corp.
KYS	Keyson Chemical Corp.	RH	Rohm & Haas Co.
MCA	Masonite Corp., Alpine Division	RPC	Millmaster Onyx Corp., Refined-Onyx Division
MCB	Borg-Warner Corp., Borg-Warner Chemicals	RSC	Resinous Chemicals Corp.
MCC	McCloskey Varnish Co.	RSN	Rilsan Corp.
MFG	Rockwell International Corp., Automotive Products Group, Resin Plant	RSY	Resyn Corp.
MID	Dexter Corp., Midland Division	RUB	Hooker Chemical Corp., Ruco Division
MMM	Minnesota Mining & Manufacturing Co.	S	Sandoz, Inc.
MNP	The Valspar Corp.	SAC	Southeastern Adhesives Co.
MOB	Mobay Chemical Co.	SAR	Sartomer Industries, Inc.
MON	Monsanto Corp.	SBI	Standard Brands Chemical Industries, Inc.
MRA	Bostik South, Inc.	SCN	Schenectady Chemicals, Inc.
MRB	Marblette Co.	SCO	Scholler Bros., Inc.
MRO	W.R. Grace & Co., Marco Chemical Division	SED	Conchemco, Inc., Colony Paint
MRT	Morton Chemical Co. Div. of Morton-Norwich Products, Inc.	SFP	Stauffer Chemical Co., Plastics Div.
NCI	Union Camp Corp.	SH	Stein Hall & Co., Inc.
NEV	Neville Chemical Co.	SHA	Shanco Plastics & Chemicals, Inc.
NPV	Norris Paint & Varnish Co., Inc.	SIC	Shell Oil Co., Shell Chemical Co. Div.
NSC	National Starch & Chemical Corp.	SIM	Vistron Corp., Silmar Division
NTC	National Casein Co.	SKP	Simpson Timber Co.
NVT	Novamont Corp., Neal Works	SKT	Shakespeare Co., Monofilament Division
NWP	Northern Petrochemical Co.	SLC	Textron Inc., Spencer Kellogg Division
OBC	O'Brien Corp.	SLT	Soluol Chemical Co., Inc.
OCF	Owens-Corning Fiberglas Corp.	SM	Soltex Polymer Corp.
OMC	Olin Corp.	SNW	Mobil Oil Corp., Mobil Chemical Co., Chemical Coatings Div.
ORO	Chevron Chemical Co.	SOL	Sum Chemical Corp., Chemicals Division
PAS	Pennwalt Corp.	SOR	Solar Chemical Corp.
PC	Proctor Chemical Co., Inc.	SPC	Thomason Industries, Inc., Southern Resin Div.
PEL	Pelron Corp.	SPD	Sinclair Paint Co. Div. of Insilco Corp.
		SPL	General Electric Co., Silicone Products Dept.
			Spaulding Fibre Co., Inc.

SYNTHETIC ORGANIC CHEMICALS, 1975

TABLE 3.--PLASTICS AND RESIN MATERIALS: DIRECTORY OF MANUFACTURERS, 1975--CONTINUED

Code	Name of company	Code	Name of company
STC	American Hoechst Corp., Sou-Tex Works	USI	National Petro Chemical Corp.
STT	Standard T Chemical Co.	USM	USM Corp., Bostik Div.
SW	Sherwin-Williams Co.	USO	U.S. Oil Co.
SWS	Stauffer Chemical Co., SWS Silicones Division	USR	Uniroyal, Inc., Chemical Division
		USS	USS Chemicals Div. of U.S. Steel Corp.
		VAL	Valchem
TNA	Ethyl Corp.	VEL	Veliscol Chemical Corp.
TX	Texaco, Inc.	VPC	Mobay Chemical Corp., Verona Div.
UBS	A.E. Staley Manufacturing Co., Staley Chemicals Division	VSV	Valentine Sugars, Inc.
UCC	Union Carbide Corp.	WCA	West Coast Adhesives Co.
UNO	United-Erie, Inc.	WLN	Wilmington Chemical Corp.
UOC	Union Oil Co. of California	WRD	Weyerhaeuser Co.
UPJ	Upjohn Co.	WTC	Witco Chemical Co., Inc.
USI	National Distillers & Chemical Corp., U.S. Industrial Chemicals Co. Div.	ZGL	Carolina Processing Corp.

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

RUBBER-PROCESSING CHEMICALS

129

RUBBER-PROCESSING CHEMICALS

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 1975 are given in table 1.¹

Production of rubber-processing chemicals as a group in 1975 amounted to 279 million pounds, or 22.5 percent less than the 360 million pounds in 1974 (revised).² Sales of rubber-processing chemicals in 1975 amounted to 204 million pounds, valued at \$207 million, compared with 274 million pounds, valued at \$230 million, in 1974.

The production of cyclic rubber-processing chemicals in 1975 amounted to 225 million pounds, or 25.2 percent less than the 301 million pounds in 1974. Sales in 1975 were 173 million pounds, valued at \$187 million, compared with 226 million pounds, valued at \$200 million, in 1974. Of the total production of cyclic rubber-processing chemicals in 1975, accelerators, activators, and vulcanizing agents accounted for 31.9 percent and antioxidants, antiozonants, and stabilizers for 61.4 percent. Production of antioxidants, antiozonants, and stabilizers, which amounted to 138.1 million pounds in 1975, included 114.1 million pounds of amino compounds and 24.0 million pounds of phenolic and phosphite compounds. Sales of amino antioxidants, antiozonants, and stabilizers in 1975 amounted to 79.5 million pounds, valued at \$84.8 million, sales of phenolic and phosphite antioxidants, antiozonants, and stabilizers, were 18.5 million pounds, valued at \$19.5 million.

Production of acyclic rubber-processing chemicals in 1975 amounted to 54.0 million pounds, or 8.8 percent less than the 59.2 million pounds reported for 1974. Sales in 1975 totaled 31.2 million pounds, valued at \$20.0 million, compared with 47.6 million pounds, valued at \$29.8 million, in 1974. Dodecyl mercaptans accounted for 24.7 percent of sales (based on quantity) of acyclic rubber-processing chemicals in 1975 and bis (dimethylthiocarbamoyl) disulfide accounted for 14.3 percent.

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

² The data for 1974 for phenol, styrenated, and phosphite compounds have been revised (see table 1, footnotes 4 and 5). The data for 1974 in the above text include these revisions and, therefore, will differ from previously reported data.

RUBBER-PROCESSING CHEMICALS

131

TABLE 1.--RUBBER-PROCESSING CHEMICALS: U.S. PRODUCTION AND SALES, 1975

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

Product	Production	Sales		
		Quantity	Value	Unit value ¹
	1,000 pounds	1,000 pounds	1,000 dollars	Per pound
Grand total-----	278,992	203,835	206,893	\$1.02
RUBBER-PROCESSING CHEMICALS, CYCLIC				
Total-----	224,997	172,637	186,853	1.08
Accelerators, activators, and vulcanizing agents, total-----				
Aldehyde-amine reaction products-----	71,727	60,704	62,583	1.03
Thiazole derivatives, total-----	972	660	870	1.32
N-Cyclohexyl-2-benzothiazolesulfenamide-----	64,678	53,929	51,468	.95
2,2'-Dithiobis(benzothiazole)-----	2,541	2,344	2,588	1.10
2-Mercaptobenzothiazole-----	16,368	7,796	6,065	.78
All other thiazole derivatives-----	2,637	2,853	1,823	.64
All other accelerators, activators, and vulcanizing agents ² -----	43,132	40,936	40,992	1.00
Antioxidants, antiozonants, and stabilizers, total-----	6,077	6,115	10,245	1.68
Amino compounds, total-----	138,075	97,978	104,279	1.06
Aldehyde- and acetone-amine reaction products-----	114,068	79,495	84,758	1.07
Substituted p-phenylenediamines, total-----	...	5,194	4,479	.86
N-(1,3-Dimethylbutyl)-N'-phenyl-p-phenylene-diamine-----	62,919	39,418	51,356	1.30
N,N'-Diphenyl-p-phenylenediamine-----	30,525	19,726	26,164	1.33
All other substituted p-phenylenediamines-----	1,069	1,157	1,830	1.58
Octyldiphenylamine-----	31,325	18,535	23,362	1.26
N-Phenyl-2-naphthylamine-----	...	2,928	2,389	.82
All other amino compounds ³ -----	1,561	...	...	...
Phenolic and phosphite compounds, total-----	49,588	31,955	26,534	.83
Phenolic compounds, total-----	24,007	18,483	19,521	1.06
Polyphenolics (including bisphenols)-----	14,320	10,796	15,454	1.43
Phenol, alkylated-----	9,223	8,156	13,446	1.65
Phenol, styrenated ⁴ -----	3,894	1,357	961	.71
Other-----	535	729	399	.55
Phosphite compounds ⁵ -----	668	554	648	1.17
Retarder: N-Nitrosodiphenylamine-----	9,687	7,687	4,067	.53
All other cyclic rubber-processing chemicals ⁶ -----	1,680	1,086	963	.89
	13,515	12,869	19,028	1.48
RUBBER-PROCESSING CHEMICALS, ACYCLIC				
Total-----	53,995	31,198	20,040	.64
Dithiocarbamic acid derivatives, total ⁷ -----	5,661	3,971	4,612	1.16
Diбуylidithiocarbamic acid, zinc salt-----	1,368	902	955	1.06
Diethyldithiocarbamic acid, zinc salt-----	927	...	...	...
Dimethyldithiocarbamic acid, zinc salt-----	2,180	1,566	1,437	.92
All other dithiocarbamic acid derivatives ⁸ -----	1,186	1,503	2,220	1.48

See footnotes at end of table.

SYNTHETIC ORGANIC CHEMICALS, 1975

TABLE 1.--RUBBER-PROCESSING CHEMICALS: U.S. PRODUCTION AND SALES, 1975--CONTINUED

Product	Production	Sales		
		Quantity	Value	Unit value ¹
		1,000 pounds	1,000 pounds	1,000 dollars
RUBBER-PROCESSING CHEMICALS, ACYCLIC--Continued				
Bis(dimethylthiocarbamoyl) disulfide-----	6,818	4,458	3,606	\$0.81
Bis(dimethylthiocarbamoyl) sulfide-----	1,968	1,566	2,360	1.51
Polymerization regulators: Dodecyl mercaptans ⁹ -----	...	7,698	4,176	.54
Shortstops: Dimethyldithiocarbamic acid, sodium salt-----	2,662	...	...	...
All other acyclic rubber-processing chemicals ¹⁰ -----	36,886	13,505	5,286	.39

¹ Calculated from rounded figures.² Includes dithiocarbamic acid derivatives, guanidines, and other uses not separately shown.³ Includes aldehyde- and acetone-amine reaction products (production only), octyldiphenylamine (production only), and N-phenyl-2-naphthylamine (sales only).⁴ In 1974, the corrected sales value is \$627,000 and not \$856,000 as previously reported. The corrected unit value of sales is \$0.54 per pound. The data for production and sales quantity for 1974 are corrected as reported.⁵ The data in the 1974 report are incorrect as a result of a misclassification of certain phosphite compounds.

The corrected data for 1974 are: production (15,701,000 pounds) and sales (12,627,000 pounds, valued at \$6,221,000).

⁶ Includes blowing agents, peptizers, and other uses not separately shown.⁷ Data on dithiocarbamates included in this table are for materials used chiefly in the processing of natural and synthetic rubber. Data on dithiocarbamates which are used chiefly as fungicides are included in the report "Pesticides and Related Products."⁸ Includes diethyldithiocarbamic acid, zinc salt (sales only).⁹ Includes normal and tertiary dodecyl mercaptans.¹⁰ Includes "other" thiurams, xanthates, sulfides, blowing agents, conditioning and lubricating agents, polymerization regulators, shortstops, and other uses not separately shown.

TABLE 2.--RUBBER-PROCESSING CHEMICALS FOR WHICH U.S. PRODUCTION OR SALES WERE REPORTED,
IDENTIFIED BY MANUFACTURER, 1975

[Rubber-processing chemicals for which separate statistics are given in table 1 are marked below with an asterick (*). 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]

Chemical	Manufacturers' identification codes (according to list in table 3)
RUBBER-PROCESSING CHEMICALS, CYCLIC	
*Accelerators, activators, and vulcanizing agents:	
*Aldehyde-amine reaction products:	
Acetaldehyde-aniline condensate-----	USR.
n-Butyraldehyde-aniline condensate-----	DUP, RCD, USR.
Heptaldehyde-aniline condensate-----	USR.
Triethyltrimethylenetriamine-----	USR.
Dithiocarbamic acid derivatives:	
Dibenzylidithiocarbamic acid, sodium salt-----	USR.
Dibenzylidithiocarbamic acid, zinc salt-----	MON, USR.
Piperidinecarbodithioic acid, piperidinium-potassium salts, mixed.	DUP.
Guanidines:	
Dicatechol borate, di-o-tolyguanidine salt-----	DUP.
1,3-Diphenylguanidine-----	ACY.
1,3-Di-o-tolyguanidine-----	ACY.
*Thiazole derivatives:	
2-Benzothiazyl N,N-diethylthiocarbamoyl sulfide-----	PAS.
1,3-Bis(2-benzothiazolylmercaptomethyl) urea-----	LAK.
N-tert-Butyl-2-benzothiazolesulfenamide-----	ACY, BFG, USR, x.
*N-Cyclohexyl-2-benzothiazolesulfenamide-----	ACY, BFG, MON, USR.
N,N-Diisopropyl-2-benzothiazolesulfenamide-----	ACY.
*2,2'-Dithiobis(benzothiazole)-----	ACY, BFG, GYR, MON, USR.
*2-Mercaptobenzothiazole-----	ACY, BFG, GYR, MON, USR.
2-Mercaptobenzothiazole, copper salt-----	ACY.
2-Mercaptobenzothiazole, zinc chloride-----	DUP.
2-Mercaptobenzothiazole, zinc salt-----	ACY, BFG, USR.
4-Morpholinyl-2-benzothiazyl disulfide-----	GYR.
N-Oxydiethylene-2-benzothiazolesulfenamide-----	ACY, BFG, MON.
All other cyclic accelerators, activators, and vulcanizing agents:	
p-Benzoquinonedioxime-----	ARA.
Bis(p-aminocyclohexyl)methane carbamate-----	DUP.
Bis(morpholinothiocarbonyl) disulfide-----	ACY.
Dibenzoyl-p-quinonedioxime-----	ARA.
Dibenzylamines, mixed-----	USR, x.
N,N'-Dicinnamylidene-1,6-hexanediamine-----	DUP.
Di-N,N'-pentamethylenethiuram tetrasulfide-----	DUP, VNC.
4,4'-Dithiodimorpholine-----	x.
2-Imidazoline-2-thiol (2-Imidazolidinethione)-----	DUP, RBC.
m-Phenylenebismaleimide-----	DUP.
Poly-p-dinitrosobenzene-----	DUP.
Toluene-2,4-diisocyanate adduct of dimethylethanol amine.	DUP.
Zinc p-toluene sulfonate-----	USR.
*Antioxidants, antiozonants, and stabilizers:	
*Amino compounds:	
*Aldehyde- and acetone-amine reaction products:	
Butyraldehyde-aniline condensate-----	DUP.
Diphenylamine-acetone condensate-----	ACY, BFG, USR.
Phenyl-2-naphthylamine-acetone condensate-----	USR.

SYNTHETIC ORGANIC CHEMICALS, 1975

TABLE 2.--RUBBER-PROCESSING CHEMICALS FOR WHICH U.S. PRODUCTION OR SALES WERE REPORTED,
IDENTIFIED BY MANUFACTURER, 1975--CONTINUED

Chemical	Manufacturers' identification codes (according to list in table 3)
RUBBER-PROCESSING CHEMICALS, CYCLIC--Continued	
*Antioxidants, antiozonants, and stabilizers--Continued	
*Amino compounds--Continued	
*Substituted p-phenylenediamines:	
Antidegradant 64-----	x.
Antidegradant 66-----	x.
Antidegradant 67-----	x.
N,N'-Bis(1,4-dimethylpentyl)-p-phenylenediamine-----	USR, x, x.
N,N'-Bis(1-ethyl-3-methylpentyl)-p-phenylene- diamine.	x.
N,N'-Bis(1-methylheptyl)-p-phenylenediamine-----	BFG, x.
N-sec-Butyl-N'-phenyl-p-phenylenediamine-----	USR.
N-Cyclohexyl-N'-phenyl-p-phenylenediamine-----	USR, x.
Diarylarylenediamines, mixed-----	GYR.
Diaryl-p-phenylenediamine-----	DUP.
N,N'-Dicyclohexyl-p-phenylenediamine-----	USR, x.
*N-(1,3-Dimethylbutyl)-N'-phenyl-p-phenylene- diamine.	GYR, USR, x, x.
N,N'-Di-2-naphthyl-p-phenylenediamine-----	BFG.
*N,N'-Diphenyl-p-phenylenediamine-----	BFG, DUP, SDC, USR.
N-Isopropyl-N'-phenyl-p-phenylenediamine-----	USR.
N-(1-Methylpentyl)-N'-phenyl-p-phenylenediamine-----	USR.
N-Phenyl-N'-2-octyl-p-phenylenediamine-----	x.
All other substituted p-phenylenediamine-----	DUP, x.
Other amino compounds:	
p-Anilinophenol-----	BFG.
1,2-Dihydro-6-dodecyl-2,2,4-trimethylquinoline-----	x.
1,2-Dihydro-6-ethoxy-2,2,4-trimethylquinoline-----	x.
1,2-Dihydro-2,2,4-trimethylquinoline-----	BFG, x.
4,4'-Dimethoxydiphenylamine-----	DUP.
Diphenylamine, styrenated-----	GYR.
N,N'-Diphenylethylenediamine-----	DA, RCI.
N,N'-Diphenyl-1,3-propanediamine-----	RCI.
N,N'-Di-o-tolylenediamine-----	RCI.
p-Hydroxydiphenylamine-----	USR.
4-Isopropoxydiphenylamine-----	BFG.
4,4'-Methylenedianiline-----	USR.
Nonyldiphenylamine mixture (mono-, di-, and tri-)-----	USR.
*Octyldiphenylamine-----	ACY, NPI, USR.
Octyldiphenylamine, alkylated-----	BFG.
Octyldiphenylamine mixture (mono-, di-, and nonyl-).	DUP.
N-Phenyl-1-naphthylamine-----	DUP, UCC.
*N-Phenyl-2-naphthylamine-----	BFG, DUP, USR.
p-(p-Toluenesulfonamido)diphenylamine-----	USR.
All other-----	USR.
*Phenolic and phosphite compounds:	
*Phenolic compounds:	
*Polyphenolics (including bisphenols):	
Bisphenol, hindered-----	GYR, USR.
4,4'-Butyldenebis(6-tert-butyl-m-cresol)-----	MON.
2,5-Di-sec-butyldecylhydroquinone-----	USR.
2,5-Di-(1,1-dimethylpropyl)hydroquinone-----	x.
3,7-Dioctylphenothiazine-----	USR.
2,2'-Methylenebis(6-tert-butyl-p-cresol)-----	ACY, ASH.
2,2'-Methylenebis(6-tert-butyl-4-ethyl-phenol)-----	ACY.
2,2'-Methylenebis[6-(1-methylcyclohexyl)-p- cresol].	ICI.

TABLE 2.--RUBBER-PROCESSING CHEMICALS FOR WHICH U.S. PRODUCTION OR SALES WERE REPORTED,
IDENTIFIED BY MANUFACTURER, 1975--CONTINUED

Chemical	Manufacturers' identification codes (according to list in table 3)
RUBBER-PROCESSING CHEMICALS, CYCLIC--Continued	
*Antioxidants, antiozonants, and stabilizers--Continued	
*Phenolic and phosphite compounds--Continued	
*Phenolic compounds--Continued	
*Polyphenolics (including bisphenols)--Continued	
2,2'-Methylenebis(6-tert-octyl-p-cresol)-----	ACY.
Polyphe nol, alkylated-----	GYR.
4,4'-Thiobis(6-tert-butyl-m-cresol)-----	x.
Thiobisphenol, alkylated-----	USR.
1,1,3-Tri(2-methyl-4-hydroxy-5-tert-butylphenyl)-butane.	ICI.
Tris(3,5-di-t-butyl-4-hydroxybenzyl)isocyanurate.	x.
Other phenolic compounds:	
o-Cresol, alkylated-----	PIT.
*Phenol, alkylated-----	ACY, BFG, GYR, NEV, RCI.
Phenol, hindered-----	DUP, GYR, USR.
*Phenol, styrenated-----	BFG, GYR, NEV, USR.
N-Stearoyl-p-aminophenol-----	x.
*Phosphite compounds:	
Nonyl phenyl phosphites, mixed-----	MCB, NPI, USR.
Polymeric phosphite-----	NPI.
Polyphenolic phosphite, polyalkylated-----	BFG.
Blowing agents:	
N,N'-Dimethyl-N,N'-dinitrosoterephthalamide-----	DUP.
Dinitrosopentamethylenetetramine-----	NPI.
p,p'-Oxybis(benzenesulfonhydrazide)-----	USR.
p-Toluenesulfonylemcarbazide-----	USR.
Peptizers:	
2',2'''-Dithiobis(benzanilide)-----	ACY.
Dixylyl disulfides, mixed-----	PIT.
Pentachlorobenzenethiol-----	SDC.
Xylenethiol-----	DUP.
*Retarders: N-Nitrosodiphenylamine-----	ACY, BFG, GYR, NPI, USR.
Other cyclic rubber-processing chemicals:	
p-tert-Amyl phenol sulfide-----	PAS.
4-Chloro-2,6-bis(2,4-dihydroxybenzyl)phenol-----	ICI.
N-(Cyclohexyl thio)phthalimide-----	MON.
Diphenyl-4,4'-diphenyl-methylene dicarbamate-----	USR.
2-Mercaptobenzimidazole-----	USR.
2-Mercaptobenzimidazole, zinc salt-----	USR.
N-(2-Methyl-2-nitropropyl)-4-nitroso aniline-----	x.
Phenol cyanurate complex-----	ICI.
All other-----	RCI.
RUBBER-PROCESSING CHEMICALS, ACYCLIC	
Accelerators, activators, and vulcanizing agents:	
*Dithiocarbamic acid derivatives:	
Dibutyl dithiocarbamic acid, nickel salt-----	USR.
Dibutyl dithiocarbamic acid, sodium salt-----	DUP, USR, VNC.
*Dibutyl dithiocarbamic acid, zinc salt-----	ALC, DUP, PAS, USR, VNC.
Diethyl dithiocarbamic acid, cadmium salt-----	VNC.
Diethyl dithiocarbamic acid, cadmium salt and bis(diethylthiocarbamoyl) disulfide, mixture.	VNC.
Diethyl dithiocarbamic acid, selenium salt-----	PAS.
Diethyl dithiocarbamic acid, sodium salt-----	VNC.
Diethyl dithiocarbamic acid, tellurium salt-----	ALC, GYR, PAS, USR, VNC.
*Diethyl dithiocarbamic acid, zinc salt-----	USR.
Dimethyl ammonium-dimethyl dithiocarbamate-----	VNC.
Dimethyl dithiocarbamic acid, bismuth salt-----	VNC.
Dimethyl dithiocarbamic acid, copper salt-----	VNC.

SYNTHETIC ORGANIC CHEMICALS, 1975

TABLE 2.--RUBBER-PROCESSING CHEMICALS FOR WHICH U.S. PRODUCTION OR SALES WERE REPORTED,
IDENTIFIED BY MANUFACTURER, 1975--CONTINUED

Chemical	Manufacturers' identification codes (according to list in table 3)
RUBBER-PROCESSING CHEMICALS, ACYCLIC--Continued	
Accelerators, activators, and vulcanizing agents--Con.	
*Dithiocarbamic acid derivatives--Continued	
Dimethyldithiocarbamic acid, lead salt-----	VNC.
Dimethyldithiocarbamic acid, selenium salt-----	VNC.
Dimethyldithiocarbamic acid, sodium salt and sodium polysulfide.	BFG.
*Dimethyldithiocarbamic acid, zinc salt-----	ALC, DUP, FMN, GYR, PAS, USR, VNC.
All other-----	PAS.
Thiurams:	
Bis(diethylthiocarbamoyl) disulfide-----	DUP, GYR, PAS.
*Bis(dimethylthiocarbamoyl) disulfide-----	DUP, GYR, PAS, VNC.
*Bis(dimethylthiocarbamoyl) sulfide-----	DUP, GYR, USR.
N,N'-Diocadecyl-N,N'-diisopropyl thiuram disulfide-----	USR.
All other-----	PAS.
Xanthates and sulfides:	
Bis(disopropoxythiophosphoryl) disulfide-----	DUP.
Di-n-butylxantho disulfide-----	USR.
Disopropylxantho disulfide-----	BFG.
Zinc diisopropyl xanthate-----	VNC.
All other acyclic accelerators, activators, and vulcanizing agents:	
n-Butyraldehyde-butylamine condensate-----	DUP.
Di-n-butylammonium oleate-----	DUP.
Ethylenediamine carbamate-----	DUP.
Methacrylic acid, monobasic zinc salt-----	USR.
1,1,3-Trimethyl-2-thiourea-----	RBC, VNC.
Urea, modified-----	DUP.
Zinc o,o-di-N-butylphosphorodithioate-----	X.
All other-----	MON.
Conditioning and lubricating agents:	
Alkyl alcohols, mixed-----	DUP.
Methyl stearyl-10-sulfonic acid, sodium salt-----	DUP.
Mono- and dialkyl acid phosphates, mixed-----	DUP.
Mono- and dialkyl phosphate ammonium salts, mixed-----	DUP.
Polymerization regulators:	
Alkyl mercaptans, mixed-----	PLC.
n-Butyl mercaptan-----	PLC.
sec-Butyl mercaptan-----	PLC.
t-Butyl mercaptan-----	PLC.
n-Decyl mercaptan-----	PLC.
*Dodecyl mercaptans-----	HK, PAS, PLC.
t-Hexadecyl mercaptan-----	PLC.
n-Octyl mercaptan-----	PAS, PLC.
t-Octyl mercaptan-----	PAS, PLC.
n-Propyl mercaptan-----	PLC.
Tridecyl mercaptan-----	PAS.
Shortstops:	
Dimethyldithiocarbamic acid, potassium salt-----	USR.
*Dimethyldithiocarbamic acid, sodium salt-----	ALC, DUP, GYR, PAS, USR.
Other acyclic rubber processing chemicals: Zinc laurate.	USR.

RUBBER-PROCESSING CHEMICALS, 1975

137

TABLE 3.--RUBBER-PROCESSING CHEMICALS: DIRECTORY OF MANUFACTURERS, 1975

ALPHABETICAL DIRECTORY BY CODE

[Names of rubber-processing chemical manufacturers that reported production or sales to the U.S. International Trade Commission for 1975 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 Div.
ALC	Alco Chemical Corp.	MON	Monsanto Co.
ARA	Arapahoe Chemicals, Inc.		
ASH	Ashland Oil, Inc., Ashland Chemical Co.		
BFG	B. F. Goodrich Co., B. F. Goodrich Chemical Co. Div.	NEV	Neville Chemical Co.
DUP	Diamond Shamrock Corp. E. I. duPont de Nemours & Co., Inc.	NPI	Stepan Chemical Co., Polychem Dept.
DA		PAS	Pennwalt Chemicals Corp.
		PIT	Pitt-Consol Chemical Co.
		PLC	Phillips Petroleum Co.
FMN	FMC Corp., Agricultural Chemical Div.	RBC	Pike Chemicals, Inc.
		RCD	Richardson Co.
		RCI	Reichhold Chemicals, Inc.
GYR	Goodyear Tire & Rubber Co.	SDC	Martin-Marietta Corp., Sodyeco Div.
HK	Hooker Chemicals & Plastics Corp.		
ICI	ICI United States, Inc., Specialty Chemicals Group.	UCC	Union Carbide Corp.
LAK	Lakeway Chemicals, Inc.	VNC	Vanderbilt Chemical Corp.

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

ELASTOMERS

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, and 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 1975 are shown in table 1.¹

Total U.S. production² of synthetic rubber in 1975 amounted to 4,579 million pounds, a decrease of 19 percent from that produced in 1974. Total sales² of elastomers in 1975 amounted to 3,948 million pounds, a decrease of 14 percent from that produced in 1974.

Styrene-butadiene rubber (SBR, or S-type rubber) in 1975 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 30 million pounds of its vinylpyridine sub-type, amounted to 2,637 million pounds in 1975, a decrease of 17 percent from that reported for 1974. Solution polymerized butadiene rubber, a stereo type elastomer, was produced domestically in 1975 in the next largest amount--656 million pounds; production of isoprene and ethylene-propylene rubbers, the other stereo types, amounted to 135 million and 187 million pounds, respectively. Total U.S. production of these stereo type elastomers amounted to 978 million pounds in 1975--a decrease of 22 percent from 1974. Other principal types of synthetic elastomers for which U.S. production data are reported separately are isobutylene-isoprene (butyl) rubber, production of which was 182 million pounds in 1975, and acrylonitrile-butadiene (N-type) rubber, production of which was 119 million pounds.

Sales of S-type rubber by U.S. producers in 1975 (including its vinylpyridine sub-type) amounted to 2,171 million pounds, a decrease of 14 percent from sales reported for 1974. Sales of solution polymerized butadiene rubber amounted to 469 million pounds, and those of ethylene-propylene rubber to 193 million pounds. Sales of N-type rubber in 1975 amounted to 105 million pounds. Sales of solution polymerized butadiene rubber and those of ethylene-propylene rubber in 1975 decreased from sales in 1974 by 16 and 20 percent, respectively. Sales of N-type rubber in 1975 were 38 percent below those in 1974.

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

² Does not include urethane type elastomers.

TABLE 1.--ELASTOMERS (SYNTHETIC RUBBER):¹ U.S. PRODUCTION AND SALES, 1975

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

Product	Production ²	Sales		
		Quantity ²	Value	Unit value ³
		1,000 pounds	1,000 dollars	Per pound
Grand total-----	4,578,725	3,948,115	1,457,692	\$0.37
Cyclic-----	2,778,884	2,302,389	639,357	.28
Acyclic-----	1,799,841	1,645,726	818,335	.50
Acrylonitrile-butadiene type (N-type)-----	118,767	105,110	60,368	.57
Chloroprene type (Neoprene) ⁴-----	...	...	...	...
Isobutylene-isoprene type (Butyl)-----	182,039	...	...	...
Silicone type-----	31,221	27,743	87,081	3.14
Stereo elastomers, total-----	978,324	...	...	...
Butadiene (solution polymerized) type-----	655,778	469,349	134,345	.29
Ethylene-propylene type-----	187,392	193,270	79,945	.41
Isoprene type-----	135,154	...	...	...
Styrene-butadiene type (S-type)-----	2,607,907	2,154,540	571,871	.27
Styrene-butadiene-vinylpyridine type-----	29,500	16,357	11,131	.68
Urethane type-----	(⁵)	(⁵)	(⁵)	(⁵)
All other elastomers ⁶ -----	630,967	981,746	512,951	.52

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

² Includes oil content of oil-extended elastomers.

³ Calculated from rounded figures.

⁴ Included in "All other elastomers". The production of polychloroprene rubber in 1975 was reported by the Rubber Manufacturers' Association to be 143,901 metric tons (317,247,000 pounds).

⁵ The data on production and sales of urethane elastomers are reported in the section Plastics and Resin Materials with urethane plastics and polyols.

⁶ Includes production and sales data for acrylic ester, butadiene emulsion, chloroprene, epichlorohydrin, fluorinated, isobutylene, and polysulfide elastomers, certain solution elastomers, carboxylated SBR latex, chlorinated rubber, chlorosulfonated polyethylene, thermoplastic rubber, miscellaneous elastomers, and sales data for the isobutylene-isoprene type and the isoprene type elastomers.

SYNTHETIC ORGANIC CHEMICALS, 1975

TABLE 2.--ELASTOMERS (SYNTHETIC RUBBER) FOR WHICH U.S. PRODUCTION OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1975

[Elastomers (synthetic rubber) for which separate statistics are given in table 1 are marked with an asterisk (*); products 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]

Product	Manufacturers' identification codes (according to list in table 3)
Acrylic ester type-----	ACY, BGF, TKL.
*Acrylonitrile-butadiene type (N-type)-----	BFG, CPY, FRS, GYR, SBI, USR.
Butadiene (emulsion polymerized) type-----	BFG, FRS, GYR, TKL, TUS.
Chloroprene type (Neoprene)-----	DUP, PTT.
Chlorosulfonated polyethylene-----	DUP.
*Isobutylene-isoprene type (Butyl)-----	CBN, ENJ.
Polyisobutylene-----	ENJ.
Polysulfide type-----	TKL.
Reaction products of natural rubber-----	GYR, ICI, x.
*Silicone type-----	DCC, SPD, SWS, UCC.
*Stereo elastomers:	
*Butadiene (solution polymerized) type-----	ASY, ATR, BFG, FRS, GNT, GYR, PLC, TUS.
*Ethylene-propylene type-----	BFG, CPY, DUP, ENJ, USR.
*Isoprene type-----	BFG, GYR.
*Styrene-butadiene type (S-type)-----	ASH, ASY, BFG, CPY, FIR, FRS, GNT, GRD, GYR, PLC, SBI, TUS, USR.
*Styrene-butadiene-vinylpyridine type-----	BFG, FIR, FRS, GNT, GYR, USR.
All other elastomers-----	ASY, BFG, DUP, HDM, MMM, PLC, PRC, SHC, USR, WAY.

TABLE 3.--ELASTOMERS (SYNTHETIC RUBBER): DIRECTORY OF MANUFACTURERS, 1975

ALPHABETICAL DIRECTORY BY CODE

[Names of elastomers manufacturers that reported production or sales to the U.S. International Trade Commission for 1975 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.	HDM	Hardman, Inc.
ASH	Ashland Oil Co., Inc.		
ASY	American Synthetic Rubber Corp.	ICI	ICI United States, Inc., Specialty Chemicals Group
ATR	Atlantic Richfield Co.		
BFG	B. F. Goodrich Co., B. F. Goodrich Chemical Co. Div.	MMM	Minnesota Mining and Manufacturing Co.
CBN	Cities Service Co., Columbian Group	PLC	Phillips Petroleum Co.
CPY	Copolymer Rubber & Chemical Corp.	PRC	Products Research & Chemical Corp., Chemical and Sealant Div.
DCC	Dow Corning Corp.	PTT	Petro-Tex Chemical Corp.
DUP	E. I. duPont de Nemours & Co., Inc.	SBI	Standard Brands Chemical Industries, Inc.
ENJ	Exxon Chemical Co., U.S.A.	SHC	Shell Oil Co., Shell Chemical Co. Div.
FIR	Firestone Tire & Rubber Co.: Firestone Plastics Co. Div.	SPD	General Electric Co., Silicone Products Dept.
FRS	Firestone Synthetic Rubber & Latex Co. Div.	SWS	Stauffer Chemical Co., SWS Silicones Div.
GNT	General Tire & Rubber Co., Chemical Div.	TKL	Thickol Chemical Corp.
GRD	W. R. Grace & Co., Polymers & Chemicals Div.	TUS	Texas-U.S. Chemical Co.
GYR	Goodyear Tire & Rubber Co.	UCC	Union Carbide Corp.
		USR	Uniroyal, Inc., Chemical Div.
		WAY	Philip A. Hunt Chemical Corp., Wayland Chemical Div.

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

SYNTHETIC ORGANIC CHEMICALS, 1975

PLASTICIZERS

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 1,352 million pounds in 1975, a decrease of 28.5 percent from the 1,892 million pounds reported for 1974. Sales of plasticizers totaled 1,338 million pounds, valued at \$470 million, in 1975, compared with 1,707 million pounds, valued at \$535 million, in 1974.

Production of cyclic plasticizers in 1975, which consisted chiefly of the esters of phthalic anhydride, phosphoric acid, and trimellitic acid, amounted to 1,038 million pounds, a decrease of 26.4 percent from the 1,411 million pounds reported for 1974. Sales of cyclic plasticizers in 1975 totaled 1,042 million pounds, valued at \$308 million, compared with 1,306 million pounds, valued at \$338 million, in 1974. The most important cyclic plasticizer was di(2-ethylhexyl) phthalate, with production of 302 million pounds, in 1975.

Production of acyclic plasticizers in 1975 totaled 313 million pounds, a decrease of 34.7 percent from the 480 million pounds reported for 1974. Sales of acyclic plasticizers totaled 296 million pounds, valued at \$162 million, in 1975, compared with 401 million pounds, valued at \$197 million, in 1974. Epoxidized soya oils were the most important acyclic plasticizer in 1975 with production of 78 million pounds.

PLASTICIZERS

143

TABLE 1.--PLASTICIZERS:¹ U.S. PRODUCTION AND SALES, 1975

[Listed below are plasticizers for which any reported data on production and/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 separately all plasticizer chemicals for which data on production and/or sales were reported and identifies the manufacturers of each]

Chemical	Production	Sales		
		Quantity	Value	Unit value ²
	1,000 pounds	1,000 pounds	1,000 dollars	Per pound
Grand total-----	1,351,702	1,338,317	470,390	\$0.35
Benzoid ³ -----	1,111,427	1,107,961	320,366	.29
Nonbenzenoid-----	240,275	230,356	150,024	.65
PLASTICIZERS, CYCLIC				
Total-----	1,038,204	1,042,188	307,923	.30
Phosphoric acid esters, total-----	79,447	68,898	43,516	.63
Cresyl diphenyl phosphate-----	...	5,992	3,744	.62
Dibutyl phenyl phosphate-----	...	734	.867	1.18
All other phosphoric acid esters ⁴ -----	79,447	62,172	38,905	.63
Phthalic anhydride esters, total-----	903,800	920,998	244,108	.26
Dibutyl phthalate-----	12,264	14,690	5,348	.36
Diethyl phthalate-----	11,661	8,856	3,535	.40
Diisodecyl phthalate-----	105,668	98,501	25,772	.26
Dimethyl phthalate-----	6,771	6,476	2,084	.32
Diocetyl phthalates, total-----	312,455	326,724	80,072	.24
Di(2-ethylhexyl) phthalate-----	302,492	321,933	78,909	.24
Other diocetyl phthalates-----	9,963	4,791	1,163	.24
Di-tridecyl phthalate-----	15,664	12,930	4,293	.33
n-Hexyl n-decyl phthalate-----	14,469	8,419	2,216	.26
All other phthalic anhydride esters-----	424,848	444,402	120,788	.27
Trimellitic acid esters, total-----	16,206	12,972	6,164	.48
Tri-n-octyl trimellitate-----	6,069	5,401	2,543	.47
Triiso-octyl trimellitate-----	...	349	162	.46
All other trimellitic acid esters-----	10,137	7,222	3,459	.48
All other cyclic plasticizers ⁵ -----	38,751	39,320	14,135	.36
PLASTICIZERS, ACYCLIC				
Total-----	313,498	296,129	162,467	.55
Adipic acid esters, total-----	48,470	46,353	21,828	.47
Di(2-ethylhexyl) adipate-----	30,302	28,617	12,578	.44
Diisodecyl adipate-----	1,973	1,912	921	.48
Diisopropyl adipate-----	411	366	252	.69
n-Octyl n-decyl adipate-----	7,508	7,127	3,300	.46
All other adipic acid esters-----	8,276	8,331	4,777	.57
Complex linear polyesters and polymeric plasticizers ⁶ -----	38,370	31,749	21,330	.67
Expoxydized esters, total-----	97,556	97,081	48,822	.50
Epoxydized soya oils-----	77,621	76,674	37,239	.49
All other epoxydized esters-----	19,935	20,407	11,583	.57
Isopropyl myristate-----	2,481	2,235	1,202	.54
Isopropyl palmitate-----	1,689	2,285	1,303	.57

See footnotes at end of table.

TABLE 1.--PLASTICIZERS:¹ U.S. PRODUCTION AND SALES, 1975--CONTINUED

Chemical	Production	Sales		
		Quantity	Value	Unit value ²
PLASTICIZERS, ACYCLIC--Continued		1,000 pounds	1,000 pounds	1,000 dollars
Oleic acid esters, total-----	8,711	8,163	3,595	\$0.44
Butyl oleate-----	1,279	1,272	599	.47
Glyceryl trioleate (triolein)-----	3,984	3,813	1,590	.42
Methyl oleate-----	2,691	2,415	935	.39
Propyl oleates (including n-propyl oleate and isopropyl oleate)-----	314	241	100	.42
All other oleic acid esters-----	443	422	371	.88
Phosphoric acid esters-----	17,111	15,207	10,396	.68
Sebacic acid esters-----	5,614	...	...	...
Stearic acid esters, total-----	11,802	10,922	4,458	.41
n-Butyl stearate-----	5,961	5,630	1,924	.34
All other stearic acid esters-----	5,841	5,292	2,534	.48
All other acyclic plasticizers ⁷ -----	81,694	82,134	49,533	.60

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

² Calculated from rounded figures.

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

⁴ Includes production data for cresyl diphenyl phosphate, dibutyl phenyl phosphate, plus data for other phosphate esters.

⁵ Includes data for alkylated naphthalene, glycol dibenzoates, isopropylidenediphenoxypopropanol, toluene-sulfonamides, tetrahydrofurfuryl oleate, and other cyclic plasticizers.

⁶ Adipic acid polyesters accounted for most of the production of complex linear polyesters and polymeric plasticizers.

⁷ Includes data for azelaic, citric and acetylcitric, myristic, palmitic, pelargonic, ricinoleic, acetyl ricinoleic, glyceryl, glycol, and sebacic acid esters (sales only), and other acyclic plasticizers, not separately shown.

PLASTICIZERS

145

TABLE 2.--PLASTICIZERS FOR WHICH U.S. PRODUCTION OR SALES, WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1975

[Plasticizers for which separate statistics are given in table 1 are marked below with an asterisk (*); products 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]

Chemical	Manufacturers' identification code (according to list in table 3)
PLASTICIZERS, CYCLIC	
Coumarone-indene plasticizers-----	NEV.
N-Cyclohexyl-p-toluenesulfonamide-----	MON.
Dibenzyl azelate-----	HAL.
Dibenzyl sebacate-----	WTH.
Diethylene glycol dibenzoate-----	VEL.
Di-tert-octylphenyl ether-----	DOW.
Dipropylene glycol dibenzoate-----	VEL.
N-Ethyl-p-toluenesulfonamide-----	MON.
Isopropylidenediphenoxypopropanol-----	DOW.
Naphthalene, alkylated-----	ACC.
Petroleum hydrocarbon-----	NEV.
*phosphoric acid esters:	
*Cresyl diphenyl phosphate-----	FMP, MON, MTR, SFS.
Dibutyl phenyl phosphate-----	FMP, MON, ORO.
Diphenyl octyl phosphate-----	MON.
Tricresyl phosphate-----	FMP, MON, MTR, SFS.
Triphenyl phosphate-----	EK, MON.
*Phthalic anhydride esters:	
Bis(2-ethylhexyl) terephthalate-----	EKT.
Butyl benzyl phthalate-----	MON.
Butyl cyclohexyl phthalate-----	CPS.
Butyl 2-ethylhexyl phthalate-----	MON.
n-Butyl n-octyl phthalate-----	RCI, USS.
Di(2-butoxyethyl) phthalate-----	ARC, HAL.
*Dibutyl phthalate-----	BAS, COM, EKT, GRH, MON, SW, UCC, USS, WTH.
Dicyclohexyl 2-ethylhexyl phthalate-----	GRH.
Dicyclohexyl phthalate-----	MON, PFZ.
*Diethyl phthalate-----	EKT, KF, MON, PFZ.
Di(heptyl, nonyl) phthalate-----	MON.
Di(heptyl, nonyl, undecyl) phthalate-----	MON.
Dihexyl phthalate-----	USS.
*Diisododecyl phthalate-----	BAS, CO, EKT, ENJ, GRH, HN, MON, RCI, RUB, TEK, USS.
Diisohexyl phthalate-----	ENJ.
Diisomonyl phthalate-----	ENJ.
Di(2-methoxyethyl) phthalate-----	EKT.
Dimethyl isophthalate-----	PFZ.
*Dimethyl phthalate-----	EKT, KF, MON, PFZ, TCC.
Dinonyl phthalate-----	PFZ, RCI.
*Diocyl phthalates:	
Dicapryl phthalate-----	WTH.
*Di(2-ethylhexyl) phthalate-----	BAS, BFG, CO, EKT, ENJ, GRH, HN, MON, RCI, TEK, UCC, USS.
Diiso-octyl phthalate-----	RCI, USS.
Di-n-octyl phthalate-----	EK.
Diphenyl phthalate-----	MON.
*Di-tridecyl phthalate-----	ENJ, GRH, HN, RCI, RUB, TEK, USS.
Diundecyl phthalate-----	MON, TEK.
Glycol phthalate esters:	
Ethyl phthalyl ethyl glycolate-----	MON.
Polyester of triethylene glycol (Phthalic anhydride).-----	UCC.
All other glycol phthalate esters-----	HPC.

TABLE 2.--PLASTICIZERS FOR WHICH U.S. PRODUCTION OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1975--CONTINUED

Chemical	Manufacturers' identification codes (according to list in table 3)
PLASTICIZERS, CYCLIC--Continued	
*Phthalic anhydride esters--Continued	
n-Hexyl n-decyl phthalate-----	BAS, CO, HN, TEK.
Hexyl iso-octyl phthalate-----	PFZ.
Isobutyl cyclohexyl phthalate-----	MON.
n-Octyl n-decyl phthalate-----	RCI, TEK, USS.
All other phthalic anhydride esters-----	HN, MON, USS.
Polyethylene glycol dibenzoate-----	VEL.
Tetrahydrofurfuryl oleate-----	EMR.
Toluenesulfonamide o-, p- mixtures-----	MON.
*Trimellitic acid esters:	
Tricapryl trimellitate-----	WTH.
Tri(2-ethylhexyl) trimellitate-----	GRH, PFZ.
Tri-n-heptyl n-nonyl trimellitate-----	MON, TEK.
Tri-n-hexyl n-decyl trimellitate-----	TEK.
Triisodecyl trimellitate-----	PFZ.
Triisononyl trimellitate-----	ENJ.
Triiso-octyl trimellitate-----	RCI, RUB, USS.
Trinonyl trimellitate-----	TEK.
Tri-n-octyl n-decyl trimellitate-----	RCI, RUB.
*Tri-n-octyl trimellitate-----	EKT, HN, PFZ, RUB, USS, WTH.
All other trimellitic acid esters-----	X.
All other cyclic plasticizers-----	HN, PFZ.
PLASTICIZERS, ACYCLIC	
*Adipic acid esters:	
Di[2-(butoxyethoxy)ethyl] adipate-----	RCI, TKL.
Di(butoxyethyl) adipate-----	HAL.
Dicapryl adipate-----	WTH.
*Di(2-ethylhexyl) adipate-----	DA, EKT, GRH, HN, MON, PFZ, RCI, RH, RUB, USS, WTH.
Diisobutyl adipate-----	GRH, HAL.
*Diisodecyl adipate-----	GRH, HN, RCI, RH, RUB, USS.
*Diisopropyl adipate-----	SBC, VND, WTH.
Diiso-octyl adipate-----	HN, RCI, RH.
Di-n-octyl adipate-----	HAL.
Di-tridecyl adipate-----	GRH, RUB.
2-(Ethylhexyl) butoxyethyl adipate-----	HAL.
n-Hexyl n-decyl adipate-----	TEK, USS.
Iso-octyl isodecyl adipate-----	GRH.
n-Octyl n-decyl adipate-----	MON, RH, USS.
Tridecyl adipate-----	SM.
All other adipic acid esters-----	EK.
Azelaic acid esters:	
Di(2-ethylhexyl) azelate-----	EKT, EMR, PFZ.
Diiso-octyl azelate-----	EMR, SM.
Di-n-octyl azelate-----	HAL.
All other azelaic acid esters-----	EMR.
Castor oil maleate-----	RH.
Citric and acetylcitric acid esters:	
Tributyl acetylcitrate-----	PFZ.
Tributyl citrate-----	PFZ.
Triethyl acetylcitrate-----	PFZ.
Triethyl citrate-----	ICI.
Tristearyl citrate-----	PFZ.
Other citric and acetylcitric acid esters-----	ASH, EKT, EKX, EMR, GRH, HAL, HN, MON, PFZ, RCI, RH, TEK, WTH.
*Complex linear polyesters and polymeric plasticizers-----	
Di[(butoxyethoxy)ethoxy]methane-----	TKL.
Dibutyl tartrate-----	ARC.
Diethylene glycol dipelargonate-----	EMR.
Diiso-octyl diglycolate-----	CCA.

PLASTICIZERS

147

TABLE 2.--PLASTICIZERS FOR WHICH U.S. PRODUCTION OR SALES WERE REPORTED, IDENTIFIED BY MANUFACTURER, 1975--CONTINUED

Chemical	Manufacturers' identification codes (according to list in table 3)
PLASTICIZERS, ACYCLIC--Continued	
*Epoxidized esters:	
Epoxidized linseed oils-----	SWT, VIK.
Epoxidized soya oils-----	ASH, FMP, RH, UCC, VIK, WTC.
Epoxidized tall oils-----	RH.
Methyl epoxystearates-----	VIK.
*Octyl epoxytallates:	
2-Ethylhexyl epoxytallates-----	UCC.
n-octyl epoxytallates-----	RH, WTC.
Octyl epoxystearates-----	WTC.
All other epoxidized esters-----	RH, UCC.
Glyceryl tributyrin (tributyrin) and tripropionate-----	EKT.
Glycol pelargonate-----	EMR.
Isodecyl pelargonate-----	EMR.
Myristic acid esters:	
*Isopropyl myristate-----	ARC, SBC, TCH, WM, WTH.
All other myristic acid esters-----	SCP, WTH.
*Oleic acid esters:	
2-Butoxyethyl oleate-----	ARC, HAL.
*Butyl oleate-----	ARC, EMR, GRO, HAL, TCH, WM, WTH.
Decyl oleate-----	SCP, VND.
Glyceryl trioleate (Triolein)-----	CHL, EMR, GLY, GRO, HAL, TCH.
Isobutyl oleate-----	DA.
Methyl cellosolve oleate-----	HAL.
*Methyl oleate-----	DA, EFH, EMR, GRO, HUM, TCH.
Octyl decyl oleate-----	HAL.
Octyl oleate-----	HAL.
*Propyl oleates:	
n-propyl oleate-----	CHL, EMR, GRO, WM.
Isopropyl oleate-----	EMR, TCH, WM.
Other oleic acid esters-----	EMR, SBC.
Palmitic acid esters:	
2-Ethylhexyl palmitate-----	VND, WTH.
Isobutyl palmitate-----	ARC.
*Isopropyl palmitate-----	ARC, SBC, TCH, WM, WTH.
Pentaerythritol diisopentanoate dipelargonate-----	SM.
*Phosphoric acid esters:	
Tri(2-butoxyethyl) phosphate-----	FMP.
Tri(2-chloroethyl) phosphate-----	SFS, UCC.
Tri(2-chloropropyl) phosphate-----	SFS.
Triethyl phosphate-----	EKT.
Trioctyl phosphate-----	HN, UCC.
All other phosphoric acid esters-----	SFS.
Ricinoleic and acetylricinoleic acid esters:	
n-Butyl acetylricinoleate-----	NTL.
Butyl ricinoleate-----	NTL.
Glyceryl monoricinoleate-----	NTL.
Glyceryl tri(acetylricinoleate)-----	NTL, PFZ.
Methyl acetylricinoleate-----	NTL.
Methyl ricinoleate-----	NTL.
*Sebacic acid esters:	
Dibutoxyethyl sebacate-----	HAL.
Dibutyl sebacate-----	EKT, HAL, RH, WTH.
Di(2-ethylhexyl) sebacate-----	GRH, RH, WTH.
Diiso-octyl sebacate-----	DA, HAL.
Diisopropyl sebacate-----	WTH.
Dimethyl sebacate-----	WTH.
*Stearic acid esters:	
Butoxyethyl stearate-----	ARC.
*n-Butyl stearate-----	ARC, ASH, CHL, EMR, GRO, HAL, TCH, WM, WTH.
Dimethylammonium stearate-----	RH.
Glycerol triacetyl stearate-----	NTL.
Hexadecyl stearate-----	SCP.

TABLE 2.--PLASTICIZERS FOR WHICH U.S. PRODUCTION OR SALES WERE REPORTED, IDENTIFIED BY
MANUFACTURER, 1975--CONTINUED

Chemical	Manufacturers' identification codes (according to list in table 3)
PLASTICIZERS, ACYCLIC--Continued	
*Stearic acid esters--Continued	
Isobutyl stearate-----	DA, WM.
Isopropyl isostearate-----	TCH.
Isopropyl stearate-----	WTH.
Methyl pentachlorostearate-----	HK.
Methyl stearate-----	CHL.
Myristyl stearate-----	VND.
Propylene glycol stearate-----	WTH.
Tridecyl stearate-----	GRO.
All other stearic acid esters-----	DA, SBC, SCP, WM, x. ARC, EKT.
Sucrose acetate isobutyrate-----	UCC.
Tetraethylene glycol di(2-ethylhexanoate)-----	HAL, PVO, RUB, WM.
*Triethylene glycol di(caprylate-caprate)-----	UCC.
Triethylene glycol di(2-ethylbutyrate)-----	EKK.
2,2,4-Trimethyl-1,3-pentanediol diisobutyrate-----	EMR, HAL, HPC, PFZ, TCH, WM, WTH.
All other acyclic plasticizers-----	

TABLE 3.--PLASTICIZERS: DIRECTORY OF MANUFACTURERS, 1975

ALPHABETICAL DIRECTORY BY CODE

[Names of plasticizers manufacturers that reported production or sales to the U.S. International Trade Commission for 1975 are listed below in the order of their identification codes as used in table 2]

Code	Name of company	Code	Name of Company
ACC	Amoco Chemicals Corp.	NEV	Neville Chemical Co.
ARC	Armak Co.	NTL	NL Industries, Inc.
ASH	Ashland Oil, Inc., Ashland Chemical Co.	ORO	Chevron Chemical Co.
BAS	BASF Wyandotte Corp.	PFZ	Pfizer, Inc.
BFG	B. F. Goodrich Co., B. F. Goodrich Chemical Co. Div.	PVO	PVO International, Inc.
CCA	Interstab Chemical, Inc.	RCI	Reichhold Chemicals, Inc.
CHL	Chemol, Inc.	RH	Rohm & Haas Co.
CO	Continental Oil Co.	RUB	Hooker Chemical Corp., Ruco Div.
COM	Commercial Solvents Corp.	SBC	Scher Brothers, Inc.
CPS	CPS Chemical Co.	SCP	Henkel, Inc.
DA	Diamond Shamrock Corp.	SFS	Stauffer Chemical Co., Specialty Chemical Div.
DOW	Dow Chemical Co.	SM	Mobil Oil Corp., Mobil Chemical Co. Div., Chemical Coatings Div.
EFH	E. F. Houghton & Co.	SW	Sherwin-Williams Co.
EK	Eastman Kodak Co.:	SWT	Unitech Chemical, Inc.
EKT	Tennessee Eastman Co. Div.	TCC	Tanatex Chemical Corp.
EKX	Texas Eastman Co. Div.	TCH	Emory Industries, Inc., Trylon Chemicals Div.
EMR	Emery Industries, Inc.	TEK	Teknor Apex Co.
ENJ	Exxon Chemical Co. U.S.A.	TKL	Thiokol Chemical Corp.
FMP	FMC Corp., Industrial Chemical Div.	UCC	Union Carbide Corp.
GLY	Glyco Chemicals, Inc.	USS	USS Chemicals Div. of U.S. Steel Corp.
GRH	W. R. Grace & Co., Hatco Chemical Div.	VEL	Velsicol Chemical Corp.
GRO	A. Gross & Co., Millmaster Onyx Group, a Kewanee Industry	VIK	Viking Chemical Co.
HAL	C. P. Hall Co.	VND	Van Dyk & Co., Inc.
HK	Hooker Chemicals & Plastics Corp.	WM	Inolex Corp.
HN	Tenneco Chemicals, Inc.	WTC	Witco Chemical Co., Inc.
HPC	Hercules, Inc.	WTH	Union Camp Corp., Chemical Div., Dover Plant
HUM	Kraftco Corp., Humko Plastics Div.		
ICI	ICI United States, Inc., Specialty Chemicals Group		
KF	Kay-Fries Chemicals, Inc.		
MON	Monsanto Co.		
MTR	Sobin Chemicals, Inc., Montrose Chemical Div.		

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

SURFACE-ACTIVE AGENTS

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 1975 amounted to 4,349 million pounds, or 7.4 percent less than the 4,696 million pounds reported for 1974. Sales of bulk surface-active agents in 1975 amounted to 2,182 million pounds, valued at \$717 million, compared with sales in 1974 of 2,502 million pounds, valued at \$746 million. In terms of quantity, sales in 1975 were thus 12.8 percent smaller than in 1974; in terms of value, sales in 1975 were 3.9 percent less than in 1974.

Production of anionic surface-active agents in 1975 amounted to 3,063 million pounds, or 70.4 percent of the total output reported for 1975; however, this was 3.5 percent less than the anionic output reported for 1974. Sales of anionics in 1975 amounted to 1,280 million pounds, valued at \$285 million. Of the total anionic output, 724 million pounds consisted of potassium and sodium salts of fatty, rosin, and tall oil acids; 650 million pounds consisted of alkylbenzenesulfonates; 945 million pounds consisted of ligninsulfonates; and 279 million pounds consisted of sulfated ethers.

Production of nonionic surface-active agents in 1975 amounted to 1,047 million pounds, or 24.1 percent of the total output reported for 1975 and 14.0 percent less than the nonionic output reported for 1974. Sales of nonionics in 1975 amounted to 728 million pounds valued at \$309 million. Of the total nonionic output, 179 million pounds con-

sisted of benzenoid ethers; 563 million pounds consisted of alcohol ethoxylates and other nonbenzenoid ethers; and 90 million pounds consisted of glycerol esters.

Production of cationic surface-active agents in 1975 amounted to 226 million pounds, or 5.2 percent of the total output reported for 1975. This was 20.5 percent smaller than the cationic output reported for 1974. Sales of cationics in 1975 amounted to 159 million pounds, valued at \$110 million. Of the total cationic output, 80 million pounds consisted of quaternary ammonium salts not containing oxygen, and 66 million pounds consisted of amines not containing oxygen.

Production of amphoteric surface-active agents in 1975 amounted to 14.2 million pounds, or 0.3 percent of the total output reported for 1975. This was 27.0 percent smaller than the amphoteric output reported for 1974. Sales of amphotericics in 1975 amounted to 14.2 million pounds, valued at \$13.4 million.

The difference between production and sales reflects inventory changes and captive consumption of soaps and 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., non-ionic 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, 1975

[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]

Chemical	Production ¹	Sales ²		
		Quantity ¹	Value	Unit value ³
		1,000 pounds	1,000 pounds	1,000 dollars Per pound
Grand total-----	4,349,397	2,181,579	717,421	\$0.33
Benzenoid ⁴ -----	762,344	259,101	96,850	.38
Nonbenzenoid ⁵ -----	3,587,053	1,922,478	620,571	.32
<i>Amphoteric Surface-Active Agents</i>				
Total-----	14,199	14,208	13,379	.94
<i>Anionic Surface-Active Agents</i>				
Total-----	3,062,834	1,280,455	285,360	.22
Carboxylic acids (and salts thereof), total-----	734,641	145,589	55,321	.38
Amine salts of fatty, rosin, and tall acids-----	1,268	396	356	.91
Carboxylic acids having amide, ester, or ether linkages-----	9,862	8,914	9,203	1.03
Potassium and sodium salts of fatty, rosin, and tall acids, total-----	723,511	136,279	45,762	.34
Coconut oil acids, potassium salt-----	...	1,390	928	.67
Coconut oil acids, sodium salt-----	129,222	682	327	.48
Corn oil acids, potassium salt-----	240	240	113	.47
Mixed vegetable oil acids, potassium salt-----	4,115	3,719	4,130	1.11
Oleic acid, potassium salt-----	240	163	87	.53
Oleic acid, sodium salt-----	863	315	172	.55
Stearic acid, potassium salt-----	450	270	139	.51
Tall oil acids, potassium and sodium salts-----	7,020	5,713	2,315	.41
Tallow acids, sodium salt-----	315,521	...	...	...
All other-----	265,840	123,787	37,551	.30
Phosphoric and polyphosphoric acid esters (and salts thereof), total-----	20,746	16,353	11,756	.72
Alcohols and phenols, ethoxylated and phosphated, total-----	14,896	11,597	8,304	.72
Mixed linear alcohols, ethoxylated and phosphated-----	4,002	3,568	2,688	.75
Nonylphenol, ethoxylated and phosphated-----	4,241	3,262	2,039	.63
Tridecyl alcohol, ethoxylated and phosphated-----	665	392	300	.77
All other-----	5,988	4,375	3,277	.75
Alcohols, phosphated or polyphosphated, total-----	5,850	4,756	3,452	.73
2-Ethylhexyl phosphate, sodium salt-----	143	120	92	.77
All other-----	5,707	4,636	3,360	.72
Sulfonic acids (and salts thereof), total-----	1,780,206	896,552	130,780	.15
Alkylnaphthalenesulfonates, total-----	650,389	178,606	60,634	.34
Dodecylbenzenesulfonic acid-----	169,241	65,690	19,203	.29
Dodecylbenzenesulfonic acid, calcium salt-----	6,909	8,348	6,410	.77
Dodecylbenzenesulfonic acid, isopropylamine salt-----	4,461	4,112	2,340	.57
Dodecylbenzenesulfonic acid, sodium salt-----	331,551	79,399	25,386	.32
Dodecylbenzenesulfonic acid, triethanolamine salt-----	9,946	10,318	2,848	.28
All other-----	128,281	10,739	4,447	.41

See footnotes at end of table.

SYNTHETIC ORGANIC CHEMICALS, 1975

TABLE 1.--SURFACE-ACTIVE AGENTS: U.S. PRODUCTION AND SALES, 1975--CONTINUED

Chemical	Production ¹	Sales ²		
		Quantity ¹	Value	Unit value ³
<i>Anionic Surface-Active Agents--Continued</i>				
Sulfonic acids (and salts thereof)--Continued				
Benzene-, cumene-, toluene-, and xylenesulfonates, total	1,000 pounds	1,000 pounds	1,000 dollars	Per pound
Toluenesulfonic acid, potassium and sodium salts	78,203	53,147	10,259	\$0.19
Xylenesulfonic acid, ammonium salt	27,379	...	...	...
Xylenesulfonic acid, sodium salt	14,803	...	...	...
All other	33,820	20,433	3,986	.20
Ligninsulfonates, total	2,201	32,714	6,273	.19
Ligninsulfonic acid, calcium salt	945,462	631,107	28,396	.04
Ligninsulfonic acid, sodium salt	447,727	430,763	12,261	.03
All other	78,056	72,150	8,161	.11
Naphthalenesulfonates	419,679	128,194	7,974	.06
Sulfonic acids having amide linkages, total	7,463	6,683	3,745	.56
Sulfosuccinic acid derivatives	4,844	2,631	3,308	1.26
Taurine derivatives	2,237	1,136	1,233	1.09
Sulfonic acids having ester or ether linkages, total	2,607	1,495	2,075	1.39
Sulfosuccinic acid esters, total	64,609	19,378	21,002	1.08
Sulfosuccinic acid, bis(2-ethylhexyl)ester, sodium salt	10,668	8,869	9,622	1.08
All other	9,026	7,257	8,182	1.13
Other sulfonic acids having ester or ether linkages	1,642	1,612	1,440	.89
All other sulfonic acids	53,941	10,509	11,380	1.08
	29,236	5,000	3,436	.69
Sulfuric acid esters (and salts thereof), total	...	215,522	85,103	.39
Acids, amides, and esters, sulfated, total	...	12,149	5,069	.42
Esters of sulfated oleic acid, total	3,753	3,935	2,147	.55
Butyl oleate, sulfated, sodium salt	1,193	1,297	486	.37
Propyl oleate, sulfated, sodium salt	374	348	193	.55
All other	2,186	2,290	1,468	.64
Oleic acid, sulfated, disodium salt	6,145	6,561	2,376	.36
Other acids, amides, and esters, sulfated	...	1,653	546	.33
Alcohols, sulfated, total	...	39,176	31,530	.80
Decyl sulfate, sodium salt	215	204	151	.74
Dodecyl sulfate salts, total	53,963	30,813	25,556	.83
Dodecyl sulfate, ammonium salt	13,016	7,386	5,728	.78
Dodecyl sulfate, magnesium salt	300	...	...	...
Dodecyl sulfate, sodium salt	16,853	15,478	12,442	.80
Dodecyl sulfate, triethanolamine salt	...	5,338	4,141	.78
All other	23,794	2,611	3,245	1.24
Mixed linear alcohols, sulfated, ammonium salt	...	1,725	963	.56
Octyl sulfate, sodium salt	...	198	259	1.31
Other alcohols, sulfated	...	6,236	4,601	.74
Ethers, sulfated, total	278,923	134,553	39,760	.30
Dodecyl alcohol, ethoxylated and sulfated, sodium salt	10,884	10,710	7,629	.71
Mixed linear alcohols, ethoxylated and sulfated, ammonium salt	176,053	...	...	...
Mixed linear alcohols, ethoxylated and sulfated, sodium salt	60,058	19,480	6,777	.35
All other	31,928	104,363	25,354	.24

See footnotes at end of table.

TABLE 1.--SURFACE-ACTIVE AGENTS: U.S. PRODUCTION AND SALES, 1975--CONTINUED

Chemical	Production ¹	Sales ²		
		Quantity ¹	Value	Unit value ³
Anionic Surface-Active Agents--Continued				
Sulfuric acid esters (and salts thereof)--Continued				
Natural fats and oils, sulfated, total-----	1,000 pounds	1,000 pounds	1,000 dollars	Per pound
Castor oil, sulfated, sodium salt-----	31,291	29,644	8,744	\$0.30
Coconut oil, sulfated, sodium salt-----	5,058	4,859	2,051	.42
Cod oil, sulfated, sodium salt-----	233	200	121	.60
Neat's-foot oil, sulfated, sodium salt-----	2,413	2,390	573	.24
Sperm oil, sulfated, sodium salt-----	2,248	1,292	417	.32
Tallow, sulfated, sodium salt-----	999	984	329	.33
All other-----	4,736	4,673	915	.20
Other anionic surface-active agents ⁴ -----	15,604	15,246	4,338	.28
152,951	6,439	2,400	.37	
Cationic Surface-Active Agents				
Total-----	225,539	159,344	109,805	.69
Amine oxides and oxygen-containing amines (except those having amide linkages), total-----				
Ayclic, total-----	43,617	15,488	16,976	1.10
(Coconut oil alkyl)amine, ethoxylated-----	38,887	11,984	14,380	1.20
(Tallow alkyl)amine, ethoxylated-----	1,408	...	...	...
All other-----	37,479	10,599	12,794	1.21
Cyclic (including imidazoline and oxazoline derivatives), total-----	4,730	3,504	2,596	.74
1-(2-Hydroxyethyl)-2-(8-heptadecenyl)-2-imidazoline-----	615	619	613	.99
1-(2-Hydroxyethyl)-2-heptadecyl-2-imidazoline-----	93	...	...	...
1-(2-Hydroxyethyl)-2-nor(tallow oil alkyl)-2-imidazoline-----	1,038	236	170	.72
All other-----	2,984	2,649	1,813	.68
25,097	24,648	15,009	.61	
Amines and amine oxides having amide linkages, total--Carboxylic acid - diamine and polyamine condensates, total-----				
Tallow oil acids - diethylenetriamine and polyalkylenepolyamine condensates-----	22,251	21,575	12,106	.56
All other-----	17,697	16,896	7,000	.41
Other amines and amine oxides having amide linkages-----	4,554	4,679	5,106	1.09
2,846	3,073	2,903	.94	
Amines, not containing oxygen (and salts thereof), total-----	66,015	46,665	29,632	.64
Diamines and polyamines, total-----	15,186	12,647	6,674	.53
Imidazoline derivatives-----	2,512	1,520	631	.42
N-(9-Octadecenyl)trimethylenediamine-----	1,773	2,098	1,240	.59
N-(Tallow alkyl)trimethylenediamine-----	4,652	...	...	...
All other-----	6,249	9,029	4,803	.53
Primary monoamines, total-----	18,922	19,322	12,279	.64
(Hydrogenated tallow alkyl)amine-----	3,046	2,242	1,133	.51
(Tallow alkyl)amine-----	4,509	4,410	2,888	.65
All other-----	11,367	12,670	8,258	.65
Secondary and tertiary monoamines, total-----	31,907	14,696	10,679	.73
N,N-Dimethyl(coconut oil alkyl)amine-----	1,338	...	...	...
N,N-Dimethyldodecylamine-----	269	237	267	1.13
N,N-Dimethylhexadecylamine-----	492	347	347	1.00
N,N-Dimethyl(mixed alkyl)amine-----	4,279	4,248	3,209	.76
N-Methylbis(hydrogenated tallow alkyl)amine-----	3,096	626	267	.43
All other-----	22,433	9,238	6,589	.71

See footnotes at end of table.

SYNTHETIC-ORGANIC CHEMICALS, 1975

TABLE 1.--SURFACE-ACTIVE AGENTS: U.S. PRODUCTION AND SALES, 1975--CONTINUED

Chemical	Production ¹	Sales ²		
		Quantity ¹	Value	Unit value ³
<i>Cationic Surface-Active Agents--Continued</i>				
Oxygen-containing quaternary ammonium salts-----	10,794.	7,927	5,588	\$0.71
Quaternary ammonium salts, not containing oxygen, total-----	80,016	64,616	42,600	.66
Acyclic, total-----	66,067	52,486	26,569	.51
Bis(hydrogenated tallow alkyl)dimethylammonium chloride-----	46,539	35,132	13,681	.39
Trimethyl(tallow alkyl)ammonium chloride-----	995.	...	...	...
All other-----	18,533	17,354	12,888	.74
Benzzenoid, total-----	13,949	12,130	16,031	1.33
Benzyl (coconut oil alkyl)dimethylammonium chloride-----	158	132	138	1.05
Benzylidimethyl(mixed alkyl)ammonium chloride-----	7,130	7,121	10,373	1.46
Benzylidimethyloctadecylammonium chloride-----	1,515	1,245	1,926	1.55
All other-----	5,146	3,632	3,594	1.00
<i>Nonionic Surface-Active Agents</i>				
Total-----	1,046,825	727,572	308,877	.42
Carboxylic acid amides, total-----	82,207	56,386	28,997	.51
Diethanolamine condensates (amine/acid ratio=2/1), total-----	20,272	15,739	8,242	.52
Coconut oil acids-----	8,463	6,470	3,496	.54
Coconut oil and tallow acids-----	2,954	2,833	1,112	.39
Linoleic acid-----	62	62	71	1.15
Oleic acid-----	941	849	448	.53
Stearic acid-----	553	401	238	.59
Tall oil acids-----	593	...	...	...
All other-----	6,706	5,124	2,877	.56
Diethanolamine condensates (other amine/acid ratios), total-----	35,272	28,735	15,144	.53
Coconut oil acids (amine/acid ratio=1/1)-----	21,660	20,620	10,446	.51
Lauric acid (amine/acid ratio=1/1)-----	8,755	4,488	2,639	.59
Lauric and myristic acids (amine/acid ratio=1/1)-----	2,898	2,507	1,244	.50
Stearic acid (amine/acid ratio=1/1)-----	356	...	...	...
All other-----	1,603	1,120	815	.73
All other carboxylic acid amides-----	26,663	11,912	5,611	.47
Carboxylic acid esters, total-----	222,346	159,435	94,863	.60
Anhydrosorbitol esters-----	14,956	10,474	7,886	.75
Diethylene glycol esters, total-----	946	883	543	.61
Diethylene glycol distearate-----	400	418	263	.63
Diethylene glycol monostearate-----	235	210	111	.53
All other-----	311	255	169	.66
Ethoxylated anhydrosorbitol esters, total-----	21,360	20,737	13,289	.64
Ethoxylated anhydrosorbitol monostearate-----	5,939	6,765	3,696	.55
All other-----	15,421	13,972	9,593	.69
Ethylene glycol esters-----	1,516	1,448	836	.58
Glycerol esters, total-----	89,563	75,710	43,299	.57
Complex glycerol esters-----	6,236	5,791	4,102	.71
Glycerol esters of chemically defined acids, total-----	27,992	21,308	11,302	.53
Glycerol mono-oleate-----	3,757	2,838	1,849	.65
Glycerol monostearate-----	23,029	17,366	8,600	.50
All other-----	1,206	1,104	853	.77

See footnotes at end of table.

TABLE 1.--SURFACE-ACTIVE AGENTS: U.S. PRODUCTION AND SALES, 1975--CONTINUED

Chemical	Production ¹	Sales ²		
		Quantity ¹	Value	Unit value ³
<i>Nonionic Surface-Active Agents--Continued</i>				
Carboxylic acid esters--Continued		1,000 pounds	1,000 pounds	Per pound
Glycerol esters--Continued				
Glycerol esters of mixed acids, total-----	55,335	48,611	27,895	\$0.57
Glycerol monoester of hydrogenated cottonseed oil acids-----	3,263	...	...	...
Glycerol monoester of hydrogenated soybean oil acids-----	7,250	5,370	4,065	.76
Glycerol monoester of lard acids-----	5,395	6,706	4,286	.64
All other-----	39,427	36,535	19,544	.54
Natural fats and oils, alkoxylated, total-----	11,427	11,092	5,268	.47
Castor oil, ethoxylated-----	6,230	5,603	2,623	.47
Hydrogenated castor oil, ethoxylated-----	...	1,798	898	.50
Lanolin, ethoxylated-----	1,741	1,725	1,061	.62
All other-----	3,456	1,966	686	.35
Polyethylene glycol esters, total-----	32,083	27,536	15,912	.58
Polyethylene glycol esters of chemically defined acids, total-----	20,578	16,859	10,887	.65
Polyethylene glycol dilaurate-----	1,201	1,013	843	.83
Polyethylene glycol dioleate-----	2,613	1,474	836	.57
Polyethylene glycol monolaurate-----	2,780	2,608	1,809	.69
Polyethylene glycol mono-oleate-----	2,659	2,319	1,354	.58
Polyethylene glycol monostearate-----	6,889	5,746	3,702	.64
All other-----	4,436	3,699	2,343	.63
Polyethylene glycol esters of mixed acids-----	11,505	10,677	5,025	.47
Propanediol esters, total-----	10,024	3,722	2,395	.64
1,2-Propanediol monolaurate-----	33	...	...	...
1,2-Propanediol monostearate-----	4,322	3,593	2,242	.62
All other-----	5,669	129	153	1.19
Other carboxylic acid esters ⁷ -----	40,471	7,833	5,435	.69
Ethers, total-----	742,272	511,751	185,017	.36
Benzenoid ethers, total-----	179,453	149,052	63,650	.43
Dodecylphenol, ethoxylated-----	12,686	...	...	...
Nonylphenol, ethoxylated-----	92,420	83,086	31,828	.38
Phenol, ethoxylated-----	1,457	1,617	838	.52
All other-----	72,890	64,349	30,984	.48
Nonbenzenoid ethers, total-----	562,819	362,699	121,367	.33
Linear alcohols, alkoxylated, total-----	506,405	315,061	96,968	.31
Dodecyl alcohol, ethoxylated-----	3,166	2,496	1,736	.70
Hexadecyl alcohol, ethoxylated-----	1,024	991	838	.85
Mixed linear alcohols, ethoxylated-----	...	291,427	84,430	.29
Mixed linear alcohols, ethoxylated and propoxylated-----	13,128	12,226	5,079	.42
9-Octadecenyl alcohol, ethoxylated-----	1,168	1,537	1,287	.84
Octadecyl alcohol, ethoxylated-----	1,226	558	408	.73
All other-----	486,693	5,826	3,190	.55
Other ethers and thioethers, total-----	56,414	47,638	24,399	.51
Tridecyl alcohol, ethoxylated-----	7,911	...	...	...
Trimethylnonyl alcohol, ethoxylated-----	1,886	2,528	1,078	.43
All other ⁸ -----	46,617	45,110	23,321	.52

¹ All quantities are given in terms of 100 percent organic surface-active ingredient.² Sales include products sold as bulk surface-active agents only.³ Calculated from rounded figures.⁴ The term "benzenoid," used in this report, describes any surface-active agent, except lignin derivatives, whose molecular structure includes 1 or more 6-membered carbocyclic or heterocyclic rings with conjugated double bonds (e.g., the benzene ring or the pyridine ring).⁵ Includes ligninsulfonates.⁶ Includes production of "all other" sulfated alcohols and other acids, amides, and esters, sulfated.⁷ Includes ethoxylated sorbitol esters, polyglycerol esters, and miscellaneous esters.⁸ Includes "other" nonionic surface-active agents.

SYNTHETIC ORGANIC CHEMICALS, 1975

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION OR SALES WERE REPORTED,
IDENTIFIED BY MANUFACTURER, 1975

[Surface-active agents for which separate statistics are given in table 1 are marked with an asterisk (*); products 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]

Chemicals	Manufacturers' identification codes (according to list in table 3)
<i>Amphoteric Surface-Active Agents</i>	
Acyclic:	
Alkylbetaine-----	DUP.
(1-Carboxyheptadecyl)trimethylammonium hydroxide, inner salt.	DUP.
N-[2-(Carboxymethylamino)ethyl]-N-(2-hydroxyethyl)-coconut oil amide, sodium salt.	WM.
(Carboxymethyl)[3-(coconut oil amido)propyl]dimethylammonium chloride, sodium salt.	x.
(1-Carboxyundecyl)trimethylammonium hydroxide, inner salt.	DUP.
N-(Coconut oil alkyl)-β-alanine, partial sodium salt-----	GNM.
N-(Coconut oil alkyl)-β-alanine, sodium salt-----	GNM.
3-[(Coconut oil alkyl)amino]butyric acid, sodium salt.	ARC.
N-(Dodecyl and tetradecyl)-β-alanine-----	GNM.
N-(Dodecyl and tetradecyl)-β-alanine, triethanolamine salt.	GNM.
N-Dodecyl-3-iminodipropionic acid-----	GNM.
N-Dodecyl-3-iminodipropionic acid, disodium salt-----	GNM.
Mixed acyclic primary amines, ethoxylated and sulfated, sodium salt.	RH.
(Mixed alkyl)sulfobetaine-----	SCP.
Mixed fatty betaines-----	SCP.
Oleic acid - ethylenediamine condensate, propoxylated and sulfated, sodium salt.	S.
N-(Tallow alkyl)-3-iminodipropionic acid, disodium salt.	GNM.
All other acyclic-----	PG, x.
Cyclic:	
1,1-Bis(carboxyethyl)-2-undecylimidazoline, sodium salt.	MOA.
1,1-Bis(carboxymethyl)-2-(coconut oil alkyl)-2-imidazolinium chloride, disodium salt.	SCP.
1,1-Bis(carboxymethyl)-2-undecyl-2-imidazolinium chloride, disodium salt.	SCP.
1,1-Bis(carboxymethyl)-2-undecyl-2-imidazolinium hydroxide, disodium salt.	BRD, MIR.
1-Carboxymethyl-2-heptadecyl-1-(2-hydroxyethyl)-2-imidazolinium hydroxide, sodium derivative, sodium salt.	MIR.
1-Carboxymethyl-1-(2-hydroxyethyl)-2-nonyl-2-imidazolinium hydroxide, sodium derivative, sodium salt.	MIR.
1-Carboxymethyl-1-(2-hydroxyethyl)-2-undecyl-2-imidazolinium hydroxide, sodium derivative, sodium salt.	GAF, MIR.
1-Carboxymethyl-1-(2-hydroxyethyl)-2-undecyl-2-imidazolinium hydroxide, sodium derivative, sodium salt.	TCH.
1-Carboxymethyl-1-(2-hydroxyethyl)-2-dodecyl-2-imidazolinium hydroxide, sodium salt.	CGY.
Heptadecylmethylbenzimidazolinesulfonic acid, sodium salt.	MOA.
1-(2-Hydroxyethyl)-2-heptyl-3-carboxyethylimidazoline, sodium salt.	MOA.
1-(2-Hydroxyethyl)-2-undecyl-3-carboxyethylimidazoline, sodium salt.	GAF, SBC.
All other cyclic-----	
<i>Anionic Surface-Active Agents</i>	
*Carboxylic acids (and salts thereof):	
Amine salts of fatty, rosin and tall oil acids:	
Coconut oil acids, diethanolamine salt-----	SOP.

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION OR SALES WERE REPORTED,
IDENTIFIED BY MANUFACTURER, 1975 --CONTINUED

Chemical	Manufacturers' identification codes (according to list in table 3)
<i>Anionic Surface-Active Agents--Continued</i>	
*Carboxylic acids (and salts thereof)--Continued	
Amine salts of fatty, rosin, and tall oil acids--Continued	SBP. SBP.
Coconut oil acids, monoethanolamine salt-----	PG. WM.
Lauric, myristic, and stearic acids, monoethanolamine salt.	DYS. PEK. WTC.
Mixed fatty acids, diethanolamine salt-----	PEK.
Mixed fatty acids, dimethylaminopropylamine salt-----	ONX. ICI.
Oleic acid, n-butylamine salt-----	GLY. SOP.
Oleic acid, diethanolamine salt-----	SBP.
Oleic acid, diethylamine salt-----	SBP.
Oleic acid, triethanolamine salt-----	
Rosin acid, triethanolamine salt-----	
Stearic acid, N,N,N'-tetrakis(2-hydroxyethyl)-ethylenediamine salt.	
Stearic acid, triethanolamine salt-----	
Tall oil acids, diethanolamine salt-----	
Tallow acids, monoethanolamine salt-----	
Tallow acids, triethanolamine salt-----	
*Carboxylic acids having amide, ester, or ether linkages:	
N-(Coconut oil acyl)polypeptide, potassium salt-----	x.
N-(Coconut oil acyl)polypeptide, sodium salt-----	x.
N-(Coconut oil acyl)polypeptide, triethanolamine salt.	x.
N-(Coconut oil acyl)sarcosine, sodium salt-----	HMP.
N-(Coconut oil acyl)sarcosine, sodium salt-----	HMP.
Diisobutylene - maleic anhydride copolymer, ammonium and sodium salts (Diisobutylene maleate).	RH.
Epoxidized oleic acid, ammonium salt-----	SCP.
N-Lauroylsarcosine-----	HMP.
N-Lauroylsarcosine, sodium salt-----	CP, HMP, ONX.
Lauryl(ethyleneoxy)propionic acid, sodium salt-----	AZS.
N-Oleoylpolyptide, sodium salt-----	IMI, x.
N-Oleoylsarcosine, sodium salt-----	HMP.
Stearolactic acid, calcium salt-----	MOA.
Tridecyloxy poly(ethyleneoxy)acetic acid, sodium salt.	MIL.
N-(Undecylenic oil acyl)polypeptide; potassium salt-----	x.
Unspecified sarcosine derivatives-----	HMP.
All other-----	CHP, BRD.
*Potassium and sodium salts of fatty, rosin, and tall oil acids:	
Animal grease, sodium salt-----	NMC.
*Castor oil acids, potassium salt-----	NTL, PEK, SEA.
*Castor oil acid, sodium salt-----	HEW, NTL.
Coco butter acids, sodium salt-----	HEW.
*Coconut oil acids, potassium salt-----	AES, CON, DA, DYS, ESS, GRC, GRL, HEW, HNT, MCP, NMC, PCH, PEK, PG, PNX, SOP, VAL.
*Coconut oil acids, sodium salt-----	AGP, CON, CP, GRC, HEW, JRG, LEV, NMC, NPR, PG.
Coconut oil and tallow acids, sodium salt-----	BSW.
*Corn oil acids, potassium salt-----	GRC, HNT, NMC.
Corn oil acids, sodium salt-----	GRC, NMC.
Fish oil acids, sodium salt-----	DA, PG.
Lauric acid, potassium salt-----	GAF.
Linseed oil acids, potassium salt-----	PEK.
Mixed fatty acids, sodium salt-----	PG.
*Mixed vegetable oil acids, potassium salt-----	AES, DYS, GRC, GRL, LUR, PCH, QCP.
*Oleic acid, potassium salt-----	AES, DA, HNT, SCP, USR, WBG.
*Oleic acid, sodium salt-----	BSW, DA, LUR, NMC, USR, WBG, WTC.
Olive oil acids, sodium salt-----	HEW, HNT.
Palm kernel acids, sodium salt-----	NMC.
Palm oil acids, sodium salt-----	HEW, LUR, NMC.
Peanut oil acids, potassium salt-----	SLC.

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION OR SALES WERE REPORTED,
IDENTIFIED BY MANUFACTURER, 1975--CONTINUED

Chemical	Manufacturers' identification codes (according to list in table 3)
<i>Anionic Surface-Active Agents--Continued</i>	
*Carboxylic acids (and salts thereof)--Continued	
*Potassium and sodium salts of fatty, rosin, and tall oil acids--Continued	
Rosin acids, potassium salt-----	ASY, SNW, x.
Rosin acids, sodium salt-----	ASY, CRT, HRT, USR, x.
Soybean oil acids, potassium salt-----	DYS, PCH, PEK.
Soybean oil acids, sodium salt-----	NMC.
*Stearic acid, potassium salt-----	CON, DA, HEW, SCO, USR, WTC.
Stearic acid, sodium salt-----	DA, HEW, JRG, WTC.
Tall oil acids, potassium and sodium salts:	
Tall oil acids, potassium salt-----	AES, CON, DAN, DYS, ESS, GRC, HNT, PEK, PNX, SOP. VAL, x.
Tall oil acids, sodium salt-----	GRC, MRV, NMC, SOP, UNP, x.
*Tallow acids, potassium salt-----	AES, AGP, ASY, DYS, PG, USR.
*Tallow acids, sodium salt-----	ASY, BSW, CON, CP, GRC, HEW, JRG, LEV, LUR, NMC, NPR, PG, PRX.
All other-----	USR.
*Phosphoric and polyphosphoric acid esters (and salts thereof):	
*Alcohols and phenols, ethoxylated and phosphated:	
Decyl alcohol, ethoxylated and phosphated-----	TCH.
Dinonylphenol, ethoxylated and phosphated-----	GAF, MOA, TCH, WAY.
Dinonylphenol, ethoxylated and phosphated, potassium salt.	WAY.
Dodecyl alcohol, ethoxylated and phosphated-----	GAF.
Dodecylphenol, ethoxylated and phosphated-----	ARL, GAF.
2-Ethylhexanol, ethoxylated and phosphated-----	FNX, WAY.
Hexylphenol, ethoxylated and phosphated-----	CRT.
*Mixed linear alcohols, ethoxylated and phosphated-----	AZS, BAS, CEL, CHP, CRT, CST, CTL, FNX, GAF, SCP, SNW, TCH, WTC.
*Nonylphenol, ethoxylated and phosphated-----	ARL, AZS, CTL, GAF, HDG, MOA, NLC, SCP, SOP, TCC, WAY, WTC.
Nonylphenol, ethoxylated and phosphated, barium salt.	DEX.
9-Octadecenyl alcohol, ethoxylated and phosphated-----	GAF.
Octadecyl alcohol, ethoxylated and phosphated-----	GAF.
Octylphenol, ethoxylated and phosphated-----	RH.
Phenol, ethoxylated and phosphated-----	GAF, MOA, WTC, x.
Polyalkylene glycol, phosphated-----	BAS.
Polyhydric alcohol, ethoxylated and phosphated-----	NLC.
Polypropylene glycol, phosphated-----	LUR.
*Tridecyl alcohol, ethoxylated and phosphated-----	ARL, DAN, FNX, GAF, SNW, TCC, WTC.
All other-----	GAF.
*Alcohols, phosphated or polyphosphated:	
Butyl phosphate, potassium salt-----	DUP.
Decyl, dodecyl, and octyl phosphate, morpholine salt.	DUP.
*2-Ethylhexyl phosphate, sodium salt-----	CHP, FNX, MRA, UCC.
2-Ethylhexyl phosphate, triethanolamine salt-----	MIL.
2-Ethylhexyl polyphosphate-----	x.
2-Ethylhexyl polyphosphate, sodium salt-----	x.
Glycerol monoester of mixed fatty acids, phosphated-----	QCP, WTC.
Hexyl phosphate-----	ICI.
Hexyl phosphate, potassium salt-----	ICI.
Hexyl polyphosphate, potassium salt-----	DEX.
Mixed alkyl phosphate-----	DUP, SFS, WTC.
Mixed alkyl phosphate, diethanolamine salt-----	DUP.
9-Octadecenyl phosphate-----	x.
Octadecyl phosphate-----	x.
Octyl phosphate-----	MCP, SCP, WTC.
Octyl phosphate, alkylamine salt-----	DUP, NLC, SCP.

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION OR SALES WERE REPORTED,
IDENTIFIED BY MANUFACTURER, 1975--CONTINUED

Chemical	Manufacturers' identification codes (according to list in table 3)
<i>Anionic Surface-Active Agents--Continued</i>	
*Phosphoric and polyphosphoric acid esters (and salts thereof)--Continued	
*Alcohols, phosphated or polyphosphated--Continued	
Octyl polyphosphate-----	DEX.
Octyl polyphosphate, potassium salt-----	SNW, x.
Oleyl phosphate-----	DUP.
Tridecyl phosphate-----	TCH.
All other-----	BRD, x.
*Sulfonic acids (and salts thereof):	
*Alkylbenzenesulfonates:	
*Dodecylbenzenesulfonates:	
*Dodecylbenzenesulfonic acid-----	CO, CRT, CTL, EMK, FNX, HLI, LAK, LEV, MON, PIL, PLX, RCD, STP, TCI, TEN, WTC.
Dodecylbenzenesulfonic acid, 2-amino-2-methyl-1-propanol salt.	VAL.
Dodecylbenzenesulfonic acid, ammonium salt-----	ARL, HLI, STC.
Dodecylbenzenesulfonic acid, butylamine salt-----	WTC.
*Dodecylbenzenesulfonic acid, calcium salt-----	ICI, NLC, RCD, RH, STP, TMH, WTC.
Dodecylbenzenesulfonic acid, diethanolamine salt-----	FNX.
Dodecylbenzenesulfonic acid, dimethylamine salt-----	PIL.
*Dodecylbenzenesulfonic acid, isopropylamine salt-----	CHP, CIN, CTL, ICI, MRV, RCD, STP, TCH, WTC.
Dodecylbenzenesulfonic acid, (mixed alkyl)amine salt.	ECC, NLC.
Dodecylbenzenesulfonic acid, monoethanolamine salt.	FNX.
Dodecylbenzenesulfonic acid, potassium salt-----	STP, VAL.
*Dodecylbenzenesulfonic acid, sodium salt-----	AAC, APX, ARD, ARL, ATR, AZS, BLA, CEL, CO, CP, CRT, CTL, DA, DEP, ECC, HLI, LEV, NMC, PEK, PG, PIL, PLX, PRX, RCD, SOP, STP, TEN, WTC.
Dodecylbenzenesulfonic acid, strontium salt-----	HLI.
*Dodecylbenzenesulfonic acid, triethanolamine salt.	AAC, ARD, ARL, ATR, CIN, CTL, ECC, ESS, PEK, PIL, RCD, SOP, STP, WTC.
*Other alkylbenzenesulfonates:	
Didodecylbenzenesulfonic acid-----	CO, WTC.
Didodecylbenzenesulfonic acid, sodium salt-----	ATR.
Pentadecylbenzenesulfonic acid, potassium salt-----	STP.
Tridecylbenzenesulfonic acid-----	CO, RCD, SCP.
Tridecylbenzenesulfonic acid, ammonium salt-----	SCP.
Tridecylbenzenesulfonic acid, sodium salt-----	BLA, CP, NPR, PG, RCD, WTC.
Undecylbenzenesulfonic acid-----	SCP.
Undecylbenzenesulfonic acid, ammonium salt-----	SCP.
Undecylbenzenesulfonic acid, isopropylamine salt-----	SCP.
Undecylbenzenesulfonic acid, sodium salt-----	SCP.
Undecylbenzenesulfonic acid, triethanolamine salt.	SCP.
All other-----	SCP, USR.
*Benzene-, cumene-, toluene-, and xylenesulfonates:	
Allylsulfonic acid, sodium salt-----	X.
*Cumenesulfonic acid, ammonium salt-----	NES, SCP, WTC.
Cumenesulfonic acid, sodium salt-----	NES.
*Toluenesulfonic acid, potassium and sodium salts:	
Potassium salt-----	NES, SCP, STP, WTC.
Sodium salt-----	CO, NES, PG, PRX, STP, WTC.
*Xylenesulfonic acid, ammonium salt-----	CO, NES, SCP, STP, WTC.
*Xylenesulfonic acid, sodium salt-----	CO, NES, PIL, PRX, SCP, SDC, STP, WTC.
*Ligninsulfonates:	
Ligninsulfonic acid, ammonium salt-----	CPP, CRZ, SPA.
*Ligninsulfonic acid, calcium salt-----	CRZ, CWP, LKY, MAR, PSP.
Ligninsulfonic acid, chromium salt-----	MAR, PSP, RAY.
Ligninsulfonic acid, iron salt-----	CRZ, PSP.

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION OR SALES WERE REPORTED,
IDENTIFIED BY MANUFACTURER, 1975--CONTINUED

Chemical	Manufacturers' identification codes (according to list in table 3)
<i>Anionic Surface-Active Agents--Continued</i>	
*Sulfonic acids (and salts thereof)--Continued	
*Ligninsulfonates:	
Ligninsulfonic acid, magnesium salt-----	CWP, MAR.
Ligninsulfonic acid, mixed salts-----	PSP.
Ligninsulfonic acid, potassium salt-----	SPA.
Ligninsulfonic acid, sodium salt-----	CRZ, MAR, PSP, RAY, SPA, WVA.
*Naphthalenesulfonates:	
Butylnaphthalenesulfonic acid-----	DA.
Butylnaphthalenesulfonic acid, sodium salt-----	DA, ECC.
Dibutylnaphthalenesulfonic acid-----	GAF, S.
Diisopropylnaphthalenesulfonic acid, sodium salt-----	DA, PFZ.
Dipentylnaphthalenesulfonic acid, (mixed alkyl)- amine salt.	NLC.
Dipentylnaphthalenesulfonic acid, sodium salt-----	CGY.
Isopropylnaphthalenesulfonic acid-----	DA, DUP, GRD.
Methylenebis(2-naphthalenesulfonic acid)-----	DUP.
Methylnaphthalenesulfonic acid, sodium salt-----	DA, UDI.
Tetrahydronaphthalenesulfonic acid, sodium salt-----	DUP.
*Sulfonic acids having amide linkages:	
*Sulfosuccinic acid derivatives:	
N-(1,2-Dicarboxyethyl)-N-octadecylsulfosuccinamic acid, tetrasodium salt.	ACY, MOA.
N-Octadecylsulfosuccinamic acid, disodium salt-----	ACY.
N-(Oleoyloxyisopropyl)sulfosuccinamic acid, disodium salt.	WTC.
Sulfosuccinic acid, alkanolamide ester, ammonium salt.	SCP.
Sulfosuccinic acid, alkanolamide ester, sodium salt.	SCP.
Sulfosuccinic acid, alkanolamide ester, tri- ethanolamine salt.	SCP.
Sulfosuccinic acid, coconut oil monoisopropanol- amide ester, disodium salt.	MOA.
Sulfosuccinic acid, 2-(coconut oil amido)ethyl ester, sodium salt.	LAK.
All other-----	ARD.
*Taurine derivatives:	
N-(Coconut oil acyl)-N-methyltaurine, sodium salt--	FNX, GAF, LIL, TNI.
N-Cyclohexyl-N-palmitoyltaurine, sodium salt-----	GAF.
N-Methyl-N-oleoyltaurine, sodium salt-----	DA, GAF, HRT.
N-Methyl-N-palmitoyltaurine, sodium salt-----	GAF.
N-Methyl-N-(tall oil acyl)taurine, sodium salt-----	CRT, FNX, GAF, MRA, x.
*Sulfonic acids having ester or ether linkages:	
*Sulfosuccinic acid esters:	
*Sulfosuccinic acid, bis(2,6-dimethyl-4-heptyl) ester, sodium salt.	DAN, GAF, MOA.
Sulfosuccinic acid, bis(diisobutyl) ester, sodium salt.	MOA.
Sulfosuccinic acid, bis(2-ethylhexyl) ester, sodium salt.	ACY, CGY, CHP, CRT, DA, DAN, ECC, EMK, FNX, HDG, HRT, MCP, MOA, MRA, PC, SCO, WTC.
Sulfosuccinic acid, bis(tallow monoglyceride) ester, sodium salt.	ACY.
Sulfosuccinic acid, dihexyl ester, sodium salt-----	ACY, MOA.
Sulfosuccinic acid, diisodecyl ester, sodium salt.	MCP.
Sulfosuccinic acid, diisoctyl ester, sodium salt.	RH.
Sulfosuccinic acid, dipentyl ester, sodium salt-----	ACY.
Sulfosuccinic acid, ditridecyl ester, sodium salt.	ACY, MOA.

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION OR SALES WERE REPORTED,
IDENTIFIED BY MANUFACTURER, 1975--CONTINUED

Chemical	Manufacturers' identification codes (according to list in table 3)
<i>Anionic Surface-Active Agents--Continued</i>	
*Sulfonic acids (and salts thereof)--Continued	
*Sulfonic acids having ester or ether linkages--	
Continued	
*Other sulfonic acids having ester or ether linkages:	
Coconut oil acids, 2-sulfoethyl ester, sodium salt.	GAF, LEV, x.
Dodecyldiphenyloxidedisulfonic acid, disodium salt.	DOW.
Dodecyl sulfoacetate, sodium salt-----	STP.
Herring oil, sulfonated, sodium salt-----	SIM.
2-Hydroxy-3-(mixed alkyl)oxy-1-propanesulfonic acid, sodium salt.	PG.
Iso-octylphenol, ethoxylated and sulfonated, sodium salt.	RH.
n-Octylphenol, ethoxylated and sulfonated, sodium salt.	CRT.
All other-----	HDG, SIM.
*All other sulfonic acids:	
Butylhydroxybiphenylsulfonic acid-----	RBC.
Mixed alkanesulfonic acid, sodium salt-----	DUP, QCP.
Mixed alpha olefin, sulfonic acid, sodium salt-----	CP, LAK, NLC, SCP, STP.
*Sulfuric acid esters (and salts thereof):	
*Acids, amides, and esters, sulfated:	
Coconut oil acids - ethanolamine condensate, sulfated, potassium salt.	DEX, EMK.
*Esters of sulfated oleic acid:	
2-Butoxyethyl oleate, sulfated, sodium salt-----	S.
*Butyl oleate, sulfated, sodium salt-----	CIN, CRT, ICI, MCP, MRV, PC.
Ethyl oleate, sulfated, sodium salt-----	AKS.
2-Ethylhexyl oleate, sulfated, sodium salt-----	CHP.
Glyceryl trioleate, sulfated, sodium salt-----	MRV.
Isobutyl oleate, sulfated, sodium salt-----	DA.
Isopropyl oleate, sulfated, sodium salt-----	CRT, DEX, HRT, SCP.
Methyl oleate, sulfated, sodium salt-----	ICI.
*Propyl oleate, sulfated, sodium salt-----	ACY, AKS, CHP, MCP, MRV.
*Oleic acid, sulfated, disodium salt-----	ACT, ACY, DA, GAF, SCO, TEN.
Oleic acid, sulfated, sodium salt-----	WHI.
Other acids, amides, and esters, sulfated:	
Glycerol monoester of coconut oil acids, sulfated sodium salt.	CP.
*Tall oil, sulfated, sodium salt-----	ACT, APX, BAO, CHP, CRT, DA, ICI, KAL, SEA, WHI, WHW,
All other-----	DA, DUP.
*Alcohols, sulfated:	
Coconut and sperm oil alkyl sulfate, sodium salt-----	DA, FNX.
Decyl and octyl sulfate, sodium salt-----	TCH.
*Decyl sulfate, sodium salt-----	CTL, DUP, HLI, SCP.
3,9-Diethyl-6-tridecyl sulfate, sodium salt-----	UCC.
*Dodecyl sulfate salts:	
2-Amino-2-methylpropanol salt-----	x.
*Ammonium salt-----	AAC, CTL, HLI, JRG, ONX, SCP, STP, TCH, TNI.
Diethanolamine salt-----	AAC, DUP, JRG, SCP, STP.
Diethylamine salt-----	AAC.
N,N-Diethylcyclohexylamine salt-----	DUP.
Isopropanolamine salt-----	JRG, TCH.
Magnesium salt-----	AAC, HLI, ONX, STP.
Potassium salt-----	PG.
*Sodium salt-----	AAC, AZS, CTL, DUP, HLI, JRG, ONX, SCP, STP, TCH.
*Triethanolamine salt-----	AAC, AZS, CTL, DUP, HLI, ONX, SCP, STP, TCH.
2-Ethylhexyl sulfate, sodium salt-----	AAC, SCP, TCH, UCC.

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION OR SALES WERE REPORTED,
IDENTIFIED BY MANUFACTURER, 1975--CONTINUED

Chemical	Manufacturers' identification codes (according to list in table 3)
<i>Anionic Surface-Active Agents--Continued</i>	
*Sulfuric acid esters (and salts thereof)--Continued	
*Alcohols, sulfated--Continued	
7-Ethyl-2-methyl-4-undecyl sulfate, sodium salt-----	UCC.
Hexadecyl and 9-octadecyl sulfate, sodium salt-----	SCP.
Hexadecyl sulfate, sodium salt-----	AAC.
Hexyl sulfate, potassium salt-----	DEX.
Mixed linear alcohols sulfated, ammonium salt-----	LAK, NTL, PG, RCD, S, SCP, UCC, WTC.
Mixed linear alcohols sulfated, diethanolamine salt--	SCP.
*Mixed linear alcohols sulfated, sodium salt-----	LAK, PG, RCD, SCP.
Mixed linear alcohols sulfated, triethanolamine salt.	LAK, PG, SCP.
Nonyl sulfate, sodium salt-----	TEN.
Octadecyl sulfate, ammonium salt-----	EMK.
Octadecyl sulfate, sodium salt-----	ONX.
*Octyl sulfate, sodium salt-----	AAC, APX, DUP, WTC.
Oleyl sulfate, diethanolamine salt-----	AAC.
Oleyl sulfate, sodium salt-----	DUP.
Tallow alcohols, sulfated, sodium salt-----	PG.
Tridecyl sulfate, sodium salt-----	AAC, DA, SCP.
All other-----	DUP, SW.
*Ethers, sulfated:	
*Alkylphenols, ethoxylated and sulfated:	
1-Naphthol, ethoxylated and sulfated, sodium salt--	TCH.
Nonylphenol, ethoxylated and sulfated, ammonium salt.	GAF, HLI, MOA, STP.
Nonylphenol, ethoxylated and sulfated, sodium salt.	CRT, DEX, GAF.
Octylphenol, ethoxylated and sulfated, sodium salt.	RH.
Decyl alcohol, propoxylated and sulfated, sodium salt.	APX.
Dodecyl alcohol, ethoxylated and sulfated, ammonium salt.	AAC, AKS, CTL, HLI, STP.
*Dodecyl alcohol, ethoxylated and sulfated, sodium salt.	AAC, CTL, HLI, ONX, SCP, STP, TCH.
Dodecyl and tetradecyl alcohols, ethoxylated and sulfated, ammonium salt.	LEV.
Hexyl alcohol, propoxylated and sulfated, sodium salt.	APX.
2-Hexyloxypropyl sulfate, sodium salt-----	S.
*Mixed linear alcohols, ethoxylated and sulfated ammonium salt.	CO, LAK, MOA, PG, PIL, RCD, SCP, SHC, STP, WTC.
Mixed linear alcohols, ethoxylated and sulfated, sodium salt.	AAC, CO, DA, GAF, HLI, LAK, LEV, PG, PIL, RCD, SCP, SHC, STP, TCI, WTC.
Tallow alcohols, ethoxylated and sulfated, sodium salt.	PG.
Tridecyl alcohol, ethoxylated and sulfated, ammonium salt.	PRX.
Tridecyl alcohol, ethoxylated and sulfated, sodium salt.	AAC, ARL.
*Natural fats and oils, sulfated:	
*Castor oil, sulfated, sodium salt-----	ACT, ACY, AKS, APX, ARL, BAO, CRT, DA, DEX, FNX, HRT, ICI, KAL, LEA, LUR, MRD, MRV, S, SCO, SCP, SLM, WHW.
Coconut oil, sulfated, sodium salt-----	ACY, BAO, DA, GAF, LUR, MRD.
*Cod oil, sulfated, sodium salt-----	ACT, BAO, SEA, WHI, WHW.
Grease, other than wool, sulfated, sodium salt-----	SEA, WHI.
Herring oil, sulfated, sodium salt-----	ACT, BAO, SCP, SEA, SLM, WHW.
Lard, sulfated, sodium salt-----	CRT, WAW, WHW.

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION OR SALES WERE REPORTED,
IDENTIFIED BY MANUFACTURER, 1975--CONTINUED

Chemical	Manufacturers' identification codes (according to list in table 3)
<i>Anionic Surface-Active Agents--Continued</i>	
*Sulfuric acid esters (and salts thereof)--Continued	
*Natural fats and oils, sulfated--Continued	
Mixed animal and vegetable oils, sulfated, sodium salt.	SLM.
Mixed fish oils, sulfated, sodium salt-----	MRD, SLM.
Mixed vegetable oils, sulfated, sodium salt-----	AZS, LUR, SLM.
Mustard seed oil, sulfated, sodium salt-----	DA.
*Neat's-foot oil, sulfated, sodium salt-----	ARC, ACT, BAO, DA, KAL, LUR, MRD, PC, SEA, SLM.
Peanut oil, sulfated, sodium salt-----	ACY, CHP, LUR.
Pecan oil, sulfated, sodium salt-----	CRT.
Ricebran oil, sulfated, sodium salt-----	DA, KNG, SEA.
Soybean oil, sulfated, sodium salt-----	ACT, HRT, ONX.
*Sperm oil, sulfated, sodium salt-----	DA, ONX, SCO, SEA, WHI, WHW.
*Tallow, sulfated, sodium salt-----	ACT, ACY, AZS, DA, ECC, LUR, MCP, MRD, PC, SCP, SID, SLM, SOS, WHI.
Other anionic surface-active agents:	
Patty acid lactolates, mixed salts-----	BFP.
Lignin, sodium salt-----	WVA.
Mixed linear alcohols, ethoxylated and carbonated, sodium salt.	S.
Polyethylene-vinyl alcohol copolymer, potassium salt---	NLC.
Tridecyl alcohol, ethoxylated and carbonated, free acid.	S.
Tridecyl alcohol, ethoxylated and carbonated, sodium salt.	S.
All other-----	SCO, WTC.
<i>Cationic Surface-Active Agents</i>	
*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, FIN.
N,N-Bis(2-hydroxyethyl)(tallow alkyl)amine-----	ARC.
N,N-Bis(2-hydroxyethyl)(tallow alkyl)amine oxide-----	ARC.
*(Coconut oil alkyl)amine, ethoxylated-----	ARC, ASH, BRD, GAF, NLC, TCH.
(Coconut oil alkyl)amine, ethoxylated, maleate-----	SDH.
(Coconut oil alkyl)amine, ethoxylated, oleate-----	DUP.
N,N-Dimethyl(coconut oil alkyl)amine oxide-----	ARC.
N,N-Dimethyldiethylamine oxide-----	BRD.
N,N-Dimethyldodecylamine oxide (Lauryl dimethylamine oxide).	BRD.
N,N-Dimethylhexadecylamine oxide-----	ONX.
N,N-Dimethyl(hydrogenated tallow alkyl)amine oxide-----	ARC.
N,N-Dimethyl(mixed alkyl)amine oxide-----	X.
N,N-Dimethylmyristylamine oxide-----	BRD.
Ethylenediamine, ethoxylated and propoxylated-----	ICI.
(Hydrogenated tallow alkyl)amine, ethoxylated-----	TCH.
N-(2-Hydroxyethyl)-N,N',N'-tris(2-hydroxypropyl)-ethylenediamine.	NLC.
N-(2-Hydroxyethyl)-N,N',N'-tris(2-hydroxypropyl)-ethylenediamine distearate, methyl sulfate.	DUP.
(Mixed alkyl)amine, ethoxylated-----	DA, GAF, ICI, RH.
(Mixed alkyl)poly(oxyethylene)amine-----	GAF.
Mixed substituted oximes-----	GNM.
(9-Octadecenyl)amine, ethoxylated-----	ARC, TCH.
Octadecylamine, ethoxylated-----	ARC, TCH.
N,N-Oleylamine oxide-----	SCP.
Polyethylenepolyamine, alkoxylated-----	NLC.

SYNTHETIC ORGANIC CHEMICALS, 1975

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION OR SALES WERE REPORTED,
IDENTIFIED BY MANUFACTURER, 1975--CONTINUED

Chemical	Manufacturers' identification codes (according to list in table 3)
<i>Cationic Surface-Active Agents--Continued</i>	
*Amine oxides and oxygen-containing amines (except those having amide linkages)--Continued	
*Acyclic--Continued	
(Soybean oil alkyl)amine, ethoxylated-----	ARC.
*(Tallow alkyl)amine, ethoxylated-----	ARC, DUP, PG, TCH.
(Tallow alkyl)amine ethoxylated, sulfate-----	DUP.
N-(Tallow alkyl)trimethylenediamine, ethoxylated-----	ARC, TCH.
N,N,N',N'-Tetrakis(2-hydroxypropyl)ethylenediamine dioleate, methyl sulfate.	DUP.
N,N,N',N'-Tetrakis(2-hydroxypropyl)ethylenediamine, propoxylated and ethoxylated.	ARC.
Triethanolamine, ethoxylated-----	MIL.
All other-----	ARC, TCH.
*Cyclic (including imidazoline and oxazoline derivatives):	
Aniline, ethoxylated-----	TCH.
Lignin amines-----	MVA.
Rosin amine, ethoxylated-----	HPC, NLC, WTC.
m-Toluidine, ethoxylated-----	TCH.
Imidazoline and oxazoline derivatives:	
2-(8-Heptadecenyl)-4,4-bis(hydroxymethyl)-2-oxazoline.	COM.
2-(8-Heptadecenyl)-4-hydroxymethyl-4-methyl-1-oxazoline.	BRD, COM.
*1-(2-hydroxyethyl)-2-(8-Heptadecenyl)-2-imidazoline.	BRD, DA, MOA, ONX, SCP.
*1-(2-Hydroxyethyl)-2-heptadecyl-2-imidazoline-----	CGY, CHP, SNW.
1-(2-Hydroxyethyl)-2-heptadecyl-4-carboxyethyl-imidazoline.	MOA.
1-(2-Hydroxyethyl)-2-nor(coconut oil alkyl)-2-imidazoline.	BRD, CGY, MOA, SCP.
*1-(2-Hydroxyethyl)-2-nor(tall oil alkyl)-2-imidazoline.	BRD, HDG, MOA, NLC, SCP, TCH, WTC.
1-(2-Hydroxyethyl)-2-tridecyl-2-imidazoline hydrochloride.	CGY.
1-(2-Hydroxyethyl)-2-undecyl-4-carboxyethyl-imidazoline.	MOA.
1-(2-Hydroxypropyl)-2-imidazoline-----	TCH.
*Amines and amine oxides having amide linkages:	
*Carboxylic acids - diamine and polyamine condensates:	
Adipic and stearic acids - diethylenetriamine condensate.	STC.
Caprylic acid - tetraethylenepentamine condensate-----	ICI.
Coconut oil acids - N,N-dimethyltrimethylenediamine condensate.	JRG, SCP.
Mixed dicarboxylic acids - polyalkylenopolyamine condensate.	SCP.
Mixed fatty acids - polyalkylenopolyamine condensate.	GRD, NLC, QCP, TCH.
Oleic acid - diethylenetriamine condensate-----	FNX, ICI.
Oleic acid - N,N-dimethyltrimethylenediamine condensate.	CCW.
Pelargonic acid - tetraethylenepentamine condensate.	ICI
Stearic acid, diethanolamine condensate, methyl sulfate.	DUP.

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION OR SALES WERE REPORTED,
IDENTIFIED BY MANUFACTURER, 1975--CONTINUED

Chemical	Manufacturers' identification codes (according to list in table 3)
<i>Cationic Surface-Active Agents--Continued</i>	
*Amines and amine oxides having amide linkages--Continued	
*Carboxylic acids - diamine and polyamine condensates--Continued	
Stearic acid - diethylenetriamine condensate-----	CHP, S, TCH.
Stearic acid - N,N-diethylmethylenediamine condensate.	CGY, S.
Stearic acid - N,N-dimethyltrimethylenediamine condensate.	SNW.
Stearic acid - dipropylenetriamine condensate-----	ONX.
Stearic acid - polyamine condensate-----	VND.
*Tall oil acids - diethylenetriamine and polyalkylene polyamine condensates:	
Tall oil acids - diethylenetriamine condensate-----	AZS, FNX, NCW, NLC, SCP, WTC.
*Tall oil acids - polyalkylenepolyamine condensate--	AZS, QCP, SCP.
Tall oil acids - polyalkylenepolyamine condensate, sulfuric acid salt.	NLC.
Tallow acid - N,N-dimethyltrimethylenediamine condensate.	SCP.
Tallow acid - polyglycolamine condensate-----	NLC.
*Other amines and amine oxides having amide linkages:	
Cocoamidopropylamine oxide-----	HLI.
3-Lauramido-N,N-dimethylpropylamine oxide-----	SNW.
Laurylamine oxide-----	HLI.
Oleic acid - ethylenediamine condensate, mono-ethoxylated.	CLD, DA, DEX, SOC, TNA.
Stearic acid - diethylenetriamine condensate, poly-ethoxylated.	APX.
Stearic acid - ethylenediamine condensate, mono-ethoxylated.	CLD, CST, DEX, ICI, MRV, S.
Stearic acid - ethylenediamine condensate, poly-ethoxylated.	ICI.
3-Tallow-N,N-dimethylpropylamine oxide-----	SCP.
*Amines, not containing oxygen (and salts thereof):	
Amine salts:	
(Coconut oil alkyl)amine acetate-----	ARC.
N-(Dodecyl alkyl)amine succinate-----	SM.
(Hydrogenated tallow alkyl)amine acetate-----	ARC, SLC.
(9-Octadecenyl)amine acetate-----	GNM.
Octadecylamine acetate-----	ARC.
N-(Tallow alkyl)trimethylenediamine acetate-----	ARC, ASH.
N-(Tallow alkyl)trimethylenediamine oleate-----	ARC, ASH.
N-(Tallow alkyl)trimethylenediamine tallate-----	ARC.
*Diamines and polyamines:	
N-(Coconut oil alkyl)trimethylenediamine-----	ARC, GNM.
N-(Docosyl and eicosyl)trimethylenediamine-----	ENO.
N-Dodecyldiethylenetriamine-----	ARC.
*Imidazoline derivatives:	
1-[3-(2-Aminoethyl)naphth-1-yl]-2-(8-hepta-deceny)-2-imidazoline.	NLC.
1-(2-Aminoethyl)-2-nor(tallow oil alkyl)-2-imidazoline.	AZS, NLC, SCP.
2-Heptadecyl-2-imidazoline-----	SCO.
*N-(Mixed alkyl)polyethylenepolyamine-----	ARC, BAS, CCW, SNW, STC.
*N-(9-Octadecenyl)trimethylenediamine-----	ARC, ASH, GNM.
N-(Soybean oil alkyl)trimethylenediamine-----	ENO.
N-(Tallow alkyl)dipropylenetriamine-----	GNM.
*N-(Tallow alkyl)trimethylenediamine-----	ARC, ASH, ENO, GNM.
*Primary monoamines:	
(Coconut oil alkyl)amine-----	ARC, ASH, ENO, GNM.
(Docosyl and eicosyl)amine-----	ENO.
Dodecylamine-----	ARC, ASH, GNM.

TABLE 2--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION OR SALES WERE REPORTED,
IDENTIFIED BY MANUFACTURER, 1975--CONTINUED

Chemical	Manufacturers' identification codes (according to list in table 3)
<i>Cationic Surface-Active Agents--Continued</i>	
<i>*Amines, not containing oxygen (and salts thereof)--</i>	
<i>Continued</i>	
<i>*Primary monoamines--Continued</i>	
Hexadecylamine-----	ENO.
(Hydrogenated tallow alkyl)amine-----	ARC, ASH, ENO, GNM.
(Mixed alkyl)amine-----	ARC.
9-Octadecenylamine-----	ARC, ASH, ENO, GNM.
Octadecylamine-----	ARC, ASH, ENO.
Octylamine-----	ARC.
(Soybean oil alkyl)amine-----	ARC, ENO.
(Tall oil alkyl)amine-----	GNM.
*(Tallow alkyl)amine-----	ARC, ASH, ENO, GNM.
<i>*Secondary and tertiary monoamines:</i>	
Bis(coconut oil alkyl)amine-----	ARC.
Bis(hydrogenated tallow alkyl)amine-----	ARC, ASH.
N,N-Dimethyl(coconut oil alkyl)amine-----	ARC, BRD, ENO.
N,N-Dimethyldecylamine-----	BRD.
N,N-Dimethyldodecylamine-----	ARC, BRD, ONX.
N,N-Dimethylhexadecylamine-----	ARC, BRD, ENO, ONX.
N,N-Dimethyl(hydrogenated tallow alkyl)amine-----	ARC, ASH, ENO.
*N,N-Dimethyl(mixed alkyl)amine-----	ARC, BRD, ENO, ONX.
N,N-Dimethyloctadecylamine-----	ARC, BRD, ENO, ONX.
N,N-Dimethyloctylamine-----	BRD.
N,N-Dimethyl(soybean oil alkyl)amine-----	ARC, ENO.
*N,N-Dimethyltetradecylamine-----	ARC, BRD, ENO.
N,N-Dimethyltridecylamine-----	BRD.
N-Methylbis(coconut oil alkyl)amine-----	ASH, ENO.
*N-Methylbis(hydrogenated tallow alkyl)amine-----	ASH, ENO, GNM.
N-Methyldioctadecylamine-----	ASH.
Triisodecylamine-----	GNM.
Trilaurylamine-----	GNM.
Trioctylamine-----	GNM.
<i>*Oxygen-containing quaternary ammonium salts:</i>	
<i>Quaternary ammonium salts having amide linkages:</i>	
Ethylidimethyl-(3-pelargonamidopropyl)ammonium ethyl sulfate.	TCH.
(2-Hydroxyethyl)dimethyl(3-stearamidopropyl)-ammonium dihydrogen phosphate.	ACY.
(2-Hydroxyethyl)dimethyl(3-stearamidopropyl)-ammonium methyl sulfate.	DUP.
(2-Hydroxyethyl)dimethyl(3-stearamidopropyl)-ammonium nitrate.	ACY.
(3-Lauramidopropyl)trimethylammonium methyl sulfate.	ACY.
2-(2-Lauroyloxyethyl)carbamoyl-1-methylpyridinium chloride.	WTC.
1-Methyl-2-(2-stearoyloxyethyl)carbamoylpypyridinium chloride.	WTC.
<i>Other oxygen-containing quaternary ammonium salts:</i>	
(2-Aminoethyl)ethyl(hydrogenated tallow alkyl)(2-hydroxyethyl)ammonium ethyl sulfate.	LUR.
(2-Aminoethyl)ethyl(oleyl)-2-imidazolinium chloride.	HLI.
Benzyl(coconut oil alkyl)bis(2-hydroxyethyl)-ammonium chloride.	NLC, SCP.
Benzyl(coconut oil alkyl, ethoxylated)dimethyl-ammonium chloride.	DUP, GAF.
1-Benzyl-1-(2-hydroxyethyl)-2-nor(coconut oil alkyl)-2-imidazolinium chloride.	SCP.
1-Benzyl-1-(2-hydroxyethyl)-2-nor(tall oil alkyl)-2-imidazolinium chloride.	MOA, NLC.

SURFACE-ACTIVE AGENTS

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION OR SALES WERE REPORTED,
IDENTIFIED BY MANUFACTURER, 1975--CONTINUED

Chemical	Manufacturers' identification codes (according to list in table 3)
<i>Cationic Surface-Active Agents--Continued</i>	
*Oxygen-containing quaternary ammonium salts--Continued	
Other oxygen-containing quaternary ammonium salts--Continued	
Bis(2-hydroxyethyl, ethoxylated)ethyl(hydrogenated tallow alkyl)ammonium ethyl sulfate.	ICI.
Bis(2-hydroxyethyl, ethoxylated)methyl(9-octadecenyl)ammonium chloride.	ARC.
Bis(2-hydroxyethyl, ethoxylated)methyloctadecyl-ammonium chloride.	ARC.
(Coconut oil alkyl)bis(2-hydroxyethyl, ethoxylated)methylammonium chloride.	ARC.
(Coconut oil alkyl)bis(2-hydroxyethyl)methylammonium nitrate.	ARC.
(Ethoxybenzyl)dimethyl(octylphenoxy)ammonium chloride.	RH.
(Ethoxybenzyl)dimethyl(octyltolyloxy)ammonium chloride.	RH.
1-Ethyl-2-(8-heptadecenyl)-1-(2-hydroxyethyl)-2-imidazolinium ethyl sulfate.	ICI.
N-Ethyl-N-hexadecylmorpholinium ethyl sulfate-----	BRD, ICI.
N-Ethyl-N-(soybean oil alkyl)morpholinium ethyl sulfate.	ICI.
2-Hydroxytrimethylenebis[(coconut oil alkyl)dimethylammonium chloride].	CGY.
(Methyloctyl)bis(2-hydroxyethyl)ammonium p-toluene sulfonate.	FIN.
All other-----	APX, DUP, ICI, MRV, x.
*Quaternary ammonium salts, not containing oxygen:	
*Acyclic:	
Bis(coconut oil alkyl)dimethylammonium chloride-----	ARC, ASH, ENO, GNM.
Bis(coconut oil alkyl)dimethylammonium nitrate-----	ARC.
*Bis(hydrogenated tallow alkyl)dimethylammonium chloride.	ARC, ASH, ENO, GNM.
Bis(hydrogenated tallow alkyl)dimethylammonium methyl sulfate.	PRX.
(Coconut oil alkyl)trimethylammonium chloride-----	ARC.
Didecyldimethylammonium chloride-----	BRD.
Dimethylbis(soybean oil alkyl)ammonium chloride-----	ARC.
Dimethyl(di(9-octadecenyl)ammonium chloride-----	GNM.
Dimethyldioctadecylammonium chloride-----	ASH.
Dimethyldioctylammonium chloride-----	BRD.
Dodecyltrimethylammonium bromide-----	DUP.
Dodecyltrimethylammonium chloride-----	ARC, GNM.
Ethyldimethyl(mixed alkyl)ammonium ethyl sulfate-----	DEX, JOR, TCC.
Ethyldimethyl(9-octadecenyl)ammonium bromide-----	ONX.
Ethylhexadecyldimethylammonium bromide-----	FIN.
Hexadecyltrimethylammonium bromide-----	DUP, FIN.
Hexadecyltrimethylammonium chloride-----	ARC, BRD.
Hexadecyltrimethylammonium p-toluenesulfonate-----	FIN.
(Hydrogenated tallow alkyl)trimethylammonium chloride.	ENO.
Methyltriocetylammonium chloride-----	GNM.
Mixed dialkyldimethylammonium chloride-----	BRD.
N,N,N',N'-Pentamethyl-N-(tallow alkyl)trimethylenebis[ammonium chloride].	ARC, GNM.
Trimethyl(mixed alkyl)ammonium chloride-----	NLC.
Trimethyloctadecylammonium chloride-----	ARC.
Trimethyl(soybean oil alkyl)ammonium chloride-----	ARC, ENO.
Trimethyl(tallow alkyl)ammonium chloride-----	ARC, ASH, GNM.
Trimethyltetradecylammonium bromide-----	FIN, ICI.
All other-----	GNM, x.

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION OR SALES WERE REPORTED,
IDENTIFIED BY MANUFACTURER, 1975--CONTINUED

Chemical	Manufacturers' identification codes (according to list in table 3)
<i>Cationic Surface-Active Agents--Continued</i>	
*Quaternary ammonium salts, not containing oxygen-- continued	
*Benzenoид:	
Benzylbis(hydrogenated tallow alkyl)methylammonium chloride.	ENO.
*Benzyl(coconut oil alkyl)dimethylammonium chloride.	ARC, CIN, CRT, DEP, ENO, LUR.
*Benzyl(dimethyl(mixed alkyl)ammonium chloride-----	AAC, BRD, FIN, ONX, RH, SDH.
Benzyl(dimethyloctadecylammonium chloride-----	BRD, FIN, HLI, ONX, RH, SCP, SNW, TNI.
Benzyl(dimethyl(tallow alkyl)ammonium chloride-----	ENO.
Benzyl(dimethyltetradecylammonium chloride-----	FIN, SDH.
Benzyl(dodecyl)dimethylammonium chloride-----	FIN, ONX.
Benzyl(hexadecyl)dimethylammonium chloride-----	ONX.
Benzyl(hydrogenated tallow alkyl)dimethylammonium chloride.	ENO.
Benzyl octyldecyl dimethylammonium chloride-----	SCP.
1-Benzyl-2-picolinium bromide-----	FIN.
1-Benzylpyridinium chloride-----	DEP.
Benzyltriethylammonium chloride-----	CHP.
Benzyltrimethylammonium chloride-----	CIN, CRT, SNW, TCC.
(3,4-Dichlorobenzyl)dodecyl dimethylammonium chloride.	ONX.
(Dodecylbenzyl)triethylammonium chloride-----	PC.
2-Dodecylisquinolinium bromide-----	ONX.
(Dodecylmethylbenzyl)trimethylammonium chloride-----	RH.
1-Dodecylpyridinium chloride-----	HK.
(Ethylbenzyl)dimethyl(mixed alkyl)ammonium chloride.	BRD.
1-(Mixed alkyl)quinolinium ethyl sulfate-----	x.
<i>Nonionic Surface-Active Agents</i>	
*Carboxylic acid amides:	
*Diethanolamine condensates (amine/acid ratio=2/1):	
Capric acid-----	CGY, CLI., SCP, TCH.
Castor oil acids-----	CLI, MOA, NTL, PC.
*Coconut oil acids-----	ACT, AKS, ARD, ARL, BRD, BSW, CHP, CIN, CLI, CTL, DA, DEP, ECC, EFH, FNX, HRT, KNP, LUR, MCP, MOA, MRV, ONX, PC, PEK, PG, PVO, RCD, SBC, SCP, STP, TCH, TXC, VAL, VND, WTC, x.
*Coconut oil and tallow acids-----	AZS, CRT, ESS, MOA, SCP, SOS, UNN.
Lauric acid-----	ARD, BRD, CLI, DA, MOA, RCD, TCH.
Lauric and myristic acids-----	HRT, MOA, PG, SBC, STP.
Lauric and oleic acids-----	SCP.
*Linoleic acid-----	VND, KNP, WTC.
Mixed vegetable oil acids-----	HLI.
Myristic acid-----	HRT.
*Oleic acid-----	CCW, CLI, EMR, FNX, PVO, SCP, STP, TCH.
Pelargonic acid-----	TCH.
Soybean oil acids-----	MOA.
*Stearic acid-----	CLI, CTL, EMR, MOA, ONX, SCO, SOS, TXC, VAL.
*Tall oil acids-----	EFH, MOA, SBC, WTC.
Tallow acids-----	SOS.
*Diethanolamine condensates (other amine/acid ratios):	MOA.
Capric acid (1/1)-----	ARD, AZS, CCL, CGY, CHP, CLI, CON, CTL, DA, FNX, HLI, JRG, MOA, MRV, ONX, PIL, PNX, SBC, SCP, SEY, STP, TCC, WHI, WTC.
*Coconut oil acids (amine/acid ratio=1/1)-----	

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION OR SALES WERE REPORTED,
IDENTIFIED BY MANUFACTURER, 1975--CONTINUED

Chemical	Manufacturers' identification codes (according to list in table 3)
<i>Nonionic Surface-Active Agents--Continued</i>	
*Carboxylic acid amides--Continued	
*Diethanolamine condensates (other amine/acid ratios)--Continued	
Coconut oil acids (amine acid ratio=1.4/1)-----	JRG, SCP.
Isostearic acid (1/1)-----	MOA.
Lard oil (amine/acid ratio=1/1)-----	EFH.
*Lauric acid (amine/acid ratio=1/1)-----	ARD, CLI, EMK, HLI, LEV, MOA, ONX, SBC, SCP, TCH, WTC.
*Lauric and myristic acids (amine/acid ratio=1/1)-----	CLI, SBC, SCP.
Linoleic acid (amine/acid ratio=1/1)-----	MOA, SBC.
Mixed fatty acids (amine/acid ratio=1/1)-----	STP.
Myristic acid (1/1)-----	MOA.
Oleic acid (amine/acid ratio=1/1)-----	CGY, HLI, SCP.
Palmitic and stearic acid (amine/acid ratio=1/1)-----	MCP, MOA.
Soybean oil acids (1/1)-----	MOA.
*Stearic acid (amine/acid ratio=1/1)-----	AZS, CGY, CHP, CLI, ECC, FNX, MRV.
Tall oil acids (amine/acid ratio=1/1)-----	ECC, EFH, FNX, MCP, MRV.
Tallow acids (amine/acid ratio=1/1)-----	RPC, TCH.
All other-----	ECC.
All other carboxylic acid amides:	
Coconut oil acids - diethanolamine condensate, propoxylated.	EFH.
Coconut oil acids - ethanolamine condensate (amine/acid ratio=2/1).	STP, TCH, VND, WTC.
Coconut oil acids - ethanolamine condensate (amine/acid ratio=1/1).	ARD, HLI, HUM, MOA, PG, SCP, STP, WTC.
Coconut oil acids - ethanolamine condensate, ethoxylated.	STP.
Coconut oil acids - isopropanolamine condensate-----	STP.
Lauric acid - diethanolamine condensate, ethoxylated.	PG.
Lauric acid - ethanolamine condensate (amine/acid ratio=2/1).	PRX, TNI.
Lauric acid - ethanolamine condensate (amine/acid ratio=1/1).	MOA.
Lauric acid - isopropanolamine condensate-----	CLI, MOA, SNW.
Lauric and myristic acids - ethanolamine condensate (amine/acid ratio=1/1).	MOA, SCP.
Lauric and myristic acids - isopropanolamine condensate.	LEV, SCP.
Oleic acid - ethanolamine condensate, ethoxylated----	GAF.
Oleic acid - ethylenediamine condensate (amine/acid ratio=1/2).	CCW.
Stearic acid - ethanolamine condensate (amine/acid ratio=2/1).	CLI, ECC.
Stearic acid - ethanolamine condensate (amine/acid ratio=1/1).	EFH, HAL, MOA, SBC, VND.
Stearic acid - ethanolamine condensate (amine/acid ratio=1/2).	TCH.
Stearic acid - ethylenediamine condensate (amine/acid ratio=1/2).	CCW, DA, HUM.
Succinic acid - ethanolamine condensate (amine/acid ratio=2/1).	ECC.
All other-----	MCP, ORO, ROB, SBC, TCH.
*Carboxylic acid esters:	
*Anhydrosorbitol esters:	
Anhydrosorbitol dioleate-----	ICI.
Anhydrosorbitol distearate-----	CHP.
Anhydrosorbitol monoester of tall oil acids-----	HDG, ICI.
Anhydrosorbitol monolaurate-----	GLY, HDG, ICI, TCH.
Anhydrosorbitol mono-oleate-----	GLY, HDG, ICI, TCH.

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION OR SALES WERE REPORTED,
IDENTIFIED BY MANUFACTURER, 1975--CONTINUED

Chemical	Manufacturers' identification codes (according to list in table 3)
<i>Nonionic Surface-Active Agents--Continued</i>	
*Carboxylic acid esters--Continued	
*Anhydrosorbitol esters--Continued	
Anhydrosorbitol monopalmitate-----	GLY, ICI, TCH.
Anhydrosorbitol monostearate-----	GLY, HDG, ICI, PVO, TCH.
Anhydrosorbitol sesquioleate-----	GLY, HDG, TCH.
Anhydrosorbitol triester of tall oil acids-----	GLY.
Anhydrosorbitol trioleate-----	GLY, ICI, TCH.
Anhydrosorbitol tristearate-----	AAC, GLY, ICI, PVO, TCH.
*Diethylene glycol esters:	
*Diethylene glycol distearate-----	ARC, GLY, VAL.
Diethylene glycol monoester of coconut oil acids-----	DA.
Diethylene glycol monolaurate-----	ECC, GLY, HAL, HDG, WM.
Diethylene glycol mono-oleate-----	ARC.
Diethylene glycol monoricinoleate-----	DA.
*Diethylene glycol monostearate-----	ARC, CHP, CLI, DA, ECC, HAL, HDG, MCP, VND.
Diethylene glycol sesquiester of tall oil acids-----	ECC.
Diethylene glycol sesquilaurate-----	ARC, GLY.
Diethylene glycol sesquistearate-----	WTC.
*Ethoxylated anhydrosorbitol esters:	
Ethoxylated anhydrosorbitol monolaurate-----	AAC, GLY, HDG, ICI, MIL, PVO, TCH.
*Ethoxylated anhydrosorbitol mono-oleate-----	AAC, ARC, CRN, GLY, HDG, ICI, MIL, PVO, TCH.
Ethoxylated anhydrosorbitol monopalmitate-----	AAC, GLY, ICI, TCH.
*Ethoxylated anhydrosorbitol monostearate-----	AAC, GLY, HDG, ICI, PVO, TCH.
Ethoxylated anhydrosorbitol triester of tall oil acids.	ICI, TCH.
Ethoxylated anhydrosorbitol trioleate-----	AAC, GLY, ICI, TCH.
Ethoxylated anhydrosorbitol tristearate-----	AAC, GLY, HDG, ICI, PVO, TCH.
Ethoxylated sorbitol esters:	
Ethoxylated sorbitol beeswax ester-----	ICI.
Ethoxylated sorbitol hexaester of tall oil acids-----	TCH.
Ethoxylated sorbitol hexaoleate-----	GLY, ICI, TCH.
Ethoxylated sorbitol lanolin ester-----	ICI.
Ethoxylated sorbitol mono-oleate-----	GLY, ICI.
Ethoxylated sorbitol oleate, acetylated-----	ICI.
Ethoxylated sorbitol tetraester of lauric and oleic acids.	ICI.
Ethoxylated sorbitol tetraoleate-----	ICI.
Ethoxylated sorbitol tetrastearate-----	ICI.
*Ethylene glycol esters:	
Ethylene glycol distearate-----	ARC, EMR, HAL, HUM, TCH, WM.
Ethylene glycol mono-oleate-----	ARC.
Ethylene glycol monostearate-----	ARC, CLI, GLY, HAL, HDG, KNP, TCH, VND, WM.
*Glycerol esters:	
*Complex glycerol esters:	
Glycerol diacetyltartrate monostearate-----	WTC.
Glycerol esters ethoxylated-----	GLY.
Glycerol lactate esters of fatty acids-----	GLD.
Glycerol monoester of mixed fatty acids, acetylated.	EKT.
Glycerol monoester of mixed fatty acids, succinylated.	EKT.
Glycerol mono-oleate, acetylated-----	GLY.
Glycerol mono-oleate, ethoxylated-----	SCP.
Glycerol pelargonate-----	WM.
*Glycerol esters of chemically defined acids:	
Glycerol dioleate-----	ARC, HAL.
Glycerol dilaurate-----	VND.
Glycerol distearate-----	APX, ARC, ICI.
Glycerol monocaprylate-----	ARC, GRO, PVO.
Glycerol monolaurate-----	ARC, GLY.
*Glycerol mono-oleate-----	ARC, CCW, EFH, EMR, FER, GLY, GRO, HAL, HDG, PVO, TCH, WM, WTC.

SURFACE-ACTIVE AGENTS

173

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION OR SALES WERE REPORTED,
IDENTIFIED BY MANUFACTURER, 1975--CONTINUED

Chemical	Manufacturers' identification codes (according to list in table 3)
<i>Nonionic Surface-Active Agents--Continued</i>	
*Carboxylic acid esters--Continued	
*Glycerol esters--Continued	
*Glycerol esters of chemically defined acids--Con.	
Glycerol monoricinoleate-----	DA, GLY, HAL, HDG.
*Glycerol monostearate-----	ARC, ASH, BLS, CHL, CIN, EMR, GLY, HAL, HDG, HRT, PVO, SCP, TCH, VND, WM, WTC.
*Glycerol esters of mixed acids:	
Glycerol mono and diesters of mixed fatty acids-----	BFP, GLD, ICI, LEV.
Glycerol monoester of coconut oil acids-----	PVO.
Glycerol monoester of cottonseed oil acids-----	EKT.
*Glycerol monoester of hydrogenated cotton seed oil acids.	EKT, GLD, LEV, WM.
*Glycerol monoester of hydrogenated soybean oil acids.	ASH, BFP, EKT, GLD, NW, PVO, TCH, WTC.
Glycerol monoester of hydrogenated tallow acid-----	TCH.
*Glycerol monoester of lard acids-----	EKT, GLD, GLY, PVO.
Glycerol monoester of mixed vegetable oil acids-----	EKT.
Glycerol monoester of palm oil acids-----	EKT.
Glycerol monoester of safflower oil acids-----	EFT.
Glycerol monoester of tall oil acids-----	EFH.
Glycerol monoester of tallow acids-----	BFP, EKT, PG.
Glycerol sesquiester of hydrogenated tallow acids--	JRG.
Glycerol sesquiester of tall oil acids-----	SLM.
*Natural fats and oils, alkoxylated:	
*Castor oil, ethoxylated-----	AAC, DA, GAF, ICI, MIL, NLC, NTL, PVO, TCH, TMH, WTC.
Corn oil, ethoxylated-----	TCH.
*Hydrogenated castor oil, ethoxylated-----	DA, ICI, TCH.
*Lanolin, ethoxylated-----	AAC, CRD, CRN, ICI, PRX, TCH.
Tall oil, ethoxylated-----	DA, JCC, TCH.
All other-----	ARC, TCH.
*Polyethylene glycol esters:	
*Polyethylene glycol esters of chemically defined acids:	
*Polyethylene glycol dilaurate-----	ARC, DA, EFH, GLY, HAL, HDG, KNP, PVO, TCH, WM.
*Polyethylene glycol dioleate-----	ARC, BRD, CGY, CLD, EFH, GLY, HAL, HDG, NLC, TCH, VND, WM.
Polyethylene glycol distearate-----	ARC, CHP, GLY, HAL, HDG, PVO, TCH, VND.
Polyethylene glycol ditallowate-----	EFH.
Polyethylene glycol methylcarbitol maleate-----	CCA.
Polyethylene glycol monoisostearate-----	TCH.
*Polyethylene glycol monolaurate-----	AAC, ARC, BRD, CCA, CGY, DA, GLY, HAL, HDG, ICI, MCP, SCP, TCH.
*Polyethylene glycol mono-oleate-----	ARC, BRD, CCA, CIN, CLD, CRT, DA, DEX, EFH, GAF, GLY, HAL, HDG, ONX, SCP, STC, TCH, WM, WTC.
Polyethylene glycol mono-oleate, ethoxylated-----	ICI.
Polyethylene glycol monopalmitate-----	ICI, KNP.
Polyethylene glycol monopalargonate-----	TCH.
Polyethylene glycol monoricinoleate-----	AKS, HAL.
*Polyethylene glycol monostearate-----	AAC, ARC, CGY, CHP, CIN, CRT, DA, DEP, DEX, EFH, EMR, GAF, GLY, HAL, HDG, HRT, ICI, KNP, MCP, ONX, PC, PVO, SOS, STC, TCH, VND, WTC.
Polyethylene glycol monotallowate-----	MRV, TCH.
Polyethylene glycol sesquioleate-----	ICI, TCH, WTC.
Polyethylene glycol sesquistearate-----	ARL.
*Polyethylene glycol esters of mixed acids:	
Polyethylene glycol monoester of capric and caprylic acids.	ECC.

SYNTHETIC ORGANIC CHEMICALS, 1975

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION OR SALES WERE REPORTED,
IDENTIFIED BY MANUFACTURER, 1975--CONTINUED

Chemical	Manufacturers' identification codes (according to list in table 3)
<i>Nonionic Surface-Active Agents--Continued</i>	
*Carboxylic Acid esters--Continued	
*Polyethylene glycol esters--Continued	
*Polyethylene glycol esters of mixed acids--Con.	
Polyethylene glycol monoester of coconut oil acids, ethoxylated.	ICI.
Polyethylene glycol monoesters of lauric and stearic acids.	MCP.
Polyethylene glycol monoester of soybean oil acids.	GLY, TCH.
Polyethylene glycol monoester of tall oil acids----	ACT.
Polyethylene glycol monoester of tall oil acids, ethoxylated.	NLC.
Polyethylene glycol sesquiester of coconut oil acids.	MRT, STC, VND.
Polyethylene glycol sesquiester of rosin acids-----	HPC.
*Polyethylene glycol sesquiester of tall oil acids--	AZS, ICI, MON, SLM, SOS.
Polyethylene glycol sesquiester of tallow acids--	NLC.
All other-----	TCH.
*Polyglycerol esters:	
Polyglycerol diisostearate-----	TCH.
Polyglycerol mono-oleate-----	HDG, PVO, VND, WTC.
Polyglycerol monostearate-----	GLY, PVO, TCH, WTC.
*Propanediol esters:	
1,2-Propanediol dioleate-----	X.
1,2-Propanediol distearate-----	ARC.
1,2-Propanediol esters of hydrogenated palm oil acids.	PG.
1,2-Propanediol esters of hydrogenated soybean oil acids.	PG.
1,3-Propanediol monoester of coconut oil acids-----	WM.
1,2-Propanediol monoisostearate-----	TCH.
*1,2-Propanediol monolaurate-----	ARC, HAL, PVO, SBC.
1,2-Propanediol mono-oleate-----	EFH, HAL.
*1,2-Propanediol monostearate-----	ARC, EKT, GLD, GLY, HAL, ICI, PVO, TCH, WM, WTC.
1,2-Propanediol sesquiester of hydrogenated tallow acids.	JRG.
All other-----	EMR, GLD.
Miscellaneous carboxylic acid esters:	
Ethoxylated 1,2-propanediol monostearate-----	ICI.
Fatty acid esters of ethoxylated pentaerythritol-----	TCH.
Lauric acid esters of glycerol and ethoxylated nonylphenol.	TCC.
Mannitol dioleate, propoxylated-----	WTC.
Methylglucoside laurate-----	HDG.
Mixed polyhydric alcohols-triester of tall oil acids.	ICI.
Mono, di, and triglycerides of hydrogenated rapeseed oil acids.	PG.
Mono, di, and triglycerides of partially hydrogenated soybean oil acids.	PG.
Mono, di, and triglycerides of hydrogenated soybean oil acids.	PG.
Oleic acid esters of ethoxylated nonylphenol-----	EFH.
Pentaerythritol stearate-----	VAL.
Polyalkylene glycol adipate-----	NLC.
Polypropylene glycol mono-oleate-----	HDG.
Polypropylene glycol monostearate-----	HDG.
All other-----	CCW, EMR, ROB, TCH.

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION OR SALES WERE REPORTED,
IDENTIFIED BY MANUFACTURER, 1975--CONTINUED

Chemical	Manufacturers' identification codes (according to list in table 3)
<i>Nonionic Surface-Active Agents--Continued</i>	
*Ethers:	
*Benzenoid ethers:	
(Mixed alkyl)phenol - formaldehyde, alkoxylated-----	NLC, NTL, WTC.
Nonylphenol - formaldehyde, alkoxylated-----	NLC, WTC.
tert-Octylphenol - formaldehyde, ethoxylated-----	ARC, DA, SDW.
Pentylophenol-formaldehyde, alkoxylated-----	AAC.
Diisobutylphenol, ethoxylated-----	GAF.
Dinonylphenol, ethoxylated-----	GAF, JCC, TCH.
*Dodecylphenol, ethoxylated-----	DA, GAF, MON, TCH, TMH.
Iso-octylphenol, ethoxylated-----	AAC, DA, RH.
(Mixed alkyl)phenol, ethoxylated-----	PRX, RH, TCH.
(Mixed alkyl)phenol, ethoxylated, butyl ether-----	NTL.
(Mixed alkyl)phenoxy poly(ethyleneoxy)ethyl chloride.	GAF.
*Nonylphenol, ethoxylated-----	DA, GAF, HDG, ICI, JCC, MON, NLC, OMC, RH, STP, TCH, TMH, UCC, WTC.
Nonylphenol, ethoxylated and propoxylated-----	WTC.
Nonylphenoxy poly(ethyleneoxy)ethyl iodide-----	GAF.
n-Octylphenol, ethoxylated-----	TCH.
*Phenol, ethoxylated-----	DA, GAF, ICI, MIL, TCH, UCC.
Styrenated phenol, ethoxylated-----	DA.
Tetradecylphenol, ethoxylated-----	ORO.
Tridecylphenol, ethoxylated-----	TCH.
Xylenol, ethoxylated-----	NLC.
*Nonbenzenoid ethers:	
*Linear alcohols, alkoxylated:	
Coconut oil alcohol, ethoxylated-----	GLY, JCC, WTC.
Decyl alcohol, ethoxylated-----	ICI, VPC, TCH.
Decyl and octyl alcohols, ethoxylated-----	GLY, SCP.
Decyl and octyl alcohols, ethoxylated and propoxylated.	GAF.
Decyloxy poly(ethyleneoxy)ethyl chloride-----	
*Dodecyl alcohol, ethoxylated-----	AAC, DUP, HDG, ICI, MIL, UCC, WTC.
Hexamethyl alcohol, ethoxylated-----	AAC, GLY, ICI, TCH.
Isodecyl alcohol, ethoxylated-----	TCH.
Iso-octyl alcohol, ethoxylated-----	GAF, TCH.
*Mixed linear alcohols, ethoxylated-----	AAC, CO, DUP, GAF, HDG, JCC, NLC, RH, SHC, STP, TCH, UCC, WTC.
*Mixed linear alcohols, ethoxylated and propoxylated.	BAS, JCC, STP, TCH, UCC, WTC.
Mixed linear alcohols, propoxylated-----	TCH.
*9-Octadecenyl alcohol, ethoxylated-----	AAC, CRN, GAF, ICI, TCH, VPC.
*Octadecyl alcohol, ethoxylated-----	DA, DUP, GAF, ICI, HDG, VPC.
Oleyl alcohol, ethoxylated-----	CRD.
Sperm oil alcohol, ethoxylated-----	DUP.
Stearyl alcohol, ethoxylated-----	TCH.
Stearyl alcohol, propoxylated-----	ICI.
Tallow alcohol, ethoxylated-----	AAC, JCC.
Wool wax alcohols, ethoxylated-----	CRD.
*Other ethers and thioethers:	
tert-Dodecyl mercaptan, ethoxylated-----	AAC.
Glycerol, alkoxylated-----	NLC.
Mixed alcohols, ethoxylated-----	CRN, PVO.
Poly(mixed ethylene, propylene)glycol-----	BAS, NLC, UCC.
Polyoxyalkylene glycols, ethoxylated-----	NLC.
Polypropylene glycol, ethoxylated-----	NLC, WTC.
Primary alcohols, ethoxylated-----	RH.
*Tridecyl alcohol, ethoxylated-----	AAC, DA, DUP, GAF, ICI, JCC, MIL, MON, NLC, OMC, PVO, TCH.

TABLE 2.--SURFACE-ACTIVE AGENTS FOR WHICH U.S. PRODUCTION OR SALES WERE REPORTED,
IDENTIFIED BY MANUFACTURER, 1975--CONTINUED

Chemical	Manufacturers' identification codes (according to list in table 3)
<i>Nonionic Surface-Active Agents--Continued</i>	
*Ethers--Continued	
*Nonbenzenoid ethers--Continued	
*Other ethers and thioethers--Continued	
Tridecyl alcohol, propoxylated and ethoxylated-----	JCC.
Trimethylnonyl alcohol, ethoxylated-----	HDG, TCH, UCC.
Trimethylolpropane, alkoxylated-----	BAS, HDG.
All other-----	GAF, TCH, VAL.
*Other nonionic surface-active agents:	ACT.
Dodecylbenzenesulfonic acid - diethanolamine condensate, fatty acid monoester.	DUP, GLY.
Octyl phosphate, ethoxylated-----	DUP, ICI, PVO, x.
All other-----	

SURFACE-ACTIVE AGENTS

177

TABLE 3.--SURFACE-ACTIVE AGENTS: DIRECTORY OF MANUFACTURERS, 1975

ALPHABETICAL DIRECTORY BY CODE

[Names of manufacturers that reported production or sales of surface-active agents to the U.S. International Trade Commission for 1975 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 Chemical Corp.	ECC	Eastern Color & Chemical Co.
ACT	Arthur C. Trask Co.	EFH	E.F. Houghton & Co.
ACY	American Cyanamid Co.	EKT	Eastman Kodak Co., Tennessee Eastman Co. Div.
AES	Penetone Corp.	EMK	Emkay Chemical Co.
AGP	Armour-Dial, Inc.	EMR	Emery Industries, Inc.
AIP	Air Products & Chemicals, Inc.	ENO	Enenco, Inc.
AKS	Arkansas Co., Inc.	ESS	Essential Chemicals Corp.
APX	Apex Chemical Co., Inc.	FER	Ferro Corp., Keil Chemical Div.
ARC	Armak Co.	FIN	Hexcel Corp., Fine Organics Div.
ARD	Ardmore Chemical Co.	GAF	GAF Corp., Chemical Div.
ARL	Arol Chemical Products Co.	GLD	SCM Corp., Glidden-Durkee Div.
ASH	Ashland Oil, Inc., Ashland Chemical Co.	GLY	Glyco Chemicals, Inc.
ASY	American Synthetic Rubber Corp.	GNM	General Mills Chemicals, Inc.
ATR	Atlantic Richfield Co., ARCO Chemical Co.	GRC	Chemed Corp., Dubois Chemicals Div.
AZS	AZS Corp.:	GRD	W.R. Grace & Co., Polymer & Chemicals Div.
	AZ Products Co. Div.	GRL	Chemed Corp., Vestal Laboratories, Inc.
	Lancaster Chemical Co. Div.	GRO	Millmaster Onyx Group, a Kewanee Industry, A. Gross & Co.
BAO	Bayoil Co., Inc.	HAL	C.P. Hall Co.
BAS	BASF Wyandotte Corp.	HODG	Hodag Chemical Corp.
BFP	Breddo Food Products Corp.	HEW	Hewitt Soap Co., Inc.
BLA	Astor Products, Inc., Blue Arrow Div.	HK	Hooker Chemicals & Plastics Corp.
BLS	Life Savers, Inc.	HLI	Haag Laboratories, Inc.
BRD	Lonza, Inc.	HMP	W.R. Grace & Co., Dewey & Almy Chemical Div., Organic Chemicals
BSW	Original Bradford Soap Works, Inc.	HNT	Huntington Laboratories, Inc.
CCA	Interstab Chemical, Inc.	HPC	Hercules, Inc.
CCL	Catawba-Charlab, Inc.	HRT	Hart Products Corp.
CCW	Cincinnati Milacron Chemicals, Inc.	HUM	Kraftco Corp., Humko Products Div.
CEL	Celanese Corp., Celanese Coatings & Specialties Co., Wica Plant	ICI	ICI United States, Inc., Specialty Chemicals Group
CGY	Ciba-Geigy Corp. and Pharmaceutical Div.	JCC	Jefferson Chemical Co., Inc.
CHL	Chemol, Inc.	JOR	Jordan Chemical Co.
CHP	C.H. Patrick & Co., Inc.	JRG	Andrew Jergens Co.
CIN	Cindet Chemicals, Inc.	KAL	Pathan Chemical Co.
CLD	Colloids, Inc.	KNG	Far-Best Corp., O.L. King Div.
CLI	Clintwood Chemical Co.	KNP	Knapp Products, Inc.
CO	Continental Oil Co.	LAK	Lakeway Chemicals, Inc.
COM	Commercial Solvents Corp.	LEA	Leatex Chemical Co.
CON	Concord Chemical Co., Inc.	LEV	Lever Brothers Co.
CP	Colgate-Palmolive Co.	LIL	Eli Lilly & Co.
CPP	Charmin Paper Products Co.	LKY	Lake States Div. of St. Regis Paper Co.
CRD	Croda, Inc.	LMI	North American Chemical Co.
CRN	CPC International, Inc.	LUR	Laurel Products Corp.
CRT	Crest Chemical Corp.	MAR	American Can Co.
CRZ	Crown Zellerbach Corp., Chemical Products Div.	MCP	Moretex Chemical Products, Inc.
CST	Charles S. Tanner Co.	MIL	Deering Milliken, Inc., Milliken Chemical Div.
CTL	Continental Chemical Co.	MIR	Miranol Chemical Co., Inc.
CWP	Consolidated Papers, Inc.	MOA	Mona Industries, Inc.
DA	Diamond Shamrock Corp.	MON	Monsanto Co.
DAN	Dan River, Inc.		
DEP	DePaul Chemical Co., Inc.		
DEX	Dexter Chemical Corp.		
DOW	Dow Chemical Co.		
DUP	E.I. duPont de Nemours & Co., Inc.		
DYS	Davies-Young Co.		

SYNTHETIC ORGANIC CHEMICALS, 1975

TABLE 3.--SURFACE-ACTIVE AGENTS: DIRECTORY OF MANUFACTURERS, 1975--CONTINUED

Code	Name of company	Code	Name of company
MRA	Bostik South, Inc.	SEA	Seaboard Chemicals, Inc.
MRD	Marden-Wild Corp.	SFS	Stauffer Chemical Co., Specialty Div.
MRT	Morton Chemical Co. Div. of Morton-Norwich Products, Inc.	SHC	Shell Oil Co., Shell Chemical Co. Div.
MRV	Marlowe-Van Loan Corp.	SID	George F. Siddall Co., Inc.
NCW	Nostrip Chemical Works, Inc.	SLC	Soluol Chemical Co., Inc.
NES	Nease Chemical Co., Inc.	SIM	Salem Oil & Grease Co.
NLC	Nalco Chemical Co.	SM	Mobil Oil Corp., Mobil Chemical Co., Chemical Coatings Div.
NMC	National Milling & Chemical Co., Inc.	SNW	Sun Chemical Corp., Chemicals Div.
NPR	Safeway Stores, Inc.	SOC	Standard Oil Co. of California, Chevron Chemical Co.
NTL	NL Industries, Inc.	SOP	Southern Chemical Products Co., Inc.
NW	Northwestern Chemical Co.	SOS	Southern Sizing Co.
OMC	Olin Corp.	SPA	Scott Paper Co.
ONX	Millmaster Onyx Corp., Onyx Chemical Co.	STC	American Hoechst Corp., Sou-Tex Works
ORO	Chevron Chemical Co.	STP	Stepan Chemical Co.
PC	Proctor Chemical Co., Inc.	SW	Sherwin-Williams Co.
PCH	Peerless Chemical Co.	TCC	Tanatex Chemical Corp.
PEK	Peck's Products Co.	TCH	Emery Industries, Inc., Trylon Chemical Div.
PFZ	Pfizer, Inc.	TCI	Texize Chemical Co.
PG	Procter & Gamble Co.	TEN	Cities Service Co., Copperhill Operations
PIL	Pilot Chemical Co.	TMH	Thompson-Hayward Chemical Co.
PLX	Plex Chemical Corp.	TNA	Ethyl Corp.
PNX	Murphy-Phoenix Co.	TNI	The Gillette Co., Chemical Div.
PRX	Purex Corp.	TXC	Tex Chem. Co.
PSP	Georgia-Pacific Corp., Bellingham Div.	UCC	Union Carbide Corp.
PVO	PVO International, Inc.	UDI	Petrochemicals Co., Inc.
QCP	Quaker Chemical Corp.	UNN	United Chemical Corp. of Norwood
RAY	ITT Rayonier, Inc.	UNP	United Chemical Products Corp.
RBC	Fike Chemicals, Inc.	USR	Uniroyal, Inc., Chemical Div.
RCD	Richardson Co.	VAL	Valchem
RH	Rohm & Haas Co.	VND	Van Dyk & Co., Inc.
ROB	Robeco Chemicals, Inc.	VPC	Mobay Chemical Corp., Verona Div.
RPC	Millmaster Onyx Corp., Refined-Onyx Div.	WAW	W.A. Wood Co.
S	Sandoz, Inc., Sandoz Colors & Chemical Div.	WAY	Philip A. Hunt Chemical Corp., Organic Chemical Div.
SBC	Scher Bros., Inc.	WBG	White & Bagley Co.
SBP	Sugar Beet Products Co.	WHI	White & Hodges, Inc.
SCO	Scholler Bros., Inc.	WHW	Whittemore-Wright Co., Inc.
SCP	Henkel, Inc.	WM	Inolex Corp.
SCP	Textilana-Nease, Inc.	WTC	Witco Chemical Co., Inc.
SCP	Textilana Corp.	WVA	Westvaco Corp., Chemicals Div., Polymers Dept.
SDC	Martin-Marietta Corp., Sodyeco Div.		
SDH	Sterling Drug, Inc.: Hilton-Davis Chemical. Div.		
SDW	Winthrop Laboratories Div.		

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

PESTICIDES AND RELATED PRODUCTS

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

U.S. production of pesticides and related products in 1975 amounted to 1,603 million pounds--13.1 percent greater than the 1,417 million pounds reported for 1974 (table 1).¹ Sales in 1975 were 1,328 million pounds, a decrease of 2.7 percent, as compared with 1,365 million pounds reported in 1974; the value of sales was \$2,366 million in 1975, compared with \$1,815 million in 1974--an increase of 30.4 percent.

The output of cyclic pesticides and related products amounted to 1,196 million pounds in 1975--16.6 percent greater than the 1,026 million pounds produced in 1974. Sales in 1975 were 965 million pounds, valued at \$1,891 million, compared with 971 million pounds, valued at \$1,468 million in 1974. Production of acyclic pesticides and related products in 1975 amounted to 407 million pounds, compared with 392 million pounds reported for 1974, an increase of 3.9 percent. Sales in 1975 were 363 million pounds, a decrease of about 7.8 percent, as compared to the 394 million pounds reported in 1974; the value of sales was \$475 million in 1975, compared with \$347 million in 1974--an increase of 37.0 percent.

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

PESTICIDES AND RELATED PRODUCTS

181

TABLE 1.--PESTICIDES AND RELATED PRODUCTS: U.S. PRODUCTION AND SALES, 1975

[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]

	Production	Sales		
		Quantity	Value	Unit Value ¹
		1,000 pounds	1,000 dollars	Per pound
Grand Total-----	1,603,016	1,328,036	2,366,383	\$1.78
Benzenoid-----	923,429	732,159	1,474,346	2.01
Nonbenzenoid-----	679,587	595,877	892,037	1.50
PESTICIDES AND RELATED PRODUCTS, CYCLIC				
Total-----	1,196,310	964,739	1,891,064	1.96
Fungicides, total-----	111,238	90,038	103,286	1.15
Naphthenic acid, copper salt-----	1,078	918	623	.68
Pentachlorophenol (PCP)-----	39,447	36,313	12,846	.36
Phenylmercuric acetate (PMA)-----	147	136	828	6.09
All other cyclic fungicides ² -----	70,566	52,671	88,989	1.69
Herbicides and plant hormones, total-----	660,738	536,149	1,273,436	2.38
2,4-Dichlorophenoxyacetic acid, dimethylamine salt-----	25,697	23,336	24,906	1.07
2,4-Dichlorophenoxyacetic acid, iso-octyl ester-----	9,872	6,236	6,226	1.00
All other cyclic herbicides and plant hormones ³ -----	625,169	506,577	1,242,304	2.45
Insecticides and rodenticides, total-----	424,334	338,552	514,342	1.52
Organophosphorus insecticides, total-----	130,289	103,474	212,504	2.05
O, O-Dimethyl O-p-nitrophenyl phosphorothioate (Methyl parathion)-----	53,668	47,919	48,106	1.00
All other organophosphorus insecticides ⁴ -----	76,621	55,555	164,398	2.96
Toxaphene(chlorinated camphene)-----	59,336	39,966	19,671	.49
1,1,1-Trichloro-2,2-bis(p-methoxyphenyl)ethane (Methoxychlor)-----	5,504	...	...	...
All other cyclic insecticides and rodenticides ⁵ -----	229,205	195,112	282,167	1.45
PESTICIDES AND RELATED PRODUCTS, ACYCLIC				
Total-----	406,706	363,297	475,319	1.31
Fungicides, total-----	44,127	36,791	38,636	1.05
Dithiocarbamic acid salts ⁶ -----	40,666	34,108	31,135	.91
All other acyclic fungicides-----	3,461	2,683	7,501	2.80
Herbicides and plant hormones ⁸ -----	127,292	108,426	178,160	1.64
Insecticides, rodenticides, soil conditioners and fumigants, total-----	235,287	218,080	258,523	1.18
Methylbromide (Bromomethane)-----	36,048	35,386	16,932	.48
Organophosphorus insecticides ⁹ -----	82,506	65,737	137,245	2.09
Trichloronitromethane (Chloropicrin)-----	5,698	5,826	3,003	.52
All other acyclic insecticides, rodenticides, soil conditioners and fumigants ¹⁰ -----	111,035	111,131	101,343	.91

See footnotes on following page.

Footnotes for Table 1

¹ Calculated from rounded figures.

² Includes benomyl, captafol, captan, chlorothalonil, dinocap, DMTT, folpet, pentachloronitrobenzene, sodium pentachlorophenate, 2,4,5-trichlorophenol and its salts, all other phenylmercury compounds, and others.

³ Includes alachlor, atrazine, barban, benefin, bensulide, 2,4-D acid, esters, and salts, 2,4-DB, dicamba, dimethylurea compounds, dinitrophenol compounds, isopropyl phenylcarbamates (IPC and CIPC), maleic hydrazide, MCPA, molinate, NPA, picloram, propanil, silvex and its esters, 2,4,5-T acid esters and salts, triazines, trifluralin, uracils, and others.

⁴ Includes carbophenothion, diazinon, dioxathion, fensulfothion, parathion, ronnel, and other phosphorothioates and phosphorodithioates, and others.

⁵ Includes carbaryl, carbofuran, chlorinated insecticides (BHC + lindane, chlordane, chlorobenzilate, DDT, dicofol, endosulfan, endrin, heptachlor, and others), insect attractants, DEET and other insect repellents, small amounts of rodenticides, piperonyl butoxide and other synergists, and others.

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

⁷ Includes dodine, and others.

⁸ Includes cacodylic acid, CDAA, dalapon, methanearsonic acid salts, sodium TCA, thiocarbamates, thiolcarbamates, and organophosphorus herbicides; and others.

⁹ Includes dichlorvos, dimethoate, disulfoton, ethion, malathion, monocrotophos, naled, phorate, and other organophosphorus insecticides.

¹⁰ Includes DBCP, soil conditioners and fumigants, methomyl, aldicarb, 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 report on cyclic intermediates. It also does not include data for the fungicides, dimethyl-dithiocarbamic acid, sodium salt and dimethylidithiocarbamic acid, zinc salt (i.e., ziram). These data are included in the report on rubber-processing chemicals.

PESTICIDES AND RELATED PRODUCTS

183

TABLE 2.--PESTICIDES AND RELATED PRODUCTS FOR WHICH U.S. PRODUCTION OR SALES WERE REPORTED,
IDENTIFIED BY MANUFACTURER, 1975

[Pesticides and related products 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]

Chemical	Manufacturers' identification codes (according to list in table 3)
PESTICIDES AND RELATED PRODUCTS, CYCLIC	
*Fungicides:	
2,6-Bis(dimethylaminomethyl)cyclohexanone-----	MRK.
4-Bromoacetoxyethyl-1-m-dioxolane-----	EFH.
2'-Bromo-4'-hydroxyacetophenone-----	BKM.
Cyanomethylthiobenzothiazole-----	x.
1,4-Dichloro-2,5-dimethoxybenzene (Chloroneb)-----	DUP.
1,2-Dihydro-6-ethoxy-2,2,4-trimethylquinoline (Ethoxyquin).	MON.
3,5-Dimethyl-1,3,5-2H-tetrahydrothiadiazine-2-thione (DMTT).	MRK, VCC.
5-Ethoxy-3-(trichloromethyl)-1,2,4-thiadiazole-----	OMC.
Hexahydro-1,3,5-triethyl-s-triazine-----	VNC.
Mercury fungicides:	
*Phenylmercuric acetate (PMA)-----	CLY, MRK, TRO.
Phenylmercuric ammonium acetate-----	TRO.
Phenylmercuric lactate-----	TRO.
Phenylmercuric oleate-----	MRK.
Phenylmercuric propionate-----	DUP.
Methyl 1-(butylcarbamoyl)-2-benzimidazolecarbamate (Benomyl).	RH.
2-(1-Methyl-n-heptyl)-4,6-dinitrophenyl crotonate (Dinocap).	LIL.
3-(2-Methylpiperidino)propyl-3,4-dichlorobenzoate (Piperalin).	CCA, FER, MCI, TRO, WTC.
*Naphthenic acid, copper salt-----	OMC, OTC.
Pentachloronitrobenzene (PCNB)-----	DOW, FRO, MON, RCI.
*Pentachlorophenol (PCP)-----	DOW.
Pentachlorophenol, sodium salt-----	ASH.
8-Quinolinol (8-Hydroxyquinoline), copper salt-----	ORO.
cis-N-[(1,1,2,2-Tetrachloroethyl)thio]-4-cyclohexene- 1,2-dicarboximide (Captafol).	DA.
2,4,5,6-Tetrachloroisophtalimide (Chlorothalonil)-----	SFA, SFC.
N-Trichloromethylthio-4-cyclohexene-1,2-dicarboximide (Captan).	SFA, SFC.
N-Trichloromethylthiophthalimide (Folpet)-----	
2,4,5-Trichlorophenol acid and salts:	
2,4,5-Trichlorophenol-----	DOW.
2,4,5-Trichlorophenol, ethanolamine salt-----	GAF.
2,4,5-Trichlorophenol, sodium salt-----	DOW.
1,3,5-Tris(2-isopropanol)-s-triazine-----	EFH.
*Herbicides and plant hormones:	
3-Amino-2,5-dichlorobenzoic acid, ammonium salt-----	AMC, GAF.
3-Amino-2,5-dichlorobenzoic acid, methyl ester-----	GAF.
4-Amino-6-(1,1-dimethylethyl)-3-(methylthio)-1,2,4- triazin-5(4H)-one (Metribuzin).	CHG.
4-Amino-3,5,6-trichloropicolinic acid (Picloram)-----	DOW.
2,4-Bis(isopropylamino)-6-methoxy-s-triazine (Prometon).	CGY.
2,4-Bis(isopropylamino)-6-(methylthio)-s-triazine (Prometryn).	CGY.
5-Bromo-3-sec-butyl-6-methyluracil (Bromacil)-----	ACN, DUP.
2-(tert-Butylamino)-4-chloro-6-(ethylamino)-s- triazine.	CGY.
2-(tert-Butylamino)-4-(ethylamino)-6-methoxy-s- triazine.	CGY.
2-(tert-Butylamino)-4-(ethylamino)-6-methylthio-s- triazine.	CGY.
3-tert-Butyl-5-chloro-6-methyluracil (Terbacil)-----	DUP.

TABLE 2.--PESTICIDES AND RELATED PRODUCTS FOR WHICH U.S. PRODUCTION OR SALES WERE REPORTED,
IDENTIFIED BY MANUFACTURER, 1975--CONTINUED

Chemical	Manufacturers' identification codes (according to list in table 3)
PESTICIDES AND RELATED PRODUCTS, CYCLIC--Continued	
*Herbicides and plant hormones--Continued	
N-Butyl-N-ethyl- α,α,α -trifluoro-2,6-dinitro-p-toluidine (Benefin).	LIL.
2-Butynyl-4-chloro-m-chlorocarbanilate (Barban)-----	GOC.
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.	GOC.
2-Chloro-2',6'-diethyl-N-(n-butoxymethyl)acetanilide (Butachlor).	MON.
2-Chloro-2',6'-diethyl-N-(methoxymethyl)acetanilide (Alachlor).	MON.
2-Chloro-4-ethylamino-6-isopropylamino-s-triazine (Atrazine).	CGY.
2-(4-Chloro-6-(ethylamino)-s-triazin-2-ylamino)-2-methylpropionitrile (Cyanazine).	CGY, SHC, VTC.
2-Chloro-N-isopropylacetanilide (Propachlor)-----	MON.
4-Chloro-5-(methylamino)-2-(α,α,α -trifluoro-m-tolyl)-3(2H)-pyridazinone (Norflurazon).	S.
4-(4-Chloro-2-methylphenoxy)butyric acid-----	RDA.
3-(p-Chlorophenyl)-1,1-dimethylurea (Monuron)-----	DUP.
3-(p-Chlorophenyl)-1,1-dimethylurea trichloroacetate-----	ACN.
3-Cyclohexyl-6-(dimethylamino)-1-methyl-1,3,5-triazine-2,4-(1H,3H)-dione.	DUP.
α -Cyclopropyl- α -(p-methoxyphenyl)-5-pyrimidine-methanol.	LIL.
3,5-Dibromo-4-hydroxybenzoylnitrile, octanoic acid ester (Bromoxnil octanoate).	RDA, SDC.
3,6-Dichloro-2-anisic acid (Dicamba)-----	VEL.
2,4-Dichlorobenzyltributylphosphonium chloride-----	SM.
4-(2,4-Dichlorophenoxy)butyric acid (2,4-DB)-----	RDA.
2-(2,4-Dichlorophenoxy)propionic acid (2,4-DP)-----	RDA.
3-(3,4-Dichlorophenyl)-1,1-dimethylurea (Diuron)-----	DUP.
3-(3,4-Dichlorophenyl)-1-methoxy-1-methylurea (Linuron).	DUP.
2-(3,4-Dichlorophenyl)-4-methyl-1,2,4-oxadiazolidine-3,5-dione (Methazole).	PEL, VEL.
2,4-Dichlorophenyl p-nitrophenyl ether-----	RH.
3',4'-Dichloropropionanilide (Propanil)-----	EGR, RH.
N ^b ,N ^b -Diethyl- α,α,α -trifluoro-3,5-dinitro-toluene-2,4-diamine (Dinitroamine).	x.
1,2-Dihydropyridazine-3,6-dione (Maleic hydrazide) (MH).	ACY, ASL, CHF, FMT, USR.
N-(beta-0,0-Diisopropylidithiophosphorylethyl)benzene sulfonamide (Bensulide).	SFA.
N,N-Dimethyl-2,2-diphenylacetamide (Diphenamid)-----	CWN.
1,2-Dimethyl-3,5-diphenyl-1H-pyrazolium methyl sulfate.	ACY, x.
N-(1,1-Dimethyl-2-propynyl)-3,5-dichlorobenzamide (Pronamide).	RH.
Dimethyl-2,3,5,6-tetrachloroterephthalate (DCPA)-----	DA.
Dinitrobutylphenol (DNBP)-----	DOW, FMN, VTC.
Dinitrobutylphenol, ammonium salt-----	DOW, FMN.
Dinitrobutylphenol, triethanolamine salt-----	DOW, FMN, VTC.
Dinitrocresol, sodium salt-----	FMN.
2,6-Dinitro-N,N-dipropylcumidine (Isopropalin)-----	LIL.
2-Ethylamino-4-isopropylamino-6-methylmercapto-s-triazine (Ametryn)..	CGY.
S-Ethyl(cyclohexyl)ethylthiocarbamate-----	SFA.
S-Ethyl hexahydro-1H-azepine-1-carbothioate (Molinate).	SFA.
2-Ethylthio-4,6-bis(isopropylamino)-s-triazine (Diprotertryn).	CGY.
Gibberellic acid-----	ABB, MRK.

TABLE 2.--PESTICIDES AND RELATED PRODUCTS FOR WHICH U.S. PRODUCTION OR SALES WERE REPORTED,
IDENTIFIED BY MANUFACTURER, 1975--CONTINUED

Chemical	Manufacturers' identification codes (according to list in table 3)
PESTICIDES AND RELATED PRODUCTS, CYCLIC--Continued	
*Herbicides and plant hormones--Continued	
3-Indolebutyric acid-----	ARA.
Isopropyl N-(3-chlorophenyl)carbamate (CIPC)-----	PPG.
Isopropyl N-phenylcarbamate (IPC)-----	PPG.
1-(2-Methylcyclohexyl)-3-phenylurea (Siduron)-----	DUP.
Methyl 5-(2',4'-dichlorophenoxy)-2-nitrobenzoate-----	SM.
4-(Methylsulfonyl)-2,6-dinitro-N,N-dipropylaniline (Nitralin).-----	SHC.
1-Naphthaleneacetic acid and derivatives:	
1-Naphthaleneacetamide-----	AMC.
1-Naphthaleneacetic acid-----	GNW.
1-Naphthaleneacetic acid, sodium salt-----	BKL, GNW.
1,8-Naphthalic anhydride-----	GOC.
N-1-Naphthylphthalamic acid (NPA)-----	USR.
7-Oxabicyclo[2.2.1]heptane-2,3-dicarboxylic acid, di- sodium salt (Endothall).-----	PAS.
Phenoxyacetic acid derivatives:	
4-Chloro-2-methylphenoxyacetic acid (MCPA)-----	CLY, RDA, TMH.
2,4-Dichlorophenoxyacetic acid (2,4-D)-----	DOW, MON, RDA.
2,4-Dichlorophenoxyacetic acid esters and salts:	
2,4-Dichlorophenoxyacetic acid, 2-butoxyethanol ester.-----	DOW.
2,4-Dichlorophenoxyacetic acid, butoxypolypropyl- englycol ester.-----	DOW.
2,4-Dichlorophenoxyacetic acid, n-butyl ester-----	RDA, RIV.
2,4-Dichlorophenoxyacetic acid, sec-butyl ester-----	DOW.
*2,4-Dichlorophenoxyacetic acid, dimethylamine salt.-----	DOW, RDA, RIV, TMH.
2,4-Dichlorophenoxyacetic acid, ethanolamine and isopropanolamine salt.-----	DOW.
*2,4-Dichlorophenoxyacetic acid, iso-octyl ester-----	DOW, RDA, RIV, TMH.
2,4-Dichlorophenoxyacetic acid, lithium salt-----	GTH.
2,4-Dichlorophenoxyacetic acid, sodium salt-----	DOW, RIV.
2,4,5-Trichlorophenoxyacetic acid esters and salts:	
2,4,5-Trichlorophenoxyacetic acid, 2-butoxyethanol ester.-----	DOW.
2,4,5-Trichlorophenoxyacetic acid, butoxypoly- propylene glycol ester.-----	DOW, RIV.
2,4,5-Trichlorophenoxyacetic acid, sec-butyl ester.-----	DOW.
2,4,5-Trichlorophenoxyacetic acid, iso-octyl ester.-----	RIV, TMH.
2,4,5-Trichlorophenoxyacetic acid, triethylamine salt.-----	DOW.
2-(2,4,5-Trichlorophenoxy)propionic acid (Silvex)-----	TMH.
2-(2,4,5-Trichlorophenoxy)propionic acid esters and salts:	
2-(2,4,5-Trichlorophenoxy)propionic acid, butoxypoly- propylene glycol ester.-----	DOW.
2-(2,4,5-Trichlorophenoxy)propionic acid, dimethyl- amine salt.-----	RIV.
2-(2,4,5-Trichlorophenoxy)propionic acid, iso-octyl ester.-----	DOW, RIV.
α,α,α-Trifluoro-2,6-dinitro-N,N-dipropyl-p-toluidine (Trifluralin).-----	LIL.
All other cyclic herbicides-----	CWN, x.
Insect attractants and repellents:	
tert-Butyl 4(or 5)-chloro-2-methylcyclohexanecarboxy- late (Trimedure).-----	UOP.
N,N-Diethyltoluamide (DEET)-----	PFZ.
Di-n-propylisocinchomeronate-----	MGK.

SYNTHETIC ORGANIC CHEMICALS, 1975

TABLE 2.--PESTICIDES AND RELATED PRODUCTS FOR WHICH U.S. PRODUCTION OR SALES WERE REPORTED,
IDENTIFIED BY MANUFACTURER, 1975--CONTINUED

Chemical	Manufacturers' identification codes (according to list in table 3)
PESTICIDES AND RELATED PRODUCTS, CYCLIC--Continued	
Insecticides:	
3-sec-Amylphenyl-N-methylcarbamate-----	x.
Bacillus thuringiensis-----	ABB, S.
(5-Benzyl-3-furyl)methyl-2,2-dimethyl-3-(2-methyl-propenyl)cyclopropane carboxylate (Resmethrin).	PEN.
2-(p-tert-Butylphenoxy)cyclohexyl-2'-propynyl sulfite--	USR.
o-sec-Butylphenyl-N-methylcarbamate-----	OTC.
Chlorinated insecticides:	
α-Bis(p-chlorophenyl)β,β,β-trichloroethane (DDT)-----	MTO.
o-Chlorophenyl-N-methylcarbamate-----	OTC.
p-Chlorophenyl 2,4,5-trichlorophenyl sulfone (Tetradifon).	FMN.
1,1-Dichloro-2,2-bis(p-ethylphenyl)ethane-----	CHF, RH.
4,4'-Dichloro-α-trichloromethylbenzhydrol (Dicofoil)--	RH.
Dodecachlorooctahydro-1,3,4-metheno-2H-cyclobuta[cd] pentalene (Mirex).	ACN.
Ethyl 4,4'-dichlorobenzilate (Chlorobenzilate)-----	CGY.
Heptachloro-tetrahydro-endo-methanoindene (Heptachlor).	VEL.
Hexachlorocyclohexane (Benzene hexachloride) (BHC)---	HK.
Hexachlorocyclohexane, 100% γ-isomer (Lindane)-----	HK.
Hexachloroepoxyoctahydro-endo, endo-dimethano-naphthalene (Endrin).	VEL.
6,7,8,9,10,10-Hexachloro-1,5,5a,6,9,9a-hexahydro-6,9-methano-2,4,3-benzodioxathiepin 3-oxide (Endosulfan).	HK.
Octachlorohexahydro-4,7-methanoindene (Chlordan)-----	VEL.
*Toxaphene (Chlorinated camphene)-----	HN, HPC, VTC.
*1,1,1-Trichloro-2,2-bis(p-methoxyphenyl)ethane (Methoxychlor).	CHF, DUP, EGR.
2,3-Dihydro-2,2-dimethyl-7-benzofuranyl methyl-carbamate (Carbofuran).	FMN.
m-[(Dimethylamino)methylene]amino]phenyl methyl-carbamate, hydrochloride.	x.
3,4-Dimethylphenyl-N-methylcarbamate-----	x.
m-(1-Ethylpropyl)phenyl methylcarbamate-----	ORO.
o-Isopropylphenyl methylcarbamate-----	OTC.
m-(1-Methylbutyl)phenyl methylcarbamate-----	ORO.
1-Naphthyl N-methylcarbamate (Carbaryl)-----	UCC.
*Organophosphorus insecticides:	
0-(4-Bromo-2,5-dichlorophenyl) 0-methylphenyl-phosphonothioate (Leptoephos).	VEL.
4-tert-Butyl-2-chlorophenyl methyl methylphosphoramidite (Crufomate).	DOW.
S-[[{(p-Chlorophenyl)thio}methyl]0,0-diethyl phosphorodithioate (Carbophenothion).	SFA.
2-Chloro-1-(2,4,5-trichlorophenyl)vinyl dimethyl-phosphate.	SHC.
2-(Diethoxyphosphinylimino)-4-methyl-1,3-dithiolane.	ACY, x.
0,0-Diethyl S-(2-chloro-1-phthalimidioethyl)-phosphorodithioate.	HPC.

PESTICIDES AND RELATED PRODUCTS

187

TABLE 2.--PESTICIDES AND RELATED PRODUCTS FOR WHICH U.S. PRODUCTION OR SALES WERE REPORTED,
IDENTIFIED BY MANUFACTURER, 1975--CONTINUED

Chemical	Manufacturers' identification codes (according to list in table 3)
PESTICIDES AND RELATED PRODUCTS, CYCLIC--Continued	
Insecticides--Continued	
*Organophosphorus insecticides--Continued	
0,0-Diethyl 0-(2-isopropyl-4-methyl-6-pyrimidinyl)-phosphorothioate (Diazinon).	CGY.
0,0-Diethyl 0-[p-(methylsulfinyl)phenyl] phosphorothioate (Fensulfothion).	CHG.
0,0-Diethyl 0-p-nitrophenyl phosphorothioate (Parathion).	MON.
0,0-Diethyl 0-(3,5,6-trichloro-2-pyridyl) phosphorothioate.	DOW.
0,0-Dimethyl 0-[4-(methylthio)-m-tolyl] phosphorothioate (Fenthion).	CHG.
*0,0-Dimethyl 0-p-nitrophenyl phosphorothioate (Methyl parathion).	AMP, MON, SFA, VTC.
0,0-Dimethyl S-[4-oxo-1,2,3-benzotriazin-3(4H)-ylmethyl] phosphorodithioate (Azinphos-methyl).	CHG.
0,0-Dimethyl S-(phthalimidomethyl) phosphorodithioate (Phosmet).	SFA.
Dimethyl 2,4,5-trichlorophenyl phosphorothionate (Ronnel).	DOW.
2,3-p-Dioxane S,S-bis(0,0-diethylphosphorodithioate) (Dioxathion).	HPC.
0-Ethyl 0-(p-nitrophenyl)phenylphosphonothioate (EPN).	SFA.
0-Ethyl S-phenylethylphosphonodithioate (Fonofos)-----	SFA.
2-Imino-1,3-dithiolane, dihydrogen sulfate-----	ACY, x.
0,0',0'-Tetramethyl 0,0'-thiodi-p-phenylene phosphorothioate.	ACY.
N-(1-Phenyl-2-nitropropyl)piperazine-----	MRK.
m-Tolyl methylcarbamate-----	x.
All other cyclic insecticides-----	PLC, x.
Nematocides: 0,0-Diethyl 0-(2,4-dichlorophenyl) phosphorothioate (Dichlofenthion).	SM.
Rodenticides:	
3-(α -Acetonylbenzyl)-4-hydroxycoumarin (Warfarin)-----	MOT.
2-Diphenylacetyl-1,3-indandione and sodium salt (Diphacinone).	NES.
2-Pivaloyl-1,3-indandione and salts (Pindone)-----	MOT, PIC.
N-3-Pyridylmethyl-N'-p-nitrophenylurea-----	x.
Synergists and adjuvants:	
α -[2-(2-n-Butoxyethoxy)ethoxy]-4,5-(methylenedioxy)-2-propyltoluene (Piperonyl butoxide).	ALP, FMN.
N-(2-Ethylhexyl)bicyclo(2.2.1)-5-heptene-2,3-di-carboximide.	MGK.
All other cyclic pesticides and related products-----	MRK, UCC.
PESTICIDES AND RELATED PRODUCTS, ACYCLIC	
Fungicides:	
Bis-1,4-bromoacetoxy-2-butene-----	VIN.
Cadmium sebacate-----	MAL.
Cadmium succinate-----	MAL.

TABLE 2.--PESTICIDES AND RELATED PRODUCTS FOR WHICH U.S. PRODUCTION OR SALES WERE REPORTED,
IDENTIFIED BY MANUFACTURER, 1975--CONTINUED

Chemical	Manufacturers' identification codes (according to list in table 3)
PESTICIDES AND RELATED PRODUCTS, ACYCLIC--Continued	
*Fungicides--Continued	
Chloromethoxypropylmercuric acetate-----	TRO.
Disodium cyanodithiocimidocarbonate-----	x.
*Dithiocarbamic acid fungicides:	
Dimethylidithiocarbamic acid, ferric salt (Ferbam)-----	FMN.
Dimethylidithiocarbamic acid, manganese salt-----	FMN.
Dimethylidithiocarbamic acid, potassium salt-----	BKM.
Ethylene bis(dithiocarbamic acid), diammmonium salt---	RBC.
Ethylene bis(dithiocarbamic acid), disodium salt (Nabam).	ALC, USR.
Ethylene bis(dithiocarbamic acid), manganese salt (Maneb).	DUP, RH.
Ethylene bis(dithiocarbamic acid), manganese salt with zinc ions.	RH.
Ethylene bis(dithiocarbamic acid), zinc salt (Zineb).	FMN, RH.
Polyethylenethiuram disulfide (PETD)-----	FMN.
All other dithiocarbamic acid fungicides-----	VNC.
n-Dodecylduanidine acetate (Dodine)-----	ACY.
n-Dodecylduanidine hydrochloride-----	MRK.
2-Hydroxypropylmethanethiol sulfonate (HPMTS)-----	x.
Methylene bis(thiocyanate)-----	MRK, VCC.
*Herbicides and plant hormones:	
N,N-Bis(phosphonomethyl)glycine-----	MON.
N,N-Bis(phosphonomethyl)glycine, isopropylamine salt---	MON.
2-Chloroallyl diethylidithiocarbamate (CDEC)-----	MON.
2-Chloro-N,N-diallylacetamide (CDAA)-----	MON.
(2-Chloroethyl)phosphonic acid-----	GAF.
(2-Chloroethyl)trimethyl ammonium chloride-----	ACY.
S-2,3-Dichloroallyl diisopropylthiolcarbamate (Diallate).	MON.
2,2-Dichloropropionic acid, sodium salt (Dalapon)-----	DOW.
N-Dimethylaminosuccinic acid (DMSA)-----	USR.
Dimethylarsinic acid (Cacodylic acid)-----	ASL.
Ethyl carbamoylphosphonate, ammonium salt-----	DUP.
S-Ethyldisobutylthiocarbamate (Butylate)-----	SFA.
S-Ethyldipropylthiocarbamate (EPTC)-----	SFA.
Ethyl xanthogen disulfide (EXD)-----	RBC.
Methaneearsonic acid, disodium salt (DSMA)-----	ASL, CLY, VIN.
Methaneearsonic acid, dodecyl- and octylammonium salts--	CLY.
Methaneearsonic acid, monosodium salt (MSMA)-----	ASL, DA.
Poly[oxyethylene(dimethylimino)ethylene-(dimethylimino) ethylene dichloride].	x.
S-Propyl butylethylthiocarbamate (Pebulate)-----	SFA.
S-Propyl dipropylthiocarbamate (Vernolate)-----	SFA.
S,S,S-Tributyl phosphorotriothioate-----	PLC.
Tributyl phosphorotriothioate (Merphos)-----	SM.
Trichloroacetic acid, sodium salt (TCA)-----	DOW.
S-2,3,3-Trichloroallyl diisopropylthiolcarbamate (Triallate).	MON.
All other acyclic herbicides-----	LIL.
*Insecticides:	
2-(2-Butoxyethoxy)ethyl thiocyanate-----	RH.
S-Methyl N-[{methylcarbamoyl}oxy]thioacetimidate (Methomyl).	DUP, EGR, SHC.
Methyl N',N'-dimethyl-N-[{methylcarbamoyl}oxy]-1- thiooxamidate.	DUP.
N-(1-Nitroethyl)ethylenediamine-----	MRK.
*Organophosphorus insecticides:	
S-[1,2-Bis(ethoxycarbonyl)ethyl] 0,0-dimethyl phosphorodithioate (Malathion).	ACY.
2-Carbomethoxy-1-propen-2-yl dimethyl phosphate (Mevinphos).	SHC.
1,2-Dibromo-2,2-dichloroethyl dimethyl phosphate (Naled).	SHC.

PESTICIDES AND RELATED PRODUCTS

189

TABLE 2.--PESTICIDES AND RELATED PRODUCTS FOR WHICH U.S. PRODUCTION OR SALES WERE REPORTED,
IDENTIFIED BY MANUFACTURER, 1975--CONTINUED

Chemical	Manufacturers' identification codes (according to list in table 3)
PESTICIDES AND RELATED PRODUCTS, ACYCLIC--Continued	
*Insecticides--Continued	
*Organophosphorus insecticides--Continued	
0,0-Diethyl S-2-(ethylthio)ethyl phosphorodithioate (Disulfoton).	CHG.
0,0-Diethyl 0-2-(ethylthio)ethyl phosphorothioate (Demeton O).	CHG.
0,0-Diethyl S-(ethylthio)methyl phosphorodithioate (Phorate).	ACY.
3-(Dimethoxyphosphinyloxy)-N,N-dimethyl-cis- crotonamide (Dicrotophos).	SHC.
0,S-Dimethylacetylphosphoramidothioate (Acephate)----	ORO.
0,0-Dimethyl 2,2-dichlorovinyl phosphate (Di- chlorvos).	SHC.
0,0-Dimethyl S-[2-(ethylsulfinyl)ethyl]phosphoro- thioate (Oxydemetonmethyl).	CHG.
0,0-Dimethyl S-(N-methylcarbamoylmethyl)phosphoro- dithioate (Dimethoate).	ACY.
Dimethyl phosphate of 3-hydroxy-N-methyl-cis- crotonamide (Monocrotophos).	SHC.
0,S-Dimethyl phosphoramidothioate-----	CHG.
0,0,0',0'-Tetraethyl S,S'-methylene bis-phosphoro- dithioate (Ethion).	FMN.
0,0,0',0'-Tetra-n-propyl dithiopyrophosphate-----	SFA.
All other acyclic insecticides-----	PLC, x.
Nematicides:	
0-Ethyl S,S-dipropyl phosphorodithioate-----	SM.
2-Methyl-2-(methylthio)propionaldehyde O-(methylcarba- moyl)oxime (Aldicarb).	UCC.
Soil conditioners: Polyacrylonitrile, hydrolyzed, sodium salt.	ACY, NLC.
Soil fumigants:	
1,2-Dibromo-3-chloropropane (DBCP)-----	DOW, MCH, SHC.
1,3-Dichloropropene-----	DOW.
1,3-Dichloropropene and 1,2-dichloropropane-----	DOW, SHC.
*Methyl bromide (Bromomethane)-----	AMP, DOW, GTL, MCH.
N-Methyldithiocarbamic acid, sodium salt (Metham)-----	SFA.
Methyl isothiocyanate-----	MRT.
*Trichloronitromethane (Chloropicrin)-----	DOW, NLO, SBN.
All other acyclic pesticides and related products-----	PCW, PLC, RBC, TRO, UCC.

SYNTHETIC ORGANIC CHEMICALS, 1975

TABLE 3.--PESTICIDES AND RELATED PRODUCTS: DIRECTORY OF MANUFACTURERS, 1975

ALPHABETICAL DIRECTORY BY CODE

[Names of manufacturers of pesticides and related products that reported production or sales to the U.S. International Trade Commission for 1975 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	MCI	Mooney Chemical Corp.
ACN	Allied Chemical Corp., Agricultural Dept.	MGK	McLaughlin, Gormley & King Co.
ACY	American Cyanamid Co.	MON	Monsanto Co.
ALC	Alco Chemical Corp.	MOT	Motomco, Inc.
ALP	Alpha Laboratories, Inc.	MRK	Merck & Co., Inc.
AMC	Amchem Products, Inc., Div. of Rorer-Amchem, Inc.	MRT	Morton Chemical Co., Div. of Morton-Norwich Products, Inc.
AMP	Kerr-McGee Chemical Corp.	MTO	Montrose Chemical Corp. of California
ARA	Arapahoe Chemical, Inc., Sub. of Syntex Corp. (U.S.A.)	NES	Nease Chemical Co., Inc.
ASH	Ashland Oil, Inc., Ashland Chemical Co.	NLC	Nalco Chemical Co.
ASL	Ansul Chemical Co.	NLO	Niklor Chemical Co.
BKL	Millmaster Onyx Corp., Millmaster Chemical Div., Berkeley Chemical Dept.	OMC	Olin Corp.
BKM	Buckman Labs., Inc.	ORO	Chevron Chemical Co.
CCA	Interstab Chemical, Inc.	OTC	Story Chemical Corp.
CGY	Ciba-Geigy Corp., Ciba Agricultural Co.	PAS	Pennwalt Corp.
CHF	Chemical Formulators, Inc.	PCW	Pfister Chemical, Inc.
CHG	Mobay Chemical Corp., Chemagro Agricultural Div.	PEL	Felron Corp.
CLY	W. A. Cleary Corp.	PEN	CPC International, Inc., Penick Div.
CWN	Upjohn Co., Fine Chemical Div.	PFZ	Pfizer, Inc.
DA	Diamond Shamrock Corp.	PIC	Pierce Organics, Inc.
DOW	Dow Chemical Co.	PLC	Phillips Petroleum Co.
DUP	E. I. duPont de Nemours & Co., Inc.	PPG	PPG Industries, Inc.
EFH	E. F. Houghton & Co.	RBC	Fike Chemicals, Inc.
EGR	Eagle River Chemical Corp.	RCI	Reichhold Chemicals, Inc.
FER	Ferro Corp., Ferro Chemical Div.	RDA	Rhodia, Inc.
FMN	FMC Corp., Agricultural Chemical Div.	RH	Rohm & Haas Co.
FMT	Fairmount Chemical Co.	RIV	Riverdale Chemical Co.
FRO	Vulcan Materials Co., Chemical Div.	S	Sandoz Inc., Crop Protection Dept.
GAF	GAF Corp., Chemical Div.	SBN	Sobin Chemicals, Inc.
GNW	Greenwood Chemical Co.	SDC	Martin-Marietta Corp., Sodyeco Div.
GOC	Gulf Oil Corp., Gulf Oil Chemical Co. - U.S.	SFA	Stauffer Chemical Co.: Agricultural Div.
GTH	Guth Chemical Co.	SFC	Calhio Chemicals, Inc. Div.
GTL	Great Lakes Chemical Corp.	SHC	Shell Oil Co., Shell Chemical Co. Div.
HK	Hooker Chemicals & Plastics Corp.	SM	Mobil Oil Corp., Mobil Chemical Co., Phosphorus Div.
HN	Tenneco Chemicals, Inc.	TMH	Thompson-Hayward Chemical Co.
HPC	Hercules, Inc.	TRO	Troy Chemical Corp.
LAK	Lakeway Chemicals, Inc.	UCC	Union Carbide Corp.
LIL	Eli Lilly & Co.	UOP	UOP, Inc., UOP Chemical Div.
MAL	Mallinckrodt Chemical Works	USR	Uniroyal, Inc., Chemical Div.
MCH	Michigan Chemical Corp.	VCC	Vinings Chemical Co.
		VEL	Velsicol Chemical Corp.
		VIN	Vineyard Chemical Co.
		VNC	Vanderbilt Chemical Corp.
		VTC	Vicksburg Chemical Co., Sub. of Vertac Consolidated
		WTC	Witco Chemical Co., Inc.

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

MISCELLANEOUS CHEMICALS

191

MISCELLANEOUS CHEMICALS

The term miscellaneous chemicals comprises those synthetic organic products that are not included in the use groups covered by the other preliminary reports in the 1975 series. They include products that are employed in a great variety of uses. The number of chemicals used exclusively for only one purpose is not large. Among the products covered are those used for gasoline and lubricating oil additives, paint driers, photographic chemicals, tanning materials, flotation reagents, refrigerants, textile polymers, sequestering agents, organic fertilizers, anti-freeze chemicals, solvents, and acyclic intermediates. This report presents statistics on U.S. production and sales of miscellaneous chemicals in as great detail as is possible without revealing the operations of individual producers.

The year 1975 will perhaps be best remembered as a year of entrenchment for the U.S. chemical industry. The figures that are herewith presented are by and large representative of broader trends that characterized the actions of the U.S. chemical industry throughout 1975. That is, throughout the gripping recession of late 1974 and much of 1975, U.S. chemical producers almost universally refused to compete on a basis of price even in contracting markets. In fact, throughout 1975, many chemical producers either maintained 1974 price levels or, as was true in many cases, actually raised prices above the 1974 level and consequently decreased production to maintain these price levels. This is perhaps an indicator as to the strategy that many capital intensive industries may deploy in future recessionary spirals.

U.S. production of miscellaneous organic chemicals declined approximately 14.3 percent from 100.6 billion pounds in 1974 to 86.2 billion pounds in 1975. Sales declined 18.3 percent by quantity from 47.4 billion pounds, valued at \$7.8 billion, in 1974 to 38.8 billion pounds, valued at \$8.0 billion, in 1975. This decline in production is generally directly attributable to the severe recessionary pressures of late 1974 and 1975. In certain instances, this situation was further aggravated by the high inventory levels carried over from 1974. Some markets, such as the aerosol market, were further depressed by pending Government regulation coupled with a growing consumer awareness of the ozone controversy. Still other markets felt the pressure of stiff competition from abroad as some world chemical producers strove to maintain production levels above their respective breakeven points.

Perhaps hardest hit were the chemical intermediates, such as methanol and formaldehyde (used principally as intermediates in the production of glue for plywood sheets), whose success in large part is determined by the number of housing starts. Both private and public housing starts and permits declined precipitously from 160,900 in April 1974 to a low of 56,200 in February 1975.¹ U.S. production of methanol declined nearly 25 percent from 6.9 billion pounds in 1974 to 5.2 billion pounds in 1975, and the

See footnotes on following page.

SYNTHETIC ORGANIC CHEMICALS, 1975

production of formaldehyde fell approximately 21 percent from 5.8 billion pounds in 1974 to 4.6 billion pounds in 1975. Although the sales quantity of methanol and formaldehyde declined approximately 32 percent and 40 percent, respectively, from 1974 to 1975, the unit price of methanol increased approximately 50 percent on a rounded basis from 4 cents per pound in 1974 to 6 cents per pound in 1975, and the unit price of formaldehyde increased approximately 33 percent on a rounded basis from 3 cents per pound in 1974 to 4 cents per pound in 1975.

Intermediates for the production of synthetic fibers fared somewhat better in 1975, although the production of manmade fibers fell from 2,228.9 million pounds for the quarter ended September 30, 1974, to a low of 1,228.6 million pounds for the quarter ended March 31, 1975.² Production of acrylonitrile (used in acrylic fiber) declined 14 percent from 1.4 billion pounds in 1974 to 1.2 billion pounds in 1975, whereas sales actually increased from 512 million pounds, valued at \$95 million, in 1974 to 524 million pounds, valued at \$122 million, in 1975. Production of polyethylene terephthalate (used in the production of polyester fibers) decreased only 5.8 percent from 1.9 billion pounds in 1974 to 1.8 billion in 1975. Production of caprolactam (used in nylon fibers) actually increased approximately 6.8 percent from 668 million pounds in 1974 to 713 million pounds in 1975.

Chemical producers of intermediates used in the manufacture of plastics were generally hard hit by the recession and in some cases by Government regulation. For example, production of vinyl chloride monomer (used in a wide range of thermoplastic applications) decreased approximately 25.3 percent from 5.6 billion pounds in 1974 to 4.2 billion pounds in 1975. Sales decreased 28.1 percent by quantity from 3.1 billion pounds, valued at \$260 million, in 1974 to 2.2 billion pounds, valued at \$221 million.

Some markets actually weathered the recession with apparently no production declines. Production of ethylene glycol (the major component in antifreeze and an intermediate in the production of polyester fibers) actually increased approximately 14 percent from 3.3 billion pounds in 1974 to 3.8 billion pounds in 1975. Urea (used principally in fertilizer markets and in feed additives) maintained its 1975 production level at its 1974 level of 7.6 billion pounds.

¹ SURVEY OF CURRENT BUSINESS, United States Department of Commerce, Social and Economic Statistics Administration, Bureau of Economic Analysis, December 1974 (vol. 54, No. 12) and October 1975 (vol. 55, No. 10).

² Ibid.

TABLE 1.--MISCELLANEOUS CHEMICALS: U.S. PRODUCTION AND SALES, 1975

[Listed below are all miscellaneous 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 chemicals for which data on production and/or sales were reported and identifies the manufacturers of each]

Chemical	Production	Sales		
		Quantity	Value	Unit value ¹
		1,000 pounds	1,000 pounds	Per pound
Grand total-----	86,243,543	38,778,827	7,973,408	\$0.21
MISCELLANEOUS CHEMICALS, CYCLIC				
Total-----	3,159,607	1,157,858	717,263	.62
Benzoic acid, sodium salt-----	9,507	9,643	4,753	.49
Benzoyl peroxide-----	7,885	6,988	11,817	1.69
Benzyl alcohol-----	7,462	7,020	5,703	.81
Butyl benzoate-----	3,079	2,660	844	.32
tert-Butyl peroxybenzoate-----	2,212	2,181	3,472	1.59
2,6-Di-tert-butyl-p-cresol (BHT):				
Food grade-----	6,051	3,662	3,387	.92
Tech. grade-----	11,049	9,871	8,555	.87
p-Dimethoxybenzene (Dimethyl ether of hydroquinone)-----	615	...	...	...
Dioxane (1,4-Diethylene oxide)-----	12,596	6,817	4,943	.72
Enzymes-----	(²)	(²)	35,690	...
Flotation reagents-----	4,457	...	...	...
Gasoline additives: ³				
N,N'-Di-sec-butyl-p-phenylenediamine-----	2,803	1,678	2,212	1.32
N ¹ ,N ¹ '-Disalicylidene-1,2-propanediamine-----	954	...	...	...
Hexamethylenetetramine, tech. grade-----	61,619	34,070	9,246	.27
Lubricating oil and grease additives, total-----	419,221	287,417	93,237	.32
Oil-soluble petroleum sulfonates, total-----	265,617	...	...	...
Oil-soluble petroleum sulfonate, calcium salt-----	159,484	94,991	23,735	.25
Oil-soluble petroleum sulfonate, sodium salt-----	88,069	86,540	20,900	.24
All other-----	18,064	...	...	...
Phenol salts-----	70,704	56,895	24,033	.42
All other lubricating oil and grease additives-----	82,900	48,991	24,569	.50
Methyl p-hydroxybenzoate (Methylparaben)-----	487	561	1,311	2.34
Naphthenic acid salts, total ⁴ ⁵ -----	10,484	9,881	6,796	.69
Calcium naphthenate-----	1,011	892	424	.48
Cobalt naphthenate-----	2,788	2,780	2,951	1.06
Lead naphthenate-----	4,118	3,755	1,705	.45
Manganese naphthenate-----	841	754	395	.52
Zinc naphthenate-----	885	804	404	.50
All other-----	841	896	917	1.02
Photographic chemicals:				
2,5-Diethoxy-4-morpholinobenzenediazonium chloride-----	170	168	2,002	11.92
p-Diethylaminobenzenediazonium chloride-----	122	122	389	3.19
p-[Ethyl(2-hydroxyethyl)amino]benzenediazonium chloride-----	15	15	67	4.47

See footnotes at end of table.

SYNTHETIC ORGANIC CHEMICALS, 1975

TABLE 1.--MISCELLANEOUS CHEMICALS: U.S. PRODUCTION AND SALES, 1975--CONTINUED

Chemical	Production	Sales		
		Quantity	Value	Unit value ¹
MISCELLANEOUS CHEMICALS, CYCLIC--Continued		1,000 pounds	1,000 pounds	1,000 dollars
Pinene (α - and β)-----	70,215	18,422	4,305	\$0.23
Polyethylene terephthalate-----	1,822,546	275,102	111,585	.41
Propyl p-hydroxybenzoate (Propylparaben)-----	83	146	418	2.86
Tall oil salts:				
Cobalt tallate-----	365	420	372	.89
Lead tallate-----	646	566	284	.50
Manganese tallate-----	...	186	128	.69
Tanning materials, synthetic-----	43,032	41,366	15,214	.37
All other miscellaneous cyclic chemicals-----	661,932	438,896	390,533	.89
MISCELLANEOUS CHEMICALS, ACYCLIC				
Total-----	83,083,936	37,620,969	7,256,145	.19
Cellulose Esters and Ethers				
Total-----	907,349	237,784	169,277	.71
Cellulose esters: Cellulose acetate-----	725,925	...	...	...
Cellulose ethers: Sodium carboxymethylcellulose, 100%-----	63,325	53,621	39,184	.73
All other cellulose esters and ethers ⁶ -----	118,099	184,163	130,093	.71
Lubricating Oil Additives				
Total-----	471,740	105,073	47,935	.46
Phosphorodithioates (Dithiophosphates)-----	121,842	17,948	10,502	.58
Sulfur compounds: Sulfurized lard oil-----	9,621	9,538	2,563	.27
All other-----	340,277	77,587	34,870	.45
Nitrogenous Compounds				
Total ⁷ -----	16,241,038	8,158,987	1,274,238	.16
Acetonitrile-----	...	7,804	2,774	.36
Acrylonitrile-----	1,214,550	523,694	122,459	.23
Amines, total-----	1,292,254	406,259	209,051	.52
Butylamines-----	21,086	13,089	9,014	.69
Ethylamines: Diethylamine-----	12,419	...	...	...
1,6-Hexanediamine (Hexamethylenediamine)-----	749,589	...	...	...
Methylamines:				
Dimethylamine-----	...	37,011	10,616	.29
Trimethylamine-----	...	14,163	3,895	.28

See footnotes at end of table.

SYNTHETIC ORGANIC CHEMICALS, 1975

TABLE 1.--MISCELLANEOUS CHEMICALS: U.S. PRODUCTION AND SALES, 1975--CONTINUED

Chemical	Production	Sales		
		Quantity	Value	Unit value ¹
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See footnotes at end of table.

TABLE 1.--MISCELLANEOUS CHEMICALS: U.S. PRODUCTION AND SALES, 1975--CONTINUED

Chemical	Production	Sales			
		Quantity	Value	Unit value ¹	
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued					
<i>Nitrogenous Compounds--Continued</i>					
Amines--Continued					
Propylamines: Propylamine, mono-----	1,000 pounds	1,000 pounds	1,000 dollars	Per pound	
All other-----	601 508,559	... 341,996	... 185,526	... \$0.54	
Caprolactam-----	713,293	...	...	...
Eruacamide-----	2,438	2,310	4,210	1.82	
Ethanolamines, total-----	257,734	219,491	69,102	.32	
2-Aminoethanol (Monoethanolamine)-----	82,678	73,572	22,494	.31	
2,2'-Aminodiethanol (Diethanolamine)-----	85,599	67,907	21,457	.32	
2,2',2'''-Nitrilotriethanol (Triethanolamine)-----	89,457	78,012	25,151	.32	
Nitriloacids and salts, total-----	153,304	120,606	54,406	.45	
(Diethylenetrinitrilo)pentaacetic acid, pentasodium salt-----	3,032 79	2,102 ...	1,550...	.74 ...
N,N-Dihydroxyethylglycine, sodium salt-----	50,070	30,219	18,723	.62	
(Ethylenedinitrilo)tetraacetic acid, tetrasodium salt-----	4,402 95,721	3,061 85,224	2,670 31,463	.87 .37	
(N-Hydroxyethylmethylenedinitrilo)triacetic acid, trisodium salt-----					
All other-----					
Nylon 6 and 6/6 (polymers for fiber, only)-----	1,504,472	...	...	...
Pentaerythritol tetrannitrate-----	5,822	3,930	4,633	1.18	
Polyacrylamide-----	26,276	25,581	25,665	1.00	
Polyacrylonitrile and acrylonitrile copolymers for fiber-----	528,670	...	...	...
Urea in compounds or mixtures (100% basis), total-----	87,597,734	6,019,095	9431,168	.07	
In feed compounds-----	581,958	495,587	38,508	.08	
In liquid fertilizer-----	2,886,976	2,490,514	157,019	.06	
In solid fertilizer-----	2,994,908	2,551,471	194,020	.08	
In plastics-----	768,364	306,746	27,024	.09	
All other-----	365,528	174,777	14,597	.08	
All other nitrogenous compounds-----	2,944,491	830,217	350,770	.42	
<i>Acids, Acyl Halides, and Anhydrides</i>					
Total-----	6,221,088	1,666,758	402,590	.24	
Acetic acid, synthetic, 100%-----	2,197,423	599,247	65,102	.11	
Acetic anhydride, 100%-----	1,457,873	...	...	...
Acrylic acid-----	215,195	20,962	6,254	.30	
Adipic acid-----	1,342,942	107,637	39,094	.36	
Fumaric acid-----	20,817	21,835	9,164	.42	
Lauroyl chloride-----	1,375	...	...	...
Maleic anhydride-----	215,828	170,129	56,961	.34	
Polyacrylic acid-----	472	468	334	.71	
Propionic acid-----	50,892	44,136	7,479	.17	
All other acids, acyl halides, and anhydrides-----	718,271	702,344	218,202	.31	

See footnotes at end of table.

SYNTHETIC ORGANIC CHEMICALS, 1975

TABLE 1.--MISCELLANEOUS CHEMICALS: U.S. PRODUCTION AND SALES, 1975--CONTINUED

Chemical	Production	Sales		
		Quantity	Value	Unit value ¹
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued				
<i>Salts of Organic Acids</i>				
Total-----				
Acetic acid salts, total-----				
Barium acetate-----	1,000 pounds	1,000 pounds	1,000 dollars	Per pound
Potassium acetate-----	277,676	240,831	120,542	\$0.50
Sodium acetate-----	22,356	22,154	11,398	.51
Zinc acetate-----	...	96	103	1.07
All other-----	15,476	...	...	...
2-Ethylhexanoic acid (α -Ethylcaproic acid) salts, total-----	...	336	256	.76
Calcium 2-ethylhexanoate-----	4,720	21,722	11,039	.51
Cobalt 2-ethylhexanoate-----	11,894	11,147	10,756	.96
Lead 2-ethylhexanoate-----	1,935	1,422	752	.53
Zinc 2-ethylhexanoate-----	3,078	2,702	3,219	1.19
Zirconium 2-ethylhexanoate-----	1,769	1,743	788	.45
All other-----	593	641	340	.53
Formic acid, sodium salt, tech. grade-----	2,060	1,998	2,190	1.10
Gluconic acid, sodium salt-----	2,459	2,641	3,467	1.31
Oleic acid salts-----	33,235	37,881	2,333	.06
Stearic acid salts, total ¹⁰ -----	11,163	11,282	4,388	.39
Aluminum stearates, total-----	516	504	563	1.12
Aluminum distearate-----	58,187	57,292	32,573	.57
Aluminum monostearate-----	2,590	2,516	1,688	.67
Aluminum tristearate-----	1,943	1,858	1,255	.68
Barium stearate-----	462	454	296	.65
Calcium stearate-----	185	204	137	.67
Magnesium stearate-----	382	379	254	.67
Zinc stearate-----	33,360	32,987	16,307	.49
All other-----	3,932	3,905	2,580	.66
All other salts of organic acids-----	15,265	15,018	9,964	.66
	2,658	2,487	1,780	.72
	140,325	100,571	58,531	.58
<i>Aldehydes and Ketones</i>				
Total-----	9,416,931	4,426,814	490,136	.11
Acetone, total-----	1,640,187	1,311,385	.155,921	.12
From cumene-----	952,969	844,801	97,592	.12
All other-----	687,218	466,584	58,329	.12
2-Butanone (Methyl ethyl ketone)-----	424,929	432,013	76,743	.18
Butyraldehyde-----	532,661	...	...	...
Formaldehyde (37% by weight)-----	4,558,127	1,598,056	60,990	.04
4-Hydroxy-4-methyl-2-pentanone (Diacetone alcohol)-----	...	39,522	8,639	.22
4-Methyl-2-pentanone (Methyl isobutyl ketone)-----	150,190	145,026	32,113	.22
4-Methyl-3-penten-2-one (Mesityl oxide)-----	45,685	53,069	7,942	.24
3-Pentanone-----	391	396	318	.80
All other aldehydes and ketones-----	2,064,761	867,347	147,470	.17

See footnotes at end of table.

MISCELLANEOUS CHEMICALS

197

TABLE 1.--MISCELLANEOUS CHEMICALS: U.S. PRODUCTION AND SALES, 1975--CONTINUED

Chemical	Production	Sales			
		Quantity	Value	Unit value ¹	
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued					
<i>Alcohols, Monohydric, Unsubstituted</i>					
Total-----	11,822,275	6,668,502	750,521	\$0.11	
Alcohols, C ₁₁ or lower, unmixed, total-----	11,024,766	6,196,667	614,144	.10	
Butyl alcohols:					
n-Butyl alcohol (n-Propylcarbinol)-----	489,616	328,260	59,919	.18	
Isobutyl alcohol (Isopropylcarbinol)-----	157,609	103,589	16,566	.16	
Ethyl alcohol, synthetic ¹¹ -----	1,428,764	1,109,604	145,459	.13	
2-Ethyl-1-hexanol-----	387,232	305,209	60,389	.20	
Isopropyl alcohol-----	1,521,492	813,164	92,141	.11	
Methanol, synthetic-----	5,176,292	2,409,430	135,949	.06	
Propyl alcohol (Propanol)-----	115,989	103,896	20,636	.20	
All other-----	1,747,772	1,023,515	83,085	.08	
Alcohols, C ₁₂ and higher, unmixed, total-----	221,732	95,607	26,360	.28	
Mixtures of alcohols, total-----	575,777	376,228	110,017	.29	
C ₁₁ and lower, only-----	166,443	98,209	23,448	.24	
C ₁₂ and higher, only-----	409,334	278,019	86,569	.31	
<i>Polyhydric Alcohols and Their Esters and Ethers</i>					
Total ¹² -----	6,578,400	4,733,831	1,223,236	.26	
Polyhydric alcohols, total-----	5,058,030	3,652,320	879,337	.24	
Ethylene glycol-----	3,809,003	2,847,976	586,063	.21	
Glycerol, synthetic only-----	136,259	119,538	57,127	.48	
Pentaerythritol-----	100,598	87,092	34,929	.40	
Propylene glycol (1,2-Propanediol)-----	390,836	365,513	97,174	.27	
Sorbitol-----	133,643	104,345	47,725	.46	
All other-----	487,691	127,856	56,319	.44	
Polyhydric alcohol esters-----	235,291	220,203	82,514	.38	
Polyhydric alcohol ethers, total-----	1,285,079	861,368	261,385	.30	
2-Butoxyethanol (Ethylene glycol monobutyl ether)-----	130,558	108,098	29,499	.27	
2-(2-Butoxyethoxy)ethanol (Diethylene glycol monobutyl ether)-----	26,759	20,202	6,099	.30	
Diethylene glycol-----	322,622	166,507	41,321	.25	
Dipropylene glycol-----	39,005	37,990	10,133	.27	
2-Ethoxyethanol (Ethylene glycol monoethyl ether)-----	178,537	82,852	21,374	.26	
2-(2-Ethoxyethoxy)ethanol (Diethylene glycol monoethyl ether)-----	32,376	24,741	6,722	.27	
2-[2-(2-Ethoxyethoxy)ethoxy]ethanol (Triethylene glycol monoethyl ether)-----	26,716	...	...	...
2-Methoxyethanol (Ethylene glycol monomethyl ether)-----	90,389	81,165	20,567	.25	
2-(2-Methoxyethoxy)ethanol (Diethylene glycol monomethyl ether)-----	15,673	10,524	2,867	.27	
2-[2-(2-Methoxyethoxy)ethoxy]ethanol (Triethylene glycol monomethyl ether)-----	38,967	...	...	...
Polyethylene glycol-----	64,822	54,380	22,368	.41	
Polypropylene glycol-----	34,863	25,624	9,040	.35	
Tetraethylene glycol-----	15,005	9,071	3,270	.36	
Triethylene glycol-----	88,528	72,982	22,064	.30	
All other ethers of polyhydric alcohols-----	180,259	167,172	66,061	.40	

See footnotes at end of table.

SYNTHETIC ORGANIC CHEMICALS, 1975

TABLE 1.--MISCELLANEOUS CHEMICALS: U.S. PRODUCTION AND SALES, 1975--CONTINUED

Chemical	Production	Sales			
		Quantity	Value	Unit value ¹	
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued					
<i>Esters of Monohydric Alcohols</i>					
Total-----	3,101,683	1,628,590	408,741	\$0.25	
n-Butyl acetate, unmixed-----	80,341	77,570	16,519	.21	
Butyl acrylate-----	178,554	91,122	28,044	.31	
tert-Butyl peroxy-2-ethylhexanoate-----	1,196	1,241	2,661	2.14	
tert-Butyl peroxypivalate-----	1,027	1,041	2,637	2.53	
Dibutyl maleate-----	...	5,635	2,248	.40	
Di(2-ethyl-1-hexyl) maleate-----	515	...	...	...
Distearyl 3,3'-thiodipropionate-----	1,603	1,619	1,892	1.17	
Ethyl acetate (85%)-----	171,162	153,615	25,929	.17	
Ethyl acrylate-----	239,978	112,800	29,041	.26	
Ethylchloroformate-----	...	887	465	.52	
2-Ethyl-1-hexyl acrylate-----	32,308	31,942	11,890	.37	
Methyl methacrylate, monomer-----	545,624	...	...	...
Phosphorus acid esters, not elsewhere specified-----	67,631	55,261	37,893	.69	
Propyl acetate-----	35,398	33,844	7,301	.22	
Vinyl acetate-----	1,290,450	783,523	131,598	.17	
All other-----	455,896	278,490	110,623	.40	
<i>Halogenated Hydrocarbons</i>					
Total-----	19,061,579	7,149,795	1,232,808	.17	
Carbon tetrachloride-----	906,489	484,058	65,887	.14	
Chlorinated paraffins, total-----	72,518	71,148	18,934	.27	
35%-64% chlorine-----	57,545	56,418	13,733	.24	
Other-----	14,973	14,730	5,201	.35	
Chloroethane (Ethyl chloride)-----	575,174	280,041	28,263	.10	
Chloroform-----	261,740	192,072	30,075	.16	
Chloromethane (Methyl chloride)-----	366,449	144,610	19,760	.14	
1,2-Dibromoethane (Ethylene dibromide)-----	275,156	160,301	43,172	.27	
1,2-Dichloroethane (Ethylene dichloride)-----	7,977,096	761,672	61,691	.08	
Dichloromethane (Methylene chloride)-----	497,119	434,524	68,270	.16	
1,2-Dichloropropane (Propylene dichloride)-----	84,233	37,113	1,638	.04	
Fluorinated hydrocarbons, total-----	969,447	...	...	...
Chlorodifluoromethane (F-22)-----	131,913	93,820	74,058	.79	
Dichlorodifluoromethane (F-12)-----	393,098	374,989	152,551	.41	
Tetrafluoroethylene, monomer-----	17,296	...	...	...
Trichlorofluoromethane (F-11)-----	269,611	253,756	85,358	.34	
All other fluorinated hydrocarbons-----	157,529	...	...	...
Tetrachloroethylene (Perchloroethylene)-----	679,140	589,311	82,991	.14	
1,1,1-Trichloroethane (Methyl chloroform)-----	458,763	478,226	80,295	.17	
Trichloroethylene-----	292,714	290,186	44,081	.15	
Vinyl chloride, monomer (Chloroethylene)-----	4,196,250	2,244,801	221,275	.10	
All other halogenated hydrocarbons-----	1,449,291	259,167	154,509	.60	

See footnotes at end of table.

TABLE 1.--MISCELLANEOUS CHEMICALS: U.S. PRODUCTION AND SALES, 1975--CONTINUED

Chemical	Production	Sales		
		Quantity	Value	Unit value ¹
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued				
All Other Miscellaneous Acyclic Chemicals				
Total-----	1,000 pounds	1,000 pounds	1,000 dollars	Per pound
8,984,177	2,604,004	1,136,121	\$0.44	
2-Butanone peroxide-----	6,359	6,276	5,974	.95
tert-Butyl peroxide (Di-tert-butyl peroxide)-----	2,291	2,256	2,117	.94
Carbon disulfide-----	479,289	341,679	21,022	.06
Epoxides, ethers, and acetals, total-----	6,429,114	1,222,503	275,643	.23
Ethylene oxide ² -----	4,466,854	409,466	105,334	.26
Ethyl ether, tech. grade-----	27,629	23,046	3,584	.15
Isopropyl ether-----	...	7,944	1,208	.15
Propylene oxide-----	1,523,613	...	...	...
All other epoxides, ethers, and acetals-----	411,018	782,047	165,717	.21
Organic-silicon compounds, total-----	182,338	99,648	169,823	1.70
Silicone fluids-----	67,462	59,399	78,734	1.33
Other organo-silicon compounds-----	114,876	40,249	91,089	2.26
Phosgene (Carbonyl chloride)-----	796,141	...	...	...
Sodium methoxide (Sodium methylate)-----	10,904	14,653	5,305	.36
Tetraethyllead-----	314,589	300,150	249,034	.83
Other organo-lead compounds-----	353,419	357,344	303,580	.85
All other-----	409,733	259,495	103,823	.40

¹ Calculated from rounded figures.² Not available.³ Statistics exclude production and sales of tricresyl phosphate. Statistics on tricresyl phosphate are given with "Plasticizers."⁴ Quantities are given on the basis of solid naphthenate, tallate, or linoleate content.⁵ Statistics exclude production and sales of copper naphthenate. Statistics on copper naphthenate are given with "Pesticides and Related Products."⁶ Ethylcellulose which was formerly included with cellulose ethers is now included with cellulosic plastics materials.⁷ Statistics exclude production and sales of fatty amines. Statistics on fatty amines are given with "Surface-Active Agents."⁸ Production of urea in primary solution totaled 7,600,219 thousand pounds.⁹ Includes estimated values for sales of urea in nitrogen compounds.¹⁰ Statistics exclude production and sales of potassium and sodium stearates. Statistics on these stearates are included with "Surface-Active Agents."¹¹ Statistics on production of ethyl alcohol from natural sources by fermentation are issued by the Department of the Treasury, Bureau of Alcohol, Tobacco, and Firearms.¹² Some polyols which are used as intermediates for urethanes have been included with "Plastics and Resin Materials."¹³ 1974 production of ethylene oxide is believed to have been 4.2 billion pounds.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION OR SALES WERE REPORTED,
IDENTIFIED BY MANUFACTURER, 1975

[Miscellaneous chemicals for which separate statistics are given in table 1 are marked 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]

Chemical	Manufacturers' identification codes (according to list in table 3)
MISCELLANEOUS CHEMICALS, CYCLIC	
6-Acetoxy-2,4-dimethyl-1,3-dioxane-----	GIV.
Acetyl cyclohexanesulfonyl peroxide-----	WTL.
Adenosine and derivatives-----	PLB.
2-Aminobenzothiazole-----	FMT.
Aminoethyl piperazine-----	JCC.
Amyl-p-dimethylaminobenzoate-----	VND.
*Benzoinic acid, sodium salt-----	HN, MON, PFZ.
p-Benzozquinone (p-Quinone)-----	EKT.
Benzothiazole-----	ACY.
*Benzoyl peroxide-----	AZT, CAD, NOC, RCI, WTC, WTL.
*Benzyl alcohol-----	BPC, MNR, UOP, VEL.
2,5-Bis(benzoylperoxy)-2,5-dimethylhexane-----	WTL.
Bis(2,4-dichlorobenzoyl) peroxide-----	CAD, WTL.
2,4-Bis(4-Hydroxy-3,5-di-tert-butylphenoxy)-6-(n-octyl-thio)-1,3,5-triazine.	CGY.
2,4-Bis(n-octylthio)-6-(4'-hydroxy-3',5'-di-tert-butyl-anilino)-1,3,5-triazine.	CGY.
Boron fluoride-phenol complex-----	ACS.
*Butyl benzoate-----	PFZ, TCC, VEL.
2(and 3)-tert-Butyl-4-methoxyphenol-----	EKT.
*tert-Butyl peroxybenzoate-----	AZT, CAD, NOC, WTC, WTL.
4-tert-Butylpyrocatechol-----	BKL, DOW.
Camphene-----	GID, HPC, NCI.
Cellulose acetate hexahydrophthalate-----	X.
Cellulose acetate phthalate-----	X.
Centralite-1 (N,N'-Diethyl-N,N'-diphenylurea)-----	OTC.
Chemical indicators and reagents-----	ACS, ARA, EK, FIN, GFS, LAM.
1-(3-Chloroallyl)-3,5,7-triaza-1-azoniaadamantane chloride.	DOW.
Cumene hydroperoxide-----	ACS, RCI.
Cyanuric acid-----	FMB.
Cyclohexanone peroxide-----	NOC.
3-Cyclohexenyl-3-cyclohexene carboxylate-----	UCC.
1,4-Cyclohexylenedimethanol-----	EKT.
Cyclopropane-----	OH, TAE.
Decabromobiphenyl or ether-----	FIN.
Decahydronaphthalene (Decalin)-----	DUP.
Diaminodiphenylmethane-----	JCC.
1,4-Diazobicyclo(2.2.2)octane-----	AIP.
Diazodinitrophenol-----	HPC.
2,6-Di-tert-butyl-p-cresol:	
*Food grade-----	ASH, KPT, SHC, USR.
*Tech grade-----	ASH, KPT, SHC, USR.
2,5-Di-tert-butylhydroquinone-----	EKT.
Dichloroisocyanuric acid and salts-----	FMB.
1,3-Dichloro-5,5-dimethylhydantoin-----	GLY.
4,4'-Dichloro-3-(trifluoromethyl)carbanilide-----	CGY.
Dicyclohexylammonium nitrate-----	OMC.
2,5-Dihydrothiophene-1,1-dioxide (Sulfolene)-----	PLC.
2,2'-Dihydroxy-4,4'-dimethoxybenzophenone-----	ACY, GAF.
2,6-Dihydroxypyridine-4-carboxylic acid-----	EK.
Diisopropylbenzene hydroperoxide-----	HPC.
Diisopropyl cresols-----	GIV.
Diketene-----	FMB.

MISCELLANEOUS CHEMICALS

201

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION OR SALES WERE REPORTED,
IDENTIFIED BY MANUFACTURER, 1975--CONTINUED

Chemical	Manufacturers' identification codes (according to list in table 3)
MISCELLANEOUS CHEMICALS, CYCLIC--Continued	
*p-Dimethoxybenzene (Dimethyl ether of hydroquinone)-----	ASL, EKT, GAF.
Dimorpholino diethylether-----	JCC.
4,4'-Dinitrocarbanilide-4,6-dimethyl-2-pyrimidinol-----	MRK.
Di-n-octadecyl-3,5-di-tert-butyl-4-hydroxyphenyl phosphonate.	CGY.
*Dioxane (1,4-Diethylene oxide)-----	CPS, DOW, FER, UCC.
1,3-Dioxolane-----	FER.
4-(Dodecyloxy)-2-hydroxybenzophenone-----	EKT.
*Enzymes:	
Hydrolytic:	
Amylases-----	BAX, DLI, MLS, PFZ, PMP, RH, WTC, x.
Proteases-----	BAX, CHH, DOL, MLS, PEN, PFZ, PMP, x.
Other-----	BAX, JFR, MLS, OMS, RH, WBC, x.
Nonhydrolytic-----	MLS, OMS, PFZ, PLB, WBC.
1,2-Epoxy-3-phenoxypropane (Glycidyl phenyl ether)-----	x.
Ethoxydihydropyran-----	UCC.
2-Ethylhexyl benzoate-----	TCC.
2-Ethylhexyl-p-dimethylaminobenzoate-----	VND.
Ethylenedene norbornene-----	UCC.
4-Ethylmorpholine-----	JCC.
*Flotation reagents:	
Dicresylphosphorodithioic acid (Dicresylthiophosphoric acid).	ACY.
Dicresylphosphorodithioic acid, ammonium salt-----	ACY.
Dicresylphosphorodithioic acid, sodium salt-----	KCU.
2,2'-Dimethylthiocarbanilide (Di-o-tolylthiourea)-----	RBC.
Rosin amines-----	HPC.
Thiocarbanilide (Diphenylthiourea)-----	ACY.
Furan derivatives:	
2-Furaldehyde (Furfural)-----	QKO.
Tetrahydrofurfuryl alcohol-----	QKO.
Gallic acid-----	HSH, MAL.
*Gasoline additives:	
Butylphenols, mixed-----	TNA.
2,6-Di-tert-butylphenol-----	TNA.
2,6-Di-tert-butyl-a-dimethylamino-p-cresol-----	TNA.
N,N'-Di-sec-butyl-o-phenylenediamine-----	x.
*N,N'-Di-sec-butyl-p-phenylenediamine-----	DUP, EKT, x.
2,6-Diethylaniline-----	TNA.
N,N'-Diisopropyl-p-phenylenediamine-----	DUP, USR.
N,N'-Disalicylidene-1,2-propanediamine-----	DUP, FER, SM, TX.
Methylcyclopentadienylmanganese tricarbonyl-----	TNA.
4,4'-Methylenebis(2,6-di-tert-butylphenol)-----	TNA.
N-Phenyl-N-sec-butyl-o-phenylenediamine-----	x.
2,2'-Thiobis(6-tert-butyl-p-cresol)-----	ASH.
Triheptyl phenol-----	SM.
1,3,5-Tris(3,5-di-tert-butyl-4-hydroxybenzyl)-mesitylene.	TNA.
Other-----	DUP, TNA.
Glyceryl p-aminobenzoate-----	VND.
Guanosine and derivatives-----	PLB.
*Hexamethylenetetramine, tech-----	BOR, DUP, HKD, HN, HMP, PLS, UCC.
p-Hydroxybenzoic acid esters:	
Butyl p-hydroxybenzoate (Butylparaben)-----	HN.
Ethyl p-hydroxybenzoate (Ethylparaben)-----	HN.
*Methyl p-hydroxybenzoate (Methylparaben)-----	ARS, HN, LEM.
*Propyl p-hydroxybenzoate (Propylparaben)-----	ARS, HN, LEM.
2-Hydroxy-4-methoxybenzophenone-----	ACY, GAF.
Inosine and derivatives-----	PLB.
Isophorone-----	UCC.
Isopropyl-o-cresols-----	CP.
Ketene dimer-----	EKT.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION OR SALES WERE REPORTED,
IDENTIFIED BY MANUFACTURER, 1975--CONTINUED

Chemical	Manufacturers' identification codes (according to list in table 3)
MISCELLANEOUS CHEMICALS, CYCLIC--Continued	
*Lubricating oil and grease additives:	
*Oil-soluble petroleum sulfonates:	
Oil-soluble petroleum sulfonate, ammonium salt-----	NTL.
Oil-soluble petroleum sulfonate, barium salt-----	LUB, PAR, WTC.
*Oil-soluble petroleum sulfonate, calcium salt-----	ENJ, LUB, ORO, PAR, PLC, TX, WTC.
*Oil-soluble petroleum sulfonate, sodium salt-----	ENJ, MOR, PAR, SHC, SOC, WTC.
Other-----	LUB, x.
*Phenol salts:	
Barium alkylphenolates-----	CCA, ENJ.
Calcium alkylphenolates-----	ORO, TX.
Other-----	ACY, ATR, ENJ, GOC, TX.
*All other lubricating oil and grease additives-----	ENJ, FMP, GOC, LUB, ORO, PLC, SHC, SM, x. ¹
p-Menthan-----	HPC.
8-p-Methyl hydroperoxide-----	ARS, ASL, EKT.
4-Methoxyphenol-----	GIV.
2,2'-Methylenebis[4-chlorophenol] (Dichlorophene)-----	GLY.
Methylene-bis(5,5-dimethyl hydantoin) and derivatives-----	JCC, UCC.
4-Methylmorpholine-----	GAF.
1-Methyl-2-pyrrolidone, monomer-----	DOW, JCC, UCC.
Morpholine-----	
*Naphthenic acid salts:	
Aluminum naphthenate-----	SHP.
Barium naphthenate-----	CCA.
Cadmium naphthenate-----	CCA.
*Calcium naphthenate-----	CCA, FER, HN, MCI, SHP, SW, TRO, WTC.
Chromium naphthenate-----	MCI.
*Cobalt naphthenate-----	CCA, FER, HN, MCI, SHP, TRO, WTC.
Iron naphthenate-----	CCA, HN, WTC.
Lead manganese naphthenate-----	CCA.
*Lead naphthenate-----	CCA, FER, MCI, SHP, SW, TX, WTC.
Lithium naphthenate-----	CCA, MCI.
*Manganese naphthenate-----	CCA, FER, HN, MCI, SHP, SM, SW, WTC.
Rare earths naphthenates-----	CCA, MCI, SHP.
Sodium naphthenate-----	CCA.
*Zinc naphthenate-----	CCA, FER, HN, MCI, SHP, SW, WTC.
All other-----	MCI.
1-Octadecenyl-2-naphthyl tetrahydro pyrimidine-----	SM.
1-Octadecenyl-2-oleyl tetrahydro pyrimidine-----	SM.
Octadecyl 3-(3,5-di-tert-butyl-4-hydroxyphenyl)- propionate.	CGY.
Phenothiazine-----	WAG.
2-Phenoxyethanol (Ethylene glycol monophenyl ether)-----	DOW, TCH.
2-(2-Phenoxyethoxy)ethanol (Diethylene glycol phenyl ether).	DOW.
2,2'-(p-Phenylene)diethanol-----	EKT.
m-Phenylenediamine-----	DUP.
Phenyl hydrogen phosphate-----	HDG.
Photographic chemicals:	
N-(2-Acetamidophenethyl)-1-hydroxy-2-naphthamide-----	EKT.
N-[2-(4-Amino-N-ethyl-m-toluidino)ethyl]methane- sulfonamide.	EKT.
2-(4-Amino-N-ethyl-m-toluidino)ethyl sulfate-----	EKT.
3-Amino-1,2,4-triazole-----	FMT.
Benzotriazole-----	FMT, SW.
α-Benzoyl-o-methoxyacetanilide-----	EKT.
Catechol-----	CRZ.
5-Chlorobenzotriazole-----	FMT.
3-Chloro-4-diethylaminobenzenediazonium chloride (p- Diazo-2-chloro-N,N-diethylaniline) - zinc chloride.	ESA, FMT.
Chlorohydroquinone-----	EK.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION OR SALES WERE REPORTED,
IDENTIFIED BY MANUFACTURER, 1975--CONTINUED

Chemical	Manufacturers' identification codes (according to list in table 3)
MISCELLANEOUS CHEMICALS, CYCLIC--Continued	
Photographic chemicals--Continued	
4-Diazo-2,4-diethoxy-1-thio-p-cresylbenzene zinc salt-----	FMT.
4-Diazo-1-morpholine benzene zinc chloride-----	FMT.
α -Diazo-1-naphthol-5-sulfonate-----	FMT.
*2,5-Diethoxy-4-morpholinobenzenediazonium chloride-----	ALL, ESA, HST.
*p-Diethylaminobenzenediazonium chloride-----	ESA, FMT, WAY.
N,N-Diethyl-p-phenylenediamine hydrochloride-----	EKT.
N,N-Diethyltoluene-2,5-diamine, monohydrochloride-----	FMT, WAY.
p-Dimethylaminobenzenediazonium chloride-----	ESA, FMT.
p-Diphenylaminodiazonium sulfate-----	FMT.
p-(N-Ethylbenzimidoo)benzenediazonium chloride-----	ESA, FMT.
*p-[Ethyl(2-hydroxyethyl)amino]benzenediazonium- chloride (p-Diazo-N-ethyl-N-hydroxyethylaniline- zinc chloride).-----	ESA, FMT, WAY.
N-Ethyl-N-hydroxyethyl-p-phenylenediamine sulfate-----	WAY.
Hydroquinone (Hydroquinol)-----	EKT.
p[(2-Hydroxyethyl)methylamino]benzenediazonium chloride.-----	ESA, FMT.
N-(2-Hydroxyethyl)- β -resorcylamide-----	MRT.
2-Hydroxynaphthoic ethylamide-----	FMT.
1-(3-Hydroxyphenyl)urea-----	FMT.
4-Methoxy-1-naphthol-----	x.
p-Methylaminophenol sulfate-----	EK.
5-Methylbenzotriazole-----	EK.
5-Methyl-1,7-dihydroxy-1,3,4-triazaindolizine-----	FMT.
4-Methyl-1-phenyl-3-pyrazolidinone-----	WAY.
2-Methylthiazoline-----	FMT.
6-Nitrobenzimidazole-----	EK, FMT.
1-Phenyl-3-pyrazolidine-----	CGY.
1-Phenyl-3-pyrazolidone-----	WAY.
4-Phenylpyrocatechol-----	x.
1-Phenyl-2-tetrazole-5-thiol-----	FMT.
2-Resorcyclic acid monoethanolamide-----	FMT.
2,2',4,4'-Tetrahydroxydiphenyl sulfide-----	FMT.
1-(2,4,6-Trichlorophenyl)-3-p-nitroanilic-2- pyrazolin-5-one.-----	EKT.
Trimethyl(vinyl benzyl)ammonium chloride, polymeric-----	DOW.
All other-----	EK, FMT, WAY, x.
Phthalic acid, lead salt, dibasic-----	NTL.
Picramic acid, sodium salt-----	SDC.
*Pinene (α - and β)-----	ARZ, CBY, GLD, HPC, NCI.
α -Pinene, P ₂ S, treated-----	ENJ.
Piperazine, ethoxylated-----	GAF.
Polyethylene terephthalate-----	DUP, EK, EKT, FND, FRF, GYR.
Propyl gallate-----	EKT, HSH.
Pyrogallol (Pyrogallic acid)-----	HSH, MAL.
Resorcinol monobenzoate-----	EKT.
Rosin acid salts:	
Calcium resinate-----	CBY.
Calcium zinc resinate-----	CBY.
All other-----	FER.
Salicylanilide-----	FIN, PCW.
Salicylic acid, lead salt-----	NTL.
Sodium cresoxide (Cresylic acid, sodium salt)-----	DEX, GOC.
Sulfosalicylic acid-----	MON.
Tall oil salts (Linoleic-rosin acid salts):	
Calcium manganese tallate-----	MCI.
Calcium tallate-----	CCA, HN, MCI, ZGL.
Calcium zinc cobalt tallate-----	MCI.
*Cobalt tallate-----	CCA, FER, FOC, HN, MCI, SHP.
Copper tallate-----	MCI.

SYNTHETIC ORGANIC CHEMICALS, 1975

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION OR SALES WERE REPORTED,
IDENTIFIED BY MANUFACTURER, 1975--CONTINUED

Chemical	Manufacturers' identification codes (according to list in table 3)
MISCELLANEOUS CHEMICALS, CYCLIC--Continued	
Tall oil salts (Linoleic-resin acid salts)--Continued	
Lead manganese tallate-----	MCI.
*Lead tallate-----	CCA, FER, HN, MCI, SHP.
*Manganese tallate-----	CCA, HN, MCI, SHP.
Zinc tallate-----	MCI.
All other-----	KCH, MCI.
Tannic acid-----	HSH, MAL.
*Tanning materials, synthetic:	
Cresol phenol formaldehyde condensate-----	DA.
Hydroxytoluenesulfonic acid, formaldehyde condensate (Cresol-formaldehyde sulfonate), sodium salt.	CGY.
1-Naphthalenesulfonic acid, formaldehyde condensate and salt.	DA.
2-Naphthalenesulfonic acid, formaldehyde condensate and salt.	AKS, GRD, RH.
1-Phenol-2-sulfonic acid, formaldehyde condensate (Phenol-formaldehyde, sulfonated).	RH.
Tetrabromobisphenol A-----	GTL.
2,3,5,6-Tetrachloro-4-(methylsulfonyl)pyridine-----	DOW.
1,2,3,6-Tetrahydrobenzaldehyde-----	UCC.
1,2,3,4-Tetrahydronaphthalene (Tetralin)-----	DUP, UCC.
Tetrahydrothiophene-----	PAS.
Tetrahydrothiophene-1,1-dioxide (Sulfolane)-----	PLC, SHC.
Tetrakis[methylene-3-(3',5'-di-tert-butyl-4'-hydroxy- phenol)propionate]methane.	CGY.
1,3,6,8-Tetranitrocarbazole-----	SDC.
Tetraphenyltin and chloride-----	x.
Tetraphenyltin succinic acid-----	TX.
Textile chemicals, other than surface-active agents:	
Dimethyloldihydroxy ethylene urea-----	x.
1-((Octadecyloxy)methyl)pyridinium chloride-----	DUP.
2,2',4,4'-Tetrahydroxybenzophenone-----	GAF.
Tri(phenyloxymethyl)trimethyloxymethylmelamine-----	DUP.
Thiophene-----	PAS.
Thymidine and derivatives-----	PLB.
p-Toluquinone-----	EK.
Triallyl cyanurate-----	ACY.
3,4,4'-Trichlorocarbonilide-----	MON.
Trimethylaminopropyl piperazine-----	JCC.
Triphenyl phosphite-----	MON.
2,4,6-Trinitroresorcinol and lead derivative-----	REM.
Triphenyl sulfonium chloride-----	ASH.
Uridine derivatives-----	PLB.
Vinyl norbornene-----	UCC.
1-Vinyl-2-pyrrolidinone, monomer and polymer-----	DAN, GAF.
1-Vinyl-2-pyrrolidinone - ethylacrylate, copolymer-----	GAF.
1-Vinyl-2-pyrrolidinone - vinyl acetate, copolymer-----	GAF.
1-Vinyl-2-pyrrolidinone - other copolymers-----	GAF.
*All other-----	ABB, ACY, ADC, ALB, ALD, AMB, ARA, ARS, AZT, BKC, CCA, CGY, CRN, DUP, EK, EKT, EVN, FIN, FMP, FMT, GAF, GIV, HEX, HMY, HPC, JCC, NEP, PD, PFN, PFZ, PIC, PLB, RSA, SAR, SM, SYP, TNA, TRO, UCC, VND, WAY, WBC, WTL, ZGL, x, x, x, x, x.
MISCELLANEOUS CHEMICALS, ACYCLIC	
Cellulose Esters and Ethers	
Cellulose esters:	
*Cellulose acetate-----	AV, CEL, DUP, EKT.
Cellulose acetate butyrate-----	EKT.
Cellulose acetate propionate-----	EKT.

MISCELLANEOUS CHEMICALS

205

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION OR SALES WERE REPORTED,
IDENTIFIED BY MANUFACTURER, 1975--CONTINUED

Chemical	Manufacturers' identification codes (according to list in table 3)
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued	
Cellulose ethers:	
Hydroxyethylcellulose-----	UCC, x.
Hydroxyethylmethyl cellulose-----	DOW.
Hydroxypropylcellulose-----	x.
Methylcellulose-----	DOW.
*Sodium carboxymethylcellulose, 100%-----	BAS, BUK, KON, WMP, x.
Lubricating Oil Additives	
*Phosphorodithioates (Thiophosphates):	
Di-2-ethylhexylphosphorodithioic acid-----	SFA.
Di-N-propylphosphorodithioic acid-----	SFA.
Zinc dialkyl dithiophosphate-----	ATR, ENJ.
Zinc di(butylhexyl) phosphorodithioate-----	ORO.
Zinc hydrocarbon dithiophosphate-----	LUB.
Zinc isopropyl hexyl phosphorodithioate-----	TX.
Sulfur compounds:	
Aliphatic hydrocarbon sulfides-----	LUB.
Chlorosulfurized lard oil-----	FER.
Chlorosulfurized sperm oil-----	CCW.
Diisobutylene polysulfide-----	TX.
Phosphosulfurized polybutene-----	ENJ.
*Sulfurized lard oil-----	ATR, CCW, FER, QCP, WBG.
Sulfurized sperm oil and substitutes-----	CCW.
Triisobutylene polysulfide-----	TX.
Other sulfur compounds-----	ATR, CCW, HK, TX.
All other-----	ALX, ATR, ENJ, FER, GOC, HK, LUB, NLC, ORO, WTH, x, x, x.
Nitrogenous Compounds	
Acetamide-----	ACS.
Acetamidoethanol (N-Acetyl-ethanolamine)-----	ALB, SBC.
Acetone semicarbazone-----	NOR.
*Acetonitrile-----	DUP, EKX, MON, SOH.
Acetyl glycine-----	CHT.
Acrylamide monomer-----	ACY, NLC.
*Acrylonitrile-----	ACY, DUP, MON, SOH.
Adiponitrile-----	DUP, MON.
1-Allyl-3-(2-hydroxyethyl)-2-thiourea-----	FMT.
Allyl isothiocyanate, non-perfume grade-----	OPC.
*Amines:	
Allylamines-----	NLC, SHC.
*Butylamines:	
n-Butylamine, mono-----	AIP, PAS, VGC.
Di-n-butylamine-----	PAS, VGC.
sec-Butylamine, mono-----	PAS.
tert-Butylamine, mono-----	MON.
Tri-n-butylamine-----	PAS.
n-Butylethylamine-----	PAS.
Diethylenetriamine-----	DOW, JCC, UCC.
N,N-Diethylethylenediamine-----	ALB, GCY.
Dimethylaminopropylamine-----	JCC.
Ethylamines:	
*Diethylamine-----	AIP, PAS, UCC.
Ethylamine, mono-----	AIP, PAS, UCC.
Triethylamine-----	PAS, UCC.
Ethylenediamine-----	DOW, JCC, UCC.
(2-Ethylhexyl)amine, mono-----	VGC.
1,6-Hexanediamine (Hexamethylenediamine)-----	CEL, DUP, ELP, MON.
3,3'-Iminobispropylamine-----	JCC.
Isobutylamines: Diisobutylamine-----	AIP, VGC.

SYNTHETIC ORGANIC CHEMICALS, 1975

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION OR SALES WERE REPORTED,
IDENTIFIED BY MANUFACTURER, 1975--CONTINUED

Chemical	Manufacturers' identification codes (according to list in table 3)
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued	
<i>Nitrogenous Compounds</i> --Continued	
*Amines--Continued	
Isopropylamines:	
Diisopropylamine-----	UCC.
Isopropylamine, mono-----	AIP, PAS, UCC, VGC.
Methylamines:	
*Dimethylamine-----	AIP, COM, DUP, GAF.
Dimethylamine hydrochloride-----	EK.
Dimethylamine sulfate-----	RH.
Methylamine, mono-----	AIP, COM, DUP, GAF.
*Trimethylamine-----	AIP, COM, DUP, GAF.
Octylamine, mono-----	VGC.
Oleylamine-----	x.
Pentaethylenehexamine-----	JCC, UCC.
Pentylamines (Amylamines):	
Dipentylamine-----	PAS.
Pentylamine, mono-----	PAS.
Tripentylamine-----	PAS.
Polyalkylene polyamines-----	NIC.
1,3-Propanediamine (1,3-Diaminopropane)-----	JCC, x.
Propylamines:	
Dipropylamine-----	AIP, PAS, VGC.
*Propylamine, mono-----	AIP, PAS, VGC.
Tripropylamine-----	PAS, VGC.
Tetraethylenepentamine-----	DOW, JCC, UCC.
N,N,N',N'-Tetramethyl-1,3-butanediamine-----	UCC.
Tetramethylethylenediamine-----	RH.
Triethylenetetramine-----	DOW, JCC, UCC.
*Other amines-----	ABB, ALB, BPC, EK, NTL, ONX, PAS, PIC, RH, UCC, VGC, x. COM. JCC. DOW, HDG, JCC, UCC. EVN.
2-Amino-1-butanol-----	COM.
Aminoethoxyethanol-----	COM.
2-(2-Aminoethylamino)ethanol (Aminoethylethanolamine)-----	COM.
2-Aminoethyl mercaptoacetate (Monoethanolamine thio-glycolate).-----	COM.
2-Amino-2-ethyl-1,3-propanediol-----	COM.
Aminoguanidine bicarbonate-----	COM.
2-Amino-2-(hydroxymethyl)-1,3-propanediol (Tris-(hydroxymethyl)aminomethane).-----	COM.
2-Amino-2-methyl-1,3-propanediol-----	COM, JCC.
2-Amino-2-methyl-1-propanol-----	COM.
2-Amino-2-methyl-1-propanol hydrochloride-----	VAL.
1,1'-Azobisformamide-----	FMT, NPI, USR.
2,2-Azobis (2-methylpropionamide)dihydrochloride-----	x..
2,2'-Azobis[2-methylpropionitrile] (Azobisisobutyronitrile).-----	DUP.
1,3-Bis(hydroxymethyl)urea (Dimethylolurea)-----	GLY.
N,O-Bis(trimethylsilyl)acetamide-----	PIC.
N,O-Bis-(trimethylsilyl)trifluoroacetamide-----	PIC.
Biuret-----	DOW.
N-Bromoacetamide-----	ARA.
N-Bromosuccinimide (Succinibromimide)-----	ARA, SDW.
2,3-Butanedione monoxime-----	EK.

MISCELLANEOUS CHEMICALS

207

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION OR SALES WERE REPORTED,
IDENTIFIED BY MANUFACTURER, 1975--CONTINUED

Chemical	Manufacturers' identification codes (according to list in table 3)
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued	
<i>Nitrogenous Compounds</i> --Continued	
Fish oil fatty acid amide-----	HUM.
Formamide-----	DUP.
Glycine (Aminoacetic acid)-----	CHT.
Glycine ethyl ester hydrochloride-----	BPC.
Glycolonitrile-----	KF.
4-Guanyl-1-nitrosoguananyl-1-tetrazine-----	REM.
Hexamethylenediacidipate (Nylon salt)-----	CEL, DUP, MON.
Hexamethylene phosphoric triamide-----	DUP.
Hydracylonitrile (Ethylene cyanohydrin)-----	TKL.
Hydrazine hydrate (100%)-----	USR.
2-(Hydroxymethyl)-2-nitro-1,3-propanediol (Tris-(hydroxymethyl)nitromethane).-----	COM.
Imino diacetic acid-----	HMP.
Iminodiacetic acid, disodium salt-----	HMP.
Isobutyronitrile-----	AIP, EKX.
Isopropanolamines:	
1-Amino-2-propanol (Monoisopropanolamine)-----	DOW, UCC.
1,1'-Iminodi-2-propanol (Diisopropanolamine)-----	DOW.
1,1',1''-Nitrilotri-2-propanol (Triisopropanolamine)-----	DOW, UCC.
2-Isopropylaminoethanol-----	PAS.
Isopropyl ethylthionocarbamate-----	DOW.
Ketimine, tetrafunctional-----	GNM.
Lactonitrile-----	MON.
Methacrylamide-----	x.
Methoxyethyl carbamate-----	DAN.
3-Methoxypyropylamine-----	JCC.
N-Methylacetamide-----	ARS, EK.
N-Methylacetamide, sodium salt-----	ARS.
2-Methylaminoethanol (N-Methylethanolamine)-----	PAS, UCC.
Methylcarbamate-----	BKL, FMP.
Methyl cyanoacetate-----	KF.
Methyl α -cyanoacrylate-----	EKT.
N,N'-Methylenebis(acrylamide)-----	ACY, SOH.
Methyl isocyanate-----	UCC.
2,2'-(Methylimino)diethanol (Methyldiethanolamine)-----	PAS, UCC.
2-Methyllactonitrile (Acetone cyanohydrin)-----	ACY, RH, x.
2-Methyl-2-nitro-1-propanol-----	COM.
Methylol urea-----	ACS.
*Nitriloacids and salts:	
(Diethylenetrinitrilo)pentaacetic acid-----	HMP.
(Diethylenetrinitrilo)pentaacetic acid, monosodium hydrogen ferric salt.	CGY.
*(Diethylenetrinitrilo)pentaacetic acid, pentasodium salt.	CGY, DAN, DOW, HMP.
(Diethylenetrinitrilo)pentaacetic, sodium salt-----	CGY, RPC.
*N,N-Dihydroxyethylglycine, sodium salt-----	DAN, DOW, HMP.
Ethanoldiglycine, disodium salt-----	HMP.
(Ethylenedinitrilo)tetraacetic acid (Ethylenediaminetetraacetic acid).	CGY, DOW, HMP.
(Ethylenedinitrilo)tetraacetic acid, calcium disodium salt.	DOW, HMP.
(Ethylenedinitrilo)tetraacetic acid, diammonium salt---	DOW, HMP.
(Ethylenedinitrilo)tetraacetic acid, diammonium zinc salt, dihydrate.	DOW.
(Ethylenedinitrilo)tetraacetic acid, disodium salt-----	CGY, DOW, EK, HMP.
(Ethylenedinitrilo)tetraacetic acid, disodium copper salt, dihydrate.	HMP.
(Ethylenedinitrilo)tetraacetic acid, disodium zinc salt, dihydrate.	HMP.
(Ethylenedinitrilo)tetraacetic acid, manganese salt-----	DOW, HMP.
(Ethylenedinitrilo)tetraacetic acid, mono ammonium iron salt.	HMP.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION OR SALES WERE REPORTED,
IDENTIFIED BY MANUFACTURER, 1975--CONTINUED

Chemical	Manufacturers' identification codes (according to list in table 3)
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued	
<i>Nitrogenous Compounds</i> --Continued	
*Nitriloacids and salts--Continued	
(Ethylenedinitrilo)tetraacetic acid, monosodium iron salt.	CGY, HMP.
(Ethylenedinitrilo)tetraacetic acid, tetraammonium salt.	DOW.
(Ethylenedinitrilo)tetraacetic acid, tetrapotassium salt.	CGY, HMP.
*(Ethylenedinitrilo)tetraacetic acid, tetrasodium salt--	CGY, CRT, DAN, DOW, HMP, JOR, RPC.
(Ethylenedinitrilo)tetraacetic acid, tripotassium salt.	HMP.
(Ethylenedinitrilo)tetraacetic acid, trisodium salt----	CGY, HMP.
(N-Hydroxyethyl)ethylenedinitrilo triacetic acid-----	HMP.
(N-Hydroxyethyl)ethylenedinitrilo triacetic acid, iron salt.	HMP.
(N-Hydroxyethyl)ethylenedinitrilo triacetic acid, sodium ferric salt.	DOW.
*(N-Hydroxyethyl)ethylenedinitrilo triacetic acid, trisodium salt.	CGY, CRT, DAN, DOW, HMP, RPC.
Nitrolotriacetic acid-----	HMP.
Nitrolotriacetic acid, trisodium salt-----	HMP, MON.
Nitrilo-tris-methylene triphosphonic acid-----	WAY.
Nitrilo-tris-methylene triphosphonic acid, sodium salt.	WAY.
*Other-----	DOW, EK, HMP, WAY.
Nitrolotriacetonitrile-----	HMP.
2-Nitro-1-butanol-----	COM.
Nitroethane-----	COM.
Nitromethane-----	COM.
1-Nitropropane-----	COM.
2-Nitropropane-----	COM.
*Nylon, 6 and 6/6 polymer for fiber-----	ALF, DUP, FND, FRF, MON, UPJ.
Octadecyl isocyanate-----	MOB, UPJ.
N-Octylethanolamine-----	X.
Oleamide (Octadecene amide)-----	ARC, FIN, GLY, HUM.
Oleonitrile (Octadecene nitrile)-----	ARC.
Oleoylpalmitamide-----	FIN.
Oleyl nitrate-----	SM.
*Pentaerythritol tetranitrate-----	COM, DUP, HPC.
Pentyl nitrate (Amyl nitrate) & hexyl nitrate-----	TNA.
*Polyacrylamide-----	ACY, DOW, HPC, NLC, SH.
Acrylamide polymers other than polyacrylamide-----	ACY.
*Polyacrylonitrile and acrylonitrile copolymers for fiber.	ACY, DBC, DUP, EKX, MON.
Polyalkylene polyamine-----	DOW.
Polyamide resin (flake)-----	MON.
Polyaminopolymethylene phosphonic acids-----	SCP.
Polyethoxy (Hydrogenated tallow) amide-----	ARC.
Polyethyleneimine-----	AAC, DOW.
Polyoxypropylene diamine-----	JCC.
Propyleneimine-----	ARS.
Ricinolamide-----	TKL.
Sarcosine (N-Methylaminoacetic acid)-----	CGY.
Sarcosine, sodium salt-----	HMP.
Semicarbazide hydrochloride-----	FMT.
Stearamide (Octadecane amide)-----	ARC, FIN, GLY, HUM.
Stearonitrile (Octadecanenitrile)-----	ARC, ASH.
Stearyl erucamide-----	FIN.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION OR SALES WERE REPORTED,
IDENTIFIED BY MANUFACTURER, 1975--CONTINUED

Chemical	Manufacturers' identification codes (according to list in table 3)
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued	
<i>Nitrogenous Compounds--Continued</i>	
Tallow amide, hydrogenated-----	ARC.
Tallow nitrile-----	ASH.
Tallow nitrile, hydrogenated-----	ARC, ASH.
Tetramethyl ammonium bromide-----	RSA.
Tetramethyl ammonium hydroxide-----	RSA.
Tetramethylguanidine-----	ACY.
Thioacetamide-----	EK, RBC.
3,3'-Thiodipropionitrile-----	ACY, EVN.
Thiosemicarbazide-----	ACY, FMT.
N-Trimethylsilylacetamide-----	LIL.
*Urea in compounds or mixtures, 100% basis:	
*In feed compounds-----	ACN, AIP, AKL, APD, AGY, FCA, FTX, GCC, JDC, MSC, PPC, SNI, SOH, TER, VLN, WYC.
*In liquid fertilizer-----	ACN, AGY, AIP, AKL, APD, ARM, CFA, CHN, CNC, FCA, FMS, FTC, FTX, GCC, HKY, HPC, JDC, MSC, PLC, PPC, SNI, SOH, TER, TRI, TVA, VLN, WLC, WYC
*In solid fertilizer-----	ACN, ACS, AGY, AKL, APD, CFA, COL, FMS, GCC, HPC, JDC, MSC, OMC, PPC, SOH, TER, TRI, TVA, VLN, WLC, WYC.
*In plastics-----	ACS, BOR, FMS, OMC, SOH, TRI.
*All other-----	ACS, DUP, JDC, SOH, TER, WYC.
Urea - urethane copolymer-----	DUP.
*All other nitrogenous compounds-----	AAC, ABB, ACS, ADC, ALB, ASH, BKL, CEL, CDY, CHP, COM, CPS, CWN, DAN, DSO, DUP, EK, EVN, GAF, GNM, HMP, JCC, KF, LIL, MCH, MOB, NCL, OTC, PAS, PD, PFN, PFZ, PIC, RSA, S, SBC, SCP, SDW, SM, SNW, STC, TNA, TNI, TX, UCC, UPM, USR, VGC, VND, WAY, x, x, x.
<i>Acids, Acid Anhydrides, and Acyl Halides</i>	
*Acetic acid, synthetic, 100%-----	ATR, BOR, CEL, EKT, FMP, MON, PUB, UCC.
*Acetic anhydride, 100%:	
From acetic acid-----	CEL, EKT, FMP, UCC.
*Acrylic acid-----	BFG, CEL, DBC, UCC.
*Adipic acid-----	CEL, DUP, ELP, MON, NLC, RH.
Azelaic acid-----	EMR.
Behenic acid-----	ASH.
tert-Butylperoxymaleic acid-----	WTL.
Butyric acid-----	CEL, EKT, EKX.
Butyric anhydride-----	EKT.
Castor oil fatty acids, dehydrated-----	NTL.
Chloroacetic acid, mono-----	BUK, DOW, x.
Chloroacetyl chloride-----	DOW.
2-Chloropropionic acid-----	DOW.
Citric acid-----	MLS, PFZ.
Crotonic acid (2-Butenoic acid)-----	EKT.
Decanoyl chloride-----	WTL.
2,2-Dichloropropionic acid-----	DOW.
Dimethylpropionic acid-----	COM.
Di-n-propylacetic acid and chloride-----	ARA.
Dodecanedioic acid-----	DUP.
Dodecenylsuccinic anhydride-----	ACS, DIX, HMY.
Dodecylsuccinic anhydride-----	HN.
Erucic acid-----	ASH.
2-Ethylbutyric acid (Diethylacetic acid)-----	UCC.
2-Ethylhexanoic acid (α -Ethylcaproic acid)-----	EKT, UCC.
2-Ethylhexanoyl chloride-----	AZT, WTL.

SYNTHETIC ORGANIC CHEMICALS, 1975

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION OR SALES WERE REPORTED,
IDENTIFIED BY MANUFACTURER, 1975--CONTINUED

Chemical	Manufacturers' identification codes (according to list in table 3)
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued	
<i>Acids, Acid Anhydrides, and Acyl Halides--Continued</i>	
Formic acid, 90%-----	CEL, DUP, UCC.
*Fumaric acid-----	HN, MON, PFZ, USS.
Gluconic acid, tech-----	PFZ.
Glutaric anhydride-----	UCC.
Glycolic acid (Hydroxyacetic acid)-----	DUP.
n-Hexadecenylsuccinic anhydride-----	HMY.
n-Hexanoic acid-----	UCC.
1-Hydroxyethylidene-1,1-diphosphonic acid-----	WAY.
Isethionic acid (2-Hydroxyethanesulfonic acid)-----	GAF, WTC.
Isoascorbic acid-----	MRK, PFZ.
Isobutyric acid-----	EKT.
Isobutyric anhydride-----	EKT.
Isobutyryl chloride-----	WTL.
Iso-octadecenylsuccinic anhydride-----	HMY.
Itaconic acid (Methylenesuccinic acid)-----	PFZ.
2-Keto-D-gluconic acid-----	MRK.
Lactic acid-----	CLN, MON.
*Lauroyl chloride-----	HK, ONX, UOP, WTL.
Maleic acid-----	PFZ.
*Maleic anhydride-----	HN, KPT, MON, PTT, RCI, USS.
Malic acid-----	ACS, EK.
Malonic acid-----	KF.
Mercaptoacetic acid (Thioglycolic acid)-----	EVN.
3-Mercaptopropionic acid-----	EVN.
Mercaptosuccinic acid (Thiomalic acid)-----	EVN.
Methacrylic acid-----	DUP, RH.
Methanesulfonic acid-----	EK, PAS.
Methanesulfonyl chloride-----	PAS.
Neodecanoic acid-----	ENJ.
Neodecanoyl chloride-----	WTL.
Neopentanoic acid-----	ENJ.
Nonanoic acid (Pelargonic acid)-----	EMR, GIV.
Nonenylsuccinic anhydride-----	HMY.
Oleic acid-----	ASH.
Octanoyl chloride-----	HK.
Octenylsuccinic anhydride-----	HMY.
Oleoyl chloride-----	ACS, GAF, HRT.
Oxalic acid-----	ACS, PFZ.
Palmitoyl chloride-----	GAF, OPC, PD.
Peroxyacetic acid-----	FMB, UCC.
Pivaloyl chloride-----	AZT, WTL.
*Polyacrylic acid-----	DA, RH.
*Propionic acid-----	CEL, COM, EKT, UCC.
Propionic anhydride-----	EKT.
Propionyl chloride-----	EK, UOP.
Sebacic acid-----	WTH.
Sebacyl chloride-----	WTL.
Stearoyl chloride-----	UOP.
Succinic acid-----	ACS.
Succinic anhydride-----	ACS, ORO.
Thioacetic acid-----	EVN.
Thiolactic acid-----	EVN.
3,3'-Thiodipropionic acid-----	CCW, EVN.
Trichloroacetic acid-----	DOW.
Valeric acid-----	UCC.
All other-----	ABB, DUP, EK, EKT, ENJ, EVN, GAF, HMY, RH, UCC.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION OR SALES WERE REPORTED,
IDENTIFIED BY MANUFACTURER, 1975--CONTINUED

Chemical	Manufacturers' identification codes (according to list in table 3)
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued	
<i>Salts of Organic Acids</i>	
*Acetic acid salts:	
Aluminum acetate-----	ACY, UCC.
Ammonium acetate-----	ACS, BKC, MAL.
*Barium acetate-----	ACS, BKC, MAL.
Calcium acetate-----	ACS, MAL.
Chromium acetate-----	SHP.
Cobalt acetate-----	HSH, SHP.
Copper acetate-----	ACS, BKC.
Lead acetate-----	BKC, MAL.
Lead subacetate-----	BKC, MAL.
Lead tetraacetate-----	ARA.
Magnesium acetate-----	BKC, SHP.
Manganese acetate-----	HSH, SHP.
Mercuric acetate-----	MAL.
Nickel acetate-----	BKC, HSH, SHP.
*Potassium acetate-----	ACS, BKC, MAL, UCC.
Sodium acetate-----	ACS, BKC, DAN, EKT, MAL, UCC.
Sodium diacetate-----	UCC.
*Zinc acetate-----	ACS, BKC, MAL, SHP, UCC.
Zirconium acetate-----	HSH, SNW, TZC.
Other acetic acid salts-----	CCW, EK, MAL, RSA, SHP, x.
Acrylic acid, sodium salt-----	TKL.
Allylsulfonic acid, sodium salt-----	IOC, NES.
Chloroacetic acid, sodium salt-----	DOW.
Citric acid salts:	
Ammonium citrate-----	MAL, PFZ.
Calcium citrate-----	PFZ.
Ferric ammonium citrate-----	PFZ.
Ferric citrate-----	MAL.
Potassium citrate-----	MLS, PFZ.
Sodium citrate-----	MLS, PFZ.
Other citric acid salts-----	EK.
*2-Ethylhexanoic acid (α -Ethylcaproic acid) salts:	
Aluminum 2-ethylhexanoate-----	NOC, WTC.
Barium 2-ethylhexanoate-----	CCA.
Bismuth 2-ethylhexanoate-----	SHP.
Cadmium 2-ethylhexanoate-----	CCA.
*Calcium 2-ethylhexanoate-----	CCA, FER, HN, MCI, SW, TRO, WTC.
*Cobalt 2-ethylhexanoate-----	CCA, FER, HN, MCI, SHP, SW, TRO, WTC.
Copper 2-ethylhexanoate-----	CCA.
Iron 2-ethylhexanoate-----	CCA, HN.
*Lead 2-ethylhexanoate-----	CCA, FER, HN, MCI, NTL, SHP, WTC.
Manganese 2-ethylhexanoate-----	CCA, FER, HN, MCI, SHP.
Nickel 2-ethylhexanoate-----	MCI, WTC.
Potassium 2-ethylhexanoate-----	CCA, MCI.
Rare earths 2-ethylhexanoate-----	CCA, MCI.
Stannous 2-ethylhexanoate-----	WTC.
*Zinc 2-ethylhexanoate-----	CCA, HN, MCI, SHP, SW, WTC.
*Zirconium 2-ethylhexanoate-----	CCA, FER, HN, MCI, TRO, WTC.
All other-----	MCI, SHP, x.
Formic acid salts:	
Ammonium formate-----	RSA.
Calcium formate-----	COM.
Chromic formate-----	GAF.
Lead formate-----	NTL.
Sodium formate, refined-----	BKC.
*Sodium formate, tech-----	CEL, COM, HPC, PNA.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION OR SALES WERE REPORTED,
IDENTIFIED BY MANUFACTURER, 1975--CONTINUED

Chemical	Manufacturers' identification codes (according to list in table 3)
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued	
<i>Salts of Organic Acids--Continued</i>	
Fumaric acid, lead salt-----	NTL.
Glucoheptonic acid salts: Sodium glucoheptanoate-----	HMP.
*Gluconic acid, sodium salt-----	GPR, PFZ, SFI, x.
9H-Hexadecafluorononanoic acid, ammonium salt-----	WTC.
Humic acids, sodium salts-----	NLC.
Isoascorbic acid, sodium salt-----	MRK, PFZ.
*Lactic acid salts:	
Calcium lactate-----	HUM.
Sodium lactate-----	MAL.
Linoleic acid salts:	
Calcium linoleate-----	CCA, SHP.
Manganese linoleate-----	SHP.
Maleic acid salts: Lead (tribasic) maleate-----	NTL.
Mercaptoacetic acid (Thioglycolic acid) salts:	
Ammonium mercaptoacetate-----	EVN, TNI.
Antimony mercaptoacetate-----	CCA.
Calcium mercaptoacetate-----	EVN.
Dibutyltin mercaptoacetate-----	CCA.
Potassium mercaptoacetate-----	EVN.
Sodium mercaptoacetate-----	EVN.
Mercaptopropionic acid, dibutyltin salt-----	CCA.
Methacrylic acid, sodium salt-----	TKL.
Neodecanoic acid salts:	
Cadmium neodecanoate-----	CCA.
Calcium neodecanoate-----	CCA, MCI.
Cobalt manganese neodecanoate-----	MCI.
Cobalt neodecanoate-----	MCI.
Lead cobalt neodecanoate-----	MCI.
Lead neodecanoate-----	MCI.
Lithium neodecanoate-----	MCI.
Manganese neodecanoate-----	MCI.
Zinc neodecanoate-----	CCA, MCI.
Zirconium neodecanoate-----	MCI.
Octanoic acid (Caprylic acid) salts:	
Aluminum octanoate-----	DA.
Stannous octanoate-----	CCW, x.
*Oleic acid salts:	
Aluminum oleate-----	WTC.
Copper oleate-----	WTC.
Lead oleate-----	NOC.
Potassium oleate-----	HAL.
Stannous oleate-----	x.
Other oleic acid salts-----	SHP.
Oxalic acid salts:	
Ammonium oxalate-----	ACS, PFZ.
Ferric ammonium oxalate-----	PFZ.
Potassium oxalate-----	BKC, PFZ.
Sodium oxalate-----	BKC.
Palmitic acid salts:	
Aluminum palmitate-----	DA.
Zinc palmitate-----	WTC.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION OR SALES WERE REPORTED,
IDENTIFIED BY MANUFACTURER, 1975--CONTINUED

Chemical	Manufacturers' identification codes (according to list in table 3)
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued	
<i>Salts of Organic Acids--Continued</i>	
Phosphorodithioic acid salts (Dithiophosphates):	
Potassium dihexyl phosphorodithioate-----	ACY.
Sodium di-sec-butyl diethyl phosphorodithioate-----	ACY.
Sodium di-sec-butyl phosphorodithioate-----	ACY.
Sodium dihexyl phosphorodithioate-----	ACY.
Sodium diisopropyl phosphorodithioate-----	ACY.
Polyacrylic acid salts:	
Ammonium polyacrylate-----	BFG.
Sodium ammonium polyacrylate and copolymers-----	BFG.
Sodium polyacrylate-----	ALC, BFG, DA, RH, STC, x.
Polymethacrylic acid, sodium salt-----	GRD.
Propionic acid salts:	
Calcium propionate-----	HFT, PFZ.
Sodium propionate-----	HFT, PFZ.
Zinc propionate-----	BKC, SHP.
Ricinoleic acid salts:	
Calcium ricinoleate-----	NTL.
Lithium ricinoleate-----	NTL.
Sodium ethyl oxalacetate-----	FMP.
Sodium sorbitol borate-----	ICI.
*Stearic acid salts:	
*Aluminum stearates:	
*Aluminum distearate-----	DA, NOC, PEN, SYP, WTC.
*Aluminum monostearate-----	ODA, NOC, SYP, WTC.
*Aluminum tristearate-----	DA, NOC, PEN, SYP, WTC.
Ammonium stearate-----	DA.
*Barium stearate-----	DA, NOC, PEN, SYP, WTC.
Cadmium stearate-----	SYP, WTC.
*Calcium stearate-----	ACY, DA, FER, HN, MAL, NOC, PEN, SYP, WTC.
Cobalt stearate-----	SHP, WTC.
Copper stearate-----	NOC.
Ferric stearate-----	SHP, WTC.
Ferrous stearate-----	MCI, NOC.
Lead stearate-----	NOC, NTL, WTC.
Lithium stearate-----	DA, PEN, SYP, WTC.
*Magnesium stearate-----	DA, MAL, NOC, PEN, SYP, WTC.
Nickel stearate-----	WTC.
*Zinc stearate-----	ACY, DA, HN, MAL, NOC, PEN, SYP, WTC.
All other-----	NOC.
Succinic acid, sodium salt-----	MAL.
Sulfosuccinic acid, trisodium salt-----	STP.
Tartaric acid salts:	
Antimony potassium tartrate-----	PFZ.
Potassium bitartrate-----	ACY.
Potassium sodium tartrate-----	PFZ.
Xanthic acid salts:	
Potassium amylixanthate-----	DOW.
Potassium ethylixanthate-----	DOW.
Potassium pentylxanthate-----	ACY.
Sodium n-butylixanthate-----	KCC, USR.
Sodium sec-butylxanthate-----	DOW.
Sodium ethylixanthate-----	DOW.
Sodium isobutylxanthate-----	DOW.
Sodium isopropylxanthate-----	DOW.
All other salts of organic acids-----	ACY, ALD, BAX, BKC, CCA, CCW, CRN, DA, EK, MCI, MLS, PFN, RSA, SDH, SFA, SHP, SNW, TCC, UCC, UOP, x, x.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION OR SALES WERE REPORTED,
IDENTIFIED BY MANUFACTURER, 1975--CONTINUED

Chemical	Manufacturers' identification codes (according to list in table 3)
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued	
<i>Aldehydes and Ketones</i>	
Acetaldehyde-----	CEL, EKT, EKX, PUB, SHC, UCC.
*Acetone:	
*From cumene-----	ACS, CLK, DOW, GP, GYR, MON, SHC, SKO, SOC, UCC, USS.
From isopropyl alcohol-----	EKT, ENJ, SHC, UCC.
Other-----	DIX, OCC.
Acrolein (Acrylaldehyde)-----	SHC, UCC.
Aldol-----	UCC.
*2-Butanone (Methyl ethyl ketone)-----	ATR, CEL, DIX, ENJ, SHC, UCC.
*Butyraldehyde-----	CEL, EKX, UCC.
Chloral (Trichloroacetaldehyde)-----	DA, MTO.
1-Chloro-1-penten-3-one (β -Chlorovinyl ethyl ketone)-----	x.
Chloro-2-propanone (Chloroacetone)-----	MRK.
Crotonaldehyde-----	CEL, EKT.
1,3-Dihydroxy-2-propanone (Dihydroxyacetone)-----	BAX.
2,4-Dimethyl-3-pentanone-----	EKX.
Ethyl amyl ketone-----	SHC.
Ethyl butyl ketone-----	UCC.
2-Ethylbutyraldehyde-----	UCC.
2-Ethylhexanal (α -Ethylcaproaldehyde)-----	EKX, UCC.
*Formaldehyde (37% by weight)-----	ACS, BOR, CBD, CEL, COM, DUP, GAF, GOC, GP, HKD, HN, HPC, MON, RCI, RH, UCC, WCL.
Glutaraldehyde-----	UCC.
Glyoxal-----	UCC.
2-Heptanone (Methyl amyl ketone)-----	DUP.
Hexafluoroacetone-----	ARS.
2,5-Hexanedione (Acetylacetone)-----	CEL, SHC, UCC.
*4-Hydroxy-4-methyl-2-pentanone (Diacetone alcohol)-----	CEL, DBC, EKX, UCC.
Isobutyraldehyde-----	UCC.
Isopentaldehyde, mixed isomers-----	UCC.
Isovaleron (Diisobutyl ketone)-----	CLN.
Lactide (3,6-Dimethyl-2,5,p-dioxanedione)-----	RDA.
Methacrolein-----	SHC.
4-Methoxy-4-methyl-2-pentanone-----	UCC.
2-Methylbutyraldehyde-----	EKT.
5-Methyl-2-hexanone (Methyl isoamyl ketone)-----	EKT, ENJ, SHC, UCC.
*4-Methyl-2-pantanone (Methyl isobutyl ketone)-----	UCC.
Methylpentenal-----	ENJ, SHC, UCC.
*4-Methyl-3-penten-2-one (Mesityl oxide)-----	UCC.
2-Methylvaleraldehyde (2-Methylpentanaldehyde)-----	WTH.
2-Octanone (Hexyl methyl ketone)-----	CEL, HN.
Paraformaldehyde-----	AZT, UCC.
2,4-Pentanedione (Acetylacetone)-----	HEX, ORT, UCC.
*3-Pantanone (Diethyl ketone)-----	EKX, UCC.
Propionaldehyde-----	RDA.
Pseudoinonone-----	UCC.
2,6,8-Trimethyl-4-nanone (Isobutyl heptyl ketone)-----	UCC.
Valeraldehyde-----	EK.
All other-----	
<i>Alcohols, Monohydric, Unsubstituted</i>	
Alcohols C ₁₁ or lower, unmixed:	
Allyl alcohol-----	FMP, SHC.
Amyl alcohols:	
2-Methyl-1-butanol-----	CPS, UCC.
1-Pentanol-----	UCC.

MISCELLANEOUS CHEMICALS

215

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION OR SALES WERE REPORTED,
IDENTIFIED BY MANUFACTURER, 1975--CONTINUED

Chemical	Manufacturers' identification codes (according to list in table 3)
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued	
<i>Alcohols, Monohydric, Unsubstituted--Continued</i>	
Alcohols C ₁₁ or lower, unmixed--Continued	
Butyl alcohols:	
Primary:	
*Iso (Isopropylcarbinol)-----	CEL, DBC, EKX, OXC, SHC, UCC.
*Normal (n-Propylcarbinol)-----	CEL, CO, DBC, EKX, OXC, SHC, TNA, UCC.
Secondary (Methylethylcarbinol)-----	ENJ, SHC, UCC.
Tertiary (Trimethylcarbinol)-----	SHC, x.
1-Decanol-----	CO.
*Ethyl alcohol, synthetic-----	EKX, ENJ, PUB, SHC, UCC, USI, x.
2-Ethyl-1-butanol-----	UCC.
*2-Ethyl-1-hexanol-----	DBC, EKX, OXC, SHC, UCC.
2-Ethyl-4-methyl-1-pentanol-----	EKX.
Heptyl alcohol-----	CO, ENJ, TNA, UCC.
*Hexyl alcohol-----	x.
Hexynol-----	ENJ, USS.
Isodecyl alcohol-----	ENJ, TID, USS.
Iso-octyl alcohol-----	ATR, ENJ, SHC, UCC.
*Isopropyl alcohol-----	AIP, ATR, BOR, CEL, COM, DUP, GP, HN, HPC, MON, RH.
*Methanol, synthetic-----	UCC.
2-Methyl-1-pentanol-----	SHC, UCC.
4-Methyl-2-pentanol (1-Methylisobutylcarbinol)-----	ENJ.
Nonyl alcohol-----	CO.
1-Octanol-----	WTH.
2-Octanol (sec-Capryl alcohol)-----	CEL, EKX, UCC.
*Propyl alcohol (Propanol)-----	GAF.
2-Propyn-1-ol-----	CO.
*Alcohols, C ₁₂ or higher, unmixed:	
Dodecyl alcohol (Lauryl alcohol) (95%)-----	CO.
1-Hexadecanol (Cetyl alcohol) (95%)-----	CO, PG.
Hexadecyl alcohols, other-----	ENJ, SCP.
1-Octadecanol (Stearyl alcohol) (95%)-----	CO, PG.
cis-9-Octadecen-1-ol (Oleyl alcohol)-----	ASH, DUP.
1-Tetradecanol (Myristyl alcohol)-----	CO.
1-Tridecanol-----	ENJ.
2,6,8-Trimethyl-4-nonanol-----	UCC.
*Mixtures of alcohols:	
*C ₁₁ and lower only-----	CEL, CO, EKX, PUB, TNA, UCC.
*C ₁₂ and higher only-----	ASH, CO, PG, SHC, TNA, WTH.
All other monohydric alcohols, unsubstituted (including mixtures).	CO, EKX, ENJ, PG, SCP, TNA, UCC, x.
<i>Polyhydric Alcohols and Their Esters and Ethers</i>	
*Polyhydric alcohols:	
2,2-Bis(bromomethyl)-1,3-propanediol-----	DOW.
1,2(and 1,3)-Butanediol-----	CEL.
1,4-Butanediol-----	GAF, DIX, DUP.
2-Butene-1,4-diol-----	GAF.
2-Butyne-1,4-diol-----	GAF.
3-Chloro-1,2-propanediol (Glycerol-a-chlorohydrin)-----	EVN.
2,2-Dimethyl-1,3-propanediol (Neopentyl glycol)-----	EKX.
*Ethylene glycol-----	BAS, CAU, CEL, DIX, DOW, EKX, JCC, NWP, OMC, PPG, SHC, UCC.
2-Ethyl-1,3-hexandiol-----	UCC.
2-Ethyl-2-(hydroxymethyl)-1,3-propanediol (Tri-methylolpropane).	CEL.
*Glycerol, synthetic-----	DOW, FMP, SHC.
1,6-Hexanediol-----	CEL.
2-(Hydroxymethyl)-2-methyl-1,3-propanediol (Tri-methylolethane).	COM.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION OR SALES WERE REPORTED,
IDENTIFIED BY MANUFACTURER, 1975--CONTINUED

Chemical	Manufacturers' identification codes (according to list in table 3)
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued	
<i>Polyhydric Alcohols and Their Esters and Ethers</i> --Continued	
*Polyhydric alcohols--Continued	
Mannitol-----	ICI. EVN. SHC, UCC. BKL.
3-Mercapto-1,2-propanediol (Thioglycerol)-----	CEL, COM, HPC, PNA. UCC.
2-Methyl-2,4-pantanediol (Hexylene glycol)-----	DOW, JCC, OCC, OMC, UCC. BRD, ICI, MRK, PFZ.
2-Methyl-2-propyl-1,3-propanediol-----	NWP. EKX.
*Pentaerythritol-----	EK, GLY, ICI, JCC, PNA, RSA, x.
1,5-Pantanediol-----	SAR. EKT, SAR, UCC.
*Propylene glycol (1,2-Propanediol)-----	UCC. USB.
*Sorbitol-----	PPG. UCC.
Triethyleneglycol-----	EKT. UCC.
2,2,4-Trimethyl-1,3-pantanediol-----	EKT, UCC. SAR.
All other-----	CCA. SAR.
*Polyhydric alcohol esters:	
1,3-Butanediol dimethacrylate-----	ARC, HAL.
2,(2-Butoxyethoxy)ethyl acetate-----	ARC, HAL.
2-Butoxyethyl acetate-----	EVN.
Butyleneglycol baborate-----	EKT, UCC.
Diethylene glycol chloroformate-----	SAR.
2,2-Dimethyl-3-hydroxylpropyl-2',2-dimethyl-3'-hydroxy propionate.	CCA.
2-(2-Ethoxyethoxy)ethyl acetate-----	SAR.
2-Ethoxyethyl acetate-----	VAL.
Ethylene glycol diacetate-----	SAR.
Ethylene glycol dimercaptoacetate-----	CEL, SAR.
Ethylene glycol dimethacrylate-----	EVN.
Ethylene glycol hydroxyacetate-----	SAR.
2-Ethyl-2-(hydroxymethyl)-1,3-propanediol trimethacrylate.	CCW.
Glyceryl diacetate (Diacetin)-----	HFT, PD.
Glyceryl monoacetate (Monoacetin)-----	DOW.
Glyceryl monothioglycolate-----	SAR.
Glyceryl triacetate (Triacetin)-----	UCC.
Glycol adipate-----	CEL, TKL.
1,6-Hexanediol diacrylate-----	SAR.
Hexylene glycol diacetate-----	SAR.
Hydroxyethyl acrylate-----	UCC.
Hydroxypropyl acrylate-----	UCC.
2-Methoxyethyl acetate-----	UCC.
2-Methoxyethyl carbamate-----	VAL.
Neopentyl glycol diacrylate-----	SAR.
Pentaerythritol tetraacrylate-----	EVN.
Pentaerythritol tetrakis(3-mercaptopropionate)-----	SAR.
Polyethylene glycol dimethacrylate-----	CCW.
Polymercaptopolymers-----	HFT, PD.
Sucrose octa-acetate-----	DOW.
2-Sulfoethyl methacrylate-----	SAR, TKL.
Tetraethylene glycol diacrylate-----	SAR.
Tetraethylene glycol dimethacrylate-----	UCC.
Triethylene glycol diacetate-----	CEL, TKL.
Triethylene glycol diacrylate-----	SAR.
Triethylene glycol dimethacrylate-----	SAR.
2,2,4-Trimethyl-1,3-pantanediol monoisobutyrate-----	EKX.
Trimethylolpropane triacrylate-----	SAR, TKL.
Trimethylolpropane tri-(3-Mercaptopropionate)-----	EVN.
All other-----	ARA, BKL, CEL, EK, EW, NLC, PLB, PVO, RH, SAR, SBC, UCC, USB.
*Polyhydric alcohol ethers:	
Bis(2-butoxyethyl) ether (Diethylene glycol di-n-butyl ether).	UCC.
Bis(2-ethoxyethyl) ether (Diethylene glycol diethyl ether).	UCC.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION OR SALES WERE REPORTED,
IDENTIFIED BY MANUFACTURER, 1975--CONTINUED

Chemical	Manufacturers' identification codes (according to list in table 3)
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued	
<i>Polyhydric Alcohols and their Esters and Ethers--Continued</i>	
*Polyhydric alcohol ethers--Continued	
Bis[2-(2-methoxyethoxy)ethyl] ether (Tetraethylene glycol dimethyl ether).	ASL.
Bis(2-methoxyethyl) ether (Diethylene glycol dimethyl ether).	ASL.
*2-Butoxyethanol (Ethylene glycol monobutyl ether)-----	DOW, EKX, JCC, OMC, SHC, UCC.
*2-(2-Butoxyethoxy)ethanol (Diethylene glycol monoiso-butyl ether).	DOW, EKX, JCC, OMC, SHC, UCC.
2-[2-(2-Butoxyethoxy)ethoxy]ethanol (Triethylene glycol monobutyl ether).	DOW, OMC, UCC.
1-Butoxyethoxy-2-propanol-----	UCC.
*Diethylene glycol-----	BAS, CEL, DIX, DOW, EKX, JCC, NWP, OMC, PPG, SHC, UCC.
Diethylene glycol, borated-----	GLY.
Dimethoxyethane (Ethylene glycol dimethyl ether)-----	ASL.
*Dipropylene glycol-----	DOW, JCC, OCC, OMC, UCC.
*2-Ethoxyethanol (Ethylene glycol monoethyl ether)-----	DOW, EKX, JCC, OMC, SHC, UCC.
*2-(2-Ethoxyethoxy)ethanol (Diethylene glycol mono-ether).	DOW, EKX, JCC, OMC, SHC, UCC.
*2-[2-(2-Ethoxyethoxy)ethoxy]ethanol (Triethylene glycol monoethyl ether).	DOW, OMC, UCC.
Glycerol tri(polyoxypolyene) ether-----	BAS.
2-[2-(Hexyloxy)ethoxy]ethanol-----	UCC.
2-Isobutoxyethanol-----	UCC.
1-Isobutoxy-2-propanol (Propylene glycol isobutyl ether).	DOW.
*2-Methoxyethanol (Ethylene glycol monomethyl ether)-----	DOW, EKX, JCC, OMC, PPG, SHC, UCC.
*2-[2-(2-Methoxyethoxy)ethoxy]ethanol (Triethylene glycol monomethyl ether).	DOW, OMC, UCC.
*2-(2-Methoxyethoxy)ethanol (Diethylene glycol monomethyl ether).	DOW, EKX, JCC, OMC, PPG, SHC, UCC.
2-(2-Methoxyethoxy)ethyl-2-methoxyethyl ether (Triethylene glycol dimethyl ether).	ASL.
Methoxypolyethylene glycol-----	DUP, UCC.
1-Methoxy-2-propanol-----	DOW, UCC.
3-(3-Methoxypropoxy)propanol-----	DOW, UCC.
3-[3-(3-Methoxypropoxy)propoxy]propanol-----	DOW.
Polyethoxylated 1,4-butanediol-----	TCH.
Polyethoxyethylsorbitol-----	UCC.
Polyethoxypolypropoxy butanol-----	JCC.
Polypropoxybutyl ethers-----	DA, JCC.
Polyoxypolyethylene glycol-----	BAS, DA, DOW, DUP, HDG, JCC, OMC, TCH, UCC.
*Polypropylene glycol-----	JCC.
Polytetramethylene ether glycol-----	BAS, DOW, JCC, HDG, OMC, UCC.
Sorbitol, ethoxylated-----	DUP, QKO.
*Tetraethylene glycol-----	TCH.
1,1,3,3-Tetramethoxyp propane-----	DOW, EKX, OMC, UCC.
2,2'-Thiodiethanol (Thiodiglycol)-----	KF.
*Triethylene glycol-----	UCC.
Tripropylene glycol-----	CEL, DOW, EKX, JCC, OMC, PPG, SHC, UCC.
All other-----	DOW, HDG, OMC, UCC.
<i>Esters of Monohydric Alcohols</i>	BAC, CAU, DOW, EKX, GAF, GLY, ICI, NLC, TCH, UCC, x.
Allyl methacrylate-----	JCC.
Amyl acetates, 90%:	
Isopentyl acetate (Isoamyl acetate)-----	UCC.

SYNTHETIC ORGANIC CHEMICALS, 1975

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION OR SALES WERE REPORTED,
IDENTIFIED BY MANUFACTURER, 1975--CONTINUED

Chemical	Manufacturers' identification codes (according to list in table 3)
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued	
<i>Esters of Monohydric Alcohols</i> --Continued	
Butyl acetates:	
Iso-----	EKK, UCC.
*Normal-----	CEL, EKT, PUB, UCC.
Secondary-----	PUB.
*Butyl acrylate-----	CEL, DBC, RH, UCC.
Butyl chloroacetate-----	MON.
Butyl lactate-----	COM.
Butyl maleate, mono-----	TCH.
Butyl methacrylate-----	x.
tert-Butyl peroxyacetate-----	AZT, WTL.
*tert-Butyl peroxy-2-ethylhexanoate-----	AZT, WTC, WTL.
tert-Butyl peroxyisobutyrate-----	AZT, WTL.
tert-Butyl peroxyisopropylcarbonate-----	PPG, WTL.
tert-Butyl peroxyneodecanoate-----	WTC, WTL.
*tert-Butyl peroxypropionate-----	AZT, WTC, WTL.
Cetyl lactate-----	SBC, VND.
Diallyl maleate-----	FMP.
Di(sec-butyl) chloroformate-----	WTL.
Dibutyl fumarate-----	MON, RCI, USS.
*Dibutyl maleate-----	HN, MON, RCI, USS.
Di(sec-butyl) peroxydicarbonate-----	WTL.
Diethyl sec-butylethylmalonate-----	ABB.
Diethyl sec-butylmalonate-----	ABB.
Diethyl carbonate (Ethyl carbonate)-----	CTN, FMP.
Diethyl (ethoxymethylene)malonate-----	KF.
Diethyl ethyl(1-methylbutyl)malonate-----	ABB.
Di(2-ethylhexyl) chloroformate-----	WTL.
*Di(2-ethyl-1-hexyl) maleate-----	CHP, DAN, HRT, RUB.
Di(2-ethyl-1-hexyl) peroxydicarbonate-----	WTL.
Diethyl maleate-----	ACY.
Diethyl malonate (Malonic ester)-----	ABB, KF.
Diethyl (1-methylbutyl)malonate-----	ABB.
Diethyl oxalate (Ethyl oxalate)-----	CDY, FMP, PFZ.
Diisobutyl maleate-----	RUB.
Diisononyl maleate-----	RUB.
Diisopropyl peroxydicarbonate (Isopropyl percarbonate)-----	PPG.
Dilauryl maleate-----	EPH.
Dilauryl 3,3'-thiodipropionate-----	ACY, EVN.
Dimethyl carbonate-----	CTN.
2,5-Dimethylhexane-2,5-diperoctoate-----	WTC.
Dimethyl maleate-----	AAC.
Dimethyl malonate-----	KF.
Dimyristyl 3,3'-thiodipropionate-----	CCW.
Dioctyl maleate-----	RCI, USS.
Di-n-propyl peroxydicarbonate-----	WTL.
*Distearyl 3,3'-thiodipropionate-----	ACY, CCW, EVN.
Dithiobis(stearyl propionate)-----	EVN.
Ditridecyl maleate-----	RUB.
Di(tridecyl) 3,3'-thiodipropionate-----	ACY, EVN.
*Ethyl acetate-----	CEL, EKT, EKK, ENJ, MON, PUB, UCC.
Ethyl acetoacetate-----	EKT.
*Ethyl acrylate-----	CEL, DBC, RH, UCC.
Ethyl chloroacetate-----	DOW.
Ethyl chloroformate-----	CTN, DOW, FMP.
Ethyl chlorothiobformate-----	SFA.
Ethylene carbonate-----	JCC.
2-Ethyl-1-hexyl acetate-----	EKT, UCC.

MISCELLANEOUS CHEMICALS

219

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION OR SALES WERE REPORTED,
IDENTIFIED BY MANUFACTURER, 1975--CONTINUED

Chemical	Manufacturers' identification codes (according to list in table 3)
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued	
<i>Esters of Monohydric Alcohols--Continued</i>	
*2-Ethyl-1-hexyl acrylate-----	AAC, CEL, DBC, UCC.
2-Ethyl-1-hexyl methacrylate-----	x.
Ethyl sulfate (Diethyl sulfate)-----	UCC.
Fatty acid esters, not included with plasticizers or surface-active agents:	
Butyl stearate-----	CHP.
Dimethyl brassylate-----	EMR.
2-Ethylhexyl oleate-----	CHP.
Isopropyl ester of lanolin-----	CRN.
Isopropyl linoleate-----	VND.
Lanolin acetate-----	CRN.
Methyl esters of coconut oil-----	HUM, PG.
Methyl esters of cottonseed oil-----	BFR.
Methyl esters of lard-----	FER.
Methyl esters of tallow-----	FER, HUM, PG.
Methyl 12-hydroxystearate-----	NTL, WTH.
Methyl myristate-----	HUM.
Myristyl myristate-----	VND.
Propyloleate-----	CHP.
All other-----	CRN, EFH, HUM, MRV.
Glycidyl acrylate-----	AAE.
Glycidyl methacrylate-----	AAE.
Isobutyl acrylate-----	UCC.
Isobutyl chloroformate-----	CTN, OTC.
Isobutyl isobutyrate-----	EKK.
Isodecyl thioglycolate-----	EVN.
Iso-octyl mercaptoacetate-----	CCW, EVN.
Iso-octyl 3-mercaptopropionate-----	EVN.
Isopropyl acetate-----	EKT, ENJ, UCC.
Isopropyl chloroformate-----	CTN, PPG.
Isostearyl neopentanoate-----	VND.
Lauryl lactate-----	VND.
Lauryl methacrylate-----	x.
Maleic esters and copolymers-----	GAF.
Methallylidene diacetate-----	RDA.
Methyl acetate-----	EK, GRD, MON, PUB, UCC.
Methyl acetoacetate-----	EKT.
Methyl acrylate, monomer-----	CEL, RH.
Methyl borate-----	ADC, SFS.
Methyl chloroacetate-----	DOW.
Methyl chloroformate-----	CTN.
Methyl formate-----	CEL, DUP.
*Methyl methacrylate, monomer-----	ACY, DUP, RH.
Methyl sulfate (Dimethyl sulfate)-----	DUP.
Myristyl lactate-----	VND.
*Phosphorus acid esters:	
Bis(2-chloroethyl)(2-chloroethyl) phosphonate-----	x.
2,2-Bis(chloromethyl) trimethylene bis [di-(2-chloroethyl) phosphate.]-----	MIL.
Bis(2-ethylhexyl) hydrogen phosphate-----	UCC.
Butylethyl phosphate-----	GAF.
Butyl hydrogen phosphates-----	SM.
Dibutyl butylphosphonate-----	SM.
Dibutyl hydrogen phosphite-----	SM.
Didodecyl hydrogen phosphate-----	DUP.
Diethylene glycol bis (di-2-chloroethyl phosphate)-----	MIL.
Diethyl hydrogen phosphite-----	SM.
Diethyl phosphorochloridothionate-----	SFA.
Dimethyl hydrogen phosphite-----	SM.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION OR SALES WERE REPORTED,
IDENTIFIED BY MANUFACTURER, 1975--CONTINUED

Chemical	Manufacturers' identification codes (according to list in table 3)
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued	
<i>Esteres of Monohydric Alcohols--Continued</i>	
*Phosphorus acid esters--Continued	
Dimethyl methylphosphonate-----	SM.
Dimethyl phosphorochloridothionate-----	SFA.
Dioleyl hydrogen phosphite-----	SM.
2-Ethylhexyl hydrogen phosphate-----	SM, USO.
Methyl dihydrogen phosphate-----	HK.
Iso-octyl hydrogen phosphate-----	SM.
Oleyl hydrogen phosphate-----	SM.
Trialkyl phosphites-----	MCB.
Tri(butoxyethyl)phosphate-----	HN.
Tributyl phosphate-----	FMP, ORO.
Tributyl phosphite-----	SM.
Triethyl phosphite-----	SFA, SFS, SM.
Triisooctyl phosphite-----	SM.
Triisopropyl phosphite-----	SM.
Trimethyl phosphite-----	SFA, SFS, SM.
Tris(2-chloroethyl) phosphite-----	SM, TCH.
Tris(2,3-dibromopropyl) phosphite-----	DOW, MCH.
All other-----	GAF, MCH, MIL, MON, SM.
Polymethacrylic acid esters-----	DUP.
*Propyl acetate-----	CEL, EKT, UCC.
Propylene carbonate-----	JCC.
Stearyl methacrylate-----	x.
Tetraethyl silicate-----	UCC.
1,1,3,3-Tetramethyl butylhydroperoxide-----	WTL.
Tetraoctyl orthosilicate-----	MON.
Titanic acid esters:	
Tetrabutyl titanate-----	DUP.
Tetraisopropyl titanate-----	DUP.
Tetrakis(2-ethylhexyl) titanate-----	DUP.
Other-----	DUP.
Triethyl orthoacetate-----	EK, KF.
Triethyl orthoformate-----	KF.
Triethyl orthopropionate-----	KF.
Triisodecyl orthoformate-----	KF.
Trimethyl orthoformate-----	KF.
*Vinyl acetate, monomer-----	BOR, CEL, DUP, NSC, UCC, USI.
All other-----	ALD, CHP, CPS, CTN, DAN, DUP, EK, EKX, EVN, GLD, PG, RH, TCH, TNI, UCC, VND, WTL.
<i>Halogenated Hydrocarbons</i>	
1-Bromobutane (n-Butyl bromide)-----	MCH.
2-Bromobutane (sec-Butyl bromide)-----	ABB.
Bromochloromethane-----	DOW.
1-Bromo-3-chloropropane (Trimethylenechlorobromide)-----	MCH.
Bromoethane (Ethyl bromide)-----	DOW, GTL, MCH.
2-Bromopentane (1-Methylbutyl bromide)-----	ABB.
1-Bromopropane (n-Propyl bromide)-----	EK, HMY.
Bromotrichloromethane-----	MCH.
*Carbon tetrachloride-----	ACS, DA, DOW, DUP, FMB, FRO, SFI, TNA.
Carbon tetrachloride crude-----	DA.
*Chlorinated paraffins:	
Less than 35% chlorine-----	HK.
*35%-64% chlorine-----	CCH, DA, DVC, FER, HPC, ICI, NEV, PFX.
65% or more chlorine-----	DA, DVC, FER, NEV.
1-Chlorobutane (n-Butyl chloride)-----	PUB, UCC.
*Chloroethane (Ethyl chloride)-----	DOW, DUP, HPC, PPG, SFP, SHC, TNA.
*Chloroform-----	ACS, DA, DOW, DUP, FRO, SFI.
*Chloromethane (Methyl chloride)-----	ACS, CO, DCC, DOW, DUP, FRO, SFI, TNA, UCC.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION OR SALES WERE REPORTED,
IDENTIFIED BY MANUFACTURER, 1975--CONTINUED

Chemical	Manufacturers' identification codes (according to list in table 3)
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued	
<i>Halogenated Hydrocarbons--Continued</i>	
1-Chloro-3-methyl-3-butene-----	RDA.
3-Chloro-2-methylpropene (Methylallyl chloride)-----	FMP.
3-Chloropropene (Allyl chloride)-----	DOW, SHC.
*1,2-Dibromoethane (Ethylene dibromide)-----	DOW, GTL, PPG, TNA.
Dibromomethane (Methylene bromide)-----	DOW.
1,4-Dibromopentane-----	PD.
Dichlorobutadiene-----	DOP.
1,4-Dichlorobutene-----	DUP, PTT.
*1,2-Dichloroethane (Ethylene dichloride)-----	ACS, AME, BAS, BFG, CO, DA, DOW, FRO, PPG, SHC, SFP, TNA, UCC.
*Dichloromethane (Methylene chloride)-----	ACS, DA, DOW, DUP, FRO, SFI.
*1,1,2-Dichloropropane (Propylene dichloride)-----	BAS, DOW, JCC, OMC, UCC.
2,3-Dichloropropene-----	DOW.
Iododomethane (Methylene iodide)-----	NTB, SDW.
Fluorinated hydrocarbons:	
2-Bromo-2-chloro-1,1,1-trifluoroethane-----	ICI.
Bromotrifluoromethane-----	DUP.
1-Chloro-1,1-difluoroethane-----	PAS.
*Chlorodifluoromethane (F-22)-----	ACS, DUP, KAI, PAS, RCN, UCC.
Chlorodifluoromethane and chloropentafluoroethane, mixture.	UCC.
Chloropentafluoroethane-----	DUP.
Chlorotrifluoroethylene (Trifluorovinyl chloride)-----	ACS, MMM.
Chlorotrifluoromethane-----	DUP.
1,2-Dibromo-1,1,2,2-tetrafluoroethane-----	DUP.
Dichlorodifluoromethane-----	DUP.
*Dichlorodifluoromethane (F-12)-----	ACS, DUP, KAI, PAS, RCN, UCC.
Dichlorodifluoromethane and 1,1-difluoroethane, mixture.	UCC.
Dichlorotetrafluoroethane-----	ACS, DUP, PAS, UCC.
Dichlorotrifluoroethane-----	DUP.
1,1-Difluoroethane-----	ACS, DUP.
Fluorinated ethylene propylene-----	DUP.
Hexafluoro-2-propane-----	DUP.
Hexafluoropropylene, monomer-----	DUP.
1-Iodoperfluorohexane-----	DUP.
Octafluoroclobutane-----	DUP.
*Tetrafluoroethylene, monomer-----	ACS, DUP, ICI, TKL.
Tetrafluoromethane-----	DUP.
*Trichlorofluoromethane (F-11)-----	ACS, DUP, KAI, PAS, RCN, UCC.
Trichlorotrifluoroethane-----	ACS, PAS, UCC, x.
Trifluoromethane-----	DUP.
Vinyl fluoride-----	DUP.
Vinylidene fluoride-----	DUP, PAS.
Iodoethane (Ethyl iodide), tech-----	EK, FMT, RSA.
Iodomethane (Methyl iodide)-----	EK, FMT, RSA.
Pentachloropropene-----	MON.
1,1,2,2-Tetrabromoethane (Acetylene tetrabromide)-----	DOW.
*Tetrachloroethylene (Perchloroethylene)-----	DA, DOW, DUP, FRO, HK, PPG, SFI, TNA.
*1,1,1-Trichloroethane (Methyl chloroform)-----	DA, DOW, FRO, PPG, TNA.
1,1,2-Trichloroethane (Vinyl trichloride)-----	DOW.
*Trichloroethylene-----	DA, DOW, HK, PPG, TNA.
1,2,3-Trichloropropane-----	DOW, SHC.
1,2,3-Trichloropropene-----	DOW, MON.
Vinyl bromide (Bromoethylene)-----	DOW, TNA.
*Vinyl chloride, monomer (Chloroethylene)-----	ACS, BFG, CO, DOW, GP, MNO, PPG, SFP, SHC, TNA, USR.
Vinylidene chloride, monomer (1,1-Dichloroethylene)-----	DOW.
All other-----	DUP, EK, GAF, HMY, MCH, NTB, RSA, SDW.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION OR SALES WERE REPORTED,
IDENTIFIED BY MANUFACTURER, 1975--CONTINUED

Chemical	Manufacturers' identification codes (according to list in table 3)
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued	
<i>All Other Miscellaneous Acyclic Chemicals</i>	
Acetyl peroxide-----	WTL.
Aluminum isopropoxide (Aluminum isopropylate)-----	CHT, KCH.
*2-Butanone peroxide-----	AZT, CAD, NOC, RCI, WTC, WTL.
tert-Butyl hydroperoxide-----	AZT, CAD, OCC, WTC, WTL.
*tert-Butyl peroxide (Di-tert-butyl peroxide)-----	AZT, CAD, SHC, WTC, WTL.
Butyrolactone-----	GAF.
Caprolactone-----	UCC.
*Carbon disulfide-----	ACS, FMB, PAS, PPG, SFI.
2-Chloroethanol (Ethylene chlorohydrin)-----	UCC.
Chloroethylalkyl phosphonate-----	SM.
Decanoyl peroxide-----	WTC, WTL.
Dextran-----	PHR.
2,3-Dibromopropanol-----	GTL, MCH.
2,5-Dimethyl-2,5-bis(2-ethyl-1-hexanoylperoxy)hexane-----	WTL.
2,5-Dimethyl-2,5-bis(tert-butylperoxy)hexane-----	WTL.
2,5-Dimethyl-2,5-di(tert-butylperoxy)hexyne-3-----	WTL.
*Epoxides, ethers, and acetals:	
Acetone dimethylacetal (2,2-Dimethoxypropane)-----	DOW.
1-(Allyloxy)-2,3-epoxypropane (Allyl glycidyl ether)-----	ACC.
Bis(2-chloroethoxy)methane (Dichloroethylformal)-----	TKL.
Bis(2-chloro-1-methylethyl) ether (Dichloroisopropyl ether).-----	DOW.
Butylene oxide-----	DOW.
Butyl vinyl ether-----	GAF, PUB.
2-Chloroethyl vinyl ether-----	ACC.
Chlormethyl methyl ether-----	RH.
2,2-Dichloro-1,1-difluoroethyl methyl ether-----	DOW.
Dimercaptodiethyl ether-----	EVN.
Epiclorohydrin-----	DOW, SHC, x.
1,2-Epoxyhexadecane-----	UCC.
*Ethylene oxide-----	BAS, CAU, CEL, DOW, EKX, JCC, NWP, OMC, PPG, SHC, SNO, UCC.
Ethyl ether:	
Absolute-----	MAL, USI.
*Tech-----	EKX, ENJ, HPC, OMS, PUB, USI.
U.S.P -----	MAL, USI.
Ethyl vinyl ether-----	GAF.
Glycidol (2,3-Epoxy-1-propanol)-----	DIX.
Isobutyl vinyl ether-----	GAF.
*Isopropyl ether-----	ENJ, SHC, UCC.
Methylal-----	CEL.
Methyl vinyl ether-----	GAF.
*Propylene oxide-----	BAS, DOW, JCC, OCC, OMC.
*Other-----	EK, EVN, LIL, PG, RH, UCC.
Epoxy curing agents-----	SHC.
Ethanethiol-----	EK.
2-(Ethylmercapto)ethanol-----	PLC.
Fats and oils, chemically modified-----	DOM, SDW.
Fatty acids, hydrogenated-----	GLY.
Fatty acids, non-hydrogenated-----	GLY.
Fatty acids, partially hydrogenated-----	GLY.
Glucono-delta-lactone-----	PFZ.
Glutaraldehyde bis(sodium bisulfite)-----	EK, FMT.
n-Hexadecyl disulfide-----	PAS.
Hydrocarbons:	
n-Decane-----	HMY, PLC.
n-Dodecane-----	HMY, PLC.
1-Dodecene-----	HMY.
n-Eicosane-----	HMY.
Hexadecane-----	HMY.
n-Hexane-----	HMY.
Myrcene-----	IFF, NCI.
n-Nonane-----	PLC.

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION OR SALES WERE REPORTED,
IDENTIFIED BY MANUFACTURER, 1975--CONTINUED

Chemical	Manufacturers' identification codes (according to list in table 3)
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued	
<i>All Other Miscellaneous Acyclic Chemicals--Continued</i>	
Hydrocarbons--Continued	
n-Octane-----	PLC.
1(and 2)-Octene-----	PLC.
Terpine hydrocarbons-----	CBY.
Other-----	HMY, PLC. CHL, GLY. CPV. WTC. PLC, TCH. CRZ. CRZ.
Hydrogenated tallow glycerides-----	TNA, TSA.
Hydroxypropyl methacrylate-----	TSA.
Lauroyl peroxide-----	TSA.
2-Mercaptoethanol-----	TNA, TSA.
Methyl sulfide (Dimethyl sulfide)-----	TNA, TSA.
Methyl sulfoxide-----	TNA.
Organic-aluminum compounds:	
Diethylaluminum chloride-----	TSA.
Diethylaluminum ethoxide-----	TSA.
Diethylaluminum iodide-----	TSA.
Diisobutylaluminum chloride-----	TNA, TSA.
Ethylaluminum chlorides-----	TNA, TSA.
Ethylaluminum sesquichloride-----	TNA, TSA.
Isopropenylaluminum-----	TSA.
Methylaluminum sesquichloride-----	TNA.
Sodium aluminum chlorohydroxylactate complex-----	REH.
Sodium aluminum hydroxylactate complex-----	REH.
Triethylaluminum-----	TNA, TSA.
Triisobutylaluminum-----	TNA, TSA.
Organic-Boron compounds:	
Boron fluoride - ethyl ether complex-----	ACS.
Triethylborane-----	TSA.
Other-----	ADC.
Organic-lead compounds:	
Mixed lead alkyls-----	TNA.
*Tetraethyllead-----	DUP, PPG, TNA.
Tetramethyllead-----	DUP, NLC, PPG, TNA.
Tetra(methyl-ethyl)lead-----	DUP, TNA.
Organic-lithium compounds:	
n-Butyllithium-----	FTE.
sec-Butyllithium-----	FTE.
Organic-magnesium halides-----	ARA.
*Organic-silicon compounds:	
Chlorotrimethylsilane-----	DCC, UCC.
Dichlorodimethylsilane-----	ADC, DCC, UCC.
Dichloromethylsilane-----	UCC.
Ethyl silicate-----	SFS.
α-Glycidoxo propyltrimethoxy silane-----	UCC.
α-Methacryloxypropyltrimethoxy silane-----	UCC.
Methyltrichlorosilane-----	DCC.
Organic-silicon copolymers-----	UCC.
Silicone greases-----	DCC, SPD, SWS.
*Silicone fluids-----	DCC, ORO, SPD, SWS, UCC.
Trichlorovinylsilane-----	UCC.
Vinyltriethoxysilane-----	UCC.
Vinyl(tris-2-methoxyethoxy)silane-----	UCC.
Other organo-silicon compounds-----	ALD, PLC, RSA, UCC.
Organic-tin compounds:	
Bis-mercaptolauric acid, dibutyltin salt-----	x.
Bis(tributyltin) oxide-----	x.
Dibutyltin bis (isoctyl maleate)-----	x.
Dibutyltin bis (isoctylthioglycolate)-----	CCW, x.
Dibutyltin bis (isopropylmaleate)-----	x.
Dibutyltin diacetate-----	x.
Dibutyltin dichloride-----	CCW, x.
Dibutyltin dilaurate-----	CCA, x.
Dibutyltin maleate-----	CCA.
Dibutyltin oxide-----	x.

SYNTHETIC ORGANIC CHEMICALS, 1975

TABLE 2.--MISCELLANEOUS CHEMICALS FOR WHICH U.S. PRODUCTION OR SALES WERE REPORTED,
IDENTIFIED BY MANUFACTURER, 1975--CONTINUED

Chemical	Manufacturers' identification codes (according to list in table 3)
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued	
All Other Miscellaneous Acyclic Chemicals--Continued	
Organic-tin compounds--Continued	
Organic-tin mercaptide-----	CCW.
Tributyltin chloride-----	CCW, PCW, x.
Tributyltin fluoride-----	x.
Other-----	CCA, x.
Organic-zinc compounds-----	TSA.
Perchloromethanethio (Perchloromethyl mercaptan)-----	SFA, SFC.
*Phosgene (Carbonyl chloride)-----	ACS, CTN, DUP, MOB, OMC, OTC, PPG, RUC, UPJ, UCC.
Pine oil, synthetic-----	CBY, GLD, NCI.
Rare sugars-----	PFN, RSA.
Sodium ethoxide-----	FMP.
Sodium formaldehyde bisulfite-----	EK, WAY.
Sodium formaldehyde sulfoxylate-----	DA.
*Sodium methoxide (Sodium methylate)-----	DA, HSH, OMC, RBC.
Sodium succinaldehyde bisulfite-----	x.
Succinyl peroxide-----	WTL.
Tetrakis(hydroxymethyl)phosphonium chloride-----	HK.
Zinc formaldehydesulfoxylate-----	USO.
Other-----	ALD, ALX, BKL, CEL, DA, DOM, DUP, EK, EKK, FER, FRF, GNM, HMY, ICI, NTL, PD, PG, PIC, PLC, RSA, SAR, SDW, SFS, SM, TNA, TSA, WTL.

MISCELLANEOUS CHEMICALS

225

TABLE 3.--MISCELLANEOUS CHEMICALS: DIRECTORY OF MANUFACTURERS, 1975

ALPHABETICAL DIRECTORY BY CODE

[Names of miscellaneous chemical manufacturers that reported production or sales to the U.S. International Trade Commission for 1975 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 Chemical Corp.	CLK	Clark Chemical Corp.
ABB	Abbott Laboratories	CLN	Standard Brands, Inc., Clinton Corp. Processing Co. Div.
ACN	Allied Chemical Corp.: Agricultural Div.	CNC	Columbia Nitrogen Corp.
ACS	Specialty Chemicals Div.	CNP	Nipro Inc.
ACY	American Cyanamid Co.	CO	Continental Oil Co.
ADC	Anderson Development Co.	COL	Collier Carbon & Chemical Corp.
AGY	Agway, Inc., Olean Nitrogen Complex	COM	Commercial Solvents Corp.
AIP	Air Products & Chemicals, Inc.	CP	Colgate-Palmolive Co.
AKL	Gardinier Big River, Inc.	CPS	CPS Chemical Co.
AKS	Arkansas Co., Inc.	CPV	Cook Paint & Varnish Co., Inc.
ALB	Ames Laboratories, Inc.	CRN	CPC International, Inc.
ALC	Alco Chemical Corp.	CRT	Crest Chemical Corp.
ALD	Aldrich Chemical Co., Inc.	CRZ	Crown Zellerbach Corp., Chemical Products Div.
ALF	Allied Chemical Corp., Fibers Div.	CTN	Chemetron Corp., Chemical Products Div.
ALL	Alliance Chemical, Inc.	CWN	Upjohn Co., Fine Chemical Div.
ALX	Alox Corp.	CYG	Cryogenic Gases, Inc.
AMB	American Bio-Synthetic Corp.	DA	Diamond Shamrock Corp.
AME	Stauffer Chemical Co., Polymers West	DAN	Dan River, Inc.
APD	Atlas Powder Co., Subsidiary of Tyler Corp.	DBC	Dow Badische Co.
ARA	Arapahoe Chemicals, Inc. Sub/Syntex Corp. (U.S.A)	DCC	Dow Corning Corp.
ARC	Armak Co.	DEX	Dexter Chemical Corp.
ARM	USS Agri-Chemicals Div. of U. S. Steel Corp.	DIX	Dixie Chemical Co.
ARS	Arsynco, Inc.	DLI	Dawe's Laboratories, Inc.
ARZ	Arizona Chemical Co.	DOL	Castle & Cooke, Inc., Castle & Cooke Foods, Hawaii Region
ASH	Ashland Oil, Inc., Ashland Chemical Co.	DOM	Dominion Products, Inc.
ASL	Ansui Chemical Co.	DOW	Dow Chemical Co.
ATR	Atlantic Richfield Co., ARCO Div.	DUP	E. I. duPont de Nemours & Co., Inc.
AV	FMC Corp., Fiber Div.	DVC	Dover Chemical Corp.
AZT	Dart Industries, Inc., Aztec Chemicals Div.	EFH	E. F. Houghton & Co.
BAS	BASF Wyandotte Corp.	EK	Eastman Kodak Co.:
BAX	Baxter Laboratories, Inc.	EKT	Tennessee Eastman Co. Div.
BFG	B. F. Goodrich Co., B. F. Goodrich Chemical Co. Div.	EKK	Texas Eastman Co. Div.
BKC	J. T. Baker Chemical Co.	ELP	El Paso Products Co.
BKL	Millmaster Onyx Corp., Millmaster Chemical Co. Div., Berkeley Chemical Dept.	EMR	Emery Industries, Inc.
BOR	Borden Co., Borden Chemical Div.	ENJ	Exxon Chemical Co. U.S.A.
BPC	Stauffer Chemical Co., Specialty Chemical Div., Benzol Products	ESA	East Shore Chemical Co., Inc.
BRD	Lonza, Inc.	EVN	Evans Chemetics, Inc.
BUK	Buckeye Cellulose Corp.	EW	Westinghouse Electric Corp.
CAD	Noury Chemical Corp.	FCA	Farmers Chemical Association, Inc.
CAU	Calcasieu Chemical Corp.	FOC	Handschy Chemical Co., Frac Oil & Chemical Div.
CBD	Chembond Corp.	FER	Ferro Corp.:
CBY	Crosby Chemicals, Inc.	EKT	Ferro Chemical Div.
CCA	Interstab Chemical, Inc.	FER	Grant Chemical Div.
CCH	Pearsall Chemical Corp.	FIN	Ferro Corp., Keil Chemical Div.
CCW	Cincinnati Milacron Chemicals, Inc.	FMB	Hexcel Corp., Fine Organics Div.
CDY	Chemical Dynamics Corp.	FMP	FMC Corp.:
CEL	Celanese Corp.:	FMS	Industrial Chemical Div.
	Celanese Chemical Co.	FMT	Industrial Chemical Div.
	Celanese Fibers Co.	FND	First Mississippi Corp.
CFA	Cooperative Farm Chemicals Association	FOC	Fairmount Chemical Co., Inc.
CGY	Ciba-Geigy Corp. and Pharmaceutical Div.	FRF	Fiber Industries, Inc.
CHH	Charles Hansen's Laboratory, Inc.	FRO	Handschy Chemical Co., Farac Oil & Chemical Div.
CHL	Chemol, Inc.	FTE	Firestone Tire & Rubber Co., Firestone Synthetic Fibers Co.
CHN	N-Ren Corp., Cherokee Nitrogen Div.	FTX	Vulcan Materials Co., Chemicals Div.
CHP	C. H. Patrick & Co., Inc.		Foote Mineral Co.
CHT	Chattem Drug & Chemical Co., Chattem Chemicals Div.		CF Industries, Inc., Fremont Nitrogen Complex

SYNTHETIC ORGANIC CHEMICALS, 1975

TABLE 3.--MISCELLANEOUS CHEMICALS: DIRECTORY OF MANUFACTURERS, 1975--CONTINUED

Code	Name of company	Code	Name of company
GAF	GAF Corp., Chemical Div.	MNO	Monochem, Inc.
GAN	Gane's Chemical Works, Inc.	MNR	Monroe Chemical Co.
GCC	W. R. Grace & Co., Agricultural Chem. Group	MOB	Mobay Chemical Co.
GFS	G. Frederick Smith Chemical Co.	MON	Monsanto Co.
GIV	Givaudan Corp.	MOR	Marathon Morco, Co.
GLD	SCM Corp., Glidden-Durkee Div.	MRK	Merck & Co., Inc.
GLY	Glyco Chemicals, Inc.	MRT	Morton Chemical Co., Div. of Morton-Norwich Products, Inc.
GNM	General Mills Chemicals, Inc.	MRV	Marlowe-Van Loan Corp.
GOC	Gulf Oil Corp., Gulf Oil Chemicals Co.-U.S.	MSC	Mississippi Chemical Corp.
GP	Georgia-Pacific Corp. and Rebecca Plant	MTO	Montrose Chemical Corp. of California
GPR	Grain Processing Corp.	NCI	Union Camp Corp.
GRD	W. R. Grace & Co., Polymers & Chemicals Div.	NEP	Nepera Chemical Co.
GRH	W. R. Grace & Co., Hatco Chemical Div.	NES	Nease Chemical Co., Inc.
GTL	Great Lakes Chemical Corp.	NEV	Neville Chemical Co.
GYR	Goodyear Tire & Rubber Co.	NLC	Nalco Chemical Co.
HAL	C.P. Hall Co.	NOC	Norac Co., Inc. and Mathe Chemical Co. Div.
HDG	Hodag Chemical Corp.	NOR	Norwich Pharmacal Co.
HEX	Hexagon Laboratories, Inc.	NPI	Stephan Chemical Co., Polychem Dept.
HFT	Syntex Agribusiness, Inc., Nutrition & Chemical Div.	NSC	National Starch & Chemical Corp.
HK	Hooker Chemicals & Plastic Corp.:	NTB	National Biochemical Co.
HKD	Durez Div.	NTL	NL Industries, Inc.
HKY	Hawkeye Chemical Co.	NWP	Northern Petrochemicals Co.
HMP	W. R. Grace & Co., Organic Chemicals Div.	OCC	Oxirane Chemical Co.
HMY	Humphrey Chemical Co.	OH	Airco, Inc., Ohio Medical Products Div.
HN	Tenneco Chemicals, Inc.	OMC	Olin Corp.
HPG	Hercules, Inc.	OMS	E. R. Squibb & Sons, Inc.
HRT	Hart Products Corp.	ONX	Millmaster Onyx Corp., Onyx Chemical Co.
HSH	Harshaw Chemical Co. Div. of Kewanee Oil Co.	OPC	Orbis Products Corp.
HST	American Hoechst Corp., Rhode Island Works	ORO	Chevron Chemical Co.
HUM	Kraftco Corp., Humko Products Chemical Div.	ORT	Roehr Chemicals, Inc.
ICI	ICI United States, Inc., Specialty Chemical Group	OTC	Story Chemical Corp.
IFF	IFF	OXC	Oxochem Enterprises
IOC	Ionac Chemical Co. Div. of Sybron Corp.	PAR	Pennzoil Co., Pennoco Div.
JCC	Jefferson Chemical Co., Inc.	PAS	Pennwalt Corp.
JDC	Nipak, Inc.	PCW	Pfister Chemical Works
JFR	George A. Jeffrey's & Co., Inc.	PD	Parke, Davis & Co.
JOR	Jordan Chemical Co.	PEN	CPC International, Inc., S. B. Penick Div.
KAI	Kaiser Aluminum & Chemical Corp., Kaiser Chemicals Div.	PFN	Pfanstiehl Laboratories, Inc.
KCC	Kennecott Copper Corp., Chino Mines Div.	PFX	Plastifax, Inc.
KCH	Joseph Ayers, Inc.	PFZ	Pfizer, Inc.
KCU	Kennecott Copper Corp., Utah Copper Div.	PG	Procter & Gamble Co.
KF	Kay-Fries Chemicals, Inc.	PHR	Pharmachem Corp.
KON	H. Kohnstamm & Co., Inc.	PIC	Pierce Chemical, Inc.
KPT	Koppers Co., Inc., Organic Materials Div.	PLB	P-L Biochemicals, Inc.
LAK	Lakeway Chemical, Inc.	PLC	Phillips Petroleum Co.
LAM	LaMotte Chemical Products Co.	PLS	Plastics Engineering Co.
LEM	Napp Chemicals, Inc.	PMP	Premier Malt Products, Inc.
LIL	Eli Lilly & Co., Inc.	PNA	Pan American Chemical Corp.
LUB	Lubrizol Corp.	PPC	Premier Petrochemical Co.
MAL	Mallinckrodt Chemical Works	PPG	Pittsburgh Plate Glass Co.
MCB	Borg-Warner Corp., Borg-Warner Chemicals Div.	PTT	Petro-Tex Chemical
MCH	Michigan Chemical Corp.	PUB	Publicker Industries, Inc.
MCI	Mooney Chemicals, Inc.	PVO	PVO International, Inc.
MHI	Ventron Corp.	QCP	Quaker Chemical Corp.
MIL	Deering Milliken, Inc., Milliken Chemical Div.	QKO	Quaker Oats Co.
MLS	Miles Laboratories, Inc., Marschall Div. & Sumner Div.	RBC	Fike Chemicals, Inc.
MMM	Minnesota Mining & Manufacturing Co.	RCI	Reichhold Chemicals, Inc.
		RCN	Racon, Inc.
		RDA	Rhodia, Inc.
		REH	Reheis Chemical Co. Div. of Armour Pharmaceutical Co.
		REM	Remington Arms Co., Inc.
		RH	Rohm & Haas Co.

TABLE 3.--MISCELLANEOUS CHEMICALS: DIRECTORY OF MANUFACTURERS, 1975--CONTINUED

Code	Name of company	Code	Name of company
RPC	Millmaster Onyx Corp., Refined-Onyx Div.	TCC	Tanatex Chemical Corp.
RSA	R.S.A. Corp.	TCH	Emery Industries Inc., Trylon Chemicals Div.
RUB	Hooker Chemical Corp., Ruco Div.	TER	Terra Chemicals International, Inc.
RUC	Rubicon Chemicals, Inc.	TID	Getty Oil Co. (Eastern Operations, Inc.)
S	Sandoz, Inc.	TKL	Thiokol Chemical Corp.
SAR	Sartomer Industries, Inc.	TNA	Ethyl Corp.
SBC	Scher Bros.	TNI	The Gillette Co., Chemical Div.
SCP	Henkel, Inc.	TRI	Triad Chemicals
SCP	Textilana Corp.	TRO	Troy Chemical Corp.
SDC	Martin-Marietta Corp., Sodyeco Div.	TSA	Texas Alkyls, Inc.
	Sterling Drug, Inc.:	TVA	Tennessee Valley Authority
SDH	Hilton-Davis Chemical Co. Div.	TX	Texaco, Inc.
SDW	Winthrop Laboratories Div.	TZC	Magnesium Elektron, Inc.
SFA	Stauffer Chemical Co.:	UCC	Union Carbide Corp.
SFC	Agricultural Div.	UOP	UOP, Inc., UOP Chemical Div.
SFI	Calhio Chemicals, Inc. Div.	UPJ	Upjohn Co.
SFP	Industrial Div.	UPM	UOP, Inc.
SFS	Plastics Div.	USB	U.S. Borax Research Corp.
SH	Specialty Chemical Div.	USI	National Distillers & Chemicals Corp., U.S. Industrial Chemicals Co.
SHA	Stein, Hall & Co., Inc.	USO	U.S. Oil Company
SHC	Shanco Plastics & Chemical Co.	USR	Uniroyal, Inc., Chemical Div.
SHP	Shell Oil Co., Shell Chemical Co. Div.	USS	USS Chemicals Div. of U.S. Steel Corp.
SK	Shepherd Chemical Co.	VAL	Valchem
SKO	Smith & Kline Chemicals	VEL	Velsicol Chemical Corp., Inc.
SM	Skelly Oil Co.	VGC	Virginia Chemicals, Inc.
	Mobil Oil Corp., Chemical Co.:	VLN	Valley Nitrogen Producers, Inc.
	Chemical Coatings Div.	VND	Van Dyk & Co., Inc.
	Phosphorus Div.	WAG	West Agro Chemical, Inc.
SNI	Kaiser Aluminum & Chemical Corp., Kaiser Agricultural Chemicals Div.	WAY	Phillip A. Hunt Chemical Corp., Organic Chemical Div.
SNO	SumOlin Chemical Co.	WBC	Worthington Biochemical Corp.
SNW	Sun Chemical Corp., Chemical Div.	WBG	White & Bagley Co.
SOC	Standard Oil Co. of California, Chevron Chemical Co.	WLC	Agrico Chemical Co.
SOH	Vistron Corp.	WM	Inolex Corp.
SPD	General Electric Co., Silicone Products Dept.	WMP	Essex Group, Inc.
STC	American Hoechst Corp., Sou-Tex Works	WTC	Witco Chemical Co., Inc.
STP	Stepan Chemical Co.	WTH	Union Camp Corp., Chemical Div., Dover Plant
SW	Sherwin-Williams Co.	WTL	Pennwalt Corp., Lucidal Div.
SWS	Stauffer Chemical Co., SWS Silicones Div.	WYC	Wycon Chemical Co.
SYP	Dart Industries, Inc., Synthetic Products Co. Div.	ZGL	Carolina Processing Corp.

Note.--Complete names and addresses of the above reporting companies are listed in Table 1 of the Appendix.

APPENDIX

APPENDIX
 DIRECTORY OF MANUFACTURERS

231

TABLE 1.--SYNTHETIC ORGANIC CHEMICALS: ALPHABETICAL DIRECTORY OF MANUFACTURERS,
BY COMPANY, 1975

[Names of synthetic organic chemical manufacturers that reported production or sales to the U.S. International Trade Commission for 1975 are listed below alphabetically, together with their identification codes as used in table 2 of the 14 individual sections of this report]

Identifi- cation code	Name of company	Office address
AEP	A & E Plastik Pak Co., Inc-----	14505 E. Proctor Ave., Industry, CA 91749.
AZS	AZS Corp.-----	762 Marietta Blvd., Atlanta, GA 30318.
	AZ Products Co. Div-----	2525 So. Combee Rd., Eaton Park, FL 33840.
ABB	Abbott Laboratories-----	14th St.. and Sheridan Rd., N. Chicago, IL 60064.
ABS	Abex Corp., Friction Products Group-----	P. O. Box 607, Winchester, VA 22601.
WLC	Agrico Chemical Co-----	P. O. Box 3166, Tulsa, OK 74101.
AGY	Agway, Inc., Olean Nitrogen Div-----	1446 Buffalo St., Olean, NY 14760.
OH	Airco, Inc., Ohio Medical Products Div-----	3030 Airco Dr., Madison, WI 53701.
AIP	Air Products & Chemicals, Inc., Chemicals Group.	636 E. Swedesford Rd, #5 Executive Mall, Wayne, PA 19187.
ALC	Alco Chemical Corp-----	Trenton Ave. and William St., Philadelphia, PA 19134.
AAC	Alcolac, Inc-----	3440 Fairfield Rd., Baltimore, MD 21226.
ALD	Aldrich Chemical Co., Inc-----	940 W. St. Paul Ave., Milwaukee, WI 53233.
ALL	Alliance Chemical Co., Inc-----	33 Avenue P, Newark, NJ 07105.
	Allied Chemical Corp.:-----	
ACN	Agricultural Div-----	P. O. Box 2120, Houston, TX 77001.
ALF	Fibers Div-----	1411 Broadway - 38th Fl., New York, NY 10036.
ASC	Semet-Solvay Div-----	Columbia Rd., Morristown, NJ 07960.
ACS	Specialty Chemicals Div-----	P. O. Box 1087-R and P. O. Box 1219-R, Morristown, NJ 07960.
ACU	Union Texas Petroleum Div-----	P. O. Box 2120, Houston, TX 77001.
ALX	Alox Corp-----	3943 Buffalo Ave., Niagara Falls, NY 14303.
APH	Alpha Chemical Corp-----	Highway 57 East Collierville, TN 38017
ALP	Alpha Laboratories, Inc-----	1685 S. Fairfax St., Denver, CO 80222.
AMC	Amchem Products, Inc. Div. of Rorer- Amchem, Inc.	Brookside Ave. and Spring Garden St., Ambler, PA 19002.
HES	Amerada Hess Corp. (Hess Oil Virgin Islands Corp.)	1 Hess Plaza, Woodridge, NJ 07095.
AMB	American Bio-Synthetics Corp-----	710 W. National Ave., Milwaukee, WI 53204.
MAR	American Can Co., Chemical Products Div-----	American Lane, Greenwich, CT 06830.
AC	American Color & Chemical Corp-----	P. O. Box 51, Reading, PA 19604.
ACY	American Cyanamid Co-----	Wayne, NJ 07470.
	American Hoechst Corp.:-----	
HST	Rhode Island Works-----	129 Quidnick St., Coventry, RI 02816.
STC	Sou-Tex Works-----	P. O. Box 866, E. Catawba Ave., Mount Holly, NC 28120.
APP	American Petrofina Co. of Texas-----	P. O. Box 849, Port Arthur, TX 77604.
ASY	American Synthetic Rubber Corp-----	P. O. Box 360, 4500 Camp Ground Rd., Louisville, KY 40201.
ALB	Ames Laboratories, Inc-----	200 Rock Lane, Milford, CT 06460.
ACC	Amoco Chemical Corp-----	200 E. Randolph Dr., Chicago, IL 60680.
AMO	Amoco Oil Company-----	200 Randolph Dr. Chicago, IL 60680.
PAN	Amoco Production Co-----	P. O. Box 591, Tulsa, OK 74102.
ADC	Anderson Development Co-----	1415 E. Michigan St., Adrian, MI 49221.
ASL	Ansol Chemical Co-----	1 Stanton St., Marinette, WI 54143.
APX	Apex Chemical Co., Inc-----	200 S. 1st St., Elizabethport, NJ 07206.
APO	Apollo Colors, Inc-----	899 Skokie Blvd., Northbrook, IL 60062.
ARA	Arapahoe Chemicals, Inc. Sub/Syntex Corp. (U.S.A.).	2855 Walnut St., Boulder, CO 80302 and P. O. Box 480, Newport, TN 37821.
KPP	ARCO/Polymers, Inc-----	1500 Market St., Philadelphia, PA 19101.
ARD	Ardmore Chemical Co., Inc-----	840 Valley Brook Ave., Lyndhurst, NJ 07071.
ARN	Arenol Chemical Corp-----	40-33 23d St., Long Island City, NY 11101.
ARZ	Arizona Chemical Co-----	Berdan Ave., Wayne, NJ 07470.
AKS	Arkansas Co., Inc-----	185 Foundry St., Newark, NJ 07101.
ARC	Armak Co-----	300 S. Wacker Dr., Chicago, IL 60606.
AGP	Armour-Dial, Co-----	2000 Oucutt Rd., Montgomery, IL 60538.
ARP	Armour Pharmaceutical Co-----	111 W. Clarendon Ave., Phoenix, AZ 85077.

SYNTHETIC ORGANIC CHEMICALS, 1975

TABLE 1.--SYNTHETIC ORGANIC CHEMICALS: ALPHABETICAL DIRECTORY OF MANUFACTURERS,
BY COMPANY, 1975--CONTINUED

Identification code	Name of company	Office address
ARK	Armstrong Cork Co-----	Liberty and Charlotte Sts., Lancaster, PA 17604.
ARL	Arol Chemical Products Co-----	649 Ferry St., Newark, NJ 07105.
ARS	Arsynco, Inc-----	P. O. Box 8, Carlstadt, NJ 07072.
ASH	Ashland Oil, Inc-----	1401 Winchester Ave., Ashland, KY 41101 and P. O. Box 2458, Columbus, OH 43216.
	Ashland Chemical Co-----	P. O. Box 2219, Columbus, OH 43216.
BLA	Astor Products, Inc., Blue Arrow Div-----	5244 Edgewood Ct., Jacksonville, FL 32205.
AST	Astra Pharmaceutical Products, Inc-----	P. O. Box 1089, Pleasant St. Connector, Farmington, MA 01701.
ATL	Atlantic Chemical Corp-----	10 Kingsland Rd., Nutley, NJ 07110.
ATR	Atlantic Richfield Co-----	515 S. Flower St., Los Angeles, CA 90071.
APD	Atlas Powder Co. Sub. of Tyler Corp-----	P. O. Box 87, Joplin, MO 64801.
APR	Atlas Processing Co-----	P. O. Box 9389, 3546 Midway St., Shreveport, LA 71109.
KCH	Joseph Ayers, Inc-----	Route #2, Bethlehem, PA 18017.
BAS	BASF Wyandotte Corp-----	100 Cherry Hill Rd., Parsippany, NJ 07054.
BRP	BP Oil, Inc-----	270 Midland Bldg., Cleveland, OH 44115.
BKC	J. T. Baker Chemical Co-----	222 Red School Lane, Phillipsburg, NJ 08865.
BAL	Baltimore Paint & Chemical Corp-----	2325 Hollins Ferry Rd., Baltimore, MD 21230.
BAX	Baxter Laboratories, Inc-----	6301 Lincoln Ave., Morton Grove, IL 60053.
BAO	Bayoil Co., Inc-----	2 Union St., Peabody, MA 01960.
BEE	Beecham, Inc-----	65 Industrial St., Clifton, NJ 07012.
BCM	Belding Chemical Industries-----	1430 Broadway, New York, NY 10018.
BLP	Belport Co., Inc., Vermilye-Bell Div-----	P. O. Box 645, Camarillo, CA 93010.
BME	Bendix Corp-----	P. O. Box 238, Troy, NY 12180.
BEN	Bennett's-----	65 W. 1st St., Salt Lake City, UT 84110.
BDO	Benzenoid Organics, Inc-----	P. O. Box 157, Route 140, Bellingham, MA 02019.
PDC	Berncolors-Poughkeepsie, Inc-----	75 N. Water St., Poughkeepsie, NY 12602.
BTZ	Betz Laboratories, Inc-----	4636 Somerton Rd., Trevose, PA 19047.
BNS	Binney and Smith, Inc-----	380 Madison Ave., New York, NY 10017.
BOC	Biocraft Laboratories, Inc-----	12 Industrial Way, Waldwick NJ 07463.
BOR	Borden, Inc.	
	Borden Chemical Div-----	180 E. Broad St., Columbus, OH 43215.
	Printing Ink Div-----	630 Glendale-Milford Rd., Cincinnati, OH 45215.
MCB	Borg-Warner Corp.:	
	Borg-Warner Chemicals-----	International Center, Parkersburg, WV 26101.
	Weston Chemical Div-----	103 Spring Valley Rd., Montvale, NJ 07645.
MRA	Bostik South, Inc. Sub of USM Corp-----	P. O. Box 5695, Greenville, SC 29606.
BFP	Breddo Food Products Corp-----	18th and Kansas Avenue, Kansas City, KS 66105.
BRS	Bristol-Meyers Co., Bristol Laboratories Div.	P. O. Box 657, Syracuse, NY 13201.
BRU	M. A. Bruder & Sons, Inc-----	52d St. and Grays Ave., Philadelphia, PA 19143.
BUK	Buckeye Cellulose Corp-----	2899 Jackson Ave., Memphis, TN 38108.
BKM	Buckman Laboratories, Inc-----	1256 N. McLean Blvd., Memphis, TN 38108.
BJL	Burdick & Jackson Laboratories, Inc-----	1953 S. Harvey St., Muskegon, MI 49442.
BUR	Burroughs Wellcome Co-----	3030 Cornwallis Rd., Research Triangle Park, NC 27709.
FTX	CF Industries, Inc., Fremont Nitrogen Complex.	P. O. Box 68, RFD #3, Fremont, NB 68025.
ACR	CPC International, Inc.:	
	Acme Resin Co. Div-----	1401 Circle Avenue, Forest Park, IL 60130.
CRN	Corn Products Div-----	International Plaza, Englewood Cliffs, NJ 07632.
PEN	S. B. Penick Co-----	1050 Wall St. W., Lyndhurst, NJ 07071.
CPS	CPS Chemical Co-----	P. O. Box 162, Old Bridge, NJ 08857.
CBT	Samuel Cabot, Inc-----	One Union St., Boston, MA 02108.
CAU	Calcasieu Chemical Corp-----	P. O. Box 1522, Lake Charles, LA 70601.
CBM	Carborundum Co-----	P. O. Box 477, Niagara Falls, NY 14302.
CGL	Cargill, Inc-----	Cargill Bldg., Minneapolis, MN 55402.
GOR	Carl Gordon Industries, Inc-----	1001 Southbridge St. Worcester, MA 01610.
ZGL	Carolina Processing Corp-----	P. O. Box 161, Severn, NC 27877.
JWC	J.W. Carroll & Sons Div. of U.S. Industries, Inc.	22600 S. Bonita St., Carson, CA 90745.

APPENDIX

233

TABLE 1.--SYNTHETIC ORGANIC CHEMICALS: ALPHABETICAL DIRECTORY OF MANUFACTURERS,
BY COMPANY, 1975--CONTINUED

Identifi- cation code	Name of company	Office address
CRS	Carus Chemical Co-----	1500 8th St., LaSalle, IL 61301.
DOL	Castle & Cooke, Inc., Castle & Cooke Foods, Hawaii Pineapple Div.	650 Iwilei Rd., Honolulu, HI 96817.
CCL	Catawba-Charlab, Inc-----	P. O. Box 948, Charlotte, NC 28231.
CEL	Celanese Corp.: Celanese Chemical Co----- Celanese Coatings & Specialties Co. and Wica Plant.	1211 Avenue of the Americas, New York, NY 10036. P. O. Box 1863, Louisville, KY 40201.
CNT	Celanese Fibers Co-----	P. O. Box 1414, Charlotte, NC 28201.
CPR	Celanese Plastics Co-----	26 Main St., Chatham, NJ 07928
GRS	Certain-Teed Products Corp-----	P. O. Box 860, Valley Forge, PA 19482.
CPP	Certified Processing Corp-----	U.S. Highway 22, Hillside, NJ 07205.
SOG	Champlin Petroleum Co-----	P. O. Box 9176, Corpus Christi, TX 78408.
CHT	Charmin Paper Products Co-----	6100 Center Hill Rd., Cincinnati, OH 45224.
CBD	Charter International Oil Co-----	P. O. Box 5008, Houston, TX 77012.
GRC	Chattem Drug & Chemical Co., Chattem Chemicals Div.	1715 W. 38th St., Chattanooga, TN 37409.
GRL	Chembond Corp-----	P. O. Box 270, Springfield, OR 97477.
Chem Corp.:	Dubois Chemicals Div----- Vestal Laboratories Div-----	Dubois Tower, Cincinnati, OH 45202. 4963 Manchester Ave., St. Louis, MO 63110.
CTN	Chemetron Corp.: Chemical Products Div-----	P. O. 66251-AMF O'Hare, White Pine, TN 60666.
HSC	Pigments Div-----	491 Columbia Ave., Holland, MI 49423.
CI	Chem-Fleur, Inc-----	200 Pulaski St., Newark, NJ 07105.
CDY	Chemical Dynamics Corp-----	P. O. Box 395, 3001 Hadley Rd., S. Plainfield, NJ 07080.
CHF	Chemical Formulators, Inc-----	P. O. Box 26, Nitro, WV 25143.
CKL	Chemlek Laboratories, Inc-----	4040 W. 123d St., Alsip, IL 60658.
CHL	Chemol, Inc-----	P. O. Box 20687, Greensboro, NC 27420.
CPX	Chemplex Co-----	3100 Golf Rd., Rolling Meadows, IL 60008.
ORO	Chevron Chemical Co-----	575 Market St., San Francisco, CA 94105.
CHC	Choate Chemical Co-----	P. O. Box 27205, Richmond, VA 23261.
CHH	CHR. Hansen's Laboratory, Inc-----	9015 W. Maple St., West Allis, WI 53214.
CGY	Ciba-Geigy Corp: Agricultural Div----- Pharmaceutical Div-----	444 Saw Mill River Rd., Ardsley, NY 10502. P. O. Box 11422, Greensboro, NC 27409. 556 Morris Ave., Summit NJ 07901.
CCW	Cincinnati Milacron Chemicals, Inc-----	West St., Reading, OH 45215.
CIN	Cindet Chemicals, Inc-----	2408 Doyle St., Greensboro, NC 27420.
Cities Service Co.:	Cities Service Div. and Plastics Div----- Copperhill Operations-----	P. O. Box 300 and 6th & Boston Sts., Tulsa, OK 74102. Copperhill, TN 37317.
CBN	Columbian Div. and Plastics Div-----	P. O. Box 300, Tulsa, OK 74102.
TEN	Copperhill Operations-----	P. O. Box 1522, Lake Charles, LA 70601.
CSO	Cities Service Oil Co-----	131st St. & Kedzie Ave., Blue Island, IL 60406.
CBN	Petrochemical Operation-----	P. O. Box 10, Somerset, NJ 08873.
CLK	Clark Chemical Corp-----	4342 S. Wolcott Ave., Chicago, IL 60609.
CLY	W. A. Cleary Corp-----	P. O. Drawer 521, Corpus Christi, TX 78403.
CLI	Clintwood Chemical Co-----	300 Park Ave., New York, NY 10022.
CSP	Coastal States Petrochemical Co-----	P. O. Box 60455, Los Angeles, CA 90060.
CP	Colgate-Palmolive Co-----	394 Frelinghuysen Ave., Newark, NJ 07114.
COL	Collier Carbon & Chemical Corp-----	P. O. Box 1483, Augusta, GA 30903.
CLD	Colloids, Inc-----	117 Ethel Ave., Hawthorne, NJ 07506.
CNC	Columbia Nitrogen Corp-----	245 Park Ave., New York, NY 10017.
CMP	Commercial Products Co., Inc-----	Petrochemical Complex, Ponce, PR 00731.
COM	Commercial Solvents Corp-----	Petrochemical Complex, Ponce, PR 00731.
COR	Commonwealth Oil Refining Co., Inc-----	1405 Buffalo St., Olean, NY 14760.
CPI	Commonwealth Petrochemicals, Inc-----	18th & Garfield Sts., Kansas City, MO 64127.
CNI	Conap, Inc-----	P. O. Box 2078, Shawnee Mission, KA 66201.
Conchemco, Inc.:	Colony Paint Div----- Conchemco Coatings-----	17th & Federal Sts., Camden, NJ 08105.
SED	Concord Chemical Co., Inc-----	
CNE		
CON		

SYNTHETIC ORGANIC CHEMICALS, 1975

TABLE 1.--SYNTHETIC ORGANIC CHEMICALS: ALPHABETICAL DIRECTORY OF MANUFACTURERS,
BY COMPANY, 1975--CONTINUED

Identifi- cation code	Name of company	Office address
CWP	Consolidated Papers, Inc-----	231 1st Ave N., Wisconsin Rapids, WI 54494.
CTL	Continental Chemical Co-----	270 Clifton Blvd., Clifton, NJ 07015.
CO	Continental Oil Co----- Conoco Chemicals-----	P. O. Box 1267, 1000 South Pine, Ponce City, OK 74601. P. O. Box 2197, Conoco Towers, 5 Greenway Plaza E, Houston, TX 77001.
CPV	Cook Paint & Varnish Co-----	P. O. Box 389, Kansas City, MO 64141.
CFA	Cooperative Farm Chemicals Association-----	P. O. Box 308, Lawrence, KS 66044.
COO	Cooper Polymers, Inc-----	820 Woburn St., Wilmington, MA 01887.
COP	Coopers Creek Chemical Corp-----	River Rd., W. Conshohocken, PA 19428.
CPY	Copolymer Rubber & Chemical Corp-----	P. O. Box 2591, Baton Rouge, LA 70821.
SWC	Corco Cyclohexane, Inc-----	Petrochemicals Complex, Ponce, PR 00731.
CSD	Cosden Oil & Chemical Co-----	P. O. Box 1311, Big Spring, TX 79720.
CRT	Crest Chemical Corp-----	225 Emmet St., Newark, NJ 07114.
CRD	Croda, Inc-----	51 Madison Ave., New York, NY 10010.
ALT	Crompton & Knowles Corp-----	500 Pear St., Reading, PA 19603.
CBY	Crosby Chemicals, Inc-----	P. O. Box 460, Picayune, MS 39466.
CCP	Crown Central Petroleum Corp-----	1 N. Charles St., Baltimore, MD 21203.
CRZ	Crown Zellerbach Corp., Chemical Products Div.	Camas, WA 98607.
CYG	Cryogenic Gases, Inc-----	97 Turnpike Rd., Westboro, MA 01581.
CTR	Customs Resins, Inc-----	P. O. Box 933, Henderson KY 42420.
DAN	Dan River, Inc-----	P. O. Box 261, Danville, VA 24541.
	Dart Industries, Inc.:-----	
AZT	Aztec Chemicals Div-----	555 Garden St., Elyria, OH 44035.
RCC	Rexene Polymers Co. Div-----	115 W. Century Rd., Paramus, NJ 07652.
SYF	Synthetic Products Co. Div-----	1636 Wayside Rd., Cleveland, OH 44112.
DYS	Davies-Young Co-----	2700 Wagner Place, Maryland Heights, MO 63043.
DLI	Dawe's Laboratories, Inc-----	450 State St., Chicago Heights, IL 60411.
DGO	Day-Glo Color Corp-----	4732 St. Clair Ave., Cleveland, OH 44103
SYL	Deering Milliken, Inc., Milliken Chemical Div.	P. O. Box 817, Inman, SC 29349.
DEG	Degen Oil & Chemical Co-----	200 Kellogg St., Jersey City, NJ 07305.
DNS	Dennis Chemical Co-----	2701 Papin St., St. Louis, MO 63103.
DEP	DePaul Chemical Co., Inc-----	44-27 Purves St., Long Island City, NY 11101.
DSO	DeSoto, Inc-----	1700 S. Mt. Prospect Ave., Des Plaines, IL 60018.
DEX	Dexter Chemical Corp-----	845 Edgewater Rd., Bronx, NY 10474.
HYC	Hysol Div-----	211 Franklin St., Olean, NY 14760.
MID	Midland Div-----	1-7 E. Water St., Waukegan, IL 60085.
DA	Diamond Shamrock Corp-----	1100 Superior Ave., Cleveland, OH 44114.
PLN	Disogrin Industries Corp-----	Perimeter Rd. - Grenier Field, Manchester, NH 03130.
DIX	Dixie Chemical Co-----	3635 W. Dallas Ave., Houston, TX 77019.
DPP	Dixie Pine Products Co., Inc-----	P. O. Box 470, Hattiesburg, MS 39401.
DOM	Dominion Products, Inc-----	882 3d Ave., Brooklyn, NY 11232.
DVC	Dover Chemical Co-----	W. 15th and Davis Sts., Dover, OH 44622.
DBC	Dow Badische Chemical Co-----	602 Copper Rd., Freeport, TX 77541.
DOW	Dow Chemical Co-----	2020 Dow Center, Midland, MI 48640.
DCC	Dow Corning Corp-----	P. O. Box 1592, Midland, MI 48640.
DUP	E. I. duPont de Nemours & Co., Inc-----	DuPont Bldg., Wilmington, DE 19898.
DSC	Dye Specialties, Inc-----	26 Journal Sq., Jersey City, NJ 07306.
EPI	Eagle Pitcher Industries, Inc., Ohio Rubber Co. Div.	P. O. 1398, Denton, TX 76201.
EGR	Eagle River Chemical Corp-----	P. O. Box 2648, W. Helena, AR 72390.
ECC	Eastern Color & Chemical Co-----	35 Livingston St., Providence, RI 02904.
EK	Eastman Kodak Co-----	343 State St., Rochester, NY 14650.
EKT	Tennessee Eastman Co. Div-----	P. O. Box 511, Kingsport, TN 37662.
EKK	Texas Eastman Co. Div-----	P. O. Box 7444, Longview, TX 75601.
ESA	East Shore Chemical Co., Inc-----	1221 E. Barney Ave., Muskegon, MI 49443.
ECL	Eastside Chemical Laboratory-----	12880 N. E. Bellevue-Redmond Rd., Bellevue, WA 98005.
ELN	Elan Chemical Co-----	268 Doremus Ave., Newark, NJ 07105.

TABLE 1.--SYNTHETIC ORGANIC CHEMICALS: ALPHABETICAL DIRECTORY OF MANUFACTURERS,
BY COMPANY, 1975--CONTINUED

Identifi- cation code	Name of company	Office address
ELP	El Paso Products Co-----	P. O. Box 3986, Odessa, TX 79760.
EMR	Emery Industries, Inc-----	1300 Carew Tower, Cincinnati, OH 45202.
TCH	Chem. Spec. Group-----	P. O. Box 628, Mauldin, SC 29662.
EMK	Emkay Chemical Co-----	319 2d St., Elizabeth, NJ 07206.
EN	Endo Laboratories, Inc-----	1000 Stewart Ave., Garden City, NY 11530.
ENO	Enenco, Inc-----	P. O. Box 398, Memphis, TN 38101.
EPC	Epoxylite Corp-----	1901 Via Burton, Anaheim, CA 92806.
ESS	Essential Chemicals Group-----	28391 Essential Rd., Merton, WI 53056.
WMP	Essex Group Inc-----	1601 Wall St., Fort Wayne, IN 46804.
TNA	Ethyl Corp-----	330 S. 4th St., Richmond, VA 23231.
EVN	Evans Chemetics, Inc-----	90 Tokeneke Rd., Darien, CT 06820.
ENJ	Exxon Chemical Co. U.S.A.	P. O. Box 3272, Houston, TX 77001.
FMC Corp.:		
FMN	Agricultural Chemical Div-----	100 Niagara St., Middleport, NY 14105.
AV	Fiber Div-----	2000 Market St., Philadelphia, PA 19103.
FMB	Industrial Chemical Div-----	2000 Market St., Philadelphia, PA 19103 and Sawyer Ave. & River Rd., Town of Tonawanda, NY 14150.
FMP	Industrial Chemical Div-----	2000 Market St., Philadelphia, PA 19103.
FRP	FRP Co-----	P. O. Box 349, Baxley, GA 31513.
FAB	Fabricolor Manufacturing Corp-----	24-1/2 Van Houten St., P. O. Box 2398, Paterson, NJ 07509.
FMT	Fairmount Chemical Co., Inc-----	117 Blanchard St., Newark, NJ 07105.
KNG	Far-Best Corp., O. L. King Div-----	640 Gilman St., Berkeley, CA 94710.
FCA	Farmers Chemical Association Inc-----	Salem Lake Dr., Long Grove, IL 60047.
FEL	Felton International, Inc-----	599 Johnson Ave., Brooklyn, NY 11235.
FER	Ferro Chemical Corp.:	
	Ferro Chemical Div-----	P. O. Box 46349, 7050 Krick Rd., Bedford, OH 44146.
	Grant Chemical Div-----	P. O. Box 263, Baton Rouge, LA 70821.
	Keil Chemical Div-----	3000 Sheffield Ave., Hammond, IN 46320.
	Ottawa Chemical Div-----	700 N. Wheeling St., Toledo, OH 43605.
PRD	Productol Chem. Div-----	13215 E. Penn St., Whittier, CA 90602.
FND	Fiber Industries, Inc-----	P. O. Box 10038, Charlotte, NC 28201.
RBC	Fike Chemicals, Inc-----	P. O. Box 546, Nitro, WV 25143.
FIR	Firestone Tire & Rubber Co.:	
	Firestone Plastics Co. Div-----	P. O. Box 699, Pottstown, PA 19464.
	Firestone Synthetic Fibers Co-----	P. O. Box 450, Hopewell, VA 23869.
	Firestone Synthetic Rubber & Latex Co. Div.	381 W. Wilbeth Rd., Akron, OH 44301.
FST	First Chemical Corp-----	P. O. Box 1427, Pascagoula, MS 39567.
FMS	First Mississippi Corp-----	P. O. Box 1249, Jackson, MS 39205.
FLM	Fleming Laboratories, Inc-----	P. O. Box 10372, Charlotte, NC 28237.
CIK	Flint Ink Corp., Cal/Ink Div-----	1404 4th St., Berkeley, CA 94710.
PLO	Florasynth, Inc-----	900 Van Nest Ave., Bronx, NY 10462.
FTE	Foote Mineral Co-----	Route 100, Exton, PA 19341.
FOM	Formica Corp-----	120 E. 4th St., Cincinnati, OH 45202.
FG	Foster Grant Co., Inc-----	289 N. Main St., Leominster, MA 01453.
FLN	Franklin Chemical Corp-----	2020 Bruck St., Columbus, OH 43207.
FRE	Freeman Chemical Corp-----	222 E. Main St., Port Washington, WI 53074.
FB	Fritzsch Dodge & Olcott, Inc-----	76 9th Ave., New York, NY 10011.
FLH	H. B. Fuller Co-----	4450 Malsbury Rd., Blue Ash, OH 45242.
GAF	GAF Corp-----	P. O. Box 6037, Chattanooga, TN 37401.
	Chemical Div-----	33 Riverside Ave., Rensselaer, NY 12144.
GAN	Gane's Chemical Works, Inc-----	1144 Avenue of the Americas New York, NY 10036.
AKL	Gardinier Big River, Inc-----	P. O. Box 825, Helena, AK 72342.
GE	General Electric Co-----	1 Plastics Ave., Pittsfield, MA 01201 and So. Second St., Coshocton, OH 43812.
GEI	Insulating Materials Products Section-----	1 Campbell Rd., Schenectady, NY 12306.
SPD	Silicone Products Dept-----	Mechanicville Rd., Waterford, NY 12188.

SYNTHETIC ORGANIC CHEMICALS, 1975

TABLE 1.--SYNTHETIC ORGANIC CHEMICALS: ALPHABETICAL DIRECTORY OF MANUFACTURERS,
BY COMPANY, 1975--CONTINUED

Identifi- cation code	Name of company	Office address
GNF	General Foods Corp., Maxwell House Div-----	1125 Hudson St., Hoboken, NJ 07030.
GLC	General Latex & Chemical Corp-----	666 Main St., Cambridge, MA 02139.
GNM	General Mills Chemicals, Inc-----	4620 W. 77th St., Minneapolis, MN 55435
GPM	General Plastics Manufacturing Co-----	3481 S. 35th St., Tacoma, WA 98409.
GNL	General Tire & Rubber Co., Chemical/ Plastics Div	1 General St., Akron, OH 44329.
GRG	P. D. George Co-----	5200 N. 2d St., St. Louis, MO 63147.
GP	Georgia-Pacific Corp-----	900 S.W. 5th Ave., Portland, OR 97240.
PSP	Bellingham Div-----	P. O. Box 1236, Bellingham, WA 98225.
GP	Rebecca Chemical Div-----	P. O. Box 629, Plaquemine, LA 70764.
TID	Getty Oil Co-----	Delaware, DE 19706.
TNI	The Gillette Co., Chemical Div-----	3500 W. 16th St., N. Chicago, IL 60064.
GIL	Gilman Paint & Varnish Co-----	216 W. 8th St., Chattanooga, TN 37401.
GIV	Givaudan Corp-----	100 Delawanna Ave., Clifton, NJ 07014.
GLY	Glyco Chemicals, Inc-----	51 Weaver St., Greenwich, CT 06830.
BFG	B. F. Goodrich Co., B. F. Goodrich Chemical Co. Div.	6100 Oak Tree Blvd., Cleveland, OH 44131.
GYR	Goodyear Tire & Rubber Co-----	1144 E. Market St., Akron, OH 44316.
	W. R. Grace & Co.:	
GCC	AG Chem. Group-----	P. O. Box 277, Memphis, TN 38101.
GRH	Hatco Chemical Div-----	King George Post Rd., Fords, NJ 08863.
HMP	Organic Chemicals Div-----	Poisson Ave., Nashua, NH 03060.
MRO	Polyester Div., Hatco Group-----	1711 W. Elizabeth Ave., Linden, NJ 07036.
GRD	Polymers & Chemicals Div-----	55 Hayden Ave., Lexington, MA 02173.
GPR	Grain Processing Corp-----	1600 Oregon St., Muscatine, IA 52761.
GRA	Great American Chemical Corp-----	650 Water St., Fitchburg, MA 01420.
GTL	Great Lakes Chemical Corp-----	P. O. Box 2200, West Lafayette, IN 47906.
GRW	Great Western Sugar Co-----	P. O. Box 5308, Terminal Annex, Denver, CO 80217.
GNW	Greenwood Chemical Co-----	State Highway #690, Greenwood, VA 22943.
GRO	A. Gross & Co., Millmaster Onyx Group, a Kewanee Industry.	652 Doremus Ave., Newark, NJ 07105.
GRV	Guardsman Chemical Coatings, Inc-----	1350 Steele Ave., S.W., Grand Rapids, MI 49507,
	Louisville Div-----	1350 S. 15th St., Louisville, KY 40210.
GOC	Gulf Oil Corp., Gulf Oil Chemicals Co. - U. S.	P. O. Box 3766, Houston, TX 77001.
GTH	Guth Corp-----	P. O. Box 302, Naperville, IL 60540.
HNC	H & N Chemical Co-----	90 Maltese Dr., Totowa, NJ 07512.
HLI	Haag Laboratories, Inc-----	14010 S. Seeley Ave., Blue Island, IL 60406.
HAL	C. P. Hall Co-----	7300 S. Central Ave., Chicago, IL 60638.
CPC	Hampden Color & Chemicals, Inc	5 Albany St., Springfield, MA 01101.
FOC	Handschy Chemical Co., Farac Oil and Chemical Div.	13601 S. Ashland Ave., Riverdale, IL 60627.
HAN	Hanna Chemical Coatings Corp-----	P. O. Box 147, Columbus, OH 43216.
HDM	Hardman, Inc-----	600 Cortlandt St., Belleville, NJ 07109.
HSH	Harshaw Chemical Co. Sub. of Kewanee Oil Co.	1945 E. 97th St., Cleveland, OH 44106.
HRT	Hart Products Corp-----	173 Sussex St., Jersey City, NJ 07302.
HVG	Haveg Industries, Inc-----	900 Greenback Rd., Wilmington, DE 19808.
HKY	Hawkeye Chemical Co-----	P. O. Box 899, Clinton, IA 52733.
SCP	Henkel, Inc-----	480 Alfred Ave., Teaneck, NJ 07666.
HCR	Hercor Chemical Corp-----	Petrochemical Complex, Ponce, PR 00731.
HPC	Hercules, Inc-----	910 Market St., Wilmington, DE 19899.
HER	Heresite & Chemical Co-----	822 S. 14th St., Manitowoc, WI 54220.
HET	Heterochemical Corp-----	111 E. Hawthorne Ave., Valley Stream, NY 11580.
HEW	Hewitt Soap Co., Inc-----	333 Linden Ave., Dayton, OH 45403.
HEX	Hexagon Laboratories, Inc-----	3536 Peartree Ave., Bronx, NY 10475.
	Hexcel Corp.:	
	Fine Organics Div-----	205 Main St., Lodi, NJ 07644.
	Rezolin Div-----	20701 Nordhoff St., Chatsworth, CA 91311.
FIN	Hodag Chemical Corp-----	7247 N. Central Park Ave., Skokie, IL 60076.
REZ		
HDG		

APPENDIX

237

TABLE 1.--SYNTHETIC ORGANIC CHEMICALS: ALPHABETICAL DIRECTORY OF MANUFACTURERS,
BY COMPANY, 1975--CONTINUED

Identifi- cation code	Name of company	Office address
HST	Hoechst Fibers Industries, Div. of American Hoechst Corp.	P. O. Box 5887, Spartanburg, SC 20304.
HOF	Hoffmann-LaPoche, Inc-----	324-424 Kingsland St., Nutley, NJ 07110.
HK & HKD	Hooker Chemicals & Plastics Corp-----	MPO Box 8, Niagara Falls, NY 14302, and Walck Rd., N. Tonawanda, NY 14121.
RUB	Ruco Div-----	P. O. Box 456, Burlington, NJ 08016.
EFH	E. F. Houghton & Co-----	303 W. Lehigh Ave., Philadelphia, PA 19133.
HMY	Humphrey Chemical Co-----	Devine St., North Haven, CT 06473.
WAY	Philip A. Hunt Chemical Corp., Organic Chemical Div.	P. O. Box 4249, E. Providence, RI 02914.
HNT	Huntington Laboratories, Inc-----	P. O. Box 710, Huntington, IN 46750.
HUS	Husky Industries, Inc-----	62 Perimeter Center E., Atlanta, GA 30346.
HYN	Hynson, Westcott & Dunning, Inc-----	Charles and Chase Sts., Baltimore, MD 21201.
ICI	ICI United States, Inc., Specialty Chemicals Group	Wilmington, DE 19897.
IFF	IFF-----	521 W. 57 St., New York, NY 10019.
RAY	ITT Rayonier, Inc-----	605 3d Ave., New York, NY 10016.
INP	Indpol, Inc-----	P. O. Box 1087, Tustin, CA 92680.
INL	Inland Steel Co., Inland Steel Container Co.	4300 W. 130th St., Chicago, IL 60658.
ICC	Inmont Corp-----	1255 Broad St., Clifton, NJ 07015 and 150 Wagaraw Rd., Hawthorne, NJ 07506.
ICF	Inolex Corp-----	Jackson & Swanson Sts., Philadelphia, PA 19148.
WM	Inolex Pharmaceutical Div-----	2600 Bond St., Park Forest South, IL 60466.
WIL	Insilco Corp., Frisch & Co. Div-----	88 E. 11th St., Paterson, NJ 07524.
FSH	Interplastic Corp-----	2015 NE. Broadway St., Minneapolis, MN 55413.
IPC	Interstab Chemical, Inc-----	500 Jersey Ave., New Brunswick, NJ 08903.
CCA	Ionac Chemical Co. Div. of Sybron Corp-----	Birmingham, NJ 08011.
IOC	Ironsides Resins, Inc-----	270 W. Mound St., Columbus, OH 43216.
IRI	Jefferson Chemical Co., Inc-----	P. O. Box 53300, Houston, TX 77052.
JCC	George A. Jeffreys & Co., Inc-----	P. O. Box 709, Salem, VA 24153.
JFR	Jennison-Wright Corp-----	P. O. Box 691, Toledo, OH 43694.
JEN	Andrew Jergens Co-----	2535 Spring Grove Ave., Cincinnati, OH 45214.
JRG	Jersey State Chemical Co-----	59 Lee Ave., Haledon, NJ 07508.
JSC	Jim Walter Resources, Inc-----	3300 1st Ave. N., Birmingham, AL 35222.
UPF	S. C. Johnson & Son, Inc-----	1525 Howe St., Racine, WI 53403.
JNS	Jones-Blair Co-----	2728 Empire Central, Dallas, TX 75040.
JOB	Jordan Chemical Co-----	1830 Columbia Ave., Folcroft, PA 19032.
JOR	Julian Associates, Inc-----	9352-58 W. Grand Ave., Franklin Park, IL 60136.
JUL	Kaiser Aluminum & Chemical Corp.: Kaiser Agricultural Chemicals Div-----	P. O. Box 246, Savannah, GA 31402.
SNI	Kaiser Chemicals-----	P. O. Box 337, Gramercy, LA 70052.
KAI	Kalama Chemical Co-----	P. O. Box 427, Kalama, WA 98625.
KLM	Kay-Fries Chemicals, Inc-----	60 Craig Rd., Montvale, NJ 07645.
KF	Kelly-Moore Paint Co-----	1015 Commercial St., San Carlos, CA 94070.
KMP	Kennecott Copper Corp.: Chino Mines Div-----	Hurley, MN 88043.
KCC	Utah Copper Div-----	P. O. Box 11299, Salt Lake City, UT 84147.
KCU	Kerr-McGee Chemical Corp-----	Kerr-McGee Bldg., Oklahoma, OK 73102.
AMP	Keysor Century Corp-----	P. O. Box 308, Saugus, CA 91350.
KYS	Keystone Color Works, Inc-----	151 W. Gay Ave., York, PA 17403.
KCW	Knapp Products, Inc-----	187 Garibaldi Ave., Lodi, NJ 07644.
KNP	Knoedler Chemical Co-----	650 Lafayette St., Lancaster, PA 17604.
KND	Kohler-McLister Paint Co-----	P. O. Box 546, Denver, CO 80201.
KMC	H. Kohnstamm & Co., Inc-----	161 Avenue of the Americas, New York, NY 10013.
KON	Koppers Co., Inc-----	Koppers Bldg., Pittsburgh, PA 15219.
KPT	Organic Materials Div-----	Koppers Bldg., Pittsburgh, PA 15219.
	Roads Materials Div-----	Koppers Bldg., Pittsburgh, PA 15219.

SYNTHETIC ORGANIC CHEMICALS, 1975

TABLE 1.--SYNTHETIC ORGANIC CHEMICALS: ALPHABETICAL DIRECTORY OF MANUFACTURERS,
BY COMPANY, 1975--CONTINUED

Identifi- cation code	Name of company	Office address
HUM	Krafto Corp., Humko Products Div-----	P. O. Box 398, Memphis, TN 38101.
KYN	Kyanize Paints, Inc-----	2d and Boston Sts., Everett, MA 02149.
JKY	Lake States Div. of St. Regis Paper Co-----	603 W. Davenport St., Rhinelander, WI 54501.
LAK	Lakeway Chemicals Inc-----	5025 Evanston Ave., Muskegon, MI 49443.
LAM	LaMotte Chemical Products Co-----	Chestertown, MD 21620.
LUR	Laurel Products Corp-----	2600 E. Tioga St., Philadelphia, PA 19134.
LEA	Leater Chemical Co-----	2722 N. Hancock St., Philadelphia, PA 19133.
LEV	Lever Brothers Co-----	390 Park Ave., New York, NY 10022.
LVR	C. Lever Co., Inc-----	736 Dunks Ferry Rd., Cornwells Hgts, PA 19020.
BLS	Life Savers, Inc-----	Church St., Canajoharie, NY 13317.
LIL	Eli Lilly & Co-----	307 E. McCarty St., Indianapolis, IN 46206 and G.P.O. Box 4388, San Juan, PR 00936.
BRD	Lonza, Inc-----	22-10 Route 208, Fair Lawn, NJ 07410.
LUB	Lubrizol Corp-----	29400 Lakeland Blvd., Wickliffe, OH 44092.
TZC	Magnesium Elektron, Inc-----	P. O. Box 202-1, Flemington, NJ 08822.
MGR	Magruder Color Co., Inc-----	1 Virginia St., Newark, NJ 07114.
MAL	Mallinckrodt Chemical Works-----	3600 N. 2d St., St. Louis, MO 63147.
TRD	Manufacturing Enterprises, Inc., Squibb Manufacturing, Inc., Trade Enterprises, Inc.	P. O. Box 609, Humacao, PR 00661.
MOR	Marathon Morco Co-----	P. O. Drawer C, 4401 Park Ave., Dickinson, TX 77539.
MOC	Marathon Oil Co., Texas Refining Div-----	P. O. Box 1191, Texas City, TX 77590.
MRB	Marblette Co-----	37-31 30th St., Long Island City, NY 11101.
MRD	Marden-Wild Corp-----	500 Columbia St., Somerville, MA 02143.
MRV	Marlowe-Van Loan Corp-----	1511 Joshua Circle, High Point, NC 27261.
SDC	Martin-Marietta Corp., Sodyeco Div-----	P. O. Box 10098, Charlotte, NC 28237.
MRX	Max Marx Color & Chemical Co-----	192 Coit St., Irvington, NJ 07111.
MCA	Masonite Corp., Alpine Chemical Div-----	P. O. Box 2392, Gulfport, MS 39503.
MAY	Otto B. May, Inc-----	52 Amsterdam St., Newark, NJ 07105.
MCC	McCloskey Varnish Co-----	7600 State Rd., Philadelphia, PA 19136.
MGK	McLaughlin Gormley King Co-----	8810 10th Ave., N., Minneapolis, MN 55427.
MDJ	Mead Johnson & Co-----	2404 Penna. St., Evansville, IN 47721.
MLC	Melamine Chemicals, Inc-----	P. O. Box 748, Donaldsonville, LA 70346.
MRK	Merck & Co., Inc-----	126 E. Lincoln Ave., Rahway, NJ 07065.
MER	Merichem Co-----	1914 Haden Rd., Houston, TX 77015.
MCH	Michigan Chemical Corp-----	2 N. Riverside Plaza, Chicago, IL 60606.
PFP	Midwest Manufacturing Corp-----	Oak St. at Bluff Rd., Burlington, IA 52601.
MLS	Miles Laboratories, Inc., Marshall Div. and Sumner Div.	1127 Myrtle St., Elkhart, IN 46514.
BKL	Millmaster Onyx Corp.: Millmaster Chemical Div., Berkeley Chemical Dept.	99 Park Ave., New York, NY 10016.
ONX	Onyx Chemical Co. Div-----	190 Warren St., Jersey City, NJ 07302.
RPC	Refined-Onyx Div-----	624 Schuyler Ave., Lyndhurst, NJ 07071.
MMM	Minnesota Mining & Manufacturing Co-----	3M Center, St. Paul, MN 55101.
MIR	Miranol Chemical Co., Inc-----	660 Stuyvesant Ave., Irvington, NJ 07111.
MSC	Mississippi Chemical Corp-----	P. O. Box 388, Yazoo City, MS 39194.
MOB	Mobay Chemical Corp-----	Penn Lincoln Parkway, W. Pittsburgh, PA 15205.
CHG	Chemagro Agricultural Div-----	P. O. Box 4913, Kansas City, MO 64120.
VPC	Verona Div-----	Iorio Ct., Union, NJ 07083.
SM	Mobil Oil Corp-----	P. O. Box 900, Dallas, TX 75221.
	Mobil Chemical Co-----	P. O. Box 3868, Beaumont, TX 77704.
	Chemical Coatings Div-----	1024 South Ave., Plainfield, NJ 07062.
	Phosphorus Div-----	P. O. Box 26683, Richmond, VA 23261.
MOA	Mona Industries, Inc-----	65 E. 23d St., Paterson, NJ 07524.
MNO	Monochem, Inc-----	P. O. Box 488, Geismar, LA 70734.
MNR	Monroe Chemical Co-----	Saville Ave. at 4th St., Eddystone, PA 19013.

APPENDIX

239

TABLE 1.--SYNTHETIC ORGANIC CHEMICALS: ALPHABETICAL DIRECTORY OF MANUFACTURERS,
BY COMPANY, 1975--CONTINUED

Identifi- cation code	Name of company	Office address
MON	Monsanto Co----- Bircham Bend Plant----- Chocolate Bayou Plant----- Plastics Div----- Springfield Plant----- Textiles Div-----	2710 Lafayette St., Santa Clara, CA 95050 and 800 N. Lindbergh Blvd., St. Louis, MO 63166. 190 Grochmal Ave., Indian Orchard, MA 01151. P. O. Box 711, Alvin, TX 77511. 5100 W. Jefferson Ave., Trenton, MI 48183; River Rd., Addyston, OH 45001 and P. O. Box 1311, Texas City, TX 77590. 730 Worcester St., Indian Orchard, MA 01151. 800 N. Lindbergh Blvd., St. Louis, MO 63166. 3250 Wilshire Blvd., Los Angeles, CA 90010. 2301 Scranton Rd., Cleveland, OH 44113. 314 W. Henry St., P. O. 1799, Spartanburg, SC 29304. 110 N. Wacker Dr., Chicago, IL 60606.
MTO	Montrose Chemical Corp. of California-----	267 Vreeland Ave., Paterson, NJ 07513.
MCI	Mooney Chemicals, Inc-----	9505 Cassius Ave., Cleveland, OH 44105.
MCP	Moretex Chemical Products, Inc-----	
MRT	Morton Chemical Co. Div. of Morton-Norwich Products, Inc.	
MOT	Motomco, Inc-----	
PNX	Murphy-Phoenix Co-----	
NTL	NL Industries, Inc-----	1221 Avenue of the Americas, New York, NY 10020.
CHN	N-Ren Corp., Cherokee Nitrogen Div-----	P. O. Box 429, Pryor, OK 74361.
NLC	Nalco Chemical Co-----	2901 Butterfield Rd, Oak Brook, IL 60521.
LEM	Napp Chemicals, Inc-----	199 Main St., Lodi, NJ 07644.
NTB	National Biochemical Co-----	3127 W. Lake St., Chicago, IL 60612.
NTC	National Casein Co-----	601 W. 80th St., Chicago, IL 60620.
USI	National Distillers & Chemicals Corp., U.S. Industrial Chemicals Co.	99 Park Ave., New York, NY 10016.
NMC	National Milling & Chemical Co-----	4601 Flat Rock Rd., Philadelphia, PA 19127.
USI	National Petro Chemical Corp-----	99 Park Ave., New York, NY 10016.
NSC	National Starch & Chemical Corp-----	10 Finderne Ave., Bridgewater, NJ 08876.
NES	Nease Chemical Co., Inc-----	P. O. Box 221, State College, PA 16801.
NEP	Nepera Chemical Co., Inc-----	Route 17, Harriman, NY 10926.
NEV	Neville Chemical Co-----	Neville Island P. O., Pittsburgh, PA 15225.
NLO	Niklor Chemical Co-----	2060 E. 220th St., Long Beach, CA 90810.
NIL	Nilok Chemicals, Inc-----	2235 Langdon Farm Rd., Cincinnati, OH 45230.
JDC	Nipak, Inc-----	301 S. Harwood St., Dallas, TX 75221.
CNP	Nipro, Inc-----	P. O. Box 1483, Augusta, GA 30903.
NOC	Norac Co., Inc----- Mathe Chemical Co. Div-----	405 S. Motor Ave., Azusa, CA 91703. 169 Kennedy Dr., Lodi, NJ 07644.
NEO	Norda, Inc-----	475 10th Ave., New York, NY 10001.
NPV	Norris Paint & Varnish Co., Inc-----	P. O. Box 2023, Salem, OR 97308.
LMI	North American Chemical Co-----	19 Chestnut St., Cambridge, MA 02139.
ATP	Northern Fine Chemicals, Inc-----	93 Main St., Franklin, NJ 07416.
NWP	Northern Petrochemical Co-----	2350 E. Devon Ave., Des Plaines, IL 60018.
NW	Northwestern Chemical Co-----	120 N. Aurora St., W. Chicago, IL 60185.
NPC	Northwest Petrochemical Corp-----	P. O. Box 99, Anacortes, WA 98221.
NOR	Norwich Pharmacal Co-----	17 Eaton Ave., Norwich, NY 13815.
NCW	Nostrip Chemical Works, Inc-----	P. O. Box 160, Pedricktown, NJ 08067.
CAD	Noury Chemical Corp-----	2153 Lockport-Olcott Rd., Burt, NY 14028.
NVT	Novamont Corp., Neal Works-----	P. O. Box 189, Kenova, WV 25530.
CMG	Nyanza, Inc-----	Maguno Rd., Ashland, MA 01721.
OBC	O'Brien Corp----- Fuller-O'Brien Div-----	2001 W. Washington Ave., South Bend, IN 46634. 450 E. Grand Ave., S. San Francisco, CA 94080.
FLW	Olin Corp-----	120 Long Ridge Rd., Stamford, CT 06904, and P. O. Box 991, Little Rock, AR 72203.
OMC		475 10th Ave., New York, NY 10008.
OPC	Orbis Products Corp-----	7125 N. Clark St., Chicago, IL 60628.
ORG	Organics, Inc-----	200 Providence St., W. Warwick, RI 02893.
BSW	Original Bradford Soap Works, Inc-----	Fiberglas Tower, Toledo, OH 43659.
OCF	Owens-Corning Fiberglas Corp-----	10801 Choate Rd., Pasadena, TX 77507.
OCC	Oxirane Chemical Co-----	P. O. Box 27, King George Post Rd., Fords, NJ 08863.
OCX	Oxochem Enterprise-----	

SYNTHETIC ORGANIC CHEMICALS, 1975

TABLE 1.--SYNTHETIC ORGANIC CHEMICALS: ALPHABETICAL DIRECTORY OF MANUFACTURERS,
BY COMPANY, 1975--CONTINUED

Identifi- cation code	Name of company	Office address
PLB	P L Biochemical, Inc-----	1037 W. McKinley Ave., Milwaukee, WI 53201.
PPG	PPG Industries, Inc-----	1 Gateway Center, Pittsburgh, PA 15222.
PVO	PVO International, Inc., Chemical Specialties Div.	416 Division St., Boonton, NJ 07005.
AMR	Pacific Resins & Chemicals, Inc-----	1754 Thorne Rd., Tacoma, WA 93421.
PNA	Pan American Chemical Corp-----	3411 Silverside Rd., Hagley Bldg., Suite 206, Wilmington, DE 19810.
PNT	Pantasote Co. of New York, Inc-----	26 Jefferson St., Passaic, NJ 07056.
PD	Parke, Davis & Co., Sub of Warner- Lambert Co.	Jos. Campau at the River, Detroit, MI 48232.
PSC	Passaic Color & Chemical Co-----	28-36 Paterson St., Paterson, NJ 07501.
KAL	Pathan Chemical Co-----	427 Moyer St., Philadelphia, PA 19125.
CHP	C. H. Patrick & Co., Inc-----	P. O. Box 2526, Greenville, SC 29602.
CCH	Pearsall Chemical Corp-----	P. O. Box 437, Houston, TX 77001.
PEK	Peck's Products Co-----	610 E. Clarence Ave., St. Louis, MO 63147.
PCH	Peerless Chemical Co-----	12416 Cloverdale Ave., Detroit, MI 48204.
PEL	Pelron Corp-----	7847 W. 47th St., Lyons, IL 60534.
AES	Penetone Corp-----	50 Hudson Ave., Tenafly, NJ 07670.
PAS	Pennwalt Corp-----	3 Parkway, Philadelphia, PA 19102.
WTL	Lucidol Div-----	1740 Military Rd., Buffalo, NY 14240.
PAR	Pennzoil Co., Penreco Div-----	Union Bank Bldg., Butler, PA 16001.
PER	Perry & Derrick Co., Inc-----	2510 Highland Ave., Norwood, OH 45212.
UDI	Petrochemicals Co., Inc-----	P. O. Box 2199, Fort Worth, TX 76101.
PTT	Petro-Tex Chemical Corp-----	8600 Park Place Blvd., Houston, TX 77017.
PFN	Pfanstiehl Laboratories, Inc-----	1219 Glen Rock Ave., Waukegan, IL 60085.
PCW	Pfister Chemical, Inc-----	Linden Ave., Ridgefield, NJ 07657.
PFZ	Pfizer, Inc-----	235 E. 42d St., New York, NY 10017.
	Pfizer Pharmaceuticals, Inc-----	P. O. Box 628, Barceloneta, PR 00617.
PHR	Pharmachem Corp-----	719 Steffko Blvd., P. O. Box 1035, Bethlehem, PA 18018.
PLC	Phillips Petroleum Co-----	16D2 Phillips Bldg., Bartlesville, OK 74003.
PPR	Phillips Puerto Rico Corp, Inc-----	GPO Box 4129, San Juan, PR 00936.
PIC	Pierce Chemical Co-----	3747 N. Meridian Rd., Rockford, IL 61103.
PIL	Pilot Chemical Co-----	11756 Burke St., Santa Fe Springs, CA 90670.
PPL	Pioneer Plastics Corp-----	Pioneer Rd., Auburn, ME 04210.
PIT	Pitt-Consol Chemical Co-----	5 Greenway Plaza E., Houston, TX 77046.
PLS	Plastics Engineering Co-----	P. O. Box 758, Sheboygan, WI 53081.
PMC	Plastics Manufacturing Co-----	2700 S. Westmoreland Ave., Dallas, TX 75224.
PLX	Plex Chemical Corp-----	1205 Atlantic St., Union City, CA 94487.
PFW	Polak's Frutal Works, Inc-----	33 Sprague Ave., Middletown, NY 10940.
POL	Polymer Corp-----	2120 Fairmont Ave., Reading, PA 19603.
PYZ	Polyrez Co., Inc-----	P. O. Box 320, Woodbury, NJ 08096.
PVI	Polyvinyl Chemical Ind. Div. of Beatrice Foods Co.	730 Main St., Wilmington, MA 01887.
POP	Pope Chemical Corp-----	33 6th Ave., Paterson, NJ 07524.
PRT	Pratt & Lambert, Inc-----	P. O. Box 22, Buffalo, NY 14240.
PMP	Premier Malt Products, Inc-----	917 W. Juneau Ave., Milwaukee, WI 53201.
PPC	Premier Petrochemical Co-----	530 N. Witter, Pasadena, TX 77501.
PG	Procter & Gamble Co., Procter & Gamble Mfg. Co.	301 E. 6th St., Cincinnati, OH 45202.
PC	Proctor Chemical Co., Inc-----	P. O. Box 399, Salisbury, NC 28144.
PRC	Products Research & Chemical Corp-----	2919 Empire Ave., Burbank, CA 91505.
PUB	Publicker Industries, Inc-----	1429 Walnut St., Philadelphia, PA 19102.
PTO	Puerto Rico Chemical Co., Inc-----	P. O. Box 496, Arecibo, PR 00613.
PUE	Puerto Rico Olefins-----	Firm Delivery, Ponce, PR 00731.
PRX	Purex Corp-----	5101 Clark Ave., Lakewood, CA 90712 and 2258 Elston Ave., Chicago, IL 60614.
QCP	Quaker Chemical Corp-----	Lime & Elm Sts., Conshohocken, PA 19428.
QKO	Quaker Oats Co-----	345 Merchandise Mart Plaza, Chicago, IL 60654.
QUN	K. J. Quinn & Co., Inc-----	195 Canal St., Malden, MA 02148.

APPENDIX

241

TABLE 1.--SYNTHETIC ORGANIC CHEMICALS: ALPHABETICAL DIRECTORY OF MANUFACTURERS,
BY COMPANY, 1975--CONTINUED

Identifi- cation code	Name of company	Office address
RSA	R.S.A. Corp-----	690 Saw Mill River Rd., Ardsley, NY 10502.
RLS	Rachelle Laboratories, Inc-----	700 Henry Ford Ave., Long Beach, CA 90801.
RCN	Racon, Inc-----	P. O. Box 198, Wichita, KS 67201.
RAB	Raybestos-Manhattan, Inc., R. M. Friction Materials Co. Div.	75 E. Main St., Stratford, CT 06497.
RED	Red Spot Paint & Varnish Co., Inc-----	110 Main St., Evansville, IN 47703.
REH	Reheis Chemical Co. Div. of Armour Pharmaceutical Co.	111 W. Clarendon, Greyhound Tower, Station 3206, Phoenix, AZ 85077.
RCI	Reichhold Chemicals, Inc-----	525 N. Broadway, White Plains, NY 10603.
RIL	Reilly Tar & Chemical Corp-----	1615 Merchants Bank, Indianapolis, IN 46204.
REL	Reliance Universal, Inc. of Texas----- Resin Div-----	6901 Cavalcade St., Houston, TX 77001. P. O. Box 21423, Louisville, KY 40221. 939 Barnum Ave., Bridgeport, CT 06602. 1399 W. Blanck St., Linden, NJ 07036. 1401 W. Blanck St., Linden, NJ 07036. 120 Jersey Ave., New Brunswick, NJ 08903. 2400 E. Devon Ave., Des Plaines, IL 60018. 15 Miegs Ave., Madison, CT 06443. 110 E. Amity Rd., Cincinnati, OH 45215.
REM	Remington Arms Co., Inc-----	75 Front St., Ridgway, PA 15853.
RSC	Resinous Chemicals Corp-----	19901 Nordhoff St., Northridge, CA 91324.
RSY	Resyn Corp-----	139 Harristown Rd., Glen Roc, NJ 07452.
RDA	Rhodia, Inc-----	4001 Goodwin Ave., Los Angeles, CA 90039.
RCD	Richardson Co., Organic Chemicals Div----- Polymeric Systems Div-----	220 E. 17th St., Chicago Heights, IL 60411. 51 Madison Ave., New York, NY 10010. 1407 Texas St., Fort Worth, TX 76102. 4501 Benefit Ave., Ashtabula, OH 44004.
LKL	Richardson-Merrill, Inc., Merrill- National Laboratories Div.	52-20 37th St., Long Island City, NY 11101.
AMS	Ridgway Color & Chemical-----	Rogers, CT 06263.
RIK	Riker Laboratories, Inc., Sub. of 3M Co-----	Independence Mall West, Philadelphia, PA 19105.
RSN	Rilsan Corp-----	P. O. Box 517, Geismar, LA 70734.
RT	Ritter International-----	900 Union Commerce Bldg., Cleveland, OH 44115 and 2333 W. Logan Blvd., Chicago, IL 60647.
RIV	Riverdale Chemical Co-----	8390 Capwell Dr., Oakland, CA 94604.
ROB	Robeco Chemicals, Inc-----	60 Grove St., Salem, MA 01970.
RBT	Robintech, Inc-----	2000 Rockford Rd., Charles City, IA 50616.
MFG	Rockwell International Corp., Automotive Products Group, Resin Plant.	P. O. Box 357, Fair Lawn, NJ 07410. Route #10, E. Hanover, NJ 07936. P. O. Box 207, Wasco, CA 93280.
ORT	Roehr Chemicals Div of Aceto Industrial Chemical Co.	Gov. Printz Blvd. & Wanamaker Ave., Essington, PA 19029.
RGC	Rogers Corp-----	P. O. Box 1046, Schenectady, NY 12301.
RH	Rohm & Haas Co-----	P. O. Box 538, Allwood Station, Cliffon, NJ 07012.
RUC	Rubicon Chemicals, Inc-----	1011 Morris Ave., Union, NJ 07083.
GLD	SGM Corp., Glidden-Durkee Div-----	Collins and Westmoreland Sts., Philadelphia, PA 19134.
NPR	Safeway Stores, Inc-----	P. O. Box 1409, Madison, WI 53701.
SLM	Salem Oil & Grease Co-----	106 Central Ave., Oconto Falls, WI 54154.
SAL	Salsbury Laboratories-----	30 Foster St., Salem, MA 01970.
S	Sandoz, Inc.: Colors & Chemicals Div----- Crop Protection Dept-----	P. O. Box 5110, Chicago, IL 60680.
SAR	Sartomer Industries, Inc-----	111 Wales St., Tonawanda, NY 140320.
SCN	Schenectady Chemicals, Inc-----	P. O. Box 2463, Houston, TX 77001.
SBC	Scher Bros., Inc-----	4900 Beech St., Cincinnati, OH 45212.
SCH	Schering Corp-----	101 Prospect Ave., NW Cleveland, OH 44115.
SCO	Scholler Bros., Inc-----	P. O. Box 925, Spartanburg, SC 29304.
SPR	Scientific Protein Labs., Inc-----	
SPA	Scott Paper Co-----	
SEA	Seaboard Chemicals, Inc-----	
SRL	G. D. Searle & Co-----	
SKP	Shakespeare Co., Monofilament Div-----	
SHA	Shanco Plastics & Chemicals Co-----	
SHO	Shell Oil Co: Shell Chemical Co. Div-----	
SHC	Shepherd Chemical Co-----	
SHP	Sherwin-Williams Co-----	
SW	George F. Siddall Co., Inc-----	

SYNTHETIC ORGANIC CHEMICALS, 1975

TABLE 1.--SYNTHETIC ORGANIC CHEMICALS: ALPHABETICAL DIRECTORY OF MANUFACTURERS,
BY COMPANY, 1975--CONTINUED

Identifi- cation code	Name of company	Office address
SIM	Simpson Timber Co.	2301 N. Columbia Blvd., Portland, OR 97217.
SPC	Sinclair Paint Co., Div. of Insilco Corp.	3960 E. Washington Blvd., Los Angeles, CA 90023.
SKO	Skelly Oil Co.	P. O. Box 1650, Tulsa, OK 74102.
GFS	G. Frederick Smith Chemical Co.	867 McKinley Ave., Columbus, OH 43223.
SK	Smith, Kline Chemicals	1500 Spring Garden St., Philadelphia, PA 19101.
SBN	Sabin Chemicals, Inc.	P. O. Box 149, Orrington, ME 04474.
MTR	Montrose Div.	100 Listen Ave., Newark, NJ 07105.
SOL	Solar Chemical Corp.	P. O. Box 90, Leominster, MA 01453.
SLT	Soltex Polymer Corp.	P. O. Box 1000, Deer Park, TX 77536.
SLC	Soluol Chemical Co., Inc.	Green Hill and Market Sts., W. Warwick, RI 02893.
SAC	Southeastern Adhesives Co.	P. O. Box 791, Lenoir, NC 28645.
SOP	Southern Chemical Products Co., Inc.	P. O. Box 205, Macon, GA 31202.
SOS	Southern Sizing Co.	1550 E. Taylor Ave., East Point, GA 30344.
SPL	Spaulding Fibre Co., Inc.	310 Wheeler St., Tonawanda, NY 14150.
OMS	E. R. Squibb & Sons, Inc.	Georges Rd., Brunswick, NJ 08903.
STA	A. E. Staley Manufacturing Co.	2200 Elorado St., Decatur, IL 62525.
UBS	Staley Chemicals Div.	320 Schuyler Ave., Kearny, NJ 07032.
CLN	Standard Brands, Inc., Clinton Corn Processing Co. Div.	1251 Beaver Channel Parkway, Clinton, IA 52733.
SBI	Standard Brands Chemical Industries, Inc.	P. O. Drawer K, Dover, DE 19901.
SOC	Standard Oil Co. of California, Chevron Chemical Co.	575 Market St., San Francisco, CA 94105.
SIO	Standard Oil Co. of Ohio	Midland Bldg., Cleveland, OH 44115.
STT	Standard T Chemical Co.	P. O. Box A-3351, Chicago, IL 60690.
STG	Stange Co.	342 N. Western Ave., Chicago, IL 60612.
AME	Stauffer Chemical Co.	P. O. Box 1110, Long Beach, CA 90801.
SFA	Agricultural Div.	636 California St., San Francisco, CA 94108.
SFC	Calhio Chemicals, Inc.	636 California St., San Francisco, CA 94108.
SFF	Food Ingredients Div.	636 California St., San Francisco, CA 94108.
SFI	Industrial Div.	636 California St., San Francisco, CA 94108.
SFP	Plastics Div.	636 California St., San Francisco, CA 94108.
SFS	Specialty Div.	636 California St., San Francisco, CA 94108.
BPC	Benzol Products	Meadow Rd., Edison, NJ 08817.
SWS	SWS Silicones Div.	636 California St., San Francisco, CA 94108.
SH	Stein Hall & Co., Inc.	P. O. Box 1154, Louisville, KY 40201.
STP & MYW	Stepan Chemical Co.	RR #1, Elwood, IL 60421 and 100 West Hunter Ave., Maywood, NJ 07607. 51 Eames St., Wilmington, MA 01887.
NPI	Polychem Dept.	
	Sterling Drug, Inc.:	
SDG	Glenbrook Laboratories Div.	90 Park Ave., New York, NY 10016.
SDH	Hilton-Davis Chemical Co. Div.	2235 Langdon Farm Rd., Cincinnati, OH 45237.
TMS	Thomasset Colors Div.	120 Lister Ave., Newark, NJ 07105.
SDW	Winthrop Laboratories Div.	90 Park Ave., New York, NY 10016.
SLV	Sterwin Chemicals, Inc.	Military Rd., Rothschild, WI 54474.
OTC	Story Chemical Corp.	500 Agard Rd., Muskegon, MI 49445.
STY	Styrochem Corp.	Petrochemical Complex, Ponce, PR 00731.
SBP	Sugar Beet Products Co.	P. O. Box 1387, Saginaw, MI 48605.
	Sun Chemical Corp.:	
SNW	Chemical Div.	P. O. Box 70, Chester, SC 29706.
SNA	Pigments Div.	441 Tompkins Ave., Staten Island, NY 10305.
SKG	Sunkist Growers, Inc.	P. O. Box 7888, Van Nuys, CA 91409.
SUN	Sun Oil Co.	240 Radnor-Chester Rd., St. Davids, PA 19087.
SNO	SunOlin Chemical Co.	P. O. Box F, Claymount, DE 19703.
SNT	Suntide Refining Co.	P. O. Box 2608, Corpus Christi, TX 78403.
BUC	Synalloy Corp., Blackman-Uhler Chemical Div.	P. O. Box 5627, Spartanburg, SC 29301.
FAR	Syncon Resins, Inc.	77 Jacobus Ave., S. Kearny, NJ 07032.
FCD	Synres Chemical Corp.	209 N. Michigan Ave., Kenilworth, NJ 07033.
HFT	Syntex Agribusiness, Inc., Nutrition & Chemical Div.	P. O. Box 1246 SSS, Springfield, MO 65805.

TABLE 1.--SYNTHETIC ORGANIC CHEMICALS: ALPHABETICAL DIRECTORY OF MANUFACTURERS,
BY COMPANY, 1975--CONTINUED

Identifi- cation code	Name of company	Office address
TCC	Tanatex Chemical Corp-----	P. O. Box 388, Lyndhurst, NJ 07071.
CST	Charles S. Tanner Co-----	1310 Barcelona Dr., Greenville, SC 29606.
TBO	Tauber Oil Co-----	1610 Melrose Blvd., Houston, TX 77052.
TEK	Teknor Apex Co-----	505 Central Ave., Pawtucket, RI 02662.
HN	Tenneco Chemicals, Inc-----	Park Eighty Plaza West-One, Saddle Brook, NJ 07662.
TOC	Tenneco Oil Co-----	P. O. Box 2511, Houston, TX 77001.
TVA	Tennessee Valley Authority-----	Muscle Shoals, AL 35660.
TER	Terra Chemicals International, Inc-----	P. O. Box 1828, Sioux City, IA 51121.
TX	Texaco, Inc-----	135 E. 42 St., New York, NY 10017.
TSA	Texas Alkyls, Inc-----	P. O. Box 600, Deer Park, TX 77536.
TUS	Texas-U.S. Chemical Co-----	P. O. Box 667, Port Neches, TX 77651.
TXC	Tex Chem Co., Inc-----	20-21 Wagaran Rd., Fair Lawn, NJ 07410.
TCI	Texize Chemicals, Co-----	P. O. Box 368, Greenville, SC 29602.
SCP	Textilana Corp-----	12607 Cerise Ave., Hawthorne, CA 90250.
SCP	Textilana Nease, Inc-----	12607 Cerise Ave., Hawthorne, CA 90250.
SKT	Textron, Inc., Spencer Kellogg Div-----	120 Delaware Ave., Buffalo, NY 14240.
TKL	Thiokol Corp., Chemical Div-----	930 Lower Ferry Rd., Trenton, NJ 08607.
SOR	Thomason Industries, Inc., Southern Resin Div.	P. O. Drawer 1600, Fayetteville, NC 29302.
TMH	Thompson-Hayward Chemical Co-----	5200 Speaker Rd., Kansas City, MO 66110 and 2 E. Madison St., Waukegan, IL 60085.
TRC	Toms River Chemical Corp-----	P. O. Box 71, Toms River, NJ 08753.
ACT	Arthur C. Trask Co-----	7666 W. 63d St., Summit, IL 60501.
TRI	Triad Chemical-----	P. O. Box 310, Donaldsonville, LA 70346.
TRO	Troy Chemical Co-----	One Avenue L, Newark, NJ 07105.
UPM	UOP, Inc-----	10 UOP Plaza, Algonquin & Mt. Prospect Rds, Des Plaines, IL 60016. State Highway 17, E. Rutherford, NJ 07073.
UOP	UOP Chemical Div-----	Boston St., Middleton, MA 01949.
USM	USM Corp., Bostik Div-----	P. O. Box 1685 Atlanta, GA 30301.
ARM	USS Agri-Chemicals Div of U.S. Steel Corp-----	600 Grant St., Rm. 2880, Pittsburgh, PA 15230.
USS	USS Chemicals Div. of U.S. Steel Corp-----	1 Railroad Ave., Hastings on the Hudson, NY 10706.
UHL	Paul Uhlich & Co., Inc-----	161 Avenue of the Americas, New York, NY 10013.
UNG	Ungerer & Co-----	P. O. Box 6170, Jacksonville, FL 32205.
NCI	Union-Camp Corp-----	P. O. Box 220, Dover, OH 44622.
WTH	Chemical Div., Dover Plant-----	270 Park Ave., New York, NY 10017.
UCC	Union Carbide Corp-----	200 E. Golf Rd., Palatine, IL 60067.
UOC	Union Oil Co. of California-----	Emic Bldg., Naugatuck, CT 06770.
USR	Uniroyal, Inc., Chemical Div-----	115 W. Jackson Blvd., Chicago, IL 60604.
SWT	Unitech Chemical, Inc-----	Endicott St., Norwood, MA 02062.
UNN	United Chemical Corp. of Norwood-----	472 York St., Jersey City, NJ 07302.
UNP	United Chemical Products Corp-----	438 Huron SE., Erie, PA 16512.
UNO	United-Erie, Inc-----	749 Queechean St., Fall River, MA 02721.
ROM	United Merchants & Manufacturers, Inc., Roma Chemical Div.	3075 Wilshire Blvd., Los Angeles, CA 90005.
USB	U.S. Borax Research Corp-----	P. O. Box 5129, Akron, OH 44313.
HIM	U.S. Industries, Inc., E. Helman Co. Div-----	P. O. Box 4228, E. Providence, RI 02914.
USO	U.S. Oil Co-----	7000 Portage Rd., Kalamazoo, MI 49002.
UPJ	Upjohn Co-----	410 Sackett Point Rd., North Haven, CT 06473.
CWN	Fine Chemical Div-----	1407 Broadway, New York, NY 10018.
VAL	Valchem Chemical Div. of United Merchants & Manufacturers, Inc.	726 Whitney Bldg., New Orleans, LA 70130.
VSV	Valentine Sugars, Inc-----	1221 Van Ness Ave., Fresno, CA 93717.
VLN	Valley Nitrogen Producers, Inc-----	1101 S. 3d St., Minneapolis, MN 55415.
MNP	The Valspar Corp-----	31 Taylor Ave., Bethel, CT 06801 and Rt. 5 - Box 54, Murray, KY 42071.
VNC	Vanderbilt Chemical Corp-----	

SYNTHETIC ORGANIC CHEMICALS, 1975

TABLE J.--SYNTHETIC ORGANIC CHEMICALS: ALPHABETICAL DIRECTORY OF MANUFACTURERS,
BY COMPANY, 1975--CONTINUED

Identifi- cation code	Name of company	Office address
VND	Van Dyk & Co., Inc-----	Main & Williams Sts., Belleville, NJ 07109.
VEL	Velsicol Chemical Corp-----	341 E. Ohio St., Chicago, IL 60611.
MHI	Ventron Corp-----	12-16 Congress St. Beverly, MA 01915.
VTC	Vicksburg Chemical Co. Sub of Ventac Consolidated.	P. O. Box 3, Vicksburg, MS 39180.
VIK	Viking Chemical Co-----	838 Baker Bldg., Minneapolis, MN 55402.
VIN	Vineland Chemical Co-----	W. Wheat Rd., Vineland, NJ 08360.
VCC	Vinings Chemical Co-----	2555 Cumberland Pkwy., Suite 200, Atlanta, GA 30339.
VGC	Virginia Chemicals, Inc-----	3340 W. Norfolk Rd., Portsmouth, VA 23703.
SOH	Vistron Corp-----	Midland Bldg., Cleveland, OH 44115.
SIC	Silmar Div-----	12333 S. Van Ness Ave., Hawthorne, CA 90250.
VTM	Vitamins, Inc-----	200 E. Randolph Dr., Chicago, IL 60601.
FRO	Vulcan Materials Co., Chemicals Div-----	P. O. Box 7689, Birmingham, AL 35223.
WJ	Warner-Jenkinson Manufacturing Co-----	2526 Baldwin St., St. Louis, MO 63106.
WAG	West Agro-Chemical, Inc-----	P. O. Box 1386, Shawnee Mission, KS 66222.
WCA	West Coast Adhesives Co-----	11104 NW. Front Ave., Portland, OR 97231.
EW	Westinghouse Electric Corp., Industrial Plastics Div., Chemical Products Plant.	Manor, PA 15665.
WVA	Westvaco Corp., Polymers Dept-----	P. O. Box 5208, N. Charleston, SC 29406.
WRD	Weyerhaeuser Co-----	118 S. Palmetto Ave., Marshfield, WI 54449.
WBG	White & Bagley Co-----	P. O. Box 706, Worcester, MA 01613.
WHI	White & Hodges, Inc-----	576 Lawrence St., Lowell, MA 01853.
WHL	Whitmoyer Laboratories, Inc-----	19 N. Railroad St., Myerstown, PA 17067.
APT	Whittaker Corp., Whittaker Coatings & Chemicals, Mol Rez Resins.	3134 California St., NE., Minneapolis, MN 55418.
WHW	Whittemore-Wright Co., Inc-----	62 Alford St., Boston, MA 02129.
WLN	Wilmington Chemical Corp-----	P. O. Box 66, Wilmington, DE 19899.
WTC	Witco Chemical Co., Inc-----	P. O. Box 305, Paramus, NJ 07652.
WAW	W. A. Wood Co-----	108 Spring St., Everett, MA 02149.
WBC	Worthington Biochemical Corp-----	Halls Mills Rd., Freehold, NJ 07728.
WYC	Wycon Chemical Co-----	S Greenway Plaza East, Houston, TX 77046.
WYT	Wyeth Laboratories, Inc., Wyeth Laboratories Div. of American Home Products Corp.	P. O. Box 831, Paoli, PA 19301.

TABLE 2.--CYCLIC INTERMEDIATES: GLOSSARY OF SYNONYMOUS NAMES

Common name	Standard (Chemical Abstracts) name
1,2,4-Acid	4-Amino-3-hydroxy-1-naphthalenesulfonic acid.
Acid yellow 9-	6-Amino-3,4'-azodibenzenesulfonic acid.
p-Aminobenzenesulfonic acid	Sulfanilic acid and salt.
Amino G acid	7-Amino-1,3-naphthalenedisulfonic acid.
Amino I 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.
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.
Bromobenzanthrone	3-Bromo-7H-benz[de]anthracene-7-one.
Broenner's acid	6-Amino-2-naphthalenesulfonic acid.
C acid	3-Amino-1,5-naphthalenedisulfonic acid.
Chlorobenzanthrone	Chloro-7H-benz[de]anthracen-7-one.
Chromotropic acid	4,5-Dihydroxy-2,7-naphthalenedisulfonic acid.
Chrysazin	1,8-Dihydroxyanthraquinone.
2-Cyanopyridine	Picolinonitrile.
3-Cyanopyridine	Nicotinonitrile.
Cyanuric chloride	2,4,6-Trichloro-s-triazine.
DADI	Dianisidine diisocyanate.
DBB	p-Dibutoxybenzene.
Decacyclene	Diacenaphtho[1,2-j:1,2'-l]fluoranthene.
Developer Z	3-Methyl-1-phenyl-2-pyrazolin-5-one.
α -Dianisidine	3,3'-Dimethoxybenzidine.
1,1'-Dianthrimeide	1,1'-Iminodianthaquinone.
Dibenzanthrone	Violanthrone.
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.
Durene	1,2,4,5-Tetramethylbenzene.
Fast Red G base	2-Nitro-p-toluidine [NH ₂ =1].
Fast Scarlet R base	5-Nitro-o-anisidine [NH ₂ =1].
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.
Hellimellitene	1,2,3-Trimethylbenzene.
J acid	7-Amino-4-hydroxy-2-naphthalenesulfonic acid, sodium salt.
J acid urea	7,7'-Ureylenebis[4-hydroxy-2-naphthalenesulfonic acid].
Koch's acid	8-Amino-1,3,6-naphthalenetrisulfonic acid.
MEP	5-Ethyl-2-picoline
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.

TABLE 2.--CYCLIC INTERMEDIATES: GLOSSARY OF SYNONYMOUS NAMES--CONTINUED

Common name	Standard (Chemical Abstracts) name
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.
Pentaanthrimide-----	1,4,5,8-Tetrakis(1-anthraquinonylamo)anthraquinone.
Phenylbiphenyl-----	Terphenyl.
N-Phenyldiethanolamine-----	2,2'-(Phenyl)imino]diethanol.
Phenyl J acid-----	7-Anilino-4-hydroxy-2-naphthalenesulfonic acid.
Phenyl peri acid-----	8-Anilino-1-naphthalenesulfonic acid.
POPOP-----	1,4-Bis[2-(5-phenyloxazolyl)]benzene.
Pseudocumene-----	1,2,4-Trimethylbenzene.
Pyrazoleanthrone-----	Antra[1,9-cd]pyrazol-6(2H)-one.
Pyrazoleanthrone yellow-----	[3,3'-Biantha[1,9-cd]pyrazole]-6,6'-(2H,2'H)dione.
Pyrazolone T-----	5-Oxo-1-(p-sulfophenyl)-2-pyrazoline-3-carboxylic acid.
Quinizarin-----	1,4-Dihydroxyanthraquinone.
2-Quinizarinsulfonic acid-----	9,10-Dihydro-1,4-dihydroxy-9,10-dioxo-2-anthracene-sulfonic acid.
Quinoline yellow base-----	Quinophthalone.
R salt-----	3-Hydroxy-2,7-naphthalenedisulfonic acid, disodium salt.
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.
o-Sulfobenzaldehyde-----	o-Formylbenzenesulfonic acid.
Thiosalicylic acid-----	o-Mercaptobenzoic acid.
Tobias acid-----	2-Amino-1-naphthalenesulfonic acid.
TODI-----	Bitolylene diisocyanate.
α -Tolidine-----	3,3'-Dimethylbenzidine.
α -Toluic acid-----	Phenylacetic acid.
α -Tolunitrile-----	Phenylacetonitrile.
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.
Vinyltoluene-----	ar-Methylstyrene.