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UNITED STATES TARIFF COMMISSION

**SYNTHETIC
ORGANIC CHEMICALS**

**United States Production
and Sales, 1962 -6**

TC Publication 114



RECENT REPORTS OF THE UNITED STATES TARIFF COMMISSION ON SYNTHETIC
ORGANIC CHEMICALS

- Synthetic Organic Chemicals, United States Production and Sales, 1957 (Rept. No. 203, 2d ser., 1958), 60¢
- *Synthetic Organic Chemicals, United States Production and Sales, 1958 (Rept. No. 205, 2d ser., 1959)
- *Synthetic Organic Chemicals, United States Production and Sales, 1959 (Rept. No. 206, 2d ser., 1960)
- Synthetic Organic Chemicals, United States Production and Sales, 1960 (TC Publication 34, 1961), \$1.25
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**SYNTHETIC
ORGANIC CHEMICALS**

**United States Production
and Sales, 1962**

UNDER THE PROVISIONS OF
SECTION 332 OF THE TARIFF
ACT OF 1930, AS AMENDED

U.S. GOVERNMENT PRINTING OFFICE
WASHINGTON : 1963

UNITED STATES TARIFF COMMISSION

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Introduction

This is the forty-sixth annual report of 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 presents statistics for 1962 on production and sales of crude organic chemicals derived from coal, natural gas, and petroleum; of intermediates; and of finished synthetic organic chemical products. The finished products are grouped according to their principal use--dyes, synthetic organic pigments, medicinal chemicals, flavor and perfume materials, plastics and resin materials, rubber-processing chemicals, elastomers, plasticizers, surface-active agents, pesticides and other organic agricultural chemicals, and miscellaneous chemicals. The use classifications of finished synthetic organic chemicals are based principally on the manufacturers' annual reports to the Tariff Commission; other sources include trade associations, the chemical literature, chemical dictionaries, encyclopedias, and consultants in the chemical industry. With a few exceptions, the report does not cover organic chemicals (such as wood-distillation products, essential oils, and naval stores) that are derived from natural (vegetable) sources by simple extraction or distillation. The Commission has compiled the statistics presented in this report from information supplied by the 776 primary manufacturers listed in part III.

The first section of the report includes statistics on all products and groups of products which conform to the general rules of publishability. The second section lists all the chemicals and chemical products on which data were reported and identifies the manufacturers of each. Each reporting company has been assigned an identification symbol consisting of a combination of not more than three capital letters, selected in most instances with the approval of the manufacturer, and bearing in most cases some relationship to the company name. The identification symbols are permanent and, except for such changes as may be necessary, will be used in all future reports in this series. This report, like the 1960 and 1961 reports, includes data on only those individual chemicals for which the volume of production or sales in the year covered exceeded 1,000 pounds or for which the value of sales exceeded \$1,000. Data for chemicals produced in Puerto Rico are included for the first time in this report. No data were reported from Alaska or Hawaii.

The raw materials referred to in this report are obtained from coal, crude petroleum, natural gas, and certain other natural materials, such as vegetable oils, fats, rosin, and grains. Crude organic chemicals are derived from coal by thermal decomposition, from petroleum and natural gas by catalytic cracking and by distillation or absorption, and from other natural sources by fermentation. Production of these crude organic chemicals is the first step in the manufacture of synthetic organic chemicals. From these crudes, intermediates are obtained by synthesis or refining; most of the intermediates are then converted into finished chemical products, such as medicinal chemicals, plastics and resin materials, and dyes. Intermediates usually are not sold directly to the ultimate consumer, but are used by the producing companies themselves--or by other industrial concerns--in their manufacturing processes. The statistics given in this report include data for all known domestic producers and are therefore virtually complete.

In this report, the statistics on production of the individual chemicals reported by manufacturers include the total output of the companies' plants, i. e., the quantities produced for consumption within the producing plants, as well as the quantities produced for sale. The quantities reported as produced, therefore, generally exceed the quantities reported as sold. Some of these differences, however, are attributable to changes in inventories. As specified in the reporting instructions that the Commission sends to manufacturers, and as used in this report, production and sales (unless otherwise specifically indicated) are defined as follows:

Production is the total quantity of a commodity made available by *original manufacture only*. It is the sum (expressed in terms of 100-percent active ingredient unless otherwise specified) of the quantities of a commodity--

- (1) Produced, separated, and consumed in the same plant or establishment (a commodity is considered to be separated when it is isolated from the reaction system and/or when it is weighed, analyzed, or otherwise measured). Byproducts and coproducts not classified as waste materials are also included;
- (2) Produced and transferred to other plants or establishments of the same firm;
- (3) Produced and sold to other firms (including production for others under toll agreements¹); and
- (4) Produced and held in stock.

¹ A toll agreement is an agreement between two firms, 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.

Production excludes--

- (1) Purification of a commodity unless specifically requested in the reporting instructions;
- (2) Intermediate products that are formed in the manufacturing process but are not isolated from the reaction system-- that is, not weighed, analyzed, or otherwise measured; and
- (3) Materials that are used in the process but are recovered for reuse, or sale; and waste products that have no economic significance.

Sales are defined as actual sales of commodities by *original manufacturers only*. Sales include--

- (1) Shipments of commodities for domestic use and for export, or segregation in a warehouse when title has passed to the purchaser in a bona fide sale;
- (2) Shipments of a commodity produced *by others* under toll agreements; and
- (3) Shipments to subsidiary or affiliated companies.

Sales exclude--

- (1) All intracompany transfers within a corporate entity;
- (2) All sales of purchased commodities; and
- (3) All shipments of a commodity produced *for others* under toll agreements.

The value of a sale is the net selling value, f. o. b. plant or warehouse, or delivered value, whichever represents the normal industry practice.

Data on the chemicals covered in this report are usually given in terms of undiluted materials. Products that assay 95 percent pure or more are considered to be 100 percent pure. The principal exceptions are the statistics on dyes and a few solvents, which are reported in terms of commercial concentrations; the statistics on certain plastics and resins, which are reported on a dry basis; and the data on sales of antibiotics, which are reported on the basis of specific conditions mentioned in the section on medicinal chemicals. The report specifically notes those products for which the statistics are reported in terms of commercial concentrations.

The average unit values of sales for groups of products shown in the tables accompanying this report are weighted averages for products which vary widely in unit values and in the quantities sold.

In this report, statistics are presented in as great detail as is possible without revealing the operations of individual producers. Statistics for an individual chemical or group of chemicals are not given if there are fewer than three producers. 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.²

Statistics on tars and tar crudes include data furnished directly to the Tariff Commission by distillers of coal tar, water-gas tar, and oil-gas tar; data furnished to the Division of Bituminous Coal, U. S. Bureau of Mines, by coke-oven operators; and data furnished to the American Gas Association by producers of water-gas tar and oil-gas tar.

Statistics on U. S. imports in 1962 of coal-tar intermediates and finished coal-tar products that entered under paragraphs 27 and 28 of the Tariff Act of 1930 are given in appendix A. Appendix B is a glossary of the common, or trivial, names of coal-tar intermediates usually encountered in the trade, together with their equivalent standard (or *Chemical Abstracts*) names. Appendix C is a cross-reference list of the *Colour Index* and common names of synthetic organic pigments.

² Sec. 5, U. S. C. 139b and sec. 18, U. S. C. 1905.

Summary

Combined production of all synthetic organic chemicals, tars, tar crudes, and crude products from petroleum and natural gas in 1962 was 112,478 million pounds--an increase of 11.7 percent over the output in 1961 (see table 1). Sales of these materials in 1962, which totaled 63,416 million pounds, valued at \$8,313 million, were 8.7 percent larger than in 1961 in terms of quantity and 4.2 percent larger in terms of value. These figures include data on production and sales of chemicals measured at several successive steps in the manufacturing process, and therefore they necessarily contain some duplication.

In 1962, production of all synthetic organic chemicals, including cyclic intermediates and finished chemical products, totaled 64,170 million pounds, or 14.2 percent more than the output in 1961. Production of plasticizers (781 million pounds) was 24.0 percent larger; that of flavor and perfume materials (76 million pounds) was 20.0 percent larger in 1962 than in 1961; that of plastics and resin materials (7,942 million pounds) was 18.4 percent larger; and that of miscellaneous chemicals (37,577 million pounds) was 14.8 percent larger.

The output of all of the other groups of synthetic organic chemicals also increased in 1962 compared with 1961. Production of dyes (189 million pounds) was 13.4 percent greater; that of surface-active agents (1,949 million pounds) was 12.7 percent greater; that of elastomers (3,134 million pounds) was 11.7 percent greater; that of rubber-processing chemicals (228 million pounds) was 11.4 percent greater; that of cyclic intermediates (11,400 million pounds) was 10.9 percent greater; that of medicinal chemicals (127 million pounds) was 8.4 percent greater; that of synthetic organic pigments (37 million pounds) was 6.0 percent greater; and that of pesticides and other agricultural chemicals (730 million pounds) was 4.3 percent greater.

TABLE 1.-- Synthetic organic chemicals and their raw materials: U.S. production and sales, 1961 and 1962

Chemical	Production			Sales					
				Quantity			Value		
	1961	1962	Increase or decrease (-), 1962 over 1961 ¹	1961	1962	Increase or decrease (-), 1962 over 1961 ¹	1961	1962	Increase or decrease (-), 1962 over 1961 ¹
	Million pounds	Million pounds	Percent	Million pounds	Million pounds	Percent	Million dollars	Million dollars	Percent
Grand total-----	100,670	112,478	11.7	58,356	63,416	8.7	7,980	8,313	4.2
Tar-----	6,499	6,694	3.0	3,266	3,181	-2.6	42	38	-8.9
Tar crudes-----	9,425	8,654	-8.2	5,565	5,255	-5.6	147	130	-12.0
Crude products from petroleum and natural gas-----	28,563	32,960	15.4	18,513	20,352	9.9	644	655	1.7
Synthetic organic chemicals, total-----	56,183	64,170	14.2	31,012	34,628	11.7	7,147	7,490	4.8
Intermediates-----	10,275	11,400	10.9	4,103	4,572	11.4	621	632	1.9
Dyes-----	167	189	13.4	158	178	12.4	213	227	6.6
Synthetic organic pigments-----	35	37	6.0	29	32	7.2	66	74	12.0
Medicinal chemicals-----	118	127	8.4	92	104	12.0	577	601	4.2
Flavor and perfume materials-----	64	76	20.0	55	63	16.0	68	76	12.0
Plastics and resin materials-----	6,709	7,942	18.4	5,989	7,116	18.8	1,710	1,884	10.1
Rubber-processing chemicals-----	205	228	11.4	156	172	10.6	104	115	9.6
Elastomers (synthetic rubbers)-----	2,807	3,134	11.7	2,565	2,730	6.5	717	774	8.1
Plasticizers-----	630	781	24.0	536	666	24.2	155	168	8.7
Surface-active agents-----	1,729	1,949	12.7	1,583	1,758	11.0	292	317	8.8
Pesticides and other organic agricultural chemicals-----	700	730	4.3	612	634	3.6	303	346	14.3
Miscellaneous chemicals-----	32,744	37,577	14.8	15,134	16,603	9.7	2,321	2,276	-2.0

¹ Percentages calculated from figures rounded to thousands.

**PART I. PRODUCTION AND SALES OF TARS, TAR CRUDES,
AND CRUDES DERIVED FROM PETROLEUM AND NATURAL GAS**

Tars

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 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 tars. Petroleum asphalts are not usually considered to be raw materials for chemicals.

The quantity of tar produced in the United States from all sources in 1962 was 669 million gallons, or 3.0 percent more than the 650 million gallons produced in 1961. Of the total quantity produced in 1962, 650 million gallons was coal tar and 19 million gallons was water-gas and oil-gas tar (see table 2).

Total consumption of tar in 1962 amounted to 677 million gallons, of which 610 million gallons was consumed by distillation, 46 million gallons as fuel, and 21 million gallons in miscellaneous uses.

TABLE 2.--Tar: U.S. production and consumption, 1961 and 1962

[In thousands of gallons]

Product	1961	1962
PRODUCTION		
Total-----	649,878	669,398
Water-gas and oil-gas tar ¹ -----	16,500	19,286
Coal tar from coke-oven byproduct plants ² -----	633,378	650,112
CONSUMPTION		
Total-----	634,769	676,531
Tar consumed by distillation, total-----	603,724	609,639
Coal tar distilled or topped by coke-oven operators ² -----	276,965	306,137
Coal tar, water-gas and oil-gas tar distilled by producers and tar distillers ³ -----	326,759	303,502
Tar consumed chiefly as fuel ² -----	16,810	46,373
Tar consumed otherwise than by distillation or as fuel, total-----	14,235	20,519
Coal tar consumed at coke-oven plants for roads and upkeep ² -----	939	541
Coal tar, water-gas tar, and oil-gas tar processed at tar refineries, crude tar consumed for upkeep at such refineries, and tar consumed in making gas and in special-purpose tar blends ⁴ -----	13,296	19,978

¹ Reported to the American Gas Association.

² Reported to the U.S. Bureau of Mines.

³ Reported to the U.S. Tariff Commission. Represents tar purchased from companies operating coke ovens and gas-retort plants and distilled by companies operating tar-distillation plants.

⁴ Reported to the American Gas Association and to the U.S. Tariff Commission.

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, naphthalene, and creosote oil. Some of the products produced from coal tar are identical with those produced from petroleum and natural gas. Data for materials derived from these latter sources are, for the most part, included in or with the statistics for materials derived from coal tar, which are shown in tables 3 and 4A.¹

Total domestic production of industrial and specification grades of benzene in 1962 amounted to 546 million gallons--0.2 percent more than the 545 million gallons reported for 1961. These totals include data for benzene produced from tars, light oil, and petroleum. Sales of benzene by coke-oven operators and petroleum operators in 1962 amounted to 405 million gallons, valued at \$99 million, compared with 421 million gallons, valued at \$134 million, in 1961. In 1962 the output of toluene from all sources (including material produced for use in blending in aviation fuel) amounted to 361 million gallons--38.9 percent more than the 260 million gallons reported for 1961. Sales of toluene in 1962 were 207 million gallons, valued at \$40 million, compared with 163 million gallons, valued at \$33 million in 1961. The output of xylene in 1962 (including that produced for blending in motor fuels) was 354 million gallons, compared with 257 million gallons in 1961. More than 97 percent of the xylene produced in 1962 was obtained from petroleum sources.

Production of crude naphthalene in 1962 (including 167 million pounds of petroleum-derived naphthalene) amounted to 591 million pounds, compared with 497 million pounds in 1961. Sales of coal-tar-derived naphthalene² in 1962 were 262 million pounds, valued at \$12 million, compared with 299 million pounds, valued at \$18 million, in 1961. In 1962 the output of creosote oil (100-percent creosote basis), used principally in wood preserving, was 91 million gallons,

TABLE 3.-- Tar and tar crudes: Summary of U.S. production of specified products, average 1950-54, annual 1961 and 1962

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

Chemical	Unit of quantity	Average 1950-54	1961	1962	Increase, or decrease (-)	
					1962 over 1950-54	1962 over 1961
Tar ¹ -----	1,000 gal--	876,070	649,878	669,398	Percent -23.6	Percent 3.0
Benzene: ²						
Tar distillers ³ -----	1,000 gal--	41,389	12,355	14,039	-66.1	13.6
Coke-oven operators-----	1,000 gal--	163,356	120,205	114,227	-30.1	-5.0
Petroleum operators-----	1,000 gal--	46,635	412,819	418,131	796.6	1.3
Total-----	1,000 gal--	251,380	545,379	546,397	117.4	.2
Toluene:						
Tar distillers-----	1,000 gal--	7,497	3,131	2,981	-60.2	-4.8
Coke-oven operators-----	1,000 gal--	32,981	28,407	27,231	-17.4	-4.1
Petroleum operators-----	1,000 gal--	80,725	4 228,330	330,709	309.7	44.8
Total-----	1,000 gal--	121,203	259,868	360,921	197.8	38.9
Xylene:						
Tar distillers-----	1,000 gal--	1,373	547	...	...	...
Coke-oven operators-----	1,000 gal--	9,028	7,564	7,578	-16.1	.2
Petroleum operators-----	1,000 gal--	78,188	4 249,228	4 346,593	343.3	25.1
Total-----	1,000 gal--	88,589	257,339	...	...	...
Naphthalene, crude:						
Solidifying at less than 79° C. ⁵ ----	1,000 lb--	307,537	6 497,165	424,205	} 92.3	18.9
Petroleum naphthalene, all grades-----	1,000 lb--	...	...	167,089		
Total-----	1,000 lb--	307,537	497,165	591,294	92.3	18.9
Creosote oil (Dead oil) ⁷ -----	1,000 gal--	109,946	87,758	82,261	-25.2	-6.3

¹ Includes data for oil-gas, water-gas, and gas-retort tar reported to the American Gas Association and for coal tar reported to the Division of Bituminous Coal, U.S. Bureau of Mines.

² Includes data for motor-grade benzene in 1950-54. Separate statistics on production of motor-grade benzene have not been published since 1954. Production in recent years, if any, has been negligible.

³ Includes data for benzene produced from imported crude light oil.

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

⁵ Figures include production by tar distillers and coke-oven operators and represent combined data for the commercial grades of naphthalene to avoid disclosure of the operations of individual companies. Because of conversion between grades, the figures may include some duplication.

⁶ Includes petroleum-derived naphthalene.

⁷ Includes data for creosote oil produced by tar distillers and coke-oven operators and used only in wood preserving. Data for production of creosote oil in coal-tar solution have been excluded because the figures for 1950-54 are not comparable with the figures for 1961 and 1962. Production figures for 1950-54 are for the distillate sold or consumed as such; and, for 1961 and 1962, the production of the distillate is on a 100-percent-creosote basis.

¹ See also table 4B, pt. III, which lists these products alphabetically and identifies the manufacturers.

² For sales of petroleum-derived naphthalene, see table 5A.

TABLE 4A.--Tar crudes: U.S. production and sales, 1962

[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 4B in pt. III lists separately all products for which data on production or sales were reported and identifies the manufacturers reporting to the U.S. Tariff Commission]

Product	Unit of quantity	Production	Sales		
			Quantity	Value	Unit value ¹
Crude light oil: Coke-oven operators-----	1,000 gal--	211,688	27,018	3,401	\$0.13
Intermediate light oil: Coke-oven operators-----	1,000 gal--	5,180	4,428	570	.13
Light-oil distillates:				1,000 dollars	
Benzene, specification and industrial grades, total--	1,000 gal--	546,397	...	...	...
Tar distillers ² -----	1,000 gal--	14,039	...	...	...
Coke-oven operators-----	1,000 gal--	114,227	116,410	26,872	.23
Petroleum operators-----	1,000 gal--	418,131	288,297	72,614	.25
Toluene, all grades, total ³ -----	1,000 gal--	360,921	206,871	39,682	.19
Tar distillers-----	1,000 gal--	2,981	1,952	461	.24
Coke-oven operators-----	1,000 gal--	27,231	27,374	5,578	.20
Petroleum operators-----	1,000 gal--	330,709	177,545	33,643	.22
Xylene, total ² -----	1,000 gal--	354,171	128,893	28,089	.22
Coke-oven operators-----	1,000 gal--	7,578	7,197	1,831	.25
Petroleum operators-----	1,000 gal--	346,593	121,696	26,258	.22
Solvent naphtha, total-----	1,000 gal--	10,722	9,830	2,137	.22
Tar distillers-----	1,000 gal--	6,438	5,526	1,094	.20
Coke-oven operators-----	1,000 gal--	4,284	4,304	1,043	.24
Other light-oil distillates, total-----	1,000 gal--	8,926	8,081	1,157	.14
Tar distillers-----	1,000 gal--	2,907	3,669	479	.13
Coke-oven operators-----	1,000 gal--	6,019	4,412	678	.15
Pyridine crude bases (dry basis)-----	1,000 gal--	730	...	...	...
Naphthalene, crude (tar distillers and coke-oven operators), total ⁵ -----	1,000 lb--	424,205	262,430	12,082	.05
Solidifying at--					
Less than 74° C-----	1,000 lb--	20,325	19,334	456	.02
74° C. to less than 79° C-----	1,000 lb--	403,880	243,096	11,626	.05
Crude tar-acid oils:					
Tar distillers-----	1,000 gal--	673	552	183	.33
Coke-oven operators-----	1,000 gal--	37,044	35,854	7,628	.21
Creosote oil (Dead oil) (tar distillers and coke-oven operators) (100% creosote basis), total ⁶ -----	1,000 gal--	90,837	86,074	18,729	.22
Distillate as such (100% creosote basis)-----	1,000 gal--	82,261	77,527	16,291	.21
Creosote content of coal-tar solution (100% creosote basis)-----	1,000 gal--	8,576	8,547	2,438	.29
All other distillate products ⁷ -----	1,000 gal--	31,890	18,393	3,047	.17
Tar, road-----	1,000 gal--	62,162	63,069	10,247	.16
Tar (crude and refined) for other uses ⁸ -----	1,000 gal--	22,529	20,446	4,367	.21
Pitch of tar:					
Soft and medium (water softening points less than 110° F., and 110° F. to 160° F. ASTM D61-24)-----	1,000 tons-	1,162	439	15,216	34.66
Hard (water softening point above 160° F.)-----	1,000 tons-	717	537	21,871	40.73
Pitch-of-tar coke and pitch emulsion-----	1,000 tons-	18	...	...	...

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

² Includes data for benzene produced from imported crude light oil.

³ Includes data for material produced for use in blending motor fuels.

⁴ Production and sales by tar distillers cannot be shown. Figures include data for material produced for use in blending motor fuels.

⁵ Statistics represent combined data for the commercial grades of naphthalene. Because of conversion of naphthalene from one grade to another, the figures may include some duplication.

⁶ Statistics include data only for creosote oil sold for, or used in, wood preserving. In 1962, production of creosote in coal-tar solution (100% solution basis) amounted to 13,686 thousand gallons; sales were 12,625 thousand gallons, valued at 2,438 thousand dollars, with a unit value of \$0.19 per gallon.

⁷ Includes data for crude cresylic acid and neutral oils produced by tar distillers, and for crude sodium phenolate produced by coke-oven operators.

⁸ Includes data for tar used for paint, pipe covering, saturating, and other uses.

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

compared with 88 million gallons in 1961. Production of road tar in 1962 was 62 million gallons, compared with 57 million gallons in 1961.

Some of the products included in the statistics in table 4A are derived 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. After duplication has been eliminated insofar as possible, it is estimated that the net value of the output of these products and of tar burned as fuel was \$423 million in 1962, compared with \$440 million in 1961 and \$413 million in 1960.

Crude Products From Petroleum and Natural Gas for Chemical Conversion

Crude products that are derived from petroleum and natural gas 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 processes (see table 5A³). Notwithstanding these duplications, the statistics are sufficiently accurate to indicate trends in the industry and to serve as a basis for general comparison. 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, depending on prevailing economic conditions. In this report, every effort has been made to exclude data on materials that are used as fuels. However, data are included on

TABLE 5A.-- *Crude products from petroleum and natural gas for chemical conversion: U.S. production and sales, 1962*

[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 5B in pt. III lists separately all products from petroleum and natural gas for chemical conversion for which data on production or sales were reported and identifies the manufacturer of each]

Product	Production	Sales		
		Quantity	Value	Unit value ¹
Grand total-----	1,000 pounds 32,960,132	1,000 pounds 20,352,220	1,000 dollars 655,574	Per pound \$0.032
AROMATICS AND NAPHTHENES ²				
Total-----	10,152,316	6,312,213	165,859	.026
Alkyl aromatics, distillates and solvents-----	1,866,388	1,802,525	21,006	.012
Benzene (1° and 2°), total-----	3,085,807	2,127,632	72,614	.034
Benzene, 1°-----	2,370,131	1,921,486	66,253	.034
Benzene, 2°-----	715,676	206,146	6,361	.031
Cresylic acid, crude-----	30,075	12,092	370	.031
Naphthalene, all grades-----	167,089	160,726	9,553	.059
Naphthenic acids, total-----	24,940	14,381	1,402	.097
Acid No. 150-199-----	5,319	1,982	165	.083
All other-----	19,621	12,399	1,237	.100
Toluene, all grades, total-----	2,404,254	1,290,752	33,643	.026
Nitration grade, 1°-----	1,513,607	1,141,819	29,784	.026
Pure commercial grade, 2°-----	226,940	86,244	2,202	.026
All other ³ -----	663,707	62,689	1,657	.026
Xylenes, mixed, total-----	2,498,936	877,428	26,258	.030
3° and 5°-----	1,363,224	572,359	17,142	.030
All other ³ -----	1,135,712	305,069	9,116	.030
All other aromatics and naphthenes ⁴ -----	74,827	26,677	1,013	.038

See footnotes at end of table.

³ See also table 5B, pt. III, which lists these products alphabetically and identifies the manufacturers.

TABLE 5A.--Crude products from petroleum and natural gas for chemical conversion: U.S. production and sales, 1962--Continued

Product	Production	Sales		
		Quantity	Value	Unit value ¹
ALIPHATIC HYDROCARBONS				
Total-----	1,000 pounds 22,807,816	1,000 pounds 14,040,007	1,000 dollars 489,715	Per pound \$0.035
C ₂ hydrocarbons, total-----	7,570,744	...	...	...
Acetylene ² -----	307,222	...	...	...
Ethane-----	980,614	401,077	3,388	.008
Ethylene-----	6,282,908	3,978,634	188,696	.047
C ₃ hydrocarbons, total-----	6,700,114	...	...	...
Propane-----	3,498,269	2,811,828	27,871	.010
Propane-propylene mixture-----	588,889	...	...	...
Propylene-----	2,612,956	1,373,452	30,906	.020
C ₄ hydrocarbons, total-----	6,184,820	3,445,758	185,752	.054
1,3-Butadiene, grade for rubbers (elastomers)-----	2,144,500	1,186,072	134,260	.113
Butadiene and butylene fractions-----	567,984	102,575	2,886	.028
n-Butane-----	1,494,414	734,150	7,878	.010
1-Butene-----	13,888	...	...	...
1-Butene and 2-butene mixture ⁶ -----	971,197	933,652	29,305	.031
Isobutane-----	664,505	239,695	2,953	.012
Isobutylene-----	241,874	150,571	5,600	.037
All other ⁷ -----	86,458	99,043	2,870	.029
C ₅ hydrocarbons ⁸ -----	540,244	58,341	2,268	.039
All other aliphatic hydrocarbons and derivatives, total--	1,811,894	1,970,917	50,834	.026
Diisobutylene (Diisobutene)-----	31,609	26,120	1,734	.066
1-Dodecene (Tetrapropylene)-----	439,441	263,967	8,147	.031
n-Heptane-----	89,827	36,026	1,283	.036
Heptenes, mixed-----	85,992	19,940	927	.046
Hexane-----	177,412	...	...	...
Nonene (Tripropylene)-----	129,631	104,262	2,827	.027
Polybutene ⁹ -----	112,265	100,613	5,374	.053
Hydrocarbon derivatives ¹⁰ -----	12,165	11,584	3,797	.324
All other ¹¹ -----	733,552	1,408,405	26,785	.019

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 aromatic chemicals from all sources are given in table 4A.

³ Includes toluene and xylene used as solvents, as well as that which is blended in aviation and motor gasolines.

⁴ Includes data for 90-percent benzene, sodium cresylate, mixed pyridines, sodium carbolate and phenate, and miscellaneous cyclic hydrocarbons.

⁵ Total production figures on acetylene, principally from calcium carbide, cannot be shown separately, because publication would disclose the operations of individual companies.

⁶ The statistics represent principally the butene content of crude refinery gases from which butadiene is manufactured.

⁷ Includes data for 2-butene, mixed butylenes, and mixed olefins.

⁸ Includes data for isoprene, pentanes, pentenes, and C₅ hydrocarbon mixtures.

⁹ Includes compounds having a molecular weight of 3,000 or less.

¹⁰ Includes data for di-tert-butyl disulfide, miscellaneous mercaptans, and aliphatic acids.

¹¹ Includes data for methane, octanes, decosane, and hydrocarbon mixtures.

toluene and xylene which are not used directly as fuel but in blending aviation and motor-grade gasolines.

The output of crude products derived from petroleum and natural gas as a group amounted to 32,960 million pounds in 1962, or 15.4 percent more than the 28,563 million pounds reported for 1961. The larger output in 1962 is accounted for chiefly by increased production of naphthalene, toluene, xylene, ethylene, and n-butane. Sales of crude chemicals from petroleum in 1962 were 20,352 million pounds, valued at \$656 million, compared with 18,513 million pounds, valued at \$644 million, in 1961.

The output of all aromatic and naphthenic products amounted to 10,152 million pounds in 1962, compared with 8,476 million pounds in 1961. Sales in 1962, which amounted to 6,312 million pounds, valued at \$166 million, were 603 million pounds larger, and valued at \$5 million less, than those in 1961. Naphthalene was produced from petroleum sources in substantially greater quantities in 1962 than in 1961. The output of 1^o and 2^o benzene from petroleum amounted to

3,086 million pounds in 1962--2.0 percent more than the 3,026 million pounds produced in 1961. The output of toluene in 1962 was 2,404 million pounds--45.4 percent more than the 1,653 million pounds produced in 1961. Production of xylene was 2,499 million pounds in 1962, compared with 1,797 million pounds in 1961. These figures include toluene and xylene used in blends in aviation and motor-grade gasolines. The output of naphthenic acids amounted to 25 million pounds in 1962, compared with 28 million pounds in 1961. Production of cresylic acid in 1962--30 million pounds--was 22.7 percent more than in 1961.

Production of all aliphatic hydrocarbons and derivatives from petroleum and natural gas was 22,808 million pounds in 1962, compared with 20,086 million pounds in 1961. Sales of these products were 14,040 million pounds, valued at \$490 million, in 1962, compared with 12,804 million pounds, valued at \$473 million, in 1961. The statistics on production of acetylene (table 5A) include only acetylene produced from natural gas and used as a raw material in the production of other chemicals. Total production of acetylene for chemical synthesis (principally from calcium carbide), as reported to the U.S. Bureau of the Census, cannot be published for 1962 without disclosing the operations of individual companies. In 1961, production of acetylene for chemical synthesis from all sources amounted to 801 million pounds. Production of ethylene was 6,283 million pounds in 1962, or 11.1 percent more than the 5,656 million pounds produced in 1961. The output of propane and propylene, including mixtures, was 6,700 million pounds in 1962--14.9 percent more than the 5,831 million pounds produced in 1961. Production of 1,3-butadiene, one of the principal ingredients of S-type synthetic rubber, was 2,145 million pounds in 1962, compared with 1,911 million pounds in 1961. The output of 1,3-butadiene in 1962--the largest on record--was 12.2 percent more than that in 1961.

**PART II. PRODUCTION AND SALES OF INTERMEDIATES AND
FINISHED SYNTHETIC ORGANIC CHEMICALS, BY GROUPS**

General

On the basis of their principal uses, the synthetic organic chemicals covered in this report are classified either as intermediates or as finished products. Finished products, in turn, are grouped as follows: Dyes, synthetic organic pigments, medicinal chemicals, flavor and perfume materials, plastics and resin materials, rubber-processing chemicals, elastomers (synthetic rubbers), plasticizers, surface-active agents, pesticides and other organic agricultural chemicals, and miscellaneous synthetic organic chemicals. Most of these groups are further subdivided, according to chemical classes, into cyclic and acyclic compounds. As most of the intermediates 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 1962 was 64,170 million pounds, or 14.2 percent more than the output of 56,183 million pounds reported for 1961 (see table 6). Sales of synthetic organic chemicals in 1962 amounted to 34,628 million pounds, valued at \$7,490 million, compared with 31,012 million pounds, valued at \$7,147 million, in 1961. Production of all cyclic products (intermediates and finished products combined) in 1962 totaled 20,690 million pounds, or 10.8 percent more than the 18,679 million pounds produced in 1961. The output of acyclic organic chemicals in 1962 amounted to 43,480 million pounds--15.9 percent more than the 37,504 million pounds reported for 1961.

TABLE 6.--Synthetic organic chemicals: Summary of U.S. production and sales of intermediates and finished products, average 1950-54, annual 1961 and 1962

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

Chemical	Average 1950-54	1961	1962	Increase, or decrease (-)	
				1962 over 1950-54	1962 over 1961
Organic chemicals, cyclic and acyclic, grand total:				<i>Percent</i>	<i>Percent</i>
Production-----	26,708,705	56,183,865	64,169,916	140.3	14.2
Sales-----	14,494,020	31,012,671	34,628,386	139.0	11.7
Sales value-----	3,692,368	7,147,640	7,490,218	102.9	4.8
Cyclic, total:					
Production-----	8,727,657	18,679,248	20,689,673	137.1	10.8
Sales-----	5,552,600	11,183,127	12,253,042	120.7	9.6
Sales value-----	1,914,275	3,304,167	3,472,358	81.4	5.1
Acyclic, total:					
Production-----	17,981,048	37,504,017	43,480,243	141.8	15.9
Sales-----	8,937,420	19,829,544	22,375,344	150.4	12.8
Sales value-----	1,778,393	3,841,473	4,017,860	126.0	4.9
1. Intermediates, Cyclic					
Production-----	4,281,640	10,275,333	11,399,541	166.2	10.9
Sales-----	1,699,407	4,103,457	4,572,116	169.0	11.4
Sales value-----	305,623	620,542	632,249	106.9	1.9
2. Dyes, Cyclic					
Production-----	167,359	166,550	188,904	12.9	13.4
Sales-----	157,224	158,351	178,031	13.2	12.4
Sales value-----	173,198	213,078	227,231	31.2	6.6
3. Synthetic Organic Pigments, Cyclic					
Production-----	43,501	35,062	37,156	-14.6	6.0
Sales-----	38,197	29,472	31,602	-17.3	7.2
Sales value-----	53,144	66,322	74,313	39.8	12.0

TABLE 6.--Synthetic organic chemicals: Summary of U.S. production and sales of intermediates and finished products, average 1950-54, annual 1961 and 1962--Continued

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

Chemical	Average 1950-54	1961	1962	Increase, or decrease (-)	
				1962 over 1950-54	1962 over 1961
<i>4. Medicinal Chemicals</i>					
Cyclic:				<i>Percent</i>	<i>Percent</i>
Production-----	51,761	80,973	87,724	69.5	8.3
Sales-----	41,915	61,322	68,228	62.8	11.3
Sales value-----	398,867	540,592	567,396	42.3	5.0
Acyclic:					
Production-----	12,670	36,576	39,707	213.4	8.6
Sales-----	10,294	31,168	35,359	243.9	13.6
Sales value-----	26,091	36,169	33,383	27.9	-7.7
<i>5. Flavor and Perfume Materials</i>					
Cyclic:					
Production-----	18,689	36,746	42,771	128.9	16.4
Sales-----	15,936	28,581	32,049	101.1	12.1
Sales value-----	22,854	40,148	47,260	106.8	17.7
Acyclic:					
Production-----	12,312	26,815	33,496	172.1	24.9
Sales-----	11,881	26,109	31,399	164.3	20.3
Sales value-----	19,556	27,684	28,702	46.8	3.7
<i>6. Plastics and Resin Materials</i>					
Cyclic:					
Production-----	1,450,115	2,828,509	3,159,236	117.9	11.7
Sales-----	1,194,058	2,348,926	2,685,314	124.9	14.3
Sales value-----	323,776	633,594	665,679	105.6	5.1
Acyclic:					
Production-----	1,055,800	3,881,141	4,782,410	353.0	23.2
Sales-----	968,602	3,640,420	4,430,423	357.4	21.7
Sales value-----	416,943	1,077,285	1,217,962	192.1	13.1
<i>7. Rubber-Processing Chemicals</i>					
Cyclic:					
Production-----	110,695	173,698	195,900	77.0	12.8
Sales-----	82,154	134,888	148,139	80.3	9.8
Sales value-----	43,607	89,188	97,363	123.3	9.2
Acyclic:					
Production-----	20,301	31,396	32,521	60.2	3.6
Sales-----	16,734	20,780	23,985	43.3	15.4
Sales value-----	12,064	15,161	17,055	41.4	12.5
<i>8. Elastomers (Synthetic Rubbers)</i>					
Cyclic:					
Production-----	1,228,997	2,117,859	2,263,105	84.1	6.9
Sales-----	1,243,149	1,911,649	1,907,319	53.4	-1.2
Sales value-----	288,960	461,666	464,581	60.8	.6
Acyclic:					
Production-----	461,334	688,672	871,290	88.9	26.5
Sales-----	451,966	653,189	823,068	82.1	26.0
Sales value-----	177,098	254,934	309,745	74.9	21.5
<i>9. Plasticizers</i>					
Cyclic:					
Production-----	206,042	473,581	570,963	177.1	20.6
Sales-----	159,831	405,835	486,050	204.1	19.8
Sales value-----	54,381	106,119	103,705	90.7	-2.3
Acyclic:					
Production-----	71,021	156,134	209,980	195.7	34.5
Sales-----	56,523	130,233	179,885	218.2	38.1
Sales value-----	23,557	48,495	64,358	173.2	32.7

TABLE 6.--Synthetic organic chemicals: Summary of U.S. production and sales of intermediates and finished products, average 1950-54, annual 1961 and 1962--Continued

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

Chemical	Average 1950-54	1961	1962	Increase, or decrease (-)	
				1962 over 1950-54	1962 over 1961
<i>10. Surface-Active Agents</i>					
Cyclic:				<i>Percent</i>	<i>Percent</i>
Production-----	510,747	1,149,519	1,301,878	154.9	13.3
Sales-----	418,230	1,085,581	1,221,295	192.0	12.5
Sales value-----	76,622	149,301	162,509	112.1	8.8
Acyclic:					
Production-----	300,822	579,786	646,689	115.0	11.5
Sales-----	262,323	497,868	537,099	104.8	7.9
Sales value-----	65,955	142,290	154,618	134.4	8.7
<i>11. Pesticides and Other Organic Agricultural Chemicals</i>					
Cyclic:					
Production-----	336,457	571,683	584,975	73.9	2.3
Sales-----	277,501	484,182	496,583	78.9	2.6
Sales value-----	103,029	237,586	271,266	163.3	14.2
Acyclic:					
Production-----	52,022	128,016	144,743	178.2	13.1
Sales-----	45,721	127,735	137,379	200.5	7.6
Sales value-----	17,794	65,369	75,035	321.7	14.8
<i>12. Miscellaneous</i>					
Cyclic:					
Production-----	321,654	769,135	857,520	166.6	11.5
Sales-----	224,998	430,883	426,316	89.5	1.1
Sales value-----	70,214	146,031	158,366	126.2	8.7
Acyclic:					
Production-----	15,494,766	31,477,481	36,719,437	129.6	14.8
Sales-----	7,113,476	14,701,842	16,176,707	127.4	10.0
Sales value-----	1,619,335	2,175,886	2,117,002	107.7	2.7

The following tabulation shows, by chemical groups, the number of companies that reported production in 1962 of one or more of the chemicals included in the groups listed in table 6:

Chemical group	Number of companies	Chemical group	Number of companies
Intermediates -----	188	Rubber-processing chemicals -----	32
Dyes -----	53	Elastomers (synthetic rubbers) -----	23
Synthetic organic pigments -----	41	Plasticizers -----	63
Medicinal chemicals -----	115	Surface-active agents -----	188
Flavor and perfume materials -----	51	Pesticides and other organic agricultural chemicals -----	80
Plastics and resin materials -----	304	Miscellaneous chemicals -----	321

Cyclic Intermediates

Cyclic intermediates are synthetic organic chemicals derived principally from coal-tar crudes produced by destructive distillation (pyrolysis) of coal and from petroleum and natural gas. Most cyclic intermediates are used in the manufacture of more advanced synthetic organic chemicals and finished products, such as dyes, medicinal chemicals, elastomers (synthetic rubbers), 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 it may be packaged and sold as a moth repellent or as a deodorant. In general, the way in which the greater part of the output of a given chemical is consumed determines its use classification in this report. Table 7A¹ gives statistics on production and sales of cyclic intermediates in 1962. Individual statistics given in the table represent more than 80 percent of the total quantity of intermediates produced. Since many of the intermediates included in the statistics represent successive steps in production, the totals necessarily include considerable duplication. In 1962 about two-fifths 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 1962--11,400 million pounds--was the largest on record, and was 10.9 percent larger than the output of 10,276 million pounds reported for 1961. The larger output of cyclic intermediates in 1962 was attributable to increased demand by a number of industries that consume large quantities of intermediates, particularly those industries that produce dyes, plastics, and elastomers. Sales of cyclic intermediates in 1962 amounted to 4,572 million pounds, valued at \$632 million, compared with 4,103 million pounds, valued at \$621 million, in 1961. In terms of quantity, sales of cyclic intermediates in 1962 were 11.4 percent larger than those in 1961 and, in terms of value, 1.8 percent larger.

TABLE 7A.--Cyclic intermediates: U.S. production and sales, 1962

[Listed below are all cyclic intermediates 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 7B in pt. III lists alphabetically all cyclic intermediates for which data on production or sales were reported and identifies the manufacturer of each. Appendix B lists alphabetically all the important common names of cyclic intermediates usually encountered in the trade and gives the corresponding standard (*Chemical Abstracts*) name under which data are presented in tables 7A and 7B.]

Chemical	Production	Sales		
		Quantity	Value	Unit value ¹
		1,000 pounds	1,000 pounds	1,000 dollars	Per pound
Total-----	11,399,541	4,572,116	632,249	\$0.14
Acetanilide, tech-----	2,413	...	...	...
4'-Aminoacetanilide (Acetyl-p-phenylenediamine)-----	454	170	267	1.57
5-Amino-2-(p-aminoanilino)benzenesulfonic acid-----	26	...	...	...
2-(p-Aminoanilino)-5-nitrobenzenesulfonic acid-----	89	...	...	...
1-Aminoanthraquinone and salt-----	1,140	...	...	...
2-Aminoanthraquinone and salt-----	899	...	...	...
6-Amino-3,4'-azodi(benzenesulfonic acid)-----	40	...	...	...
1-Amino-4-benzamidoanthraquinone-----	22	...	...	...
6-(p-Aminobenzamido)-1-naphthol-3-sulfonic acid-----	29	...	...	...
2-Amino-p-benzenedisulfonic acid [SO ₂ H=1]-----	19	...	...	...
1-Amino-4-bromo-2-anthraquinonesulfonic acid and sodium salt-----	175	...	...	...
2-Amino-1-bromo-3-chloroanthraquinone-----	18	...	...	...
1-Amino-2-bromo-4-hydroxyanthraquinone-----	83	...	...	...
1-Amino-5-chloroanthraquinone-----	64	...	...	...
2-Amino-3-chloroanthraquinone-----	32	...	...	...
2-Amino-4-chlorophenol-----	6	...	...	...
6-Amino-4-chloro-1-phenol-2-sulfonic acid-----	17	...	...	...
2-Amino-5-chloro-p-toluenesulfonic acid [SO ₂ H=1]-----	1,034	...	...	...
6-Amino-4-chloro-m-toluenesulfonic acid [SO ₂ H=1]-----	...	198	255	1.29

See footnotes at end of table.

¹See also table 7B, pt. III, which lists these products alphabetically and identifies the manufacturers; appendix A, which shows imports of intermediates and related products during 1960-62; and appendix C, which is a glossary of synonymous names of cyclic intermediates.

TABLE 7A.--Cyclic intermediates: U.S. production and sales, 1962--Continued

Chemical	Production	Sales		
		Quantity	Value	Unit value ¹
	1,000 pounds	1,000 pounds	1,000 dollars	Per pound
1-Amino-2,4-dibromoanthraquinone-----	165	...	...	...
1-Amino-2-methoxy-4-(p-toluenesulfonamido)anthraquinone-----	13	...	...	...
4'-Amino-N-methylacetanilide-----	20	...	...	...
2-Amino-1,5-naphthalenedisulfonic acid-----	53	...	...	...
3-Amino-1,5-naphthalenedisulfonic acid (Cassella acid)-----	175	...	...	...
6-Amino-1,3-naphthalenedisulfonic acid (Amino I acid)-----	918	...	...	...
7-Amino-1,3-naphthalenedisulfonic acid (Amino G acid)-----	839	...	...	...
2-Amino-1-naphthalenesulfonic acid (Tobias acid)-----	2,922	...	...	...
5-Amino-2-naphthalenesulfonic acid (1,6-Cleve's acid)-----	150	...	...	...
5 (and 8)-Amino-2-naphthalenesulfonic acid (Cleve's acid, mixed)-----	172	...	...	...
6-Amino-2-naphthalenesulfonic acid (Broenner's acid)-----	77	42	64	\$1.52
8-Amino-1-naphthalenesulfonic acid (Peri acid)-----	270	...	...	...
8-Amino-2-naphthalenesulfonic acid (1,7-Cleve's acid)-----	173	...	...	...
8-Amino-2-naphthol-----	88	...	...	...
8-Amino-1-naphthol-3,6-disulfonic acid (H acid), monosodium salt-----	2,961	...	...	...
1-Amino-2-naphthol-4-sulfonic acid (1,2,4-acid)-----	1,913	...	...	...
6-Amino-1-naphthol-3-sulfonic acid (J acid, sodium salt)-----	488	...	...	...
7-Amino-1-naphthol-3-sulfonic acid (Gamma acid), sodium salt-----	516	226	328	1.45
2-Amino-5-nitrobenzenesulfonic acid [SO ₃ H=1]-----	42	...	...	...
2-Amino-4-nitrophenol-----	65	...	...	...
2-Amino-1-phenol-4-sulfonamide-----	50	...	...	...
2-Amino-1-phenol-4-sulfonic acid-----	131	...	...	...
p-(p-Aminophenylazo)benzenesulfonic acid-----	154	...	...	...
1-(m-Aminophenyl)-5-oxo-2-pyrazoline-3-carboxylic acid-----	17	...	...	...
4-Amino-m-toluenesulfonic acid [SO ₃ H=1]-----	218	...	...	...
6-Amino-m-toluenesulfonic acid [SO ₃ H=1]-----	264	...	...	...
16-Aminoviolanthrone-----	20	...	...	...
2-Amino-3,5-xylenesulfonic acid [SO ₃ H=1]-----	89	...	...	...
Aniline (Aniline oil)-----	137,524	55,698	7,395	.13
Anilinomethanesulfonic acid and salt-----	199	...	...	...
8-Anilino-1-naphthalenesulfonic acid (Phenyl peri acid)-----	257	...	...	...
6-Anilino-1-naphthol-3-sulfonic acid (Phenyl J acid)-----	53	...	...	...
o-Anisidine-----	1,060	...	...	...
o-Anisidinomethanesulfonic acid-----	258	...	...	...
Anthranilic acid (o-Aminobenzoic acid)-----	635	...	...	...
Anthraquinone, 100%-----	4,353	...	...	...
2-Anthraquinonecarboxylic acid-----	...	9	30	3.33
1,5-Anthraquinonedisulfonic acid-----	180	...	...	...
1,5 (and 1,8)-Anthraquinonedisulfonic acid and salt-----	360	...	...	...
1,8-Anthraquinonedisulfonic acid, potassium salt-----	341	...	...	...
2,6-Anthraquinonedisulfonic acid and salt-----	234	...	...	...
1-Anthraquinonesulfonic acid and salt-----	2,308	...	...	...
N,N'-(1,5-Anthraquinonylene)dianthranilic acid-----	26	...	...	...
Anthrarufin (1,5-Dihydroxyanthraquinone)-----	243	...	...	...
Barbituric acid-----	70	82	137	1.67
Benzaldehyde, tech-----	2,856	2,898	1,159	.40
1-Benzamido-5-chloroanthraquinone-----	75	...	...	...
7H-Benz[de]anthracen-7-one (Benzanthrone)-----	2,151	...	...	...
Benzidine hydrochloride and sulfate-----	1,327	...	...	...
Benzoic acid, tech-----	11,998	5,853	1,056	.18
o-Benzoylbenzoic acid-----	5,455	...	...	...
[4,4'-Bi-7H-benz[de]anthracen]-7,7'-dione-----	386	...	...	...
1,4-Bis[1-anthraquinonylamino]anthraquinone-----	115	...	...	...
4,4'-Bis[diethylamino]benzophenone (Ethyl ketone base)-----	101	...	...	...
4,4'-Bis[dimethylamino]benzophenone (Michler's ketone)-----	128	...	...	...
3-Bromo-7H-benz[de]anthracen-7-one (Bromobenzanthrone)-----	229	...	...	...
o-Chloroaniline-----	...	210	107	.51
1-Chloroanthraquinone-----	254	...	...	...
2-Chloroanthraquinone-----	610	...	...	...
Chlorobenzene, mono-----	554,310	67,283	4,534	.07
o-(p-Chlorobenzyl)benzoic acid-----	1,134	...	...	...
1-Chloro-2,4-dinitrobenzene (Dinitrochlorobenzene)-----	7,217	1,208	202	.17
6-Chloromethanilic acid-----	30	...	...	...
1-Chloro-2-methylantraquinone-----	466	...	...	...
2-Chloro-4-nitroaniline (o-Chloro-p-nitroaniline)-----	297	...	...	...
4-Chloro-2-nitroaniline (p-Chloro-o-nitroaniline)-----	172	219	183	.84
1-Chloro-5-nitroanthraquinone-----	61	...	...	...

See footnotes at end of table.

TABLE 7A.--Cyclic intermediates: U.S. production and sales 1962--Continued

Chemical	Production	Sales		
		Quantity	Value	Unit value ¹
	1,000 pounds	1,000 pounds	1,000 dollars	Per pound
1-Chloro-2-(and 4)-nitrobenzene (Chloronitrobenzenes, o- and p-)-----	4,852	...	...	...
1-Chloro-3-nitrobenzene (Chloro-m-nitrobenzene)-----	3,890	...	...	...
4-Chloro-3-nitrobenzenesulfonamide-----	130	...	...	...
2-Chloro-5-nitrobenzenesulfonic acid, sodium salt-----	340	...	...	...
4-Chloro-3-nitrobenzenesulfonyl chloride-----	165	...	...	...
o-(4-Chloro-3-nitrobenzoyl)benzoic acid-----	106	...	...	...
4-Chloro-2-nitrotoluene-----	313	...	...	...
4-Chloro-3-nitrotoluene-----	71	...	...	...
2-Chloroquinizarin-----	38	...	...	...
α-Chlorotoluene (Benzyl chloride)-----	34,008	6,021	1,203	\$0.20
5-Chloro-o-toluidine [NH ₂ =1] and hydrochloride-----	366	105	153	1.46
Cresols, total ² -----	64,529	54,028	10,593	.20
o- and p-Cresols-----	21,127	18,628	5,564	.30
(m,p)-Cresol, total-----	28,371	21,841	3,157	.14
From coal tar-----	9,069	6,451	965	.15
From petroleum-----	19,302	15,390	2,192	.14
(o,m,p)-Cresol ³ -----	15,031	13,559	1,872	.14
Cresylic acid, refined, total ² -----	62,901	47,488	4,837	.10
From coal tar-----	29,174	29,832	3,061	.10
From petroleum-----	33,727	17,656	1,776	.10
Cumene-----	385,903	...	...	...
Cyclohexane-----	863,486	704,432	31,708	.04
Cyclohexanol-----	...	4,846	1,492	.31
1,4-Diaminoanthraquinone-----	88	...	...	...
2,6-Diaminoanthraquinone-----	158	...	...	...
2,4-Diaminobenzenesulfonic acid [SO ₃ H=1]-----	82	...	...	...
4,4'-Diamino-2,2'-biphenyldisulfonic acid-----	8	...	...	...
4,4'-Diamino-2,2'-stilbenedisulfonic acid-----	1,868	...	...	...
2,4-Dianilino-1-hydroxyanthraquinone-----	32	...	...	...
4,5'-Dibenzamido-1,1'-iminodanthraquinone-----	148	...	...	...
1,5-Dibenzoylnaphthalene-----	215	...	...	...
3,9-Dibromo-7H-benz[de]anthracen-7-one-----	291	...	...	...
2,5-Dichloroaniline and hydrochloride [NH ₂ =1]-----	226	...	167	.82
1,5-Dichloroanthraquinone-----	104	...	...	...
1,8-Dichloroanthraquinone-----	99	84	143	1.70
o-Dichlorobenzene-----	46,726	35,505	3,494	.10
o-(and p)-Dichlorobenzene-----	14,174	11,832	396	.03
p-Dichlorobenzene-----	74,598	65,690	6,249	.10
3,3'-Dichlorobenzidine base and salts-----	1,702	1,351	1,895	1.40
2,5-Dichloro-4-(3-methyl-5-oxo-2-pyrazolin-1-yl)benzenesulfonic acid	215	...	...	...
2,6-Dichloro-4-nitroaniline-----	81	...	...	...
1,4-Dichloro-2-nitrobenzene (Nitro-p-dichlorobenzene)-----	276	...	...	...
2,5-Dichlorosulfanilic acid [SO ₃ H=1]-----	88	...	...	...
N,N-Diethylaniline-----	1,319	861	483	.56
N ₁ ,N ₁ -Diethyl-4-methoxymetanilamide-----	56	...	...	...
6,7-Dihydroxy-2-naphthalenesulfonic acid-----	...	377	994	2.64
16,17-Dihydroxyviolanthrone (Dihydroxydibenzanthrone)-----	390	...	...	...
m-Dimethoxybenzene-----	269	8	19	2.38
3,3'-Dimethoxybenzidine-----	389	312	616	1.97
1,4-Dimethoxy-2-nitrobenzene-----	40	...	...	...
N,N-Dimethylaniline-----	9,845	6,365	1,583	.25
N,N-Dimethylbenzylamine-----	45	...	...	...
2,2'-Dimethyl-1,1'-bianthraquinone-----	155	...	...	...
N,N-Dimethyl-p-nitrosoaniline-----	89	...	...	...
4,5-Dinitrochrysin-----	133	...	...	...
2,4-Dinitrophenol, tech-----	1,053	...	...	...
4,4'-Dinitro-2,2'-stilbenedisulfonic acid-----	2,885	...	...	...
1,4-Di(p-toluidino)anthraquinone-----	91	...	...	...
Dodecylbenzene ⁴ -----	533,788	472,946	43,176	.09
Dodecylphenol-----	21,538	...	...	...
N-Ethylaniline, refined-----	838	480	269	.56
2-(N-Ethylanilino)ethanol-----	119	...	...	...

See footnotes at end of table.

TABLE 7A.-- Cyclic intermediates: U.S. production and sales, 1962--Continued

Chemical	Production	Sales		
		Quantity	Value	Unit value ¹
	1,000 pounds	1,000 pounds	1,000 dollars	Per pound
α-(N-Ethylanilino)-p-toluenesulfonic acid-----	577	...	...	...
Ethylbenzene-----	2,009,744	83,315	4,087	\$0.05
N-Ethyl-N-phenylbenzylamine-----	790	...	...	...
2-Ethyl-2-phenylmalonic acid, diethyl ester-----	470	...	...	...
3-(N-Ethyl-m-toluidino)propionitrile-----	33	...	...	...
o-Formylbenzenesulfonic acid (o-Sulfobenzaldehyde)-----	191	...	...	...
p-Hydrazinobenzenesulfonic acid-----	101	...	...	...
3-Hydroxy-2-naphthoic acid (B.O.N.)-----	3,631	...	...	...
1,1'-Iminobis[4-aminonaphthoquinone]-----	123	...	...	...
1,1'-Iminobis[4-nitronaphthoquinone]-----	120	...	...	...
1,1'-Iminodianthraquinone (Dianthrime)-----	123	...	...	...
Isocyanic acid derivatives, total-----	101,506	...	...	...
Diphenylmethane 4,4'-diisocyanate (MDI)-----	1,756	1,310	1,708	1.30
Toluene 2,4- and 2,6-diisocyanate (80/20 mixture)-----	93,792	89,381	54,931	.61
All other-----	5,958	...	...	...
4,4'-Isopropylidenediphenol (Bisphenol A)-----	62,059	28,747	7,328	.25
Isoviolanthrone (Isodibenzanthrone)-----	62	...	...	...
Leuco-1,4-diaminonaphthoquinone-----	297	...	...	...
Leuco quinizarin (1,4,9,10-Anthratetrol)-----	81	...	...	...
Leuco tetrahydroxyanthraquinone-----	65	...	...	...
Metanilic acid (m-Aminobenzenesulfonic acid)-----	1,019	...	...	...
1-Methylaminonaphthoquinone-----	98	...	...	...
4,4'-Methylenebis[N,N-dimethylaniline] (Methane base)-----	945	...	...	...
2-Methyl-1-nitronaphthoquinone-----	145	...	...	...
p-(3-Methyl-5-oxo-2-pyrazolin-1-yl)benzenesulfonic acid-----	108	...	...	...
3-Methyl-1-phenyl-2-pyrazolin-5-one (Developer Z)-----	243	252	.99	1.58
α-Methylstyrene-----	10,395	...	...	...
Naphthalene, solidifying at 79° C., or above (refined flake) ⁵ -----	21,633	18,978	2,580	.14
1,4,5,8-Naphthalenetetracarboxylic acid-----	27	...	...	...
Naphthalic anhydride-----	92	...	...	...
Naphthalimide-----	137	...	...	...
Naphthionic acid (4-Amino-1-naphthalenesulfonic acid)-----	435	...	...	...
2-Naphthol-6,8-disulfonic acid (G acid) and disodium salt-----	1,499	80	59	.74
2-Naphthol-6-sulfonic acid (Schaeffer's acid) and sodium salt-----	460	201	164	.82
Naphth[1,2]oxadiazole-5-sulfonic acid-----	1,399	...	...	...
2-(Naphthylthio)acetic acid-----	40	...	...	...
m-Nitroaniline-----	159	...	...	...
p-Nitroaniline-----	8,769	6,922	2,998	.43
4-Nitro-o-anisidine [NH ₂ =1]-----	144	26	62	2.38
5-Nitro-o-anisidine [NH ₂ =1]-----	201	...	...	...
1-Nitro-2-anthraquinonecarboxylic acid-----	31	...	...	...
5-Nitro-1-anthraquinonesulfonic acid-----	60	...	...	...
Nitrobenzene-----	199,587	9,095	815	.09
m-Nitrobenzenesulfonic acid and sodium salt-----	1,603	1,608	675	.42
7 (and 8)-Nitronaphth[1,2]oxadiazole-5-sulfonic acid-----	1,184	...	...	...
p-Nitrophenol-----	13,093	5,618	2,335	.42
5-Nitro-o-toluenesulfonic acid [SO ₃ H=1]-----	4,870	...	...	...
3-Nitro-p-toluenesulfonic acid [SO ₃ H=1]-----	75	...	...	...
5-Nitro-o-toluidine [NH ₂ =1]-----	326	234	309	1.32
2-Nitro-p-toluidine [NH ₂ =1]-----	1,204	581	716	1.23
16-Nitroviolanthrone-----	79	...	...	...
Nonylphenol-----	55,892	12,534	1,694	.14
1-(7-Oxo-7H-benz [de]anthracen-3-ylamino)anthraquinone-----	230	...	...	...
1,1'-(7-Oxo-7H-benz [de]anthracen-3,9-ylenedimino)dianthraquinone-----	378	...	...	...
5-Oxo-1-phenyl-2-pyrazoline-3-carboxylic acid-----	83	...	...	...
5-Oxo-1-(p-sulfophenyl-2-pyrazoline-3-carboxylic acid (Pyrazolone T)-----	52	...	...	...
Phenol, grand total ² -----	825,604	386,989	46,539	.12
Natural, total-----	52,441	50,555	5,573	.11
From coal tar, total-----	39,560	40,120	4,303	.11
82%-84%-----	6,867	6,932	690	.10
Other-----	32,693	33,188	3,613	.11
From petroleum-----	12,881	10,435	1,270	.12
Synthetic, total-----	773,163	336,434	40,966	.12
From cumene-----	233,616	101,303	11,766	.12
Other synthetic-----	539,547	235,131	29,200	.12

See footnotes at end of table.

TABLE 7A.--Cyclic intermediates: U.S. production and sales, 1962--Continued

Chemical	Production	Sales		
		Quantity	Value	Unit value ¹
1-Phenol-4-sulfonic acid-----	1,000 pounds 5,395	1,000 pounds 5,344	1,000 dollars 756	Per pound \$0.14
Phenylacetonitrile (α -Tolunitrile)-----	... 128	... 793	... 480	....61
p-Phenyldiazaniline (p-Aminodiazobenzene) and hydrochloride-----	1,420	...	...	...
m-Phenylenediamine-----	540	...	...	...
o-Phenylenediamine-----	446	51	18	.35
2,2'-(Phenylimino)diethanol (Phenyldiethanolamine)-----	427,419	215,167	30,000	.14
Phthalic anhydride-----	3,201	605	268	.64
2-Picoline (α -Picoline) ² -----	358	...	...	...
Piperidine-----	413	...	...	...
Propiophenone-----	3,183	2,730	2,049	.75
2° Pyridine ⁶ -----	1,429	...	...	...
Quinizarin-----	34,338	3,142	1,170	.37
Salicylic acid, tech-----	1,942,227	1,018,420	102,101	.10
Styrene, all grades-----	...	65,256	20,585	.32
Terephthalic acid, dimethyl ester-----	25	...	...	...
1,4,5,8-Tetrachloroanthraquinone-----	243	...	...	...
o-Tolidine-----	541	...	...	...
o-(p-Toluoxy)benzoic acid-----	363	...	...	...
4-(o-Tolylazo)-o-toluidine-----	208	...	...	...
6,6'-Ureylenebis[1-naphthol-3-sulfonic acid] (J acid urea)-----	582	...	...	...
Violanthrone (Dibenzanthrone)-----	271,577	154,602	9,375	.06
o-Xylene-----	256,487	272,090	31,457	.12
p-Xylene-----	2,224,431	641,015	181,404	.28
All other cyclic intermediates-----				

¹ Unit values calculated from rounded figures.

² Includes data for coke ovens and gas-retort ovens, reported to the Division of Bituminous Coal, U.S. Bureau of Mines, Department of the Interior, and for tar and petroleum refineries and other producers, reported to the U.S. Tariff Commission.

³ Includes some mixed cresols. Figures include (o,m,p)-cresol from coal tar and from petroleum.

⁴ Includes tridecylbenzene.

⁵ Includes naphthalene refined from domestic and imported crude naphthalene.

⁶ Includes data for coke ovens and gas-retort ovens, reported to the Division of Bituminous Coal, U.S. Bureau of Mines, Department of the Interior, and for tar refineries and other producers, reported to the U.S. Tariff Commission.

In 1962, production of two of the largest volume intermediates amounted to approximately 2 billion pounds each. The output of ethylbenzene totaled 2,010 million pounds (3.8 percent more than in 1961) and that of styrene, 1,942 million pounds (10.2 percent more than in 1961). Ethylbenzene is used almost entirely in the manufacture of styrene, which, in turn, is used almost entirely in the manufacture of plastics materials and synthetic rubber. The output of other large-volume intermediates in 1962 compared with the output in 1961 as follows: Cyclohexane, 23.2 percent larger; phenol, 6.0 percent larger; phthalic anhydride, 12.5 percent larger; and monochlorobenzene, 2.2 percent larger. Production of dodecylbenzene (including tridecylbenzene) in 1962 was 9.3 percent larger than that in 1961; that of refined naphthalene was 61.8 percent smaller. Production of orthoxylene amounted to 272 million pounds in 1962, compared with 318 million pounds in 1961--representing a decrease of 14.7 percent.

Dyes

Dyes are synthetic organic chemicals derived from cyclic intermediates. About three-fourths of the dyes consumed in the United States are used by the textile industry to dye natural and synthetic fibers or fabrics; the rest are used chiefly by the industries that produce organic pigments, paper, and leather. Of the several thousand different synthetic dyes that are known, more than two 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 is determined largely by the use for which it is intended.

Table 8A² shows U.S. production and sales of dyes in 1962, total and by individual dyes, using the *Colour Index* classification and terminology which was used for the first time in the Commission's 1958 report.

Total domestic production of dyes in 1962 amounted to 189 million pounds--13.4 percent more than the 167 million pounds produced in 1961, and 21.2 percent more than the 156 million pounds reported for 1960. Sales of dyes in 1962 amounted to 178 million pounds, valued at \$227 million, compared with 158 million pounds, valued at \$213 million, in 1961. In terms of quantity, sales of dyes in 1962 were 12.4 percent larger than in 1961, and in terms of value, 6.6 percent larger.

For many important individual low- and medium-priced dyes for which statistics are given in table 8A, production was larger in 1962 than in 1961. The output of Vat Green 1 was 5.3 million pounds in 1962, or 8.7 percent more than the 4.9 million pounds produced in 1961; that of Direct Black 38 (Direct Black EW) was 6.4 million pounds, or 8.0 percent more than the 6.0 million pounds reported for 1961. Other important dyes whose output was substantially larger in 1962

TABLE 8A.--Coal-tar dyes: U.S. production and sales, 1962

[Listed below are all coal-tar 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 8B in pt. III lists all dyes for which data on production or sales were reported and identifies the manufacturer of each.]

Dye	Production	Sales		
		Quantity	Value	Unit value ¹
	1,000 pounds	1,000 pounds	1,000 dollars	Per pound
Grand total-----	182,904	178,331	227,231	\$1.28
ACID DYES				
Total-----	15,390	15,106	29,431	1.95
Acid yellow dyes, total-----	2,200	1,823	3,956	2.17
Acid Yellow 3-----	...	32	175	5.53
Acid Yellow 11-----	...	23	46	2.00
Acid Yellow 17-----	360	376	770	2.05
Acid Yellow 23-----	269	233	494	2.12
Acid Yellow 36-----	228	204	282	1.38
Acid Yellow 40-----	50	62	167	2.69
Acid Yellow 42-----	26	34	61	1.79
Acid Yellow 44-----	17	19	61	3.21
Acid Yellow 54-----	59	61	127	2.08
Acid Yellow 73-----	...	59	136	2.30
Acid Yellow 99-----	...	70	149	2.13
All other-----	1,191	648	1,543	2.38
Acid orange dyes, total-----	2,476	2,311	3,139	1.36
Acid Orange 1-----	33	28	60	2.14
Acid Orange 7-----	819	757	614	.81
Acid Orange 8-----	299	296	311	1.05
Acid Orange 10-----	288	280	360	1.29
Acid Orange 24-----	549	447	606	1.36
Acid Orange 60-----	20	19	48	2.53
Acid Orange 74-----	...	50	113	2.26
All other-----	468	434	1,027	2.37
Acid red dyes, total-----	2,736	2,194	4,200	1.91
Acid Red 1-----	466	437	488	1.12
Acid Red 4-----	145	126	228	1.81
Acid Red 12-----	...	10	13	1.30

See footnotes at end of table.

² See also table 8B, pt. III, which lists these products and identifies the manufacturers, and appendix A (table 24), which shows imports of dyes during 1960-62.

TABLE 8A. --Coal-tar dyes: U.S. production and sales, 1962--Continued

Dye	Production	Sales		
		Quantity	Value	Unit value ¹
ACID DYES--Continued				
Acid red dyes--Continued	1,000 pounds	1,000 pounds	1,000 dollars	Per pound
Acid Red 14-----	76	73	9 ^a	\$1.36
Acid Red 18-----	152	124	141	1.14
Acid Red 26-----	71	56	64	1.14
Acid Red 37-----	38	3 ^a	92	2.36
Acid Red 73-----	204	18 ^a	415	2.20
Acid Red 85-----	119	114	187	1.64
Acid Red 87-----	452	57	121	2.12
Acid Red 88-----	124	113	168	1.49
Acid Red 89-----	...	27	47	1.74
Acid Red 92-----	10	...	...	...
Acid Red 114-----	85	80	161	2.01
Acid Red 115-----	13	13	1 ^a	1.46
Acid Red 137-----	141	126	405	3.21
Acid Red 151-----	20	22	44	2.00
Acid Red 182-----	26	31	101	3.26
Acid Red 183-----	...	8	41	5.12
Acid Red 186-----	20	9	24	2.67
All other-----	554	540	1,342	2.49
Acid violet dyes, total-----	376	382	782	2.05
Acid Violet 1-----	60	44	68	1.48
Acid Violet 3-----	91	128	262	2.05
Acid Violet 7-----	55	57	82	1.44
Acid Violet 17-----	44	53	120	2.26
Acid Violet 43-----	12	11	37	3.36
All other-----	114	87	213	2.45
Acid blue dyes, total-----	2,772	2,542	7,513	2.96
Acid Blue 7-----	36	45	142	3.16
Acid Blue 9-----	502	462	531	1.15
Acid Blue 25-----	96	79	415	5.25
Acid Blue 40-----	...	10	50	5.00
Acid Blue 41-----	...	78	284	3.64
Acid Blue 43-----	23	24	144	6.00
Acid Blue 45-----	460	439	1,621	3.69
Acid Blue 59-----	...	15	48	3.20
Acid Blue 78-----	29	20	161	8.05
Acid Blue 90-----	...	15	114	7.60
Acid Blue 113-----	226	238	34 ^a	1.53
Acid Blue 158 and 158A-----	271	221	48 ^a	2.20
All other-----	1,129	906	3,167	3.50
Acid green dyes, total-----	609	555	1,443	2.60
Acid Green 3-----	166	144	174	1.21
Acid Green 9-----	...	23	95	4.13
Acid Green 12-----	...	9	32	3.56
Acid Green 16-----	69	40	112	2.80
Acid Green 20-----	27	25	49	1.96
Acid Green 25-----	149	150	545	3.63
Acid Green 50-----	67	57	81	1.42
All other-----	131	107	355	3.32
Acid brown dyes, total-----	535	621	1,401	2.26
Acid Brown 14-----	212	278	377	1.76
All other-----	323	343	1,024	2.99
Acid black dyes, total-----	4,266	78	6,997	1.50
Acid Black 1-----	1,660	1,16	1,928	1.12
Acid Black 24-----	107	119	198	1.66
Acid Black 41-----	...	20	28	1.40
Acid Black 48-----	27	40	213	5.32
All other-----	2,472	2,783	4,630	1.66

See footnotes at end of table.

TABLE 8A. --Coal-tar dyes: U.S. production and sales, 1962--Continued

Dye	Production	Sales		
		Quantity	Value	Unit value ¹
AZOIC DYES AND COMPONENTS				
<i>Azoic Compositions</i>				
Total-----	1,886	1,930	3,571	\$1.85
Azoic Yellow 1-----	51	89	91	1.02
Azoic Yellow 2-----	30	18	33	1.83
Azoic Orange 3-----	71	53	103	1.94
Azoic red dyes, total-----	638	526	860	1.63
Azoic Red 1-----	160	126	232	1.84
Azoic Red 2-----	113	82	146	1.78
Azoic Red 6-----	252	178	292	1.64
Azoic Red 16-----	15	13	26	2.00
All other-----	98	127	164	1.29
Azoic Violet 1-----	31	24	56	2.33
Azoic Blue 3-----	64	60	105	1.75
Azoic brown dyes-----	230	174	525	3.02
Azoic black dyes-----	563	762	1,314	1.72
All other azoic compositions-----	208	224	484	2.16
<i>Azoic Diazo Components, Bases (Fast Color Bases)</i>				
Total-----	1,205	1,019	1,587	1.56
Azoic Diazo Component 3, base-----	...	23	23	1.00
Azoic Diazo Component 12, base-----	188	157	212	1.35
Azoic Diazo Component 13, base-----	340	333	390	1.17
Azoic Diazo Component 32, base-----	180	203	322	1.59
Azoic Diazo Component 48, base-----	63	54	107	1.98
All other azoic diazo components, bases-----	434	249	533	2.14
<i>Azoic Diazo Components, Salts (Fast Color Salts)</i>				
Total-----	1,981	1,918	2,101	1.10
Azoic Diazo Component 1, salt-----	11	11	13	1.18
Azoic Diazo Component 3, salt-----	299	302	226	.75
Azoic Diazo Component 5, salt-----	74	74	94	1.27
Azoic Diazo Component 6, salt-----	5	13	14	1.08
Azoic Diazo Component 8, salt-----	35	34	32	.94
Azoic Diazo Component 9, salt-----	190	184	115	.62
Azoic Diazo Component 11, salt-----	33	34	62	1.82
Azoic Diazo Component 12, salt-----	186	155	172	1.11
Azoic Diazo Component 13, salt-----	350	362	256	.71
Azoic Diazo Component 20, salt-----	29	25	80	3.20
Azoic Diazo Component 28, salt-----	147	144	171	1.19
Azoic Diazo Component 36, salt-----	127	118	210	1.78
Azoic Diazo Component 42, salt-----	6	6	16	2.67
Azoic Diazo Component 48, salt-----	89	62	75	1.21
Azoic Diazo Component 49, salt-----	34	36	113	3.14
All other azoic diazo components, salts-----	366	358	452	1.26
<i>Azoic Coupling Components (Naphthal AS and Derivatives)</i>				
Total-----	2,482	2,197	4,469	2.03
Azoic Coupling Component 2-----	253	220	234	1.06
Azoic Coupling Component 3-----	11	8	28	3.50
Azoic Coupling Component 4-----	5	7	14	2.00

See footnotes at end of table.

TABLE 8A. --Coal-tar dyes: U.S. production and sales, 1962--Continued

Dye	Production	Sales		
		Quantity	Value	Unit value ¹
AZOIC DYES AND COMPONENTS--Continued				
<i>Azoic Coupling Components</i>				
<i>(Naphthol AS and Derivatives)--Continued</i>				
	1,000 pounds	1,000 pounds	1,000 dollars	Per pound
Azoic Coupling Component 5-----	54	41	113	\$2.76
Azoic Coupling Component 7-----	513	525	1,047	1.99
Azoic Coupling Component 14-----	135	120	255	2.12
Azoic Coupling Component 17-----	186	120	228	1.90
Azoic Coupling Component 18-----	718	657	792	1.21
Azoic Coupling Component 20-----	101	91	186	2.04
Azoic Coupling Component 21-----	54	41	90	2.20
Azoic Coupling Component 29-----	...	6	14	2.33
Azoic Coupling Component 34-----	45	50	126	2.52
Azoic Coupling Component 35-----	32	30	151	5.03
Azoic Coupling Component 43-----	15	11	30	2.73
All other azoic coupling components-----	360	270	1,161	4.30
BASIC DYES				
Total-----	7,610	6,977	16,246	2.33
Basic Yellow 2-----	617	611	1,341	2.19
Basic orange dyes, total-----	925	835	1,421	1.70
Basic Orange 1-----	228	173	198	1.14
Basic Orange 2-----	501	473	546	1.15
Basic Orange 21-----	135	139	499	3.59
All other-----	61	50	178	3.56
Basic Red 2-----	190	168	485	2.89
Basic Violet 1-----	1,174	862	1,109	1.29
Basic Violet 3-----	...	1,063	2,017	1.90
Basic Violet 4-----	50	34	103	3.03
Basic Violet 10-----	260	258	901	3.49
Basic blue dyes, total-----	840	785	2,531	3.22
Basic Blue 1-----	22	15	56	3.73
Basic Blue 7-----	147	110	387	3.52
Basic Blue 9-----	340	289	669	2.31
Basic Blue 26-----	66	69	213	3.09
All other-----	265	302	1,206	3.99
Basic Green 1-----	74	64	226	3.53
Basic Green 4-----	423	447	1,206	2.70
Basic Brown 1-----	218	236	313	1.33
Basic Brown 4-----	494	562	725	1.29
All other basic dyes-----	2,345	1,052	3,868	3.68
DIRECT DYES				
Total-----	27,425	26,812	40,315	1.50
Direct yellow dyes, total-----	4,626	4,722	8,496	1.80
Direct Yellow 4-----	385	390	801	2.05
Direct Yellow 5-----	96	85	383	4.51
Direct Yellow 6-----	1,186	1,135	1,670	1.47
Direct Yellow 11-----	678	723	897	1.24
Direct Yellow 12-----	330	328	799	2.44
Direct Yellow 28-----	184	217	422	1.94
Direct Yellow 29-----	76	76	113	1.49
Direct Yellow 44-----	300	294	519	1.77
Direct Yellow 50-----	253	213	402	1.89
Direct Yellow 59-----	39	...	...	...
Direct Yellow 81-----	...	18	37	2.06

See footnotes at end of table.

TABLE 8A. --Coal-tar dyes: U.S. production and sales, 1962--Continued

Dye	Production	Sales		
		Quantity	Value	Unit value ¹
DIRECT DYES--Continued				
Direct yellow dyes--Continued	1,000 pounds	1,000 pounds	1,000 dollars	Per pound
Direct Yellow 84-----	...	115	198	\$1.72
All other-----	1,099	1,128	2,255	2.00
Direct orange dyes, total-----	1,630	1,568	3,754	2.39
Direct Orange 1-----	19	15	40	2.67
Direct Orange 8-----	79	108	156	1.44
Direct Orange 15-----	134	154	184	1.19
Direct Orange 26-----	58	47	97	2.06
Direct Orange 34-----	98	83	191	2.30
Direct Orange 37-----	57	53	133	2.51
Direct Orange 72-----	206	180	460	2.56
Direct Orange 73-----	111	126	389	3.09
Direct Orange 81-----	89	65	188	2.89
Direct Orange 102-----	174	170	466	2.74
All other-----	605	567	1,450	2.56
Direct red dyes, total-----	2,916	2,813	6,110	2.17
Direct Red 1-----	130	145	236	1.63
Direct Red 2-----	403	390	638	1.64
Direct Red 4-----	33	31	91	2.94
Direct Red 10-----	23	25	35	1.40
Direct Red 13-----	75	52	82	1.58
Direct Red 16-----	43	42	84	2.00
Direct Red 23-----	304	278	609	2.19
Direct Red 24-----	158	178	347	1.95
Direct Red 26-----	55	70	181	2.59
Direct Red 28-----	163	135	184	1.36
Direct Red 31-----	14	10	36	3.60
Direct Red 37-----	59	54	138	2.56
Direct Red 39-----	22	30	85	2.83
Direct Red 75-----	19	20	70	3.50
Direct Red 79-----	...	222	528	2.38
Direct Red 80-----	336	322	698	2.17
Direct Red 81-----	200	206	542	2.63
Direct Red 83-----	85	74	124	1.68
Direct Red 122-----	25	27	119	4.41
Direct Red 123-----	...	10	26	2.60
Direct Red 149-----	13	13	38	2.92
Direct Red 152-----	...	4	17	4.25
All other-----	756	475	1,202	2.53
Direct violet dyes, total-----	153	157	439	2.80
Direct Violet 1-----	...	11	26	2.36
Direct Violet 9-----	109	90	214	2.38
Direct Violet 48-----	...	20	77	3.85
All other-----	44	36	122	3.39
Direct blue dyes, total-----	5,425	5,324	7,499	1.41
Direct Blue 1-----	261	217	491	2.26
Direct Blue 2-----	1,979	1,996	1,746	.87
Direct Blue 6-----	387	386	229	.59
Direct Blue 8-----	...	36	68	1.89
Direct Blue 14-----	...	89	84	.94
Direct Blue 15-----	...	33	46	1.39
Direct Blue 22-----	33	21	40	1.90
Direct Blue 24-----	...	25	38	1.52
Direct Blue 25-----	48	43	114	2.65
Direct Blue 26-----	...	11	20	1.82
Direct Blue 67-----	28	25	103	4.12
Direct Blue 71-----	49	54	144	2.67
Direct Blue 76-----	133	104	142	1.37
Direct Blue 78-----	96	86	252	2.93

See footnotes at end of table.

TABLE 8A.--Coal-tar dyes: U.S. production and sales, 1962--Continued

Dye	Production	Sales		
		Quantity	Value	Unit value ¹
DIRECT DYES--Continued				
Direct blue dyes--Continued	1,000 pounds	1,000 pounds	1,000 dollars	Per pound
Direct Blue 80-----	230	247	382	\$1.55
Direct Blue 86-----	826	741	1,237	1.67
Direct Blue 98-----	145	141	251	1.78
Direct Blue 120 and 120A-----	95	118	247	2.09
Direct Blue 126-----	116	121	293	2.42
All other-----	999	830	1,572	1.89
Direct green dyes, total-----	905	833	1,724	2.07
Direct Green 1-----	211	118	150	1.27
Direct Green 6-----	485	425	514	1.21
Direct Green 8-----	...	16	18	1.12
Direct Green 38-----	...	22	77	3.50
All other-----	209	252	965	3.83
Direct brown dyes, total-----	2,054	1,913	2,676	1.40
Direct Brown 1 and 1A-----	421	341	336	.99
Direct Brown 2-----	207	198	302	1.53
Direct Brown 6-----	51	77	90	1.17
Direct Brown 31-----	100	104	286	2.75
Direct Brown 74-----	67	55	85	1.55
Direct Brown 95-----	719	674	498	.74
Direct Brown 111-----	...	89	313	3.52
Direct Brown 154-----	143	151	226	1.50
All other-----	346	224	540	2.41
Direct black dyes, total-----	9,716	9,482	9,617	1.01
Direct Black 4-----	291	333	342	1.03
Direct Black 9-----	25	61	80	1.31
Direct Black 17-----	31	28	52	1.86
Direct Black 19-----	186	182	279	1.53
Direct Black 22-----	565	514	419	.82
Direct Black 38-----	6,439	6,336	5,599	.88
Direct Black 51-----	99	94	252	2.68
Direct Black 80-----	1,242	1,162	1,281	1.10
All other-----	838	772	1,313	1.70
DISPERSE DYES				
Total-----	10,334	8,691	20,310	2.34
Disperse yellow dyes, total-----	1,372	1,314	2,778	2.11
Disperse Yellow 3-----	537	470	875	1.86
Disperse Yellow 5-----	40	24	80	3.33
All other-----	795	820	1,823	2.22
Disperse orange dyes, total-----	848	623	1,056	1.70
Disperse Orange 3-----	99	86	138	1.60
Disperse Orange 5-----	59	67	149	2.22
Disperse Orange 17-----	302	199	209	1.05
All other-----	388	271	560	2.07
Disperse red dyes, total-----	1,318	1,176	3,345	2.84
Disperse Red 1-----	205	188	290	1.54
Disperse Red 5-----	58	52	62	1.19
Disperse Red 11-----	37	15	92	6.13
Disperse Red 13-----	17	22	31	1.41
Disperse Red 15-----	77	68	197	2.90
Disperse Red 17-----	155	114	127	1.11
All other-----	769	717	2,546	3.55
Disperse Violet 1-----	43	28	103	3.68
Disperse Violet 4-----	59	45	149	3.31

See footnotes at end of table.

TABLE 8A.--Coal-tar dyes: U.S. production and sales, 1962--Continued

Dye	Production	Sales		
		Quantity	Value	Unit value ¹
DISPERSE DYES--Continued				
	1,000 pounds	1,000 pounds	1,000 dollars	Per pound
Disperse blue dyes, total-----	4,333	3,474	10,049	\$2.89
Disperse Blue 1-----	...	395	1,379	3.49
Disperse Blue 3-----	1,299	964	1,582	1.64
Disperse Blue 7-----	207	207	1,211	5.85
All other-----	2,827	1,908	5,877	3.08
Disperse Black 1-----	443	373	468	1.25
Disperse Black 9-----	1,265	1,107	1,128	1.02
All other disperse dyes-----	653	551	1,234	2.24
FIBER-REACTIVE DYES				
Fiber-reactive dyes-----	546	597	2,746	4.60
FLUORESCENT BRIGHTENING AGENTS				
Total-----	11,846	10,786	21,028	1.95
Fluorescent Brightening Agent 68-----	100	...	...	...
All other fluorescent brightening agents-----	11,746	10,786	21,028	1.95
FOOD, DRUG, AND COSMETIC COLORS				
Total-----	2,694	2,354	9,459	4.02
<i>Food, Drug, and Cosmetic Dyes</i>				
Total-----	2,349	2,020	7,955	3.94
FD&C Blue No. 1-----	58	50	600	12.00
FD&C Red No. 2-----	723	624	1,782	2.86
FD&C Red No. 3-----	39	38	673	17.71
FD&C Red No. 4-----	288	260	1,296	4.98
FD&C Yellow No. 5-----	638	497	1,611	3.24
FD&C Yellow No. 6-----	544	483	1,433	2.97
All other food, drug, and cosmetic dyes-----	59	68	560	8.24
<i>Drug and Cosmetic and External Drug and Cosmetic Dyes</i>				
Total-----	345	334	1,504	4.50
D&C Orange No. 4-----	4	...	...	...
D&C Orange No. 5-----	...	20	81	4.05
D&C Red No. 7-----	14	...	...	...
D&C Red No. 19-----	13	9	56	6.22
D&C Red No. 21-----	49	47	178	3.79
D&C Red No. 27-----	...	12	39	3.25
D&C Red No. 36-----	8	7	26	3.71
All other drug and cosmetic and external drug and cosmetic dyes-----	257	239	1,124	4.70
MORDANT DYES				
Total-----	5,519	5,267	6,518	1.24
Mordant yellow dyes, total-----	216	219	350	1.60
Mordant Yellow 8-----	9	11	15	1.36
Mordant Yellow 16-----	...	11	16	1.45
All other-----	207	197	319	1.62
Mordant orange dyes, total-----	61	87	148	1.70
Mordant Orange 1-----	12	31	46	1.48
Mordant Orange 6-----	...	32	33	1.03
All other-----	49	24	69	2.88

See footnotes at end of table.

TABLE 8A. --Coal-tar dyes: U.S. production and sales, 1962--Continued

Dye	Production	Sales		
		Quantity	Value	Unit value ¹
MORDANT DYES--Continued				
Mordant red dyes, total-----	156	147	389	\$2.65
Mordant Red 3-----	...	21	65	3.10
Mordant Red 7-----	73	62	124	2.00
Mordant Red 9-----	17	...	...	...
All other-----	66	64	200	3.12
Mordant blue dyes, total-----	74	96	260	2.71
Mordant Blue 1-----	13	28	82	2.93
Mordant Blue 9-----	25	30	61	2.03
All other-----	36	38	117	3.08
Mordant brown dyes, total-----	283	306	717	2.34
Mordant Brown 1-----	49	66	145	2.20
Mordant Brown 19-----	...	9	27	3.00
Mordant Brown 33-----	40	...	...	...
Mordant Brown 40-----	26	24	65	2.71
All other-----	168	207	480	2.32
Mordant black dyes, total-----	4,713	4,393	4,605	1.05
Mordant Black 1-----	...	19	27	1.42
Mordant Black 11-----	3,169	3,054	2,805	.92
Mordant Black 13-----	120	82	275	3.35
Mordant Black 17-----	1,122	922	893	.97
Mordant Black 38-----	21	17	55	3.24
All other-----	281	299	550	1.84
All other mordant dyes-----	16	19	49	2.58
SOLVENT DYES				
Total-----	7,648	6,508	10,557	1.62
Solvent yellow dyes, total-----	1,086	821	1,723	2.10
Solvent Yellow 2-----	41	28	40	1.43
Solvent Yellow 3-----	...	39	65	1.67
Solvent Yellow 14-----	802	554	650	1.17
Solvent Yellow 47-----	36	35	167	4.77
All other-----	207	165	801	4.85
Solvent orange dyes, total-----	262	238	576	2.42
Solvent Orange 3-----	16	17	37	2.18
Solvent Orange 7-----	116	103	165	1.60
All other-----	130	118	374	3.17
Solvent red dyes, total-----	953	809	1,859	2.30
Solvent Red 24-----	...	343	623	1.82
Solvent Red 26-----	278	267	459	1.72
Solvent Red 49-----	36	30	185	6.17
All other-----	639	169	592	3.50
Solvent Violet 8-----	303	287	432	1.51
Solvent Blue 4-----	68	58	229	3.95
Solvent Blue 38-----	204	170	829	4.88
Solvent green dyes, total-----	110	89	423	4.75
Solvent Green 3-----	67	49	271	5.53
All other-----	43	40	152	3.80
All other solvent dyes-----	4,662	4,036	4,486	1.11

See footnotes at end of table.

TABLE 8A. --Coal-tar dyes: U.S. production and sales, 1962--Continued

Dye	Production	Sales		
		Quantity	Value	Unit value ¹
SULFUR DYES				
Total-----	1,000 pounds 38,927	1,000 pounds 38,859	1,000 dollars 9,882	Per pound \$.025
Sulfur Red 1-----	...	14	13	.93
Sulfur Blue 7-----	143	142	150	1.06
Sulfur Green 2-----	18	19	35	1.84
Sulfur Brown 10-----	108	109	54	.50
Sulfur Black 1-----	1,390	1,387	511	.37
All other sulfur dyes-----	37,268	37,188	9,119	.25
VAT DYES				
Total-----	52,675	48,848	48,498	.99
Vat yellow dyes, total-----	3,716	3,133	4,274	1.36
Vat Yellow 2, 8-1/2%-----	2,322	1,915	1,835	.96
Vat Yellow 4, 12-1/2%-----	815	644	738	1.15
Solubilized Vat Yellow 4, 37-1/2%-----	...	8	78	9.75
All other-----	579	560	1,623	2.87
Vat orange dyes, total-----	2,498	1,925	4,598	2.39
Vat Orange 1, 20%-----	420	356	1,079	3.03
Solubilized Vat Orange 1, 26%-----	17	13	93	7.15
Vat Orange 2, 12%-----	428	270	632	2.34
Vat Orange 3, 13-1/2%-----	252	95	240	2.53
Vat Orange 4, 6%-----	41	61	218	3.57
Vat Orange 5, 10%-----	228	203	292	1.44
Solubilized Vat Orange 5, 30%-----	...	3	30	10.00
Vat Orange 9, 12%-----	159	87	219	2.52
Vat Orange 15, 10%-----	471	437	938	2.15
All other-----	482	400	857	2.14
Vat red dyes, total-----	1,208	909	1,938	2.13
Vat Red 1, 13%-----	451	394	696	1.77
Solubilized Vat Red 1, 37%-----	5	6	39	6.50
Vat Red 10, 18%-----	114	83	371	4.47
Vat Red 13, 11%-----	87	52	144	2.77
Vat Red 15, 10%-----	223	132	167	1.27
Vat Red 32, 20%-----	45	24	79	3.29
All other-----	283	218	442	2.03
Vat violet dyes, total-----	962	846	1,857	2.20
Vat Violet 1, 11%-----	380	264	559	2.12
Vat Violet 2, 20%-----	...	43	123	2.86
Vat Violet 9, 12%-----	117	73	266	3.64
Vat Violet 13, 6-1/4%-----	368	376	678	1.80
Vat Violet 17, 12-1/2%-----	...	28	85	3.04
All other-----	97	62	146	2.35
Vat blue dyes, total-----	18,411	17,846	11,810	.66
Vat Blue 4, 10%-----	...	87	161	1.85
Vat Blue 5, 16%-----	328	296	272	.92
Solubilized Vat Blue 5, 38%-----	41	29	90	3.10
Vat Blue 6, 8-1/3%-----	2,618	2,638	2,921	1.11
Solubilized Vat Blue 6, 17-1/2%-----	57	48	240	5.00
Vat Blue 14, 8-1/3%-----	...	363	426	1.17
Vat Blue 18, 13%-----	968	877	1,542	1.76
Vat Blue 20, 14%-----	1,171	977	1,691	1.73
All other-----	13,228	12,531	4,467	.36
Vat green dyes, total-----	11,663	10,362	7,696	.74
Vat Green 1, 6%-----	5,325	4,290	2,859	.67
Vat Green 3, 10%-----	3,141	2,802	2,019	.72
Solubilized Vat Green 3, 26%-----	8	8	58	7.25

See footnotes at end of table.

TABLE 8A.--Coal-tar dyes: U.S. production and sales, 1962--Continued

Dye	Production	Sales		
		Quantity	Value	Unit value ¹
VAT DYES--Continued				
Vat green dyes--Continued				
Vat Green 8, 8-1/2%-----	1,706	1,787	1,187	\$0.66
Vat Green 9, 12-1/2%-----	1,335	1,256	1,169	.93
All other-----	148	219	404	1.84
Vat brown dyes, total-----				
Vat Brown 1, 11%-----	6,088	5,957	8,165	1.37
Vat Brown 3, 11%-----	1,115	1,088	2,050	1.88
Vat Brown 5, 13%-----	1,142	1,012	1,707	1.69
All other-----	246	255	359	1.41
All other-----	3,585	3,602	4,049	1.12
Vat black dyes, total-----				
Vat Black 9, 16%-----	8,129	7,870	8,160	1.04
Vat Black 25, 12-1/2%-----	267	242	693	2.86
Vat Black 27, 12-1/2%-----	3,877	3,608	2,693	.75
All other-----	796	778	1,035	1.33
All other-----	3,189	3,242	3,739	1.15
All other dyes ² -----	156	162	513	3.17

¹ Calculated from rounded figures.

² Includes oxidation bases, ingrain dyes, and miscellaneous dyes.

than in 1961 were Vat Blue 20 (134.7 percent); Vat Green 9 (64.4 percent); Mordant Black 11 (61.4 percent); Direct Black 80 (48.4 percent); Direct Yellow 6 (48.1 percent); Disperse Blue 3 (47.4 percent); and Direct Blue 2 (39.1 percent).

On the other hand, the output of a few important dyes was smaller in 1962 than in 1961. Production of Vat Green 8 in 1962 was 1.7 million pounds--21.3 percent less than the 2.2 million pounds reported for 1961. The output of Acid Black 1 was 15.3 percent smaller in 1962 than in 1961; and that of Vat Brown 3 was 9.7 percent smaller.

Table 9 summarizes production and sales of dyes in 1962, by class of application. Four classes of dyes accounted for 71.5 percent of the total output of dyes in 1962. Vat dyes accounted for 27.9 percent of the total; sulfur dyes, for 20.6 percent; direct dyes, for 14.5 percent; and acid dyes, for 8.5 percent. In 1962 the output of the four major classes was larger than in 1961. Production of direct dyes was 20.2 percent larger; sulfur dyes, 14.3 percent larger; vat dyes, 9.3 percent larger; and acid dyes, 5.5 percent larger than in 1961.

The output of three classes of dyes increased substantially in 1962. The production of mordant dyes was 5.5 million pounds in 1962, or 42.8 percent more than the output of 3.9 million pounds in 1961. Production of disperse dyes was 10.3 million pounds in 1962, or 29.7 percent more than the 8.0 million pounds in 1961. The output of fluorescent brightening agents was 11.8 million pounds in 1962, or 21.4 percent more than the 9.8 million pounds in 1961. Of the remaining classes, the output of solvent dyes was 18.1 percent larger in 1962 than in 1961; azoic dyes and components, 7.3 percent larger; food, drug, and cosmetic dyes, 6.7 percent larger; and basic dyes, 2.9 percent larger. The output of fiber-reactive dyes, on the other hand, was 54.4 percent smaller in 1962 than in 1961.

Table 10 shows production and sales of dyes in 1962 by chemical class. In 1962 four chemical classes of dyes accounted for more than 75 percent of all the dyes produced: Azo dyes accounted for 27.5 percent of the total; anthraquinone dyes, for 22.5 percent; sulfur dyes (not including vat sulfur dyes), for 20.6 percent; and stilbene dyes, for 7.4 percent. The output of each of these four classes was larger in 1962 than in 1961: that of stilbene dyes was 43.2 percent larger; that of azo dyes, 15.5 percent larger; that of sulfur dyes, 14.3 percent larger; and that of anthraquinone dyes, 9.1 percent larger. Of the remaining chemical classes, production of 10 classes was larger in 1962 than in 1961 and production of 2 classes--oxazine and thiazine, was smaller in 1962 than in 1961. In terms of value of sales, the most important classes of dyes in 1962 were the azo dyes (\$81.5 million), the anthraquinone dyes (\$61.5 million), the stilbene dyes (\$23.4 million), and the azoic dyes (\$11.7 million).

TABLE 9. --Coal-tar dyes: U.S. production and sales, by class of application, 1962

Class of application	Production	Sales		
		Quantity	Value	Unit value ¹
	1,000 pounds	1,000 pounds	1,000 dollars	Per pound
Total-----	188,904	178,031	227,231	\$1.28
Acid-----	15,970	15,106	29,431	1.95
Azoic dyes and components:				
Azoic compositions-----	1,386	1,930	3,571	1.85
Azoic diazo components, bases (Fast color bases)-----	1,205	1,019	1,987	1.56
Azoic diazo components, salts (Fast color salts)-----	1,981	1,918	2,101	1.10
Azoic coupling components (Naphthol AS and derivatives)-----	2,482	2,197	4,469	2.03
Basic-----	7,610	6,977	16,246	2.33
Direct-----	27,425	26,812	40,315	1.50
Disperse-----	10,334	8,691	20,310	2.34
Fiber-reactive-----	540	597	2,746	4.60
Fluorescent brightening agents-----	11,846	10,786	21,028	1.95
Food, drug, and cosmetic colors-----	2,694	2,354	9,459	4.02
Mordant-----	5,519	5,267	6,518	1.24
Solvent-----	7,648	6,508	10,557	1.62
Sulfur-----	38,927	38,859	9,882	.25
Vat-----	52,675	48,848	48,498	.99
All other ² -----	156	102	513	3.17

¹ Calculated from rounded figures.

² Includes oxidation bases, ingrain dyes, and miscellaneous dyes. Statistics for these groups of dyes may not be published separately because publication would disclose information received in confidence.

TABLE 10. --Coal-tar dyes: U.S. production and sales, by chemical class, 1962

Chemical class	Production	Sales		
		Quantity	Value	Unit value ¹
	1,000 pounds	1,000 pounds	1,000 dollars	Per pound
Total-----	188,904	178,031	227,231	\$1.28
Acridine-----	34	29	80	2.76
Anthraquinone-----	42,472	37,157	61,476	1.65
Azo, total-----	51,872	49,586	81,463	1.64
Monoazo-----	16,654	15,372	27,730	1.80
Disazo-----	15,196	15,037	25,244	1.68
Trisazo-----	11,289	10,900	12,267	1.13
Polyazo-----	1,556	1,514	2,663	1.76
Not specified-----	7,177	6,763	13,559	2.00
Azoic-----	7,554	7,064	11,728	1.66
Indigoid-----	7,190	6,728	3,897	.58
Ketone imine-----	652	626	1,384	2.21
Nitro-----	486	549	989	1.80
Oxazine-----	60	79	285	3.61
Phthalocyanine-----	1,203	1,105	2,894	2.62
Quinoline-----	322	292	1,224	4.19
Stilbene-----	13,982	12,975	23,412	1.80
Sulfur ² -----	38,927	38,859	9,882	.25
Thiazine-----	340	290	672	2.32
Thiazole-----	374	494	913	1.85
Triarylmethane-----	5,954	4,629	10,670	2.30
Xanthene-----	1,420	676	3,177	4.70
All other ³ -----	16,062	16,893	13,085	.77

¹ Calculated from rounded figures.

² Does not include vat sulfur dyes.

³ Includes aminoketone, azine, coumarin, hydroxyketone, methine, nitroso, vat sulfur, and miscellaneous dyes. Statistics for these groups of dyes may not be published separately because publication would disclose information received in confidence.

Synthetic Organic Pigments

As the terms are used in this report, synthetic organic pigments are toners and lakes. They are used in paints and related products, in printing inks, and in plastics and resin materials.

Statistics on production and sales of all synthetic organic pigments in 1962 are given in table 11A.³ Statistics on sales of a few selected pigments by commercial forms (dry full-strength form, dry extended form, dry dispersions, aqueous dispersions, and flushed colors) are given in table 12. Prior to 1961, statistics for toners included the quantities and values of extenders and diluents. Beginning in 1961, data were collected for both the full-strength and extended toners on a full-strength-toner-content basis. Individual toners and lakes are identified in this report by the names used in the second edition of the *Colour Index* rather than by their common names.⁴

Total production of synthetic organic pigments in 1962 was 37.2 million pounds--6.0 percent more than the 35.1 million pounds produced in 1961 and 2.8 percent more than the estimated 36.2 million pounds produced in 1960. Total sales of synthetic organic pigments in 1962 amounted to 31.6 million pounds, valued at \$74.3 million, compared with 29.5 million pounds, valued at \$66.3 million, in 1961 and an estimated 28.8 million pounds, valued at \$64.3 million, in 1960. In terms of quantity, sales of synthetic organic pigments in 1962 were 7.2 percent larger than in 1961 and 9.7 percent larger than in 1960; in terms of value, sales in 1962 were 12.0 percent larger than in 1961 and 15.6 percent larger than in 1960.

Production of toners in 1962 amounted to 33.4 million pounds--6.6 percent more than the 31.4 million pounds reported for 1961. Sales in 1962 were 28.4 million pounds, valued at \$70.7 million, compared with 26.4 million pounds, valued at \$63.2 million, in 1961. Sales in 1962 were thus 7.7 percent larger than in 1961, in terms of quantity, and 11.9 percent larger, in terms of value. Production of red toners in 1962 amounted to 16.2 million pounds, or 48.4 percent of the total output of toners. The individual toners produced in the largest quantities in 1962 were Pigment Blue 15, alpha form, 2.9 million pounds; Pigment Red 49, barium toners, 2.9 million pounds; Pigment Green 7, 2.7 million pounds; Pigment Yellow 12, 2.7 million pounds; and Pigment Red 48, 2.2 million pounds.

Production of lakes totaled 3.7 million pounds in 1962, or approximately the same as reported for 1961. Sales of lakes in 1962 amounted to 3.2 million pounds, valued at \$3.6 million, compared with sales in 1961 of 3.1 million pounds, valued at \$3.1 million. Sales in 1962 were thus 3.1 percent larger than in 1961, in terms of quantity, and 15.6 percent larger, in terms of value. Pigment Blue 24, with an output of 1.9 million pounds, was the lake produced in largest quantity in 1962.

Table 12 gives data on sales by commercial forms for each of 16 selected pigments or groups of pigments. Pigment Yellow 12, Pigment Red 90, Pigment Blue 19, and Pigment Blue 24 were sold principally in flushed form. The remaining 12 pigments or groups of pigments for which data are shown were sold principally in dry full-strength form.

³ See also table 11B, pt. III, which lists these products alphabetically and identifies the manufacturers, and table 24 in appendix A, which shows imports of synthetic organic pigments during the years 1960-62.

⁴ See appendix C, which lists the common names of all the pigments mentioned in this report.

TABLE 11A.--Synthetic organic pigments: U.S. production and sales, 1962

[Listed below are all toners and lakes 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 11B in pt. III lists all toners and lakes for which data on production or sales were reported and identifies the manufacturer of each.]

Product	Production	Sales		
		Quantity	Value	Unit value ¹
	1,000 pounds	1,000 pounds	1,000 dollars	Per pound
Grand total-----	37,156	51,602	74,313	\$2.35
TONERS				
Total-----	33,450	28,389	70,732	2.49
Yellow toners, total-----	5,137	3,601	8,914	2.48
Hansa yellows, total-----	908	754	1,959	2.60
Pigment Yellow 1, C.I. 11 680-----	489	422	847	2.01
Pigment Yellow 3, C.I. 11 710-----	126	87	207	2.38
Other Hansa yellows-----	293	245	905	3.69
Benzidine yellows:				
Pigment Yellow 12, C.I. 21 090-----	2,676	1,683	3,719	2.21
Pigment Yellow 13, C.I. 21 100-----	146	73	240	3.29
Pigment Yellow 14, C.I. 21 095-----	1,104	875	2,037	2.33
Pigment Yellow 17, C.I. 21 105-----	163	144	466	3.24
All other-----	140	72	493	6.85
Orange toners, total-----	661	595	2,874	4.83
Pigment Orange 1, C.I. 11 725-----	6	...	...	...
Pigment Orange 2, C.I. 12 060-----	52	57	87	1.53
Pigment Orange 5, C.I. 12 075-----	200	174	266	1.53
Pigment Orange 13, C.I. 21 110-----	90	88	284	3.23
Pigment Orange 16, C.I. 21 160-----	126	122	361	2.96
All other-----	187	154	1,876	12.18
Red toners, total-----	16,174	13,989	27,958	2.00
Naphthol reds, total-----	759	560	2,079	3.71
Pigment Red 2, C.I. 12 310-----	44	39	103	2.64
Pigment Red 5, C.I. 12 490-----	122	64	333	5.20
Pigment Red 13, C.I. 12 395-----	6	5	17	3.40
Pigment Red 17, C.I. 12 390-----	94	80	245	3.06
Pigment Red 18, C.I. 12 350-----	19	...	...	...
Pigment Red 22, C.I. 12 315-----	134	119	347	2.92
Pigment Red 23, C.I. 12 355-----	160	139	489	3.52
Pigment Red 31, C.I. 12 360-----	17	...	...	...
Other naphthol reds-----	163	114	545	4.78
Pigment Red 1, C.I. 12 070, dark-----	203	190	231	1.22
Pigment Red 1, C.I. 12 070, light-----	341	301	372	1.24
Pigment Red 3, C.I. 12 120-----	1,853	1,312	2,123	1.62
Pigment Red 4, C.I. 12 085-----	253	317	422	1.33
Pigment Red 38, C.I. 11 120-----	131	131	577	4.40
Pigment Red 48, C.I. 15 865-----	2,165	1,952	3,636	1.86
Pigment Red 49, C.I. 15 630-----				
Barium toner-----	2,874	2,710	2,675	.99
Calcium toner-----	1,316	1,291	1,314	1.02
Sodium toner-----	376	324	354	1.09
Pigment Red 52, C.I. 15 860-----	675	622	919	1.48
Pigment Red 53, C.I. 15 585, barium toner-----	1,625	1,423	1,791	1.26
Pigment Red 54, C.I. 14 830, calcium toner-----	55	...	...	...
Pigment Red 57, C.I. 15 850, calcium toner-----	788	730	1,091	1.49
Pigment Red 63, C.I. 15 880-----	52	42	82	1.95
Pigment Red 81, C.I. 45 160, PMA-----	143	127	796	6.27
Pigment Red 81, C.I. 45 160, PTA-----	118	119	770	6.47
Pigment Red 90, C.I. 45 380-----	1,096	599	1,112	1.86
All other-----	1,351	1,239	7,614	6.15
Violet toners, total-----	1,091	963	3,318	3.34
Pigment Violet 1, C.I. 45 170, PMA-----	20	20	119	5.95
Pigment Violet 1, C.I. 45 170, PTA-----	75	67	374	5.58
Pigment Violet 3, C.I. 42 535, fugitive-----	405	379	610	1.61
Pigment Violet 3, C.I. 42 535, PMA-----	417	347	976	2.81
Pigment Violet 3, C.I. 42 535, PTA-----	38	41	169	4.12
All other-----	136	109	1,070	9.82

TABLE 11A. -- Synthetic organic pigments: U.S. production and sales, 1962--Continued

Product	Production	Sales		
		Quantity	Value	Unit value ¹
TONERS--Continued				
Blue toners, total-----	6,978	6,166	18,323	\$2.97
Pigment Blue 1, C.I. 42 595, PMA-----	169	144	748	5.19
Pigment Blue 1, C.I. 42 595, PTA-----	30	20	117	5.85
Pigment Blue 9, C.I. 42 025, PMA-----	4	4	14	3.50
Pigment Blue 9, C.I. 42 025, PTA-----	9	9	50	5.56
Pigment Blue 14, C.I. 42 600, PMA-----	60	60	545	9.08
Pigment Blue 15, C.I. 74 160, alpha form-----	2,940	2,540	6,941	2.73
Pigment Blue 15, C.I. 74 160, beta form-----	1,625	1,398	4,169	2.98
Pigment Blue 19, C.I. 42 750A-----	1,876	1,792	4,631	2.58
Pigment Blue 25, C.I. 21 180-----	70	...	...	...
All other-----	195	199	1,108	5.57
Green toners:				
Pigment Green 1, C.I. 42 040, PMA-----	9	8	44	5.50
Pigment Green 1, C.I. 42 040, PTA-----	5	6	27	4.50
Pigment Green 2, C.I. 42 040 and 49 005, PMA-----	45	41	212	5.17
Pigment Green 2, C.I. 42 040 and 49 005, PTA-----	50	47	309	6.57
Pigment Green 4, C.I. 42 000, fugitive-----	8	3	13	4.33
Pigment Green 4, C.I. 42 000, PTA-----	5	5	23	4.60
Pigment Green 7, C.I. 74 260-----	2,684	2,513	7,600	3.02
Pigment Green 8, C.I. 10 006-----	222	194	275	1.42
Brown toners, total-----	112	43	151	3.51
Pigment Brown 3, C.I. 21 010, fugitive, and PMA-----	5	5	16	3.20
All other-----	107	38	135	3.55
All other toners ² -----	269	215	691	3.21
LAKES				
Total-----	3,706	3,213	3,581	1.11
Yellow lakes-----	192	...	...	...
Pigment Orange 17, C.I. 15 510-----	447	...	...	...
Red lakes, total-----	883	861	956	1.11
Pigment Red 60, C.I. 16 105-----	168	149	218	1.46
(Acid Red 26), C.I. 16 150-----	537	536	241	1.45
All other-----	178	176	497	2.82
Violet lakes, total-----	121	113	277	2.45
Pigment Violet 5, C.I. 58 055-----	108	102	251	2.46
All other-----	13	11	26	2.36
Blue lakes, total-----	1,935	1,435	1,678	1.17
Pigment Blue 24, C.I. 42 090-----	1,909	1,411	1,663	1.18
All other-----	26	24	15	.62
Black lakes: (Natural Black 3), C.I. 75 291-----	101	97	92	.95
All other lakes ³ -----	27	707	578	1.10

¹ Calculated from rounded figures.² Includes all black toners and all other green toners.³ Includes all green lakes, production of all other orange lakes, and sales of all orange and yellow lakes.

TABLE 12.--U.S. sales of selected dry full-strength colors, dry extended colors, dry dispersions, aqueous dispersions, and flushed colors, 1962

Selected pigments by commercial forms	Sales		
	Quantity ¹	Value	Unit value ²
	1,000 pounds	1,000 dollars	Per pound
Pigment Yellow 12, C.I. 21 090, total-----	1,683	3,962	\$2.35
Dry full-strength toner-----	665	1,450	2.18
Dry extended toner, dry dispersions and aqueous dispersions ^{3 4} -----	66	189	2.86
Flushed color-----	952	2,323	2.44
Pigment Yellow 13, C.I. 21 100; Pigment Yellow 14, C.I. 21 095; and Pigment Yellow 17, C.I. 21 105, total-----	1,092	2,949	2.64
Dry full-strength toner-----	768	2,135	2.76
Dry extended toner and dry dispersions ³ -----	44	143	3.25
Aqueous dispersions ⁴ -----	170	335	1.97
Flushed color-----	110	336	3.05
Pigment Red 3, C.I. 12 120, total-----	1,312	2,177	1.66
Dry full-strength toner and dry extended toner ³ -----	899	1,514	1.68
Aqueous dispersions ⁴ -----	154	183	1.19
Flushed color-----	259	480	1.85
Pigment Red 48, C.I. 15 865, total-----	1,952	3,622	1.86
Dry full-strength toner-----	1,778	3,224	1.81
Dry extended toner-----	41	82	2.00
Dry dispersions-----	61	173	2.84
Aqueous dispersions ⁴ -----	26	53	2.04
Flushed color-----	46	90	1.96
Pigment Red 49, C.I. 15 630, barium toner, total-----	2,710	2,853	1.05
Dry full-strength toner-----	1,880	1,862	.99
Dry extended toner, dry dispersions and aqueous dispersions ^{3 4} -----	22	28	1.27
Flushed color-----	808	963	1.19
Pigment Red 49, C.I. 15 630, calcium toner, total-----	1,291	1,371	1.06
Dry full-strength toner-----	1,074	1,099	1.02
Aqueous dispersions ⁴ and flushed color ³ -----	217	272	1.25
Pigment Red 49, C.I. 15 630, sodium toner, total-----	324	369	1.14
Dry full-strength toner-----	203	230	1.13
Dry extended toner, aqueous dispersions, ⁴ and flushed color ³ -----	121	139	1.15
Pigment Red 53, C.I. 15 585, barium toner, total-----	1,423	1,869	1.31
Dry full-strength toner and dry extended toner ³ -----	994	1,246	1.25
Flushed color-----	429	623	1.45
Pigment Red 90, C.I. 45 380, total-----	599	1,212	2.02
Dry full-strength toner and dry extended toner ³ -----	52	92	1.77
Aqueous dispersions ⁴ and flushed color ³ -----	547	1,120	2.05
Pigment Violet 3, C.I. 42 535, fugitive, total-----	379	616	1.63
Dry full-strength toner and dry extended toner ³ -----	261	405	1.55
Aqueous dispersions ⁴ and flushed color ³ -----	118	211	1.79
Pigment Violet 3, C.I. 42 535, permanent (PMA and PTA), total-----	388	1,142	2.94
Dry full-strength toner-----	268	734	2.74
Dry extended toner-----	22	133	6.05
Dry dispersions and aqueous dispersions ^{3 4} -----	9	20	2.22
Flushed color-----	89	255	2.87
Pigment Blue 15, C.I. 74 160, alpha form, total-----	2,540	7,252	2.86
Dry full-strength toner-----	1,110	3,070	2.77
Dry extended toner-----	410	1,436	3.50
Dry dispersions-----	132	384	2.91
Aqueous dispersions ⁴ -----	720	1,896	2.63
Flushed color-----	168	466	2.77
Pigment Blue 15, C.I. 74 160, beta form, total-----	1,398	4,154	2.97
Dry full-strength toner-----	757	2,311	3.05
Dry extended toner and dry dispersions ³ -----	109	341	3.13
Aqueous dispersions ⁴ and flushed color ³ -----	532	1,502	2.82

See footnotes at end of table.

TABLE 12.--U.S. sales of selected dry full-strength colors, dry extended colors, dry dispersions, aqueous dispersions, and flushed colors, 1962--Continued

Selected pigments by commercial forms	Sales		
	Quantity ¹	Value	Unit value ²
	1,000 pounds	1,000 dollars	Per pound
Pigment Blue 19, C.I. 42 750A, total-----	1,792	4,727	\$2.64
Dry full-strength toner-----	208	509	2.45
Aqueous dispersions ⁴ and flushed color ³ -----	1,584	4,218	2.66
Pigment Blue 24, C.I. 42 090, total-----	1,411	2,018	1.43
Dry lake-----	121	158	.89
Aqueous dispersions ⁴ and flushed color ³ -----	1,290	1,910	1.48
Pigment Green 7, C.I. 74 260, total-----	2,513	7,737	3.08
Dry full-strength toner-----	1,519	4,971	3.28
Dry extended toner and dry dispersions ³ -----	476	1,419	2.98
Aqueous dispersions ⁴ -----	435	1,158	2.66
Flushed color-----	83	189	2.28

¹ Quantity of the various commercial forms is given in terms of dry full-strength toner (or dry lake) content.

² Calculated from rounded figures.

³ Separate data on these commercial forms may not be published without revealing the operations of individual companies.

⁴ Includes presscake.

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

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

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 the technical grade material. They include alkaloids, antibiotics, antihistamines, hormones, sulfa drugs, sympathomimetic agents, tranquilizers, vitamins, and other therapeutic agents for human or veterinary use and for animal feed supplements.

Statistics on the production of medicinal chemicals are in terms of 100-percent content of the medicinal chemical itself, exclusive of all diluents or other materials used in mixing or compounding tablets, solutions, and suspensions for consumer use. Except for antibiotics, the statistics on sales include only that part of the original (primary) production that was sold in undiluted or un-compounded form. Sales of antibiotics include all sales by the primary producers, both diluted and undiluted, in bulk or in dosage forms.

Statistics on U.S. production and sales of medicinal chemicals in 1962 are given in table 13A.⁵ Total production of medicinal chemicals in 1962 amounted to 127 million pounds, or 8.4 percent more than the 118 million pounds produced in 1961, and 12.0 percent more than the 114 million pounds produced in 1960. Total sales of medicinal chemicals in 1962 amounted to 104 million pounds, valued at \$601 million, compared with sales in 1961 of 92 million pounds, valued at \$577 million, and sales in 1960 of 88 million pounds, valued at \$557 million. Sales in 1962 were thus 12.0 percent larger than in 1961 and 17.8 percent larger than in 1960, in terms of quantity, and 4.2 percent larger than in 1961 and 7.9 percent larger than in 1960, in terms of value.

Medicinal chemicals in this report are divided into antibiotics, benzenoid, and nonbenzenoid groups, instead of into cyclic and acyclic groups as in previous years. Totals for the cyclic and acyclic groups are shown in this report, however, in order to permit comparison of the statistics for 1962 with those for previous years. Production of cyclic medicinal chemicals in 1962 amounted to 88 million pounds, or 8.3 percent more than the output of 81 million pounds reported for 1961. Sales of cyclic medicinals in 1962 amounted to 68 million pounds, valued at \$567 million, compared with sales in 1961 of 61 million pounds, valued at \$541 million. Production of acyclic medicinals in 1962 amounted to 40 million pounds, or 8.6 percent more than the output of 37 million pounds reported for 1961. Sales of acyclic medicinals in 1962 amounted to 35 million pounds, valued at \$33 million, compared with sales in 1961 of 31 million pounds, valued at \$36 million.

Production of antibiotics for all uses in 1962 amounted to 6.3 million pounds, of which 4.0 million pounds was for human or veterinary use and 2.3 million pounds was for animal feed supplements, food preservation, and crop spraying. Sales amounted to 5.0 million pounds, valued at \$370 million. The most important antibiotics, in terms of value, were the penicillin salts and tetracycline. Production of penicillin salts, for all uses, amounted to 964 trillion U.S.P. units; sales totaled 715 trillion U.S.P. units, valued at \$66.5 million. Production of tetracycline for human or veterinary use amounted to 195 million grams of activity; sales totaled 131 million grams of activity, valued at \$66.2 million.

Production of benzenoid medicinals in 1962 amounted to 70.7 million pounds; sales totaled 55.0 million pounds, valued at \$127 million. The benzenoid medicinal chemicals that were produced in largest quantity in 1962 were acetylsalicylic acid (aspirin), 27.2 million pounds; salicylic acid, 10.6 million pounds; and sulfa drugs, 4.3 million pounds.

Production of nonbenzenoid medicinals in 1962 amounted to 50.4 million pounds; sales totaled 43.6 million pounds, valued at \$103 million. The most important nonbenzenoid medicinal chemicals, in terms of quantity, were the choline salts, production of which amounted to 20.4 million pounds.

Production of all vitamins, both benzenoid and nonbenzenoid, amounted to 12.4 million pounds in 1962; sales amounted to 9.3 million pounds, valued at \$68.0 million. The most important vitamins, in terms of value, were vitamins A, B₁₂, and C. Production of vitamin A alcohol and esters amounted to 446 trillion U.S.P. units; sales totaled 398 trillion units, valued at \$25.0 million. Production of vitamin B₁₂ amounted to 763,000 grams; sales amounted to 628,000 grams, valued at \$10.2 million. Production of vitamin C (ascorbic acid) and derivatives amounted to 6.4 million pounds; sales totaled 4.4 million pounds, valued at \$10.8 million.

⁵ See also table 13B, pt. III, which lists these products alphabetically and identifies the manufacturers, and table 24 in appendix A, which shows imports of coal-tar medicinal chemicals and pharmaceuticals during the years 1960-62.

TABLE 13A. -- Medicinal chemicals: U.S. production and sales, 1962

[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 13B in pt. III lists alphabetically all medicinal chemicals for which data on production or sales were reported and identifies the manufacturer of each]

Chemical	Production ¹	Sales ²		
		Quantity	Value	Unit value ³
	1,000 pounds	1,000 pounds	1,000 dollars	Per pound
Grand total-----	127,431	103,627	600,779	\$5.80
Cyclic ⁴ -----	87,724	68,228	567,396	8.32
Acyclic ⁴ -----	39,707	35,399	33,383	.94
ANTIBIOTICS ⁵				
Total-----	6,322	5,029	370,423	73.66
For human or veterinary use, total-----	3,965	3,073	317,508	103.32
Bacitracin-----	5	6	1,441	240.17
Dihydrostreptomycin-----	565	496	7,683	15.49
Neomycin, base-----	49	49	4,707	96.06
dl- α -Phenoxyethylpenicillin and potassium salt-----	22	13	3,565	274.23
Potassium penicillin G-----	335	274	16,275	59.40
Procaine penicillin G-----	917	569	11,991	21.07
Sodium penicillin G-----	15	14	436	31.14
Tetracycline-----	431	288	66,230	229.97
All other ⁶ -----	1,626	1,364	205,180	150.43
For animal feed supplements, food preservation, and crop spraying, total-----	2,357	1,956	52,915	27.05
Bacitracin-----	173	155	3,156	20.36
Procaine penicillin G-----	241	238	1,833	7.70
All other ⁶ -----	1,943	1,563	47,926	30.66
BENZENOID ⁷				
Total-----	70,698	55,003	127,119	2.31
Acetylsalicylic acid (Aspirin)-----	27,194	22,874	12,418	.54
Alkaloids and related products, total-----	33	26	3,146	121.00
Dihydrocodeinone bitartrate-----	1	1	302	302.00
Homatropine methyl bromide-----	...	2	58	29.00
All other-----	32	23	2,786	121.13
Amino acids-----	3	2	89	44.50
p-Aminobenzoic acid and derivatives, total-----	863	774	1,809	2.34
p-Butylaminobenzoic acid, 2-dimethylaminoethyl ester (Tetracaine) base and hydrochloride-----	2	2	50	25.00
All other-----	861	772	1,759	2.28
Antihistamines, total-----	375	216	4,755	22.01
2-[p-Chloro- α -(2-dimethylaminoethyl)benzyl]pyridine (Chlorpheniramine) maleate-----	17	8	460	57.50
2-[3-(Dimethylamino)-1-phenylpropyl]pyridine (Pheniramine) maleate-----	15	12	461	38.42
All other-----	343	196	3,834	19.56
Antimony, arsenic, and bismuth compounds, total-----	1,588	...	...	...
Bismuth salicylate, basic-----	...	20	80	4.00
Bismuth subgallate-----	22	27	99	3.67
All other-----	1,566	...	...	...
Barbiturates:				
5-Ethyl-5-phenylbarbituric acid (Phenobarbital)-----	299	333	873	2.62
5-Ethyl-5-phenylbarbituric acid, sodium salt-----	11	9	36	4.00

See footnotes at end of table.

TABLE 13A.--Medicinal chemicals: U.S. production and sales, 1962--Continued

Chemical	Production ¹	Sales ²		
		Quantity	Value	Unit value ³
BENZENOID ⁷ --Continued				
Benzothiadiazine dioxide derivatives-----	...	31	3,721	\$120.03
Dyes, medicinal-----	28	19	459	24.16
Guaiacol glyceryl ether-----	...	20	81	4.05
1-Hexadecylpyridinium chloride-----	...	17	72	4.24
Imidazoline derivatives-----	1	1	65	65.00
Mercury compounds-----	88	...	...	...
Phenylsulfonurea derivatives-----	895	...	...	...
8-Quinololinol and derivatives, total-----	325	145	496	3.42
5,7-Diiodo-8-quinolinol-----	52	...	...	...
8-Quinololinol-----	186	...	...	...
All other-----	87	145	496	3.42
Salicylic acid-----	10,574	8,723	3,467	.40
Salicylic acid salts, total-----	728	596	511	.86
Sodium salicylate-----	628	486	359	.74
All other-----	100	110	152	1.38
Sulfa drugs-----	4,257	...	...	...
Sympathomimetic (Adrenergic) agents, total-----	289	236	3,867	16.39
d- and dl-N,α-Dimethylphenethylamine (Desoxyephedrine) hydrochloride-----	6	5	59	11.80
α-(Isopropylaminomethyl)protocatechuy alcohol (Isoproterenol)-----	1	1	23	23.00
dl-α-Methylphenethylamine (Amphetamine) base-----	40	...	...	...
Norephedrine hydrochloride-----	130	125	1,047	8.38
Phenylephrine hydrochloride-----	40	40	1,801	45.02
All other-----	72	65	937	14.42
Tranquilizers-----	168	5	309	61.80
Vitamins, total-----	3,453	2,967	23,788	8.02
B ₂ (Riboflavin) (100%)-----	553	546	5,867	10.75
B ₁₂ (All grades) (100%) ⁸ -----	2	1	10,205	10,205.00
K ₃ (Menadione)-----	14	5	47	9.40
Niacin (Nicotinic acid) (All grades)-----	1,893	1,679	2,087	1.24
Niacinamide (Nicotinamide)-----	706	548	1,346	2.46
All other-----	285	188	4,236	22.53
All other benzenoid medicinals-----	19,526	17,962	66,978	3.73
NONBENZENOID ⁹				
Total-----	50,411	43,595	103,237	2.37
Acetylcholine bromide and chloride-----	...	(¹⁰)	13	95.59
Amino acids-----	5,004	5,490	7,121	1.30
Barbiturates, total-----	518	182	1,480	8.13
5-Allyl-5-(1-methylbutyl)barbituric acid (Secobarbital) and sodium salt-----	...	21	127	6.05
5-Ethyl-5-(1-methyl-n-butyl)barbituric acid (Pentobarbital)-----	...	10	54	5.40
5-Ethyl-5-(1-methyl-n-butyl)barbituric acid, sodium salt-----	...	41	226	5.51
All other-----	518	110	1,073	9.75
Bile acids and salts, total-----	238	112	1,251	11.17
Ketocholanic acids-----	20	...	...	...
All other-----	218	112	1,251	11.17
Carbohydrates and derivatives, total-----	1,113	864	1,160	1.34
Calcium gluconate (including feed grade)-----	704	560	304	.54
All other ¹¹ -----	409	304	856	2.82

See footnotes at end of table.

TABLE 13A.--Medicinal chemicals: U.S. production and sales, 1962--Continued

Chemical	Production ¹	Sales ²		
		Quantity	Value	Unit value ³
NONBENZENOID ⁹ --Continued				
	<i>1,000 pounds</i>	<i>1,000 pounds</i>	<i>1,000 dollars</i>	<i>Per pound</i>
Choline salts, total-----	20,431	19,772	4,480	\$0.23
Choline bitartrate-----	187	167	153	.92
Choline chloride, for animal and poultry feed, and for use as an intermediate-----	20,057	19,477	4,215	.22
Choline dihydrogen citrate-----	78	71	66	.93
Tricholine citrate-----	...	13	16	1.23
All other-----	109	44	30	.68
Hexamethylenebis(trimethylammonium chloride) (Hexamethonium chloride)-----	2	2	9	4.50
Hormones:				
Hydrocortisone alcohol and acetate-----	13	9	2,755	306.11
Prednisolone-----	1	...	...	...
Prednisone-----	2	1	590	590.00
Hydantoin derivative: Allantoin-----	40	34	271	7.97
Mercury compounds-----	19	...	...	...
Piperazine-----	1,921	986	1,267	1.28
Piperazine derivatives, total-----	2,791	2,741	2,658	.97
Piperazine dihydrochloride-----	1,072	1,067	1,051	.98
Piperazine hydrochloride-----	443	462	527	1.14
All other-----	1,276	1,212	1,080	.89
Purine derivatives, total-----	2,011	2,098	5,606	2.67
Caffeine, natural and synthetic-----	1,959	2,064	4,856	2.35
Theophylline ethylenediamine (Aminophylline)-----	39	...	...	...
All other-----	13	34	750	22.06
Tetramethylammonium chloride-----	...	2	3	1.50
Tranquilizers-----	1,168	1,117	3,243	2.90
Trihalogenated compounds-----	38	37	154	4.16
Vitamins, total-----	8,902	6,313	44,176	7.00
A palmitate, except feed grade ⁸ -----	162	132	7,529	57.04
C (Ascorbic acid) and derivatives, total-----	6,406	4,380	10,754	2.46
Ascorbic acid-----	5,368	3,431	8,330	2.43
All other-----	1,038	949	2,424	2.55
D ₂ (Irradiated ergosterol) ⁸ -----	1	1	181	181.00
D ₃ (Irradiated animal sterol) ⁸ -----	3	1	313	313.00
Pantothenic acid and derivatives, total-----	1,288	1,036	3,388	3.27
Pantothenic acid, dl-calcium salt-----	1,010	883	2,256	2.55
All other-----	278	153	1,132	7.40
All other vitamins ¹² -----	1,042	763	22,011	28.85
All other nonbenzenoid medicinals-----	6,199	3,835	27,000	7.04

¹ The data on production are those for medicinal chemicals in bulk; they do not include finished preparations, such as tablets, capsules, and ampoules, which are manufactured from bulk chemicals.

² Except for antibiotics, sales include only that part of the original production which is sold in undiluted or un-compounded form, including that sold in bulk and that sold in packages (tablets, ampoules, etc.). Sales of antibiotics include all forms (both undiluted or un-compounded and diluted or compounded), including that sold in bulk and that sold in packages.

³ Calculated from rounded figures.

⁴ Medicinal chemicals have been divided into antibiotics, benzenoid, and nonbenzenoid groups, instead of into cyclic and acyclic groups, as in previous reports. Totals for the cyclic and acyclic groups are shown in this report in order to facilitate comparison of the statistics for 1962 with those for earlier years.

⁵ For statistical purposes, reported quantities of antibiotics have been converted from grams of activity or U.S.P. units to pounds by means of the following conversion factors: procaine penicillin G, 453.6 million units=1 pound; penicillin V salts, 768.9 million units=1 pound; other penicillin salts and hygromycin B, 756 million units=1 pound; terramycin and bacitracin, 22.7 million units=1 pound; polymyxin B sulfate, 2,812.3 million units=1 pound; all other

MEDICINAL CHEMICALS

Footnotes for table 1.3A--Continued

antibiotics, 453.6 grams of activity=1 pound. Statistics for all individually publishable antibiotics are given in the following tabulation in terms of million U.S.P. units (MU), billion U.S.P. units (BU), or kilograms of activity (Kg.):

Antibiotic	Production	Sales		
		Quantity	Value	Unit value
			1,000 dollars	
Bacitracin (MU), total-----	4,047,182	3,662,985	4,597	\$1.25
For human or veterinary use---	122,288	137,207	1,441	10.50
For other uses-----	3,924,894	3,525,778	3,156	.90
Dihydrostreptomycin, for human or veterinary use (Kg.)-----	256,409	225,028	7,623	34.14
Neomycin base, for human or veterinary use (Kg.)-----	22,248	22,035	4,707	213.01
Penicillin salts (BU), total---	964,023	715,260	66,504	92.98
dl-2-Phenoxyethyl penicillin and potassium salt, for human or veterinary use---	16,295	9,921	3,565	359.34
Potassium penicillin G, for human or veterinary use---	253,101	207,445	16,275	78.45
Procaine penicillin G, total---	524,999	366,130	13,324	37.76
For human or veterinary use---	415,725	258,136	11,991	41.45
For other uses-----	109,274	107,994	1,333	16.97
Sodium penicillin G, for human or veterinary use---	11,403	10,828	436	40.27
Other penicillin salts, for all uses-----	158,225	120,936	32,404	267.94
Streptomycin, for all uses (Kg.)-----	377,905	321,711	9,498	29.52
Tetracycline, for human or veterinary use (Kg.)-----	195,439	130,674	66,230	506.83

⁶ Includes streptomycin and all other penicillin salts, for which separate statistics cannot be published by use category, because publication might reveal the operations of individual companies. Statistics for streptomycin and for all other penicillin salts are given in terms of grams or U.S.P. units in footnote 5 above.

⁷ The term "benzenoid," as used in this report, describes any cyclic medicinal chemical, other than antibiotics, whose molecule contains any one or more of the following types of rings: 6-membered carbocyclic rings with conjugated double bonds, e.g., the benzene ring or the quinone ring; 6-membered heterocyclic rings with 1 hetero atom and conjugated double bonds, e.g., the pyridine ring; or 5-membered heterocyclic rings with 2 hetero atoms and conjugated double bonds, except the pyrimidine ring, e.g., the pyrazine ring or the pyridazine ring.

⁸ For statistical purposes, reported quantities of vitamins A, B₁₂, D₂, and D₃ have been converted from grams or U.S.P. units to pounds by means of the following conversion factors: vitamin A acetate, 1.307 billion units=1 pound; vitamin A alcohol, 1.510 billion units=1 pound; vitamin A palmitate, 0.816 billion units=1 pound; vitamin B₁₂, 453.6 grams=1 pound; vitamins D₂ and D₃, 18.14 billion units=1 pound. Statistics for these vitamins are given in the following tabulation in terms of grams or U.S.P. units:

Vitamin	Unit of quantity	Production	Sales		
			Quantity	Value	Unit value
				1,000 dollars	
Vitamin A, total-----	Billion units	446,168	398,026	25,014	\$62.85
Palmitate, except feed grade-----	----do-----	131,832	107,817	7,529	69.83
All other-----	----do-----	314,336	290,209	17,485	60.25
Vitamin B ₁₂ -----	Grams.....	762,861	628,418	10,205	16.24
Vitamin D ₂ -----	Billion units	12,758	10,199	181	17.75
Vitamin D ₃ -----	----do-----	54,406	19,339	313	16.18

⁹ The term "nonbenzenoid," as used in this report, describes any cyclic or acyclic medicinal chemical, other than antibiotics, whose molecule does not contain any of the types of rings described in footnote 7 above. All acyclic compounds and any cyclic compound whose molecule contains only one or more of the following types of rings are classified as "nonbenzenoid": fully or partially reduced rings, e.g., the piperidine ring or the cyclohexadiene ring; rings with more or less than 6 members, e.g., the imidazole ring or the azepine ring; heterocyclic rings with more than 2 hetero atoms, e.g., the triazine ring; or the pyrimidine ring.

¹⁰ Sales of acetylcholine bromide and chloride amounted to 136 pounds.

¹¹ Includes all other salts of gluconic acid, except the sodium salt, which is included in the section "Miscellaneous Chemicals."

¹² Includes all other vitamin A alcohol and esters, for which separate statistics cannot be published in pounds, because publication might reveal the operations of individual companies. Statistics for all other vitamin A alcohol and esters are given in terms of U.S.P. units in footnote 8 above.

Flavor and Perfume Materials

Flavor and perfume materials are chemicals--with desirable flavors or odors--that are used in the manufacture of foods, beverages, cosmetics, and soaps, and to disguise unpleasant odors in industrial products. This report includes data on materials derived from natural products by actual chemical processes and from coal tar; it does not include data on purely natural products, such as floral essences, essential oils, and other materials that are obtained by simple extraction or by distillation from natural vegetable and animal sources.

The flavor and perfume materials covered in this report are grouped as either cyclic or acyclic materials, according to their chemical structure. Cyclic materials are further classified as (1) benzenoid and naphthalenoid, and (2) terpenoid, heterocyclic, and alicyclic. Statistics on production and sales of flavor and perfume materials in 1962 are given in table 14A.⁶

Production of flavor and perfume materials in 1962 amounted to 76 million pounds--20 percent more than the output of 64 million pounds in 1961. Sales in 1962 amounted to 63 million pounds, valued at \$76 million, compared with 55 million pounds, valued at \$68 million, in 1961.

Production of cyclic flavor and perfume materials in 1962 amounted to 43 million pounds--16 percent more than the 37 million pounds reported for 1961. Sales of cyclic flavor and perfume materials in 1962 were 32 million pounds, valued at \$47 million, compared with 29 million pounds, valued at \$40 million, in 1961. The individual chemical in the cyclic group that was produced in the greatest volume in 1962 was methyl salicylate (6 million pounds).

The output of acyclic flavor and perfume materials in 1962 amounted to 33 million pounds--25 percent more than the 27 million pounds reported for 1961. By far the most important of the acyclic materials was monosodium glutamate, production of which totaled 31 million pounds. Sales of acyclic flavor and perfume materials in 1962 amounted to 31 million pounds, valued at \$29 million, compared with 26 million pounds, valued at \$28 million, in 1961.

TABLE 14A.--Flavor and perfume materials: U.S. production and sales, 1962

[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 1-B in pt. III lists alphabetically all flavor and perfume materials for which data on production or sales were reported and identifies the manufacturer of each.]

Material	Production	Sales		
		Quantity	Value	Unit value ¹
Grand total-----	76,267	63,448	75,962	\$1.20
FLAVOR AND PERFUME MATERIALS, CYCLIC				
Total-----	42,771	32,049	47,260	1.47
<i>Benzenoid and Naphthalenoid</i>				
Total-----	21,672	18,190	22,036	1.21
4-Allylveratrole (Eugenyl methyl ether)-----	13	1	43	3.1-
Anethole (p-Propenylanisole)-----	1,269	1,462	1,024	.70
p-Anisaldehyde (p-Methoxybenzaldehyde)-----	5-6	57-	876	1.53
Benzophenone-----	280	291	273	.94
Benzyl acetate-----	1,180	1,076	470	.44
Benzyl alcohol ² -----	2,051	1,915	83-	.44
Benzyl butyrate-----	6	6	7	1.33
Benzyl cinnamate-----	...	2	8	3.49
Benzyl propionate-----	19	20	23	1.16
Cinnamaldehyde-----	770	672	475	.71
Cinnamyl alcohol-----	166	143	194	1.35
2-Ethoxynaphthalene (Ethyl β -naphthyl ether)-----	12	7	15	2.30
Ethyl-3-phenylglycidate-----	...	2	7	4.74
Eugenol-----	291	280	554	1.98
Hexylcinnamaldehyde-----	13	19	68	3.59
Isobutyl phenylacetate (Isobutyl α -toluate)-----	15	19	19	.99
Isobutyl salicylate-----	21	31	30	.99
Isoeugenol-----	96	79	233	2.95
Isopentyl salicylate (Amyl salicylate)-----	442	355	252	.71
p-Isopropyl- α -methylhydrocinnamaldehyde (Cyclamen aldehyde)-----	146	180	551	3.06
Methyl anthranilate-----	180	69	151	2.19

See footnotes at end of table.

⁶See also table 14B, pt. III, which lists these products alphabetically and identifies the manufacturers, and table 24 in appendix A, which shows imports of coal-tar flavor and perfume materials during the years 1960-62.

TABLE 14A.--Flavor and perfume materials: U.S. production and sales, 1962--Continued

Material	Production	Sales		
		Quantity	Value	Unit value ¹
FLAVOR AND PERFUME MATERIALS, CYCLIC--Continued				
<i>Benzenoid and Naphthalenoid--Continued</i>				
	<i>1,000 pounds</i>	<i>1,000 pounds</i>	<i>1,000 dollars</i>	<i>Per pound</i>
α-Methylbenzyl acetate-----	23	25	21	\$0.87
α-Methylcinnamaldehyde-----	...	9	15	1.65
Methyl cinnamate-----	60	64	123	1.93
Methyl salicylate (Synthetic wintergreen oil)-----	6,270	4,155	2,277	.55
α-Pentylcinnamaldehyde (α-Amylcinnamaldehyde)-----	355	358	516	1.44
Phenethyl acetate-----	57	58	64	1.10
Phenethyl isobutyrate-----	...	6	13	2.09
2-Phenoxyethyl isobutyrate-----	2	5	16	3.49
3-Phenyl-1-propanol (Hydrocinnamic alcohol)-----	15	15	29	1.90
4-Propenylveratrole (Isoeugenyl methyl ether)-----	7	7	27	4.08
All other benzenoid and naphthalenoid materials-----	7,367	6,272	12,828	2.05
<i>Terpenoid, Heterocyclic, and Alicyclic</i>				
Total-----	21,099	13,859	25,224	1.82
Caryophyllene-----	...	9	10	1.17
Cedryl acetate-----	120	105	252	2.40
Citral (Geraniol)-----	166	82	411	5.04
Citronellol-----	521	397	797	2.01
Citronellyl acetate-----	16	14	28	2.03
Citronellyl formate-----	...	19	60	3.18
Citronellyl isobutyrate-----	3	6	19	3.35
Coumarin-----	774	696	1,800	2.59
Essential oils, chemically modified-----	208	226	232	1.03
Geraniol-----	511	406	698	1.72
Geranyl acetate-----	38	41	81	1.94
Geranyl formate-----	...	7	21	3.03
Hydrocoumarin (3,4-Dihydrocoumarin)-----	22	17	73	4.39
Hydroxycitronellal-----	396	396	1,941	4.90
Hydroxycitronellal, dimethyl acetal-----	...	5	29	6.10
Ionones-----	215	185	978	5.29
Isobornyl acetate-----	1,065	1,078	438	.41
Linalool-----	410	292	830	2.84
Linalyl acetate-----	332	203	740	3.64
Menthol, synthetic, tech. and U.S.P.-----	260	342	1,537	4.49
Methylionones-----	406	359	2,349	6.53
Nerol-----	8	6	27	4.26
Nopyl acetate-----	31	33	39	1.19
Piperonal (Heliotropin)-----	209	194	424	2.19
Rhodinol-----	14	13	411	32.59
Terpineols-----	3,555	2,838	785	.28
Terpinyl acetate-----	660	573	260	.45
Vetiveryl acetate-----	17	15	348	23.51
All other terpenoid, heterocyclic, and alicyclic materials	11,142	5,302	9,606	1.81
FLAVOR AND PERFUME MATERIALS, ACYCLIC				
Total-----	33,496	31,399	28,702	.91
Allyl hexanoate (Allyl caproate)-----	21	19	65	3.40
3,7-Dimethyl-1-octanol-----	4	...	...	...
Ethyl butyrate-----	247	239	164	.69
Ethyl heptanoate (Ethyl enanthate)-----	3	3	5	1.62
Glutamic acid, monosodium salt (Monosodium glutamate)-----	31,474	29,455	26,692	.91
4-Hydroxyundecanoic acid, γ-lactone (γ-Undecalactone)-----	5	5	28	5.19
Isopentyl butyrate (Amyl butyrate)-----	47	44	36	.81
2-Methylundecanal (2-Methylundecylaldehyde)-----	...	7	32	4.72
All other acyclic materials-----	1,695	1,627	1,680	1.03

¹ Calculated from the unrounded figures.

² Includes some technical grade.

Plastics and Resin Materials

Plastics and resin materials are condensation or polymerization products of organic chemicals containing necessary fillers, plasticizers, and extenders. At some stage in their manufacture they exist in such physical condition that they can be shaped or processed by the application of heat and pressure. Some types of plastics may be molded, cast, or extruded into finished or semifinished forms. Other types are used as adhesives, for the treatment of textiles and paper, and for protective coatings. Still other types of plastics materials may be processed into sheets, rods, and tubes, which are further manufactured into finished articles. Except for vinyl resins, the statistics given in the following tables are based on the total weight of the materials, excluding liquids. Statistics for vinyl resins are given on the basis of resin content. Sales figures for thermoplastics materials, including styrene, vinyl, and polyolefin resins, include data for intracompany consumption, in order that complete information on consumption by uses may be obtained.

Statistics on production and sales of plastics and resins in 1962 are given in table 15A⁷ according to chemical composition and, in table 16, according to broad end uses. In 1962 total

TABLE 15A.--Plastics and resin materials: U.S. production and sales, by chemical composition, 1962

[Quantities and values are given in terms of the total weight of the materials (dry basis). Listed below are all plastics and resin materials for which any reported data on production or sales may be published. Table 15B in pt. III lists all plastics and resin materials for which data on production or sales were reported and identifies the manufacturer of each.]

Material	Production	Sales		
		Quantity	Value	Unit value ¹
	1,000 pounds, dry basis ²	1,000 pounds, dry basis ²	1,000 dollars	Per pound
Grand total-----	7,941,646	7,115,737	1,883,641	\$0.26
PLASTICS AND RESIN MATERIALS, BENZENOID				
Total-----	3,159,236	2,685,314	665,679	.25
Coumarone-indene and petroleum polymer resins-----	347,640	332,233	32,457	.10
Epoxy resins:				
Unmodified (condensation products of phenol and deriva-				
tives with epoxy compounds)-----	78,229	71,120	41,672	.59
Modified (with hardening agents and esterified with				
fatty acids)-----	8,271	1,832	1,493	.81
Phenolic and other tar-acid resins-----	689,963	571,679	155,691	.27
Phthalic alkyd resins, total-----	505,516	236,048	66,751	.28
Unmodified-----	360,534	157,480	41,167	.26
Modified-----	144,982	78,568	25,584	.33
Polyester resins ³ -----	212,230	193,388	63,552	.33
Polyurethane and diisocyanate resins-----	19,655	15,492	10,648	.69
Styrene resins, total-----	1,274,441	1,245,357	285,311	.23
Styrene-acrylonitrile (SAN) and acrylonitrile-butadiene-				
styrene (ABS) materials-----	89,412	84,161	28,463	.34
Styrene and copolymer resins (containing 50% or more				
styrene)-----	1,087,803	1,080,856	231,046	.21
All other styrene resins-----	97,226	80,340	25,802	.32
Styrene-alkyd polyesters and styrenated alkyds-----	17,453	13,514	5,450	.40
All other benzenoid plastics and resin materials ⁴ -----	5,838	4,651	2,654	.57
PLASTICS AND RESIN MATERIALS, NONBENZENOID				
Total-----	4,782,410	4,430,423	1,217,962	.27
Alkyd resins, except phthalic-----	43,236	31,642	9,139	.29
Dicyandiamide resins-----	1,393	1,389	503	.36
Polyamide resins-----	53,813	44,098	41,961	.95
Polyethylene resins, total-----	2,016,208	1,932,749	436,451	.23
Density 0.940 and below-----	1,592,533	1,581,966	328,527	.21
Density over 0.940-----	423,675	350,783	107,924	.31
Polypropylene resins-----	145,443	107,076	35,250	.33

See footnotes at end of table.

⁷See also table 15B, pt. III, which lists these products according to chemical composition, and identifies the manufacturers.

TABLE 15A.--Plastics and resin materials: U.S. production and sales, by chemical composition, 1962--Continued

Material	Production	Sales		
		Quantity	Value	Unit value ¹
PLASTICS AND RESIN MATERIALS, NONBENZENOID--Continued				
Rosin modifications, total-----	1,000 pounds, dry basis ² 151,735	1,000 pounds, dry basis ² 148,251	1,000 dollars 28,927	Per pound \$.20
Rosin and rosin esters, unmodified (ester gums)-----	61,530	64,471	11,222	.17
All other-----	90,205	83,780	17,705	.21
Silicone resins-----	8,478	8,212	19,813	2.41
Urea and melamine resins, total-----	488,908	429,625	117,422	.27
Melamine-formaldehyde type-----	148,046	127,880	55,007	.43
Urea-formaldehyde type-----	340,862	301,745	62,415	.21
Vinyl and vinyl copolymer resins (resin content basis), total-----	1,566,449	1,459,011	335,809	.23
Polyvinyl acetate-----	208,201	182,934	55,538	.30
Polyvinyl alcohol-----	34,445	25,944	13,964	.54
Polyvinyl chloride and copolymer resins (containing 50% or more polyvinyl chloride)-----	1,214,510	1,150,807	202,601	.18
All other vinyl resins ³ -----	109,293	99,326	63,706	.64
All other nonbenzenoid plastics and resin materials ⁶ -----	306,747	268,370	192,687	.72

¹ Calculated from rounded figures.

² For the purposes of this report, "dry basis" is defined as the total weight of the material, including resin, plasticizers, fillers, extenders, colors, and stabilizers, and excluding water, solvents, and other liquid diluents.

³ For the purposes of this report, polyester resins include unsaturated alkyds copolymerized with monomers such as styrene, and polyallyl resins such as diallyl phthalate, and allyl diglycol carbonate. Styrene-alkyd polyesters for protective coatings are shown separately.

⁴ Includes data for toluenesulfonamide, and other benzenoid plastics and resin materials not specifically classified.

⁵ Includes data for butyral and formal, and for copolymers containing less than 50% polyvinyl chloride.

⁶ Includes data for acrylic and other nonbenzenoid plastics and resin materials.

U.S. production of synthetic plastics and resin materials (except cellulose) amounted to 7,942 million pounds, or 18.4 percent more than the 6,710 million pounds reported for 1961. Sales amounted to 7,116 million pounds, valued at \$1,884 million, in 1962, compared with 5,989 million pounds, valued at \$1,711 million, in 1961.

Total production of benzenoid plastics and resins was 3,159 million pounds in 1962--11.7 percent larger than the output of 2,829 million pounds reported for 1961. Sales in 1962 amounted to 2,685 million pounds, valued at \$666 million. Of the benzenoid group, styrene resins were produced in the largest volume in 1962, as in previous years. The output of styrene resins in 1962 was 1,274 million pounds; sales totaled 1,245 million pounds, valued at \$285 million. Second in volume of output in the benzenoid group in 1962 were the phenolic and other tar-acid resins. Production of these resins in 1962 was 690 million pounds; sales amounted to 572 million pounds, valued at \$156 million. The phthalic alkyd resins, used principally in the manufacture of protective coatings, were third in volume of production in the benzenoid group; production in 1962 amounted to 506 million pounds. The output of epoxy resins in 1962 was 86 million pounds; that of polyester resins was 212 million pounds.

Production of nonbenzenoid plastics and resins in 1962 amounted to 4,782 million pounds, compared with the 3,881 million pounds reported for 1961. Sales of these resins in 1962 amounted to 4,430 million pounds, valued at \$1,218 million, compared with 3,640 million pounds, valued at \$1,077 million, in 1961. Of the nonbenzenoid group, polyethylene resins were produced in the

largest volume in 1962. The output of polyethylene resins amounted to 2,016 million pounds in 1962, compared with 1,606 million pounds in 1961. Sales and use of polyethylene resins in 1962 totaled 1,933 million pounds, valued at \$436 million, compared with 1,582 million pounds, valued at \$388 million, in 1961. In this report, statistics are given for production and sales of high-density and low- and medium-density materials. The output of vinyl resins in 1962, which ranked next to that of polyethylene resins, amounted to 1,566 million pounds, compared with 1,260 million pounds in 1961. Sales and use of vinyl resins in 1962 totaled 1,459 million pounds, valued at \$336 million, compared with 1,212 million pounds, valued at \$307 million in 1961.

TABLE 16.--Plastics and resin materials: U.S. production and sales, by classes and uses, 1962

[In thousands of pounds, dry basis¹]

Kind and use	Production	Sales and use
Cellulose plastic materials, total-----	158,390	153,253
Sheets, continuous:		
Under 0.003 gage-----	20,571	18,320
0.003 gage and over-----	35,491	30,992
All other sheets, rods, and tubes-----	4,217	5,728
Molding and extrusion materials-----	98,111	98,213
Sales for export-----		
Alkyd resins, total-----	548,752	267,690
Protective coatings:		
Phthalic anhydride type:		
Unmodified-----	360,334	156,259
Modified-----	143,709	77,159
Polybasic acid type, unmodified and modified-----	28,995	15,962
All other uses-----	15,714	12,867
Sales for export-----	...	5,443
Coumarone-indene and petroleum polymer resins, total-----	347,640	332,233
Floor tile-----	106,348	96,454
Rubber compounding-----	51,467	49,675
All other uses-----	189,825	161,141
Sales for export-----	...	24,963
Epoxy resins, unmodified, total-----	78,229	71,120
Bonding and adhesives-----	...	8,941
Protective coatings-----	...	32,876
Reinforced plastics-----	...	8,992
All other uses-----	...	12,101
Sales for export-----	...	8,210
Polyester resins, total-----	212,230	193,388
Reinforced plastics:		
Sheets, flat and corrugated-----	...	24,973
All other-----	...	131,966
Surface coatings-----	...	3,871
All other uses-----	...	27,319
Sales for export-----	...	5,259
Silicone resins-----	8,478	8,212
Phenolic and other tar acid resins, total-----	689,963	571,679
Molding materials-----	221,000	203,502
Bonding and adhesive resins for--		
Laminating-----	91,708	54,701
Coated and bonded abrasives-----	17,857	16,281
Friction materials-----	24,859	22,256
Thermal insulation-----	91,624	40,148
Foundry or shell molding-----	42,424	38,746
Plywood-----	67,762	68,490
Fibrous and granulated wood-----	15,793	15,187
All other bonding and adhesive uses-----	33,196	23,909
Protective coatings, unmodified and modified-----	35,158	27,327
All other uses-----	48,582	45,732
Sales for export-----	...	15,400

See footnote at end of table.

TABLE 16.--Plastics and resin materials: U.S. production and sales, by classes and uses, 1962--Continued

[In thousands of pounds, dry basis¹]

Kind and use	Production	Sales and use
Urea and melamine resins, total-----	488,908	429,625
Textile treating and coating resins-----	51,794	47,024
Paper treating and coating resins-----	51,710	37,772
Bonding and adhesive resins for--		
Laminating-----	50,957	36,195
Plywood-----	95,721	88,254
Fibrous and granulated wood-----	63,374	56,412
All other bonding and adhesive uses-----	11,762	9,893
Protective coatings, straight and modified-----	42,041	26,828
All other uses (including molding)-----	121,549	108,776
Sales for export-----	...	18,471
Styrene type plastics materials:		
Styrene-acrylonitrile (SAN), acrylonitrile-butadiene-styrene (ABS) materials,		
total-----	89,412	84,161
Molding-----	...	31,568
All other uses (including extrusion)-----	...	39,433
Sales for export-----	...	13,160
→ Styrene and copolymer resins (containing 50% or more styrene), total-----	1,185,029	1,161,196
Straight polystyrene-----	467,771	...
Rubber-modified polystyrene-----	441,463	...
Styrene-butadiene copolymer-----	180,085	...
All other-----	95,710	...
Molding-----	...	531,589
Textile and paper treating and coating-----	...	88,199
Emulsion paint-----	...	55,183
Extrusion-----	...	125,300
All other uses (including foam and foamable materials)-----	...	256,552
Sales for export-----	...	104,373
Vinyl resins (resin content basis):		
Polyvinyl acetate, total-----	208,201	182,934
Emulsion paint-----	...	50,794
Adhesives-----	...	85,297
Bonding and sizing-----	...	9,642
All other uses-----	...	33,673
Sales for export-----	...	3,528
Polyvinyl chloride and copolymers (containing 50% or more polyvinyl chloride),		
total-----	1,214,510	1,150,807
Calendering:		
Film (under 6 mils)-----	...	76,493
Sheet (6 mils and over)-----	...	167,174
Flooring-----	...	185,634
Coating, bonding, and adhesives:		
Paper and textile coating (including calendering)-----	...	90,441
Flooring-----	...	46,827
All other coating, bonding, and adhesive uses-----	...	44,911
Extrusion:		
Wire and cable-----	...	170,167
Garden hose-----	...	6,247
All other extrusions-----	...	96,017
Molding:		
Records-----	...	60,934
Slush and rotational moldings-----	...	28,402
All other moldings-----	...	16,819
All other uses (including export)-----	...	160,741
All other vinyl resins-----	143,738	125,270
Polyolefin plastics materials:		
Polyethylene:		
Density 0.940 and below, total-----	1,592,533	1,581,966
Injection molding-----	...	151,291
Blow molding-----	...	32,720
Extrusions:		
Film and sheet-----	...	522,352
Wire and cable coating-----	...	140,359
Extrusion coating on paper and other substrates-----	...	157,634
Pipe-----	...	24,821
All other extrusions (including filament)-----	...	10,411

See footnote at end of table.

TABLE 16. -- *Plastics and resin materials: U.S. production and sales, by classes and uses, 1962-- Continued*[In thousands of pounds, dry basis¹]

Kind and use	Production	Sales and use
Polyolefin plastics materials--Continued		
Polyethylene--Continued		
Density 0.940 and below--Continued		
All other uses-----	...	185,253
Sales for export-----	...	357,125
Density over 0.940, total-----	423,675	350,783
Injection molding-----	...	57,141
Blow molding-----	...	164,532
Extrusions:		
Film and sheet-----	...	15,360
Wire and cable coating-----	...	6,263
Pipe-----	...	11,411
Extrusion coating on paper and other substrates-----	...	3,159
All other extrusions and filament-----	...	17,228
All other uses-----	...	49,975
Sales for export-----	...	25,714
Polypropylene, total-----	145,443	107,076
Injection and blow molding-----	...	37,172
Extrusions-----	...	50,879
All other uses (including sales for export)-----	...	19,025

¹ For the purposes of this report, "dry basis" is defined as the total weight of the material, including that of resin, plasticizers, fillers, extenders, colors, and stabilizers, and excluding that of water, solvents, and other liquid diluents.

Note.--The figures in the above table are based on the Tariff Commission's monthly reports on the production and sales of synthetic plastics and resin materials and are more nearly complete than those given in the Tariff Commission's release for January 1963, which gave a summation of the data reported by months for 1962. Changes in classification and an increase in coverage on some products may result in differences between the detail figures given in the table above and those given in the January 1963 release.

The output of urea and melamine resins in 1962 was 489 million pounds. Sales of these resins amounted to 430 million pounds, valued at \$117 million. Other important resins in the nonbenzenoid group are the acrylic, polyamide, polypropylene, silicone, and nonphthalic alkyd resins.

The statistics shown in table 16 for the production and sales of plastics and resins, by uses, were compiled principally from the Tariff Commission's monthly surveys on production and sales of synthetic plastics and resin materials. This survey was revised at the beginning of 1962 to provide more extensive detail on the sales and uses of plastics materials. Molding and extrusion of finished and semifinished products was the largest use for plastics and resin materials in 1962. Other important uses for which statistics are shown are for bonding and adhesives, treatment of textiles and paper, and protective coatings.

Production of cellulose plastics as a group amounted to 158 million pounds in 1962. Sales in 1962 were 153 million pounds, compared with 144 million pounds in 1961.

Rubber-Processing Chemicals

Rubber-processing chemicals are organic compounds that are added to natural and synthetic rubbers to give them qualities necessary for their conversion into finished rubber goods. In this report, statistics are given for cyclic and acyclic compounds, by use--such as accelerators, antioxidants, and peptizers. Statistics on production and sales of rubber-processing chemicals in 1962 are given in table 17A.⁸

Production of rubber-processing chemicals as a group in 1962 amounted to 228 million pounds, or 11.4 percent more than the 205 million pounds reported for 1961. The larger total output of rubber-processing chemicals in 1962 is attributable principally to increased production of antioxidants and thiazole accelerators. Sales of rubber-processing chemicals in 1962 amounted to 172 million pounds, valued at \$114 million, compared with 156 million pounds, valued at \$104 million, in 1961.

⁸ See also table 17B, pt. III, which lists these products alphabetically and identifies the manufacturers.

The output of cyclic rubber-processing chemicals in 1962 amounted to 196 million pounds, or 12.8 percent more than the 174 million pounds reported for 1961. Sales in 1962 were 148 million pounds, valued at \$97 million, compared with 135 million pounds, valued at \$89 million, in 1961. Of the total output of cyclic rubber-processing chemicals in 1962, accelerators accounted for 36.9 percent and amino and hydroxy antioxidants, for 47.7 percent. Production of amino and hydroxy antioxidants, which amounted to 93.4 million pounds in 1962, included 75.1 million pounds of amino compounds and 18.2 million pounds of hydroxy compounds. In 1961 the output of amino antioxidants amounted to 66.9 million pounds and that of hydroxy antioxidants, to 14.5 million pounds. Sales of amino antioxidants in 1962 were 61.6 million pounds, valued at \$39.0 million; sales of hydroxy antioxidants were 12.6 million pounds, valued at \$11.8 million.

Production of acyclic rubber-processing chemicals in 1962 amounted to 32.5 million pounds, compared with the 31.4 million pounds reported for 1961. Sales in 1962 totaled 24.0 million pounds, valued at \$17.1 million, compared with 20.8 million pounds, valued at \$15.2 million, in 1961. Accelerators, principally dithiocarbamic acid derivatives and tetramethylthiuram sulfides, accounted for about 59.3 percent of the output of acyclic rubber-processing chemicals in 1962. Peptizers and modifiers--chiefly dodecyl mercaptans--together with blowing agents and lubricating and conditioning agents, accounted for 40.7 percent of the output in the acyclic group.

TABLE 17A.--Rubber-processing chemicals: U.S. production and sales, 1962

[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 17B in pt. III lists separately all rubber-processing chemicals for which data on production or sales were reported and identifies the manufacturer of each.]

Chemical	Production	Sales		
		Quantity	Value	Unit value ¹
		1,000 pounds	1,000 dollars	Per pound
Grand total-----	228,421	172,124	114,418	\$0.66
RUBBER-PROCESSING CHEMICALS, CYCLIC				
Total-----	195,900	148,139	97,363	.66
Accelerators, total-----	72,204	47,398	29,016	.61
Aldehyde-amines-----	1,871	1,443	1,390	.96
Dithiocarbamic acid derivatives-----	309	239	390	1.63
Thiazole derivatives, total-----	60,453	37,189	20,350	.55
N-Cyclohexyl-2-benzothiazolesulfenamide-----	7,775	6,446	4,217	.65
2,2'-Dithiobis(benzothiazole)-----	18,063	9,981	5,043	.51
2-Mercaptobenzothiazole-----	7,004	4,586	1,889	.41
All other ² -----	27,611	16,176	9,201	.57
All other accelerators-----	9,571	8,527	6,886	.81
Antioxidants: Amino and hydroxy compounds, total ³ -----	93,390	74,175	50,728	.68
Amino compounds, total-----	75,145	61,597	38,968	.63
N,N'-Diphenyl-p-phenylenediamine-----	2,574	2,273	2,045	.90
All other-----	72,571	59,324	36,923	.62
Hydroxy compounds, total-----	18,245	12,578	11,760	.93
Phenol, alkylated-----	8,124	3,350	1,856	.55
All other-----	10,121	9,228	9,904	1.07
N-M-trosodiphenylamine-----	2,729	1,806	1,043	.58
Peptizers-----	4,286	4,036	2,916	.72
All other cyclic rubber-processing chemicals ⁴ -----	23,291	20,724	13,660	.66

See footnotes at end of table.

TABLE 17A.--Rubber-processing chemicals: U.S. production and sales, 1962--Continued

Chemical	Production	Sales		
		Quantity	Value	Unit value ¹
	1,000 pounds	1,000 pounds	1,000 dollars	Per pound
RUBBER-PROCESSING CHEMICALS, ACYCLIC				
Total-----	32,521	23,985	17,055	\$0.71
Accelerators, total-----	19,291	12,111	10,300	.85
Dithiocarbamic acid derivatives, total ² -----	11,240	7,124	5,867	.82
Dibutylthiocarbamic acid, sodium salt-----	764	272	195	.72
Dibutylthiocarbamic acid, zinc salt-----	1,143	985	1,170	1.19
Diethylthiocarbamic acid, zinc salt-----	1,292	959	838	.87
Dimethylthiocarbamic acid, potassium salt-----	254	...	...	...
Dimethylthiocarbamic acid, sodium salt-----	3,730	1,985	752	.38
Dimethylthiocarbamic acid, zinc salt ⁶ -----	845	833	769	.92
All other-----	3,407	2,090	2,143	1.03
Thiurams, total ⁷ -----	7,517	4,812	4,269	.89
Bis(dimethylthiocarbamoyl)disulfide-----	3,555	3,253	2,674	.32
Bis(dimethylthiocarbamoyl)sulfide-----	993	895	986	1.10
All other-----	2,969	664	609	.92
All other accelerators-----	334	175	164	.94
Dodecyl mercaptans-----	9,624	9,149	4,161	.45
All other acyclic rubber-processing chemicals ⁸ -----	3,606	2,725	2,594	.95

¹ Calculated from rounded figures.

² Includes small quantities produced and sold for uses other than rubber processing.

³ Data on production and sales of aldehyde and acetone amine antioxidants are included below in "All other cyclic rubber-processing chemicals."

⁴ Includes aldehyde and acetone amines, blowing agents, inhibitors, modifiers, stabilizers, and tackifiers.

⁵ Data on dithiocarbamates included in this table are for materials used chiefly in the processing of natural and synthetic rubbers. Data on dithiocarbamates which are used chiefly as fungicides are reported in the section "Pesticides and Other Organic Agricultural Chemicals."

⁶ Includes material used as a pesticide (Ziram). Dimethylthiocarbamic acid, zinc salt is chiefly used as an accelerator.

⁷ Includes data for small amounts of tetramethylthiuram sulfides for uses other than in the processing of natural and synthetic rubbers.

⁸ Includes blowing agents, peptizers, modifiers, and conditioning and lubricating agents.

Elastomers (Synthetic Rubbers)

The synthetic rubber industry in the United States had its beginning during World War II and has continued to thrive since that time. The styrene-butadiene, or S-type, rubber, which was the first to be developed, is a general-purpose material used in the manufacture of tires and other rubber goods; it is still the most important type of synthetic rubber, in terms of quantity produced. Several other types of synthetic rubbers are also produced in large quantities; among them are the polybutadiene-acrylonitrile type, or N-type, the polybutadiene-isoprene type, or Butyl-type, neoprene, and silicone elastomers. In 1962, production of stereo (synthetic natural) rubbers was reported separately for the first time.

The total output of all types of elastomers in the United States in 1962 amounted to 3,134 million pounds--11.7 percent more than the 2,807 million pounds reported for 1961. Sales of elastomers covered in this report amounted to 2,730 million pounds, valued at \$774 million, in 1962, compared with 2,565 million pounds, valued at \$717 million, in 1961. Statistics on the production and sales of elastomers are given in table 18A.⁹

Production of cyclic elastomers, which consisted chiefly of the polybutadiene-styrene type (S-type), amounted to 2,263 million pounds in 1962, compared with 2,118 million pounds in 1961. Sales of these elastomers amounted to 1,907 million pounds, valued at \$465 million, in 1962, compared with 1,912 million pounds, valued at \$462 million, in 1961. Production of polyurethane type elastomers in 1962 amounted to 17 million pounds.

The output of acyclic elastomers, including N-type, neoprene, Butyl, silicone, and stereo elastomers, amounted to 871 million pounds in 1962, compared with the 689 million pounds reported for 1961. Sales of these elastomers amounted to 823 million pounds, valued at \$310 million, in 1962, compared with 653 million pounds, valued at \$255 million, in 1961. The output of silicone elastomers in 1962 amounted to 6.7 million pounds, and that of stereo elastomers to 208 million pounds.

⁹ See also table 18B, pt. III, which lists these products alphabetically and identifies the manufacturers.

TABLE 18A.--Elastomers (synthetic rubbers):¹ U.S. production and sales, 1962

[Listed below are all elastomers (synthetic rubbers) 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 18B in pt. III lists alphabetically all elastomers for which data on production or sales were reported and identifies the manufacturer of each]

Product	Production	Sales		
		Quantity	Value	Unit value ²
Grand total-----	1,000 pounds ³ 3,134,395	1,000 pounds ³ 2,730,387	1,000 dollars 774,326	Per pound \$0.28
ELASTOMERS, CYCLIC				
Total-----	2,263,105	⁴ 1,907,319	464,581	.24
Polybutadiene-styrene type (S-type)-----	2,230,262	...	...	...
Polybutadiene-styrene-vinylpyridine type-----	16,291	...	...	...
Polyurethane type-----	16,552	...	...	...
ELASTOMERS, ACYCLIC				
Total-----	871,290	823,068	309,745	.38
Polybutadiene-acrylonitrile type (N-type)-----	103,197	90,809	46,457	.51
Polychloroprene type (Neoprene)-----	288,653	...	...	...
Polyisobutylene-isoprene type (Butyl)-----	201,564	...	...	...
Silicone elastomers-----	6,663	5,127	24,626	4.80
Stereo elastomers-----	208,472	...	...	...
All other acyclic elastomers ⁵ -----	62,741	727,132	238,662	.33

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 so stretched and the stress removed, will return with force to approximately their original length.

² Calculated from rounded figures.

³ Elastomer-content basis.

⁴ Partially estimated.

⁵ Includes data for the production and sales of polyalkylene sulfide, polybutadiene and polyisobutylene elastomers, and natural rubber modifications; and for sales of neoprene, Butyl, and stereo elastomers.

Note.--Statistics on the production of S-type, N-type, Butyl, neoprene, and stereo elastomers were compiled in cooperation with the U.S. Bureau of the Census.

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 resins, or (3) develop new improved properties not present in the original resins. Plasticizers reduce the viscosity of the resins and make it easier to shape and form them at high temperatures and pressures. They also impart flexibility and other desirable properties to the finished product. Statistics on production and sales of plasticizers are given in table 19A.¹⁰

Total U.S. production of plasticizers in 1962 amounted to 781 million pounds--representing an apparent increase of 24.0 percent over the output of 630 million pounds reported for 1961. However, because of certain changes in reporting procedures, and increased coverage, the 1962 figures are not strictly comparable with those for 1961. Sales in 1962 of the plasticizers covered by this report amounted to 666 million pounds, valued at \$168 million, compared with 536 million pounds, valued at \$155 million, in 1961.

Production of cyclic plasticizers in 1962, which consisted chiefly of the esters of phthalic anhydride and phosphoric acid, amounted to 571 million pounds, compared with 474 million pounds in 1961. Sales of cyclic plasticizers in 1962 amounted to 486 million pounds, valued at \$104 million, compared with 406 million pounds, valued at \$106 million, in the previous year.

Production of acyclic plasticizers in 1962 amounted to 210 million pounds, compared with 156 million pounds in 1961. Sales of acyclic plasticizers in 1962 amounted to 180 million pounds, valued at \$64 million. Because of certain changes in reporting procedures, and increased coverage on the epoxy and polymeric materials, these figures are not strictly comparable with those

¹⁰See also table 19B, pt. III, which lists these products alphabetically and identifies the manufacturers.

TABLE 19A. --Plasticizers: U.S. production and sales, 1962

[Listed below are all plasticizers for which reported data 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 19B in pt. III lists all plasticizers for which data on production or sales were reported and identifies the manufacturer of each.]

Chemical	Production	Sales		
		Quantity	Value	Unit value ¹
		1,000 pounds	1,000 dollars	Per pound
Grand total-----	780,943	665,935	168,063	\$0.25
PLASTICIZERS, CYCLIC				
Total-----	570,963	486,050	103,705	.21
Phosphoric acid esters:				
Cresyl diphenyl phosphate ² -----	15,700	13,888	3,455	.25
Tricresyl phosphate ² -----	27,451	26,291	8,089	.31
Triphenyl phosphate-----	10,435	2,972	1,073	.36
Phthalic anhydride esters, total-----	469,996	398,836	77,741	.19
Butyl decyl phthalate-----	3,011	2,880	511	.18
Butyl octyl phthalate-----	17,833	17,084	3,091	.18
Dibutyl phthalate-----	15,486	13,818	3,460	.25
Dicyclohexyl phthalate-----	6,369	3,781	1,518	.40
Diethyl phthalate-----	16,142	10,918	2,330	.21
Diethyl phthalate-----	1,533	1,173	247	.21
Diisodecyl phthalate-----	62,680	53,093	8,440	.16
Di(2-methoxyethyl) phthalate-----	3,927	...	...	...
Dimethyl phthalate-----	4,562	3,756	858	.23
Dioctyl phthalates, total-----	234,888	200,905	36,470	.18
Di(2-ethylhexyl) phthalate-----	171,037	142,576	24,951	.18
Diiso-octyl and mixed octyl phthalates-----	63,851	58,329	11,519	.20
Ditridecyl phthalate-----	4,398	3,928	886	.23
Octyl decyl phthalates, total-----	17,475	16,282	3,406	.21
Iso-octyl isodecyl phthalate-----	2,060	2,158	420	.20
n-Octyl n-decyl phthalate-----	15,415	14,124	2,986	.21
All other phthalic anhydride esters-----	81,692	71,218	16,524	.23
All other cyclic plasticizers ³ -----	47,381	44,063	13,347	.30
PLASTICIZERS, ACYCLIC				
Total-----	209,980	179,885	64,358	.36
Adipic acid esters, total-----	23,575	21,429	6,528	.30
Di(2-ethylhexyl) adipate-----	5,413	4,271	1,254	.29
Diisodecyl adipate-----	4,851	4,730	1,491	.32
Diiso-octyl adipate-----	4,205	4,093	1,209	.30
Octyl decyl adipate-----	8,078	7,386	2,137	.29
All other-----	1,028	949	437	.46
Azelaic acid esters-----	13,090	11,427	3,729	.33
Complex linear polyesters and polymeric plasticizers-----	33,731	29,663	12,957	.44
Dibutyl maleate-----	7,395	2,966	742	.25
Epoxidized esters, total-----	53,998	49,558	15,759	.32
Butyl epoxy stearates-----	195	251	97	.39
Epoxidized soya oils-----	37,725	33,538	10,638	.32
Octyl epoxy tallates-----	14,611	14,462	4,552	.31
All other-----	1,467	1,307	472	.36
Glycerol monoricinoleate-----	175	165	61	.37
Oleic acid esters, total-----	6,073	5,413	1,460	.27
Butyl oleate-----	2,022	1,572	403	.26
Glycerol trioleate (Triolein)-----	1,618	1,674	343	.20
n-Propyl oleate-----	513	386	80	.21
All other-----	1,920	1,781	634	.36

See footnotes at end of table.

TABLE 19A.--Plasticizers: U.S. production and sales, 1962--Continued

Chemical	Production	Sales		
		Quantity	Value	Unit value ¹
PLASTICIZERS, ACYCLIC--Continued				
Phosphoric acid esters-----	1,000 pounds 16,889	1,000 pounds 12,710	1,000 dollars 5,131	Per pound \$.40
Sebacic acid esters, total-----	12,944	10,835	6,056	.56
Dibutyl sebacate-----	3,847	2,348	1,493	.64
Di(2-ethylhexyl) sebacate-----	8,864	8,319	4,426	.53
All other-----	233	168	137	.82
Stearic acid esters, total-----	6,371	5,714	1,405	.25
n-Butyl stearate-----	3,003	3,077	759	.25
All other-----	3,368	2,637	646	.24
Triethylene glycol di(caprylate-caprate)-----	2,601	2,449	808	.33
All other acyclic plasticizers-----	33,138	27,556	9,722	.35

¹ Calculated from rounded figures. ² Includes material produced for use as motor-fuel additive.

³ Includes data for toluenesulfonamides, tetrahydrofurfuryl oleate, and other cyclic plasticizers.

⁴ Includes data for citric and acetylcitric, tartaric, and ricinoleic acid esters, and for butyl myristate, glycerol and glycol esters of certain fatty acids, glycerol tripropionate, and other acyclic plasticizers.

for 1961 (130 million pounds, valued at \$49 million). Production of complex linear polyesters in 1962 amounted to 34 million pounds, and that of epoxidized esters to 54 million pounds. Other products included in the acyclic class are the esters of adipic, azelaic, oleic, sebacic, and stearic acids.

Surface-Active Agents

The surface-active agents covered in this report include synthetic organic detergents and wetting, emulsifying, and dispersing agents that function in either aqueous or nonaqueous systems. Soaps, waxes, and plasticizers are not included. The data are reported in terms of 100-percent organic, surface-active ingredients, and thus exclude all inorganic salts, water, and other diluents. Originally developed as soap substitutes for the textile industry, surface-active agents have proved valuable in many other applications. A major part of the output of surface-active agents is consumed in the form of packaged household and industrial detergents. The remainder is used as wetting, dispersing, penetrating, and emulsifying agents in the processing of textiles and leather, in ore flotation and oil-drilling operations, and in the manufacture of paints, agricultural sprays, lubricants, cosmetics, foods, pharmaceuticals, and many other products.

Statistics on U.S. production and sales of surface-active agents in 1962 are given in table 20A.¹¹ Total production of surface-active agents in 1962 amounted to 1,949 million pounds--12.7 percent more than the 1,729 million pounds produced in 1961, and 27.2 percent more than the 1,532 million pounds produced in 1960. Sales in 1962 totaled 1,758 million pounds, valued at \$317 million, compared with 1,583 million pounds, valued at \$292 million, in 1961, and 1,399 million pounds, valued at \$278 million, in 1960. Sales in 1962 were thus 11.0 percent larger than in 1961 and 25.7 percent larger than in 1960, in terms of quantity, and 8.8 percent larger than in 1961 and 14.0 percent larger than in 1960, in terms of value.

Production of anionic materials in 1962 amounted to 1,361 million pounds, or 69.8 percent of total production; sales of anionic materials were 1,311 million pounds, valued at \$188 million. Production of those surface-active agents which are generally considered nonionic amounted to 523 million pounds, or 26.9 percent of the total; sales were 389 million pounds, valued at \$100 million. Production of cationic and amphoteric materials amounted to 65 million pounds, or 3.3 percent of the total; sales of these two classes totaled 59 million pounds, valued at \$30 million.

In this report surface-active agents have been divided, for statistical purposes, into benzenoid and nonbenzenoid groups, as in the 1961 report, instead of into cyclic and acyclic groups, as in the reports for 1960 and earlier years. Although the statistical totals given for the benzenoid and nonbenzenoid groups for 1961 and 1962 are not strictly comparable with those shown for the cyclic and acyclic groups in previous years, the differences in the group totals are small, so that comparisons between the data are significant.

Production of benzenoid surface-active agents in 1962 amounted to 1,302 million pounds, or 13.3 percent more than the 1,150 million pounds reported for 1961. Sales of benzenoid surface-active agents in 1962 totaled 1,221 million pounds, valued at \$163 million, compared with sales

¹¹ See also table 20B, pt. III, which lists these products alphabetically and identifies the manufacturers.

TABLE 20A.--Surface-active agents: U.S. production and sales, 1962

[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 20B in pt. III lists all surface-active agents for which data on production or sales were reported and identifies the manufacturer of each.]

Chemical	Production ¹	Sales		
		Quantity ¹	Value	Unit value ²
	1,000 pounds	1,000 pounds	1,000 dollars	Per pound
Grand total-----	1,948,567	1,758,394	317,127	\$0.18
Anionic-----	1,360,571	1,310,843	187,690	.14
Cationic and amphoteric-----	64,758	58,519	29,538	.50
Nonionic-----	523,238	389,032	99,899	.26
BENZENOID SURFACE-ACTIVE AGENTS				
Total-----	1,301,878	1,221,295	162,509	.13
<i>Not Sulfated or Sulfonated</i>				
Total-----	231,575	181,273	37,546	.21
Amides, amines, and quaternary ammonium salts, total-----	5,845	5,817	5,630	.97
Benzyltrimethyloctadecylammonium chloride-----	216	190	189	.99
Benzyl(dodecyl)dimethylammonium chloride-----	826	795	684	.86
Benzyl(hydrogenated tallow alkyl)dimethylammonium chloride-----	299	298	157	.53
(Dodecylbenzyl)trimethylammonium chloride-----	85	75	77	1.03
Heterocyclic amides, amines, and quaternary ammonium salts-----	565	561	743	1.32
Other amides, amines, and quaternary ammonium salts-----	3,854	3,898	3,780	.97
Carboxylic acid esters and ethers, total-----	224,781	174,796	31,661	.18
Alkylphenol - formaldehyde, alkoxylated-----	4,965	...	...	...
Dodecylphenol, ethoxylated-----	39,291	...	...	...
Nonylphenol, ethoxylated-----	123,901	92,919	15,724	.17
Phenol, ethoxylated-----	2,053	1,442	497	.34
Other carboxylic acid esters and ethers-----	54,571	80,435	15,440	.19
Phosphoric and polyphosphoric acid esters and salts-----	949	660	255	.39
<i>Sulfated and Sulfonated</i>				
Total-----	1,070,303	1,040,022	124,963	.12
Alkylphenols, ethoxylated and sulfated, total-----	46,199	...	...	...
Nonylphenol, ethoxylated and sulfated-----	27,319	25,924	5,799	.22
All other-----	18,880	...	...	...
Benzenesulfonates, total-----	623,200	614,996	96,944	.16
<i>Benzene, toluene-, and xylenesulfonates:</i>				
Toluenesulfonic acid, sodium salt-----	15,460	15,553	1,448	.09
Xylenesulfonic acid, ammonium salt-----	17,427	17,266	1,643	.10
Xylenesulfonic acid, sodium salt-----	22,903	21,324	2,064	.10
Dodecylbenzenesulfonates, total-----	407,598	404,735	59,504	.15
Dodecylbenzenesulfonic acid-----	71,103	61,522	15,396	.25
Dodecylbenzenesulfonic acid, calcium salt-----	8,659	5,239	1,613	.31
Dodecylbenzenesulfonic acid, isopropylamine salt-----	3,469	3,758	1,163	.31
Dodecylbenzenesulfonic acid, sodium salt-----	314,296	324,828	39,377	.12
Dodecylbenzenesulfonic acid, triethanolamine salt-----	3,336	3,044	902	.30
All other-----	6,735	6,344	1,053	.17
Other benzenesulfonates ³ -----	159,812	156,118	32,285	.21
Lignosulfonates, total-----	389,075	373,745	11,947	.03
Lignosulfonic acid, calcium salt-----	270,616	255,364	7,733	.03
All other-----	118,459	118,381	4,214	.04

See footnotes at end of table.

TABLE 20A. --Surface-active agents: U.S. production and sales, 1962--Continued

Chemical	Production ¹	Sales		
		Quantity ¹	Value	Unit value ²
BENZENOID SURFACE-ACTIVE AGENTS--Continued				
<i>Sulfated and Sulfonated--Continued</i>				
	<i>1,000 pounds</i>	<i>1,000 pounds</i>	<i>1,000 dollars</i>	<i>Per pound</i>
Naphthalenesulfonates, total-----	6,848	4,961	2,133	\$0.43
Dibutylnaphthalenesulfonic acid-----	498	377	309	.82
Diisopropylnaphthalenesulfonic acid, sodium salt-----	555	415	192	.46
Isopropylnaphthalenesulfonic acid-----	314	223	124	.56
All other-----	5,481	3,946	1,508	.38
Other benzenoid surface-active agents, sulfated and sulfonated ⁴ -----	4,981	20,396	8,340	.40
NONBENZENOID SURFACE-ACTIVE AGENTS				
Total-----	646,689	537,099	154,618	.29
<i>Not Sulfated or Sulfonated</i>				
Total-----	373,156	280,634	99,741	.36
Amides, amines, and quaternary ammonium salts, total-----	141,339	128,192	50,736	.40
Amine salts, total-----	2,724	2,336	980	.42
Amine acetates, total-----	2,185	1,960	739	.38
(Tallow alkyl)amine acetate-----	681	517	176	.34
All other-----	1,504	1,443	563	.39
Triethanolamine salts, total-----	164	...	...	...
Oleic acid, triethanolamine salt-----	120	20	9	.45
All other-----	44	...	...	...
Other amine salts ⁵ -----	375	356	232	.65
Amines, ethoxylated, total-----	7,002	5,973	2,877	.48
Rosin amine, ethoxylated-----	1,511	1,385	433	.31
All other-----	5,491	4,588	2,444	.53
Fatty acid - alkanolamine condensates, total-----	82,506	76,919	23,675	.31
Diethanolamine condensates, total-----	50,124	44,552	15,510	.35
Cocumont oil acids (amine/acid ratio=2/1)-----	12,116	9,126	5,004	.55
Cocumont oil acids (amine/acid ratio=1/1)-----	16,745	16,027	4,880	.30
Lauric acid-----	16,233	14,973	4,322	.29
Oleic acid (amine/acid ratio=2/1)-----	962	934	277	.30
Oleic acid (amine/acid ratio=1/1)-----	644	605	245	.40
Stearic acid-----	1,521	1,334	467	.35
All other-----	1,903	1,553	315	.20
Other alkanolamine condensates, total-----	32,382	32,367	8,365	.25
Lauric acid - ethanolamine condensate-----	33	33	12	.36
Stearic acid - ethanolamine condensates:				
(Amine/acid ratio=1/1)-----	76	65	27	.42
(All other ratios)-----	246	228	132	.58
All other-----	32,027	32,041	7,994	.25
Fatty acid - polyamine condensates, total-----	9,603	9,499	2,789	.29
Fatty acid - diethylenetriamine condensates-----	4,938	...	...	...
All other-----	4,665	9,499	2,789	.29
Fatty acid - polyamine condensates, ethoxylated, total-----	6,383	4,693	2,867	.61
Stearic acid - ethylenediamine condensate, monoethoxylated-----	1,523	1,420	905	.64
All other-----	4,860	3,273	1,962	.60
Heterocyclic amides, amines, and quaternary ammonium salts, total-----	4,307	4,011	2,219	.55
2-(8-Heptadeceryl)-1-(2-hydroxyethyl)-2-imidazoline-----	579	...	...	...
All other-----	3,728	4,011	2,219	.55
N-Substituted amino acids and polypeptides, total-----	4,488	3,060	5,385	1.76
N-Lauroylsarcosine, sodium salt-----	1,972	1,799	4,747	2.64
All other-----	2,516	1,261	638	.51
Other amides, amines, and quaternary ammonium salts, total-----	24,326	21,701	9,944	.46
Bis(hydrogenated tallow alkyl)dimethylammonium chloride-----	15,386	13,260	6,021	.45
Dodecyltrimethylammonium chloride-----	245	246	231	.94
Hexadecyltrimethylammonium bromide and chloride-----	649	609	617	1.01
Oleic acid - ethanolamine condensate, ethoxylated-----	63	58	45	.78
All other-----	7,983	7,528	3,030	.40

See footnotes at end of table.

TABLE 20A.--Surface-active agents: U.S. production and sales, 1962--Continued

Chemical	Production ¹	Sales		
		Quantity ¹	Value	Unit value ²
NONBENZENOID SURFACE-ACTIVE AGENTS--Continued				
Not Sulfated or Sulfonated--Continued				
	1,000 pounds	1,000 pounds	1,000 dollars	Per pound
Carboxylic acid esters, total-----	113,843	93,059	31,414	\$0.34
Glycerol esters, total-----	60,722	50,932	14,419	.28
Glycerol distearate-----	325	...	...	...
Glycerol mono(oconut oil) ester-----	683	...	...	...
Glycerol mono(cottonseed oil) ester-----	...	159	69	.43
Glycerol monoester of mixed fatty acids-----	1,562	647	243	.38
Glycerol monolaurate-----	266	215	85	.40
Glycerol mono-oleate-----	845	546	206	.38
Glycerol monostearate-----	17,234	15,336	4,661	.30
All other-----	39,807	34,029	9,155	.27
Polyethylene glycol esters, total-----	20,924	14,138	5,081	.36
Polyethylene glycol castor oil ester-----	872	713	365	.51
Polyethylene glycol coconut oil ester-----	221	187	48	.26
Polyethylene glycol dilaurate-----	823	755	266	.35
Polyethylene glycol dioleate-----	1,826	636	217	.34
Polyethylene glycol distearate-----	357	347	141	.41
Polyethylene glycol monolaurate-----	2,918	1,998	890	.45
Polyethylene glycol mono-oleate-----	3,492	1,938	758	.39
Polyethylene glycol monostearate-----	3,792	2,902	1,171	.40
Polyethylene glycol tall oil ester-----	5,484	3,929	998	.25
All other-----	1,139	733	227	.31
Other carboxylic acid esters, total-----	32,197	27,989	11,914	.43
Anhydrosorbitol tall oil ester-----	792	485	144	.30
Diethylene glycol monolaurate-----	744	625	189	.30
Diethylene glycol mono-oleate-----	128	89	25	.28
Diethylene glycol monostearate-----	1,051	830	249	.30
Diethylene glycol tall oil ester-----	76	76	29	.38
Ethoxylated anhydrosorbitol monolaurate-----	1,891	...	...	...
Ethoxylated anhydrosorbitol tristearate-----	301	...	...	...
Ethylene glycol distearate-----	238	223	66	.30
Ethylene glycol monostearate-----	1,386	1,381	483	.35
Polyalkylene glycol diglycolate-----	2,705	2,620	1,059	.40
1,2-Propanediol monolaurate-----	...	162	69	.43
1,2-Propanediol monostearate-----	985	799	348	.37
All other-----	21,900	20,559	9,253	.45
Ethers, total-----	100,908	43,427	12,108	.28
Castor oil, ethoxylated-----	1,631	1,284	461	.36
n-Dodecyl alcohol, ethoxylated-----	...	1,535	720	.47
Lanolin, ethoxylated-----	470	468	116	.25
9-Octadecenyl alcohol, ethoxylated-----	1,966	1,724	829	.48
n-Octadecyl alcohol, ethoxylated-----	116	71	38	.54
Polypropylene glycol ethers-----	32,009	...	...	...
Tridecyl alcohol, ethoxylated-----	6,525	5,893	1,400	.24
All other-----	58,191	32,452	8,544	.26
Fatty acids, potassium and sodium salts, total-----	11,640	11,336	2,592	.23
Coconut oil acids, potassium salt-----	90	89	25	.28
Lauric acid, potassium salt-----	54	54	32	.59
Oleic acid, potassium salt-----	458	289	42	.15
Oleic acid, sodium salt-----	1,253	1,252	220	.18
Soybean oil acids, potassium salt-----	23	21	4	.19
Stearic acid, sodium salt-----	1,808	1,761	912	.52
Tall oil acids, potassium salt-----	4,184	4,178	731	.17
Tall oil acids, sodium salt-----	84	83	10	.12
Tallow acids, sodium salt-----	1,585	1,578	179	.11
All other-----	2,101	2,031	437	.22
Phosphoric and polyphosphoric acid esters, total-----	2,873	2,139	1,486	.69
Alcohols, phosphated and polyphosphated, total-----	2,755	2,059	1,423	.69
2-Ethylhexyl phosphate, sodium salt-----	120	89	57	.64
All other-----	2,635	1,970	1,366	.69
Other phosphoric and polyphosphoric acid esters-----	118	80	63	.79

See footnotes at end of table.

TABLE 20A.--Surface-active agents: U.S. production and sales, 1962--Continued

Chemical	Production ¹	Sales		
		Quantity ¹	Value	Unit value ²
NONBENZENOID SURFACE-ACTIVE AGENTS--Continued				
Not Sulfated or Sulfonated--Continued				
Other nonbenzenoid surface-active agents, not sulfated or sulfonated-----	1,000 pounds 2,553	1,000 pounds 2,481	1,000 dollars 1,405	Per pound \$.57
Sulfated and Sulfonated				
Total-----	273,533	256,465	54,877	.21
Acids, sulfated and sulfonated, total-----	2,362	1,387	572	.41
Oleic acid, sulfonated-----	2,193	1,265	464	.37
All other-----	169	122	108	.89
Dicarboxylic acid amides, sulfated and sulfonated-----	1,282	1,242	751	.60
Dicarboxylic acid esters, sulfated and sulfonated, total--	4,899	4,446	2,155	.48
Sulfosuccinic acid, bis(2-ethylhexyl) ester-----	3,269	2,853	1,385	.49
All other-----	1,630	1,593	770	.48
Fats, oils, and waxes, sulfated and sulfonated, total----	30,252	19,226	3,685	.19
Animal fats and oils, sulfated and sulfonated, total----	9,687	7,258	875	.12
Grease, other than wool, sulfonated-----	416	...	...	...
Neat's-foot oil, sulfonated-----	1,600	961	164	.17
Tallow, sulfonated-----	7,271	5,690	623	.11
All other-----	400	607	88	.14
Fish and marine animal oils, sulfated and sulfonated:				
Cod oil, sulfonated-----	2,246	1,797	273	.15
Sperm oil, sulfonated-----	6,578	3,592	657	.18
Vegetable oils, sulfated and sulfonated:				
Castor oil, sulfonated-----	7,038	3,462	1,003	.29
Cocunut oil, sulfonated-----	1,332	649	149	.23
Peanut oil, sulfonated-----	1,427	1,370	393	.29
Rice-bran oil, sulfonated-----	341	121	30	.25
Soybean oil, sulfonated-----	285	269	78	.29
Other fats, oils, and waxes, sulfated and sulfonated, total-----	1,318	708	227	.32
Tall oil, sulfonated-----	504	483	144	.30
All other ⁶ -----	814	225	83	.37
Other nonbenzenoid surface-active agents, sulfated and sulfonated, total-----	234,738	230,164	47,714	.21
Cocunut oil acids - ethanalamine condensate, sulfated, potassium salt-----	47	46	40	.87
n-Dodecyl sulfate, ammonium salt-----	923	919	484	.52
n-Dodecyl sulfate, diethanolamine salt-----	341	319	231	.73
n-Dodecyl sulfate, sodium salt-----	13,365	12,081	6,374	.53
n-Dodecyl sulfate, triethanolamine salt-----	5,736	5,620	1,971	.35
Isopropyl sulfo-oleate-----	1,152	715	237	.33
N-Methyl-N-oleoyltaurine-----	2,943	2,940	1,577	.54
N-Propyl sulfo-oleate-----	1,288	926	230	.25
All other ⁷ -----	208,943	206,598	36,570	.18

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

² Calculated from rounded figures.

³ Includes tridecylbenzenesulfonates and all other benzene-, toluene-, and xylene-sulfonates.

⁴ Includes sales of all other alkylphenols, ethoxylated and sulfated.

⁵ Includes sales of all other triethanolamine salts.

⁶ Includes all other fish and vegetable oils, sulfated and sulfonated.

⁷ Includes alcohols, alkanes, amines, ethers, fatty acid amides, fatty acid esters, and quaternary ammonium compounds, sulfated and sulfonated.

in 1961 of 1,086 million pounds, valued at \$149 million. Of the benzenoid surface-active agents for which individual statistics are shown in the table, those produced in largest quantity were dodecylbenzenesulfonic acid, sodium salt, 314 million pounds; lignosulfonic acid, calcium salt, 271 million pounds; and nonylphenol, ethoxylated, 124 million pounds.

Production of nonbenzenoid surface-active agents in 1962 amounted to 647 million pounds, or 11.5 percent more than the 580 million pounds reported for 1961. Sales of nonbenzenoid surface-active agents in 1962 totaled 537 million pounds, valued at \$155 million, compared with the 498 million pounds, valued at \$142 million, reported for 1961. Of the nonbenzenoid surface-active agents for which individual statistics are shown in the table, those produced in largest quantity were glycerol monostearate, 17 million pounds; coconut oil acids - diethanolamine condensate (amine/acid ratio=1/1), 17 million pounds; and lauric acid - diethanolamine condensate, 16 million pounds.

Pesticides and Other Organic Agricultural Chemicals

This section of the report covers pesticides (fungicides, herbicides, insecticides, and rodenticides) and other organic agricultural chemicals, such as plant hormones, seed disinfectants, soil conditioners, and soil fumigants. The data are given in terms of 100-percent active material; they thus exclude such materials as diluents, emulsifiers, synergists, and wetting agents. Statistics on production and sales of pesticides and other organic agricultural chemicals in 1962 are given in table 21A.¹²

Production of pesticides and other organic agricultural chemicals in 1962 amounted to 730 million pounds--about 4 percent more than the 700 million pounds reported for 1961. Sales in 1962 were 634 million pounds, valued at \$346 million, compared with 612 million pounds, valued at \$303 million, in 1961.

The output of cyclic pesticides and other chemicals included in the cyclic group amounted to 585 million pounds in 1962-- about 2 percent more than the 572 million pounds produced in 1961. Sales in 1962 were 497 million pounds, valued at \$271 million, compared with 484 million pounds, valued at \$238 million, in 1961. The chemical in this group which was produced in the greatest quantity in 1962--as in each year since it was first separately reported in 1944--was the insecticide DDT. The output of this product in 1962 amounted to 167 million pounds.

TABLE 21A.--Pesticides and other organic agricultural chemicals: U.S. production and sales, 1962

[Listed below are all pesticides and other organic agricultural 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 21B in pt. III lists all pesticides and other organic agricultural chemicals for which data on production or sales were reported and identifies the manufacturer of each]

Product	Production	Sales		
		Quantity	Value	Unit value ¹
	1,000 pounds	1,000 pounds	1,000 dollars	Per pound
Grand total-----	729,718	633,962	346,301	\$0.55
PESTICIDES AND OTHER ORGANIC AGRICULTURAL CHEMICALS, CYCLIC				
Total-----	584,975	496,583	271,266	.55
Fungicides, total-----	80,651	61,626	18,906	.31
Mercury fungicides-----	1,201	1,081	2,411	2.23
Naphthenic acid, copper salt-----	1,745	1,697	548	.32
Pentachlorophenol (PCP)-----	38,793	31,491	5,276	.17
8-Quinolinol (8-Hydroxyquinoline), copper salt-----	68	54	211	3.91
2,4,5-Trichlorophenol and salts-----	11,776	...	...	...
All other-----	27,068	27,303	10,460	.38

See footnotes at end of table.

¹² See also table 21B, pt. III, which lists these products alphabetically and identifies the manufacturers.

TABLE 21A.--Pesticides and other organic agricultural chemicals: U.S. production and sales, 1962--Continued

Product	Production	Sales		
		Quantity	Value	Unit value ¹
PESTICIDES AND OTHER ORGANIC AGRICULTURAL CHEMICALS, CYCLIC--Continued				
Herbicides and plant hormones, total-----	1,000 pounds 131,690	1,000 pounds 78,229	1,000 dollars 78,490	Per pound \$1.00
Phenoxyacetic acid derivatives:				
(2,4-Dichlorophenoxy)acetic acid (2,4-D)-----	42,997	17,010	16,941	.29
(2,4-Dichlorophenoxy)acetic acid esters and salts, total-----	37,105	28,825	10,521	.36
(2,4-Dichlorophenoxy)acetic acid, n-butyl ester-----	5,609	5,675	1,725	.30
(2,4-Dichlorophenoxy)acetic acid, dimethylamine salt-----	9,045	7,137	2,583	.36
(2,4-Dichlorophenoxy)acetic acid, iso-octyl ester-----	3,813	4,347	1,475	.34
(2,4-Dichlorophenoxy)acetic acid, isopropyl ester-----	5,435	2,944	956	.32
All other-----	13,203	8,722	3,782	.43
(2,4,5-Trichlorophenoxy)acetic acid (2,4,5-T)-----	8,369	2,250	2,038	.91
(2,4,5-Trichlorophenoxy)acetic acid esters and salts, total-----	10,504	5,607	4,516	.81
(2,4,5-Trichlorophenoxy)acetic acid, n-butyl ester-----	1,147	856	699	.82
(2,4,5-Trichlorophenoxy)acetic acid, iso-octyl ester-----	1,971	1,509	1,264	.84
(2,4,5-Trichlorophenoxy)acetic acid, triethylamine salt-----	285	277	372	1.34
All other-----	7,101	2,965	2,181	.74
Phenylmercury acetate (PMA)-----	534	384	2,263	5.89
All other-----	32,181	24,153	54,211	2.24
Insecticides and rodenticides, total-----	372,634	356,728	173,870	.49
Chlorinated insecticides, total-----	296,702	296,693	104,105	.35
Hexachlorocyclohexane (Benzene hexachloride) and lindane ² -----	12,022	12,400	2,434	.20
1,1,1-Trichloro-2,2-bis(p-chlorophenyl)ethane (DDT)-----	167,032	174,093	28,290	.16
All other-----	117,648	110,200	73,381	.67
O,O-Diethyl O-(p-nitrophenyl) phosphorothioate (Parathion)-----	8,786	5,847	4,949	.85
O,O-Dimethyl O-(p-nitrophenyl) phosphorothioate (Methyl parathion)-----	16,156	12,196	10,609	.87
All other ³ -----	50,990	41,992	54,207	1.29
PESTICIDES AND OTHER ORGANIC AGRICULTURAL CHEMICALS, ACYCLIC				
Total-----	144,743	137,379	75,035	.55
Fungicides, total-----	36,828	35,963	26,910	.75
Dimethyldithiocarbamic acid, ferric salt (Ferbam)-----	2,966	3,170	1,221	.39
Ethylene bis(dithiocarbamic acid), disodium salt (Nabam)-----	4,216	4,080	1,192	.29
All other-----	29,646	28,713	24,497	.85
Herbicides and plant hormones, total-----	19,198	16,980	13,627	.80
Methanesulfonic acid, disodium salt-----	531	348	259	.74
All other-----	18,667	16,632	13,368	.80
Insecticides and rodenticides, total-----	32,855	22,422	21,770	.97
Organophosphorus insecticides-----	31,387	20,880	20,474	.98
All other ⁴ -----	1,468	1,542	1,296	.84
Soil conditioners and soil fumigants, total-----	55,862	62,014	12,728	.21
Bromomethane (Methyl bromide)-----	12,757	11,873	5,215	.44
1,2-Dibromo-3-chloropropane-----	1,545	2,177	1,204	.55
All other-----	41,560	47,964	6,309	.13

¹ Calculated from rounded figures.² Production of gamma isomer content in benzene hexachloride and lindane totaled 3.4 million pounds; sales amounted to 3.5 million pounds.³ Includes small amounts of insect repellents and nematocides.⁴ Includes small amounts of fly repellents.

Production of acyclic pesticides and other acyclic organic agricultural chemicals in 1962 amounted to 145 million pounds, compared with the 128 million pounds reported for 1961. Sales in 1962 were 137 million pounds, valued at \$75 million, compared with 128 million pounds, valued at \$65 million, in 1961.

Miscellaneous Synthetic Organic Chemicals

As used in this report, the term "miscellaneous synthetic organic chemicals" refers to those products that are not included in the use groups covered in the preceding sections of the report. These miscellaneous chemicals, which account for about three-fifths of the output of all synthetic organic chemicals, 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, antifreeze chemicals, solvents, and acyclic intermediates.

Production of miscellaneous chemicals in 1962 amounted to 37.6 billion pounds, or 14.8 percent more than the output of 32.7 billion pounds reported for 1961. Sales of miscellaneous chemicals in 1962 amounted to 16.6 billion pounds, valued at \$2.3 billion, compared with 15.1 billion pounds, valued at \$2.3 billion, in 1961. Statistics on production and sales of miscellaneous chemicals in 1962 are given in table 22A.¹³

The total output of miscellaneous cyclic chemicals in 1962 was 858 million pounds, or 11.5 percent more than the output of 769 million pounds reported for 1961. Sales in 1962 totaled 426 million pounds, valued at \$159 million, compared with 431 million pounds, valued at \$146 million, in 1961. The most important subgroup of cyclic compounds was the lubricating oil additives, the output of which was 366 million pounds in 1962.

Total production of miscellaneous acyclic chemicals in 1962 was 36.7 billion pounds--14.8 percent more than the output of 32.0 billion pounds reported for 1961. Sales in 1962 totaled 16.2 billion pounds, valued at \$2.1 billion, compared with 14.7 billion pounds, valued at \$2.2 billion, in 1961.

Production of alcohols and halogenated hydrocarbons in 1962 each exceeded that of any of the use groups of synthetic organic chemicals except cyclic intermediates and plastics and resin materials. Production of monohydric, unsubstituted alcohols totaled 6.6 billion pounds in 1962, about 6.5 percent more than in 1961. Alcohols are used as solvents, intermediates, and antifreeze materials, and for other purposes. Production of halogenated hydrocarbons totaled 6.8 billion pounds in 1962, or 27.0 percent more than the 5.4 billion pounds reported for 1961. Halogenated hydrocarbons are used as solvents, intermediates, refrigerants, and aerosol propellents, and for other purposes.

Individual miscellaneous chemicals the output of which exceeded 1 billion pounds in 1962 were formaldehyde (2.4 billion pounds, compared with 1.8 billion pounds in 1961); synthetic methanol (2.2 billion pounds, compared with 2.0 billion pounds); urea (2.0 billion pounds, compared with 1.8 billion pounds); dichloroethane (1.8 billion pounds, compared with 1.4 billion pounds); ethyl alcohol (1.7 billion pounds in each year); ethylene oxide (1.5 billion pounds, compared with 1.4 billion pounds); ethylene glycol (1.4 billion pounds, compared with 1.2 billion pounds); vinyl chloride (1.3 billion pounds, compared with 1.0 billion pounds); and acetic anhydride (1.2 billion pounds, compared with 1.3 billion pounds).

¹³ See also table 22B, pt. III, which lists these products alphabetically and identifies the manufacturers.

TABLE 22A.-- *Miscellaneous chemicals: U.S. production and sales, 1962*

[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 22B in pt. III lists alphabetically all miscellaneous chemicals for which data on production or sales were reported and identifies the manufacturer of each]

Chemical	Production	Sales		
		Quantity	Value	Unit value ¹
	1,000 pounds	1,000 pounds	1,000 dollars	Per pound
Grand total-----	37,576,927	16,603,023	2,275,808	\$0.14
MISCELLANEOUS CHEMICALS, CYCLIC				
Total-----	857,520	426,316	158,806	.37
Benzoic acid salts: Sodium benzoate, tech. and U.S.P-----	5,915	5,770	1,842	.32
Benzoyl peroxide-----	4,226	3,223	3,095	.96
Cyclohexanone peroxide-----	19	...	...	...
Cyclopropane-----	185	161	2,317	14.39
2,6-Di-tert-butyl-p-cresol, total-----	14,198	15,096	8,564	.57
Food grade-----	4,041	4,257	2,540	.60
Tech-----	10,157	10,839	6,024	.56
Flotation reagents-----	4,462	3,141	1,061	.34
Gasoline additives, total ² -----	10,600	7,168	6,959	.97
N,N-Di-sec-butyl-p-phenylenediamine-----	2,980	3,338	3,054	.91
N,N'-Disalicylidene-1,2-propanediamine-----	1,392	1,077	1,892	1.76
All other-----	6,228	2,753	2,013	.73
Hexamethylenetetramine, tech-----	36,415	20,130	3,854	.19
Lubricating oil and grease additives, total-----	365,818	180,936	40,597	.22
Oil soluble petroleum sulfonate, barium salt-----	42,987	...	...	...
Oil soluble petroleum sulfonate, calcium salt-----	120,661	42,369	8,468	.20
Oil soluble petroleum sulfonate, sodium salt-----	82,194	33,838	5,553	.16
All other-----	119,976	104,729	26,576	.25
Naphthenic acid salts, total ^{3 4} -----	15,008	13,430	5,110	.38
Calcium naphthenate-----	1,407	1,157	488	.42
Cobalt naphthenate-----	2,834	2,523	1,614	.64
Iron naphthenate-----	183	127	44	.35
Lead naphthenate-----	8,094	7,421	2,079	.28
Manganese naphthenate-----	1,444	1,230	475	.39
Zinc naphthenate-----	745	677	251	.37
All other-----	304	295	159	.54
Photographic chemicals, total-----	6,615	6,469	11,402	1.76
Benzotriazole-----	21	20	94	4.70
All other-----	6,594	6,449	11,308	1.75
Pinene-----	2,949	2,205	283	.13
Rosin acid salts ³ -----	472	...	...	...
Salicylanilide-----	144	...	...	...
Tall oil salts, total ³ -----	7,371	6,767	2,250	.33
Calcium tallate-----	353	362	117	.32
Cobalt tallate-----	2,106	1,983	949	.48
Copper tallate-----	92	95	19	.20
Lead tallate-----	3,395	3,007	786	.26
Manganese tallate-----	820	735	203	.28
All other-----	605	585	176	.30
Tanning materials, synthetic, total-----	34,730	34,105	7,249	.21
2-Naphthalenesulfonic acid, formaldehyde condensate and salts-----	30,169	29,286	5,524	.19
All other-----	4,561	4,819	1,725	.36

See footnotes at end of table.

TABLE 22A.--Miscellaneous chemicals: U.S. production and sales, 1962--Continued

Chemical	Production	Sales		
		Quantity	Value	Unit value ¹
MISCELLANEOUS CHEMICALS, CYCLIC--Continued				
Textile chemicals, other than surface-active agents-----	1,000 pounds 2,474	1,000 pounds 1,242	1,000 dollars 1,519	Per pound \$1.22
All other miscellaneous cyclic chemicals-----	345,919	126,473	62,704	.49
MISCELLANEOUS CHEMICALS, ACYCLIC				
Total-----	36,719,407	16,176,707	2,117,002	.13
Acetaldehyde-----	...	87,875	6,964	.08
Acetic acid, synthetic 100%-----	963,604	177,352	14,197	.08
Acetic acid salts, total-----	21,010	16,796	3,686	.22
Ammonium acetate-----	975	901	329	.37
Copper acetate-----	...	113	75	.66
Magnesium acetate-----	...	12	12	1.00
Potassium acetate-----	1,465	1,375	289	.21
Sodium acetate-----	13,325	...	...	...
Zinc acetate-----	764	813	273	.34
All other-----	4,481	13,582	2,708	.20
Acetic anhydride, 100%, from all sources-----	1,241,918	...	...	...
Acetone, total-----	849,110	517,633	28,876	.06
From isopropyl alcohol-----	668,463	366,719	21,508	.06
All other-----	180,647	150,914	7,368	.05
Acetonitrile-----	2,108	...	...	...
Acrylic acid-----	17,572	4,343	1,653	.38
Acrylonitrile-----	360,091	203,368	30,201	.15
Adipic acid-----	...	53,425	13,505	.25
Alcohols, monohydric, unsubstituted, total-----	6,575,612	3,270,220	220,929	.07
Alcohols C ₈ or lower, total-----	6,293,046	3,169,637	203,666	.06
Allyl alcohol-----	19,228	...	...	...
Butyl alcohols, total-----	625,704	297,869	33,845	.11
Normal (n-Propylcarbinol)-----	275,922	222,150	26,048	.12
All other-----	349,782	75,719	7,797	.10
Ethyl alcohol, synthetic ³ -----	1,679,548	989,377	61,627	.06
Iso-octyl alcohols-----	66,783	54,505	7,633	.14
Isopropyl alcohol-----	1,325,585	471,219	29,035	.06
Methanol, synthetic-----	2,228,062	1,122,602	38,213	.03
All other-----	348,136	234,105	33,313	.14
Alcohols C ₁₀ and higher, total-----	282,566	100,583	17,263	.17
Decyl alcohol-----	55,936	41,424	5,701	.14
Dodecyl alcohol (Lauryl alcohol)-----	...	10,911	3,134	.29
1-Hexadecanol (Cetyl alcohol)-----	1,090	794	281	.35
1-Octadecanol (Stearyl alcohol)-----	...	4,214	903	.21
All other-----	225,540	43,240	7,244	.17
Amines, total-----	495,022	134,207	45,490	.34
Butylamine-----	954	...	...	...
Coconut oil amine-----	943	...	...	...
Diethylamine-----	5,660	...	...	...
Dimethylamine-----	49,452	31,239	7,646	.24
Dodecylamine-----	1,886	...	...	...
Methylamine, mono-----	16,272	13,643	2,507	.18
Octadecylamine-----	916	...	...	...
Oleylamine-----	1,016	651	225	.35
Tallow amine-----	2,089	1,543	590	.38
Tallow amine, dihydrogenated and hydrogenated-----	2,087	1,817	679	.37
Trimethylamine-----	11,226	...	...	...
All other-----	402,521	85,314	33,843	.40
Amly acetates, 90%-----	8,225	5,738	1,000	.17
Bis(2-chloroethyl) ether (Dichlorodiethyl ether), all grades-----	...	7,321	143	.02

See footnotes at end of table.

TABLE 22A.-- Miscellaneous chemicals: U.S. production and sales, 1962--Continued

Chemical	Production	Sales		
		Quantity	Value	Unit value ¹
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued				
1,3-Bis(hydroxymethyl)urea (Dimethylolurea)-----	1,955	...	...	...
2-Butanone peroxide-----	1,032	981	1,847	\$1.88
Butyl acetates, 90%, total-----	88,567	101,810	12,606	.12
Normal-----	54,400	63,526	8,276	.13
All other-----	34,167	38,284	4,330	.11
Butyric acid-----	...	457	140	.31
Caprolactam (Hexahydro-2H-azepin-2-one)-----	163,806	68,722	27,981	.41
Carbon disulfide-----	607,182	487,708	20,110	.04
Cellulose esters and ethers, total-----	839,257	242,786	100,070	.41
Cellulose acetate-----	606,184	...	...	...
Sodium carboxymethylcellulose, 100%-----	43,488	41,119	18,298	.44
All other-----	189,585	201,667	81,772	.41
Chloral (Trichloroacetaldehyde)-----	76,816	...	...	...
Chloroacetic acid, mono-----	46,271	...	...	...
Chloroacetic acid, ethyl ester-----	1,288	...	...	...
2-Chloro-N,N-dimethylethylamine (Dimethylaminoethyl chloride) hydrochloride-----	225	148	211	1.43
Dibutyl fumarate-----	4,852	...	...	...
Diethylene glycol-----	127,047	80,614	9,966	.12
Diethyl malonate (Malonic ester)-----	...	466	347	.74
Dilauryl 3,3'-thiodipropionate-----	352	461	571	1.24
2-Dimethylaminoethanol-----	1,208	941	628	.67
Dioctyl maleate-----	334	...	...	...
Dipropylene glycol-----	22,928	20,377	2,667	.13
Epichlorohydrin-----	68,836	19,287	4,784	.25
Ethanolamines, total-----	135,479	116,223	24,097	.21
2-Aminoethanol (Monoethanolamine)-----	43,649	36,861	7,769	.21
2,2'-Iminodiethanol (Diethanolamine)-----	54,475	43,374	9,151	.21
2,2',2''-Nitrioltriethanol (Triethanolamine)-----	37,355	35,988	7,177	.20
2-Ethoxyethanol (Ethylene glycol monoethyl ether)-----	...	29,371	5,214	.18
Ethyl acetate, 85%-----	101,979	90,149	10,230	.11
Ethyl acrylate-----	71,842	24,017	7,759	.32
Ethylene glycol-----	1,433,877	963,778	90,040	.09
Ethylene oxide-----	1,517,968	156,880	18,639	.12
Ethyl ether, all grades-----	88,834	54,143	4,958	.09
Ethyl formate-----	199	175	59	.34
2-Ethylhexanoic acid (α -Ethylcaproic acid) salts, total-----	3,472	2,314	2,236	.97
Calcium 2-ethylhexanoate-----	...	112	71	.63
Cobalt 2-ethylhexanoate-----	505	423	384	.91
Copper 2-ethylhexanoate-----	31	31	16	.52
Lead 2-ethylhexanoate-----	200	206	86	.42
Manganese 2-ethylhexanoate-----	33	34	18	.53
Zinc 2-ethylhexanoate-----	153	123	60	.49
All other-----	2,590	1,385	1,601	1.16
Ethyl silicate (Tetraethoxysilane)-----	4,031	3,477	1,415	.41
Fatty acid esters, not included with plasticizers or surface-active agents, total-----	5,028	4,160	1,277	.31
Isopropyl myristate-----	1,809	1,811	643	.36
Isopropyl palmitate-----	572	651	215	.33
All other-----	2,647	1,698	419	.25
Formaldehyde (37% by weight)-----	2,398,067	835,572	26,474	.03
Formic acid, 90%-----	17,260	16,977	2,388	.14
Formic acid salts-----	22,836	...	...	...
Fumaric acid-----	24,432	20,033	3,778	.19

See footnotes at end of table.

TABLE 22A.--Miscellaneous chemicals: U.S. production and sales, 1962--Continued

Chemical	Production	Sales		
		Quantity	Value	Unit value ¹
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued				
	1,000 pounds	1,000 pounds	1,000 dollars	Per pound
Gluconic acid, tech-----	3,593	3,415	1,124	\$0.33
Gluconic acid, sodium salt, tech-----	6,237	5,509	1,594	.29
Glycerol, synthetic-----	117,966	...	...	...
Halogenated hydrocarbons, total-----	6,810,222	...	...	...
1-Bromobutane (n-Butyl bromide)-----	58	36	28	.78
Bromoethane (Ethyl bromide)-----	862	...	...	...
Carbon tetrachloride-----	483,673	404,599	31,537	.08
Chlorinated paraffins, total-----	39,712	37,980	5,006	.13
35%-64% Chlorine-----	30,113	29,441	3,603	.12
All other-----	9,599	8,539	1,403	.16
Chlorodifluoromethane-----	...	29,473	19,890	.67
Chloroethane (Ethyl chloride)-----	536,794	218,720	16,256	.07
Chloroform, total-----	98,209	81,542	7,328	.09
Tech-----	97,137	80,389	7,113	.09
U.S.P.-----	1,072	1,153	215	.19
Chloromethane (Methyl chloride)-----	107,715	46,216	4,427	.10
Dichlorodifluoromethane-----	207,960	201,712	59,447	.29
1,2-Dichloroethane (Ethylene dichloride)-----	1,774,345	294,960	13,681	.05
Dichloromethane (Methylene chloride)-----	143,787	128,723	11,899	.09
1,2-Dichloropropane (Propylene dichloride)-----	35,467	23,771	743	.03
Dichlorotetrafluoroethane-----	10,521	9,694	5,916	.61
Tetrachloroethylene (Perchloroethylene)-----	320,452	307,662	29,456	.10
1,1,2-Trichloroethane (Vinyl trichloride)-----	2,536	...	...	...
Trichloroethylene-----	356,062	347,881	34,798	.10
Trichlorofluoromethane-----	124,757	119,756	24,707	.21
Vinyl chloride, monomer (Chloroethylene)-----	1,311,489	515,522	38,548	.07
All other-----	1,255,823	...	...	...
Hexanoic acid (Caproic acid)-----	44	32	27	.84
Isoscorbic acid, sodium salt-----	2,014	1,616	2,773	1.72
Isopropyl acetate-----	32,650	33,664	3,751	.11
Isopropyl ether-----	...	3,332	253	.08
Lactic acid, 100%, total-----	5,543	5,302	2,132	.40
Edible and medicinal-----	4,066	3,963	1,779	.45
Technical-----	1,477	1,339	353	.26
Linoleic acid salts, total ³ -----	437	442	145	.33
Calcium linoleate-----	135	113	23	.20
Cobalt linoleate-----	112	...	...	...
All other-----	190	329	122	.37
Lubricating oil additives, total-----	284,963	108,378	24,003	.22
Phosphorodithioates (Dithiophosphates)-----	89,053	40,086	10,488	.26
Sulfurized lard oil-----	1,800	...	...	...
Sulfurized sperm oil-----	21,091	...	...	...
All other-----	173,019	68,292	13,515	.20
Maleic anhydride-----	83,966	46,286	7,716	.17
Mercaptoacetic (Thioglycolic) acid derivatives, total-----	2,921	2,763	3,647	1.32
2-Aminoethyl mercaptoacetate (Monoethanolamine thioglycolate)-----	282	...	...	...
All other-----	2,639	2,763	3,647	1.32
Methyl acetate-----	15,119	...	...	...
2-Octanone (Hexyl methyl ketone)-----	...	197	52	.26
Oleic acid salts ⁶ -----	213	234	183	.78
Oxalic acid-----	20,669	19,136	3,478	.18
Oxalic acid salts-----	6,512	5,676	1,315	.23
Palmitic acid salts-----	327	...	...	...
Palmitoyl chloride-----	136	...	...	...
Pentaerythritol-----	62,029	55,796	14,309	.26

See footnotes at end of table.

TABLE 22A.--Miscellaneous chemicals: U.S. production and sales, 1962--Continued

Chemical	Production	Sales		
		Quantity	Value	Unit value ¹
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued				
	1,000 pounds	1,000 pounds	1,000 dollars	Per pound
Pentaerythritol tetranitrate-----	3,815	2,230	1,723	\$0.77
Phosgene (Carbonyl chloride)-----	111,999	...	...	...
Phosphorus acid esters, not elsewhere specified, total-----	6,852	7,620	3,590	.47
Tributyl phosphate-----	2,234	2,266	1,075	.47
All other-----	4,618	5,354	2,515	.47
Polyacrylic acid salts-----	1,492	1,232	1,705	1.38
Polyethylene glycol-----	32,843	26,315	6,693	.25
Polypropoxy ethers, total-----	117,304	91,021	19,345	.22
Glycerol tri(polyoxypropylene) ether-----	85,527	66,700	14,697	.22
All other-----	31,777	24,321	5,148	.21
Polypropylene glycol-----	87,469	68,125	13,193	.19
Propionic acid-----	30,745	9,959	1,491	.15
Propionic acid salts:				
Calcium propionate-----	5,384	9,847	2,449	.25
Sodium propionate-----	4,932	4,589	1,188	.26
Propionic anhydride-----	...	225	97	.43
Propylene glycol (1,2-Propanediol)-----	184,401	145,160	16,594	.11
Propylene oxide-----	446,199	60,091	7,336	.12
Sarcosine and salt-----	809	...	...	...
Sequestering agents, total-----	26,152	20,000	7,120	.36
(Diethylenetrinitrilo)pentaaetic acid, sodium salt-----	977	894	262	.29
(Ethylenedinitrilo)tetraaetic acid (Ethylenediamine-tetraaetic acid).	3,941	2,134	822	.39
(Ethylenedinitrilo)tetraaetic acid, dihydrogen, disodium salt.	522	488	286	.59
(Ethylenedinitrilo)tetraaetic acid, monohydrogen, trisodium salt.	294	277	140	.51
(Ethylenedinitrilo)tetraaetic acid, monosodium iron salt.	452	427	302	.71
(Ethylenedinitrilo)tetraaetic acid, tetrasodium salt-----	13,388	9,657	3,288	.34
(N-Hydroxyethylethylenedinitrilo)triacetic acid, trisodium salt.	4,692	4,490	1,351	.30
All other-----	1,886	1,633	669	.41
Sodium formaldehydesulfoxylate-----	5,334	5,327	1,118	.21
Sodium methoxide (Sodium methylate)-----	5,903	4,818	1,354	.28
Stearic acid salts, total ⁷ -----	30,573	28,102	10,277	.37
Aluminum stearates, total-----	5,066	5,314	1,999	.38
Aluminum distearate-----	3,990	4,189	1,565	.37
Aluminum stearate, other-----	1,076	1,125	434	.39
Calcium stearate-----	10,083	9,809	2,889	.29
Lead stearate-----	611	507	180	.36
Lithium stearate-----	259	240	114	.48
Magnesium stearate-----	1,265	1,041	424	.41
Zinc stearate-----	8,538	7,458	2,876	.39
All other-----	4,751	3,733	1,795	.48
Tallow amide, hydrogenated-----	1,235	1,164	397	.34
Tetraethylene glycol-----	...	1,749	333	.19
Tetraethyllead-----	493,909	...	...	...
Tetramethyllead-----	18,107	17,548	12,898	.74
Triethylene glycol-----	34,799	29,958	5,177	.17
Urea in compounds or mixtures (100% basis), total ⁸ -----	2,020,012	1,934,017	9 84,160	.04
In feed compounds-----	222,764	228,211	10,027	.04
In liquid fertilizer-----	683,262	685,424	29,815	.04
In solid fertilizer-----	932,125	893,201	38,933	.04
All other-----	181,861	127,181	5,385	.04

See footnotes at end of table.

TABLE 22A. --Miscellaneous chemicals: U.S. production and sales, 1962--Continued

Chemical	Production	Sales		
		Quantity	Value	Unit value ¹
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued	1,000 pounds	1,000 pounds	1,000 dollars	Per pound
Vinyl acetate, monomer-----	317,912	189,330	26,350	\$0.14
Zinc formaldehydesulfoxylate-----	1,199	1,279	549	.43
All other miscellaneous acyclic chemicals-----	6,857,975	2,636,971	774,960	.29

¹ Calculated from rounded figures.

² Statistics exclude production and sales of tricresyl phosphate. Statistics on tricresyl phosphate are given in the section "Plasticizers."

³ Quantities are given on the basis of solid naphthenate, resinates, tallates, or linoleate content.

⁴ Statistics exclude production and sales of copper naphthenate. Statistics on copper naphthenate are given in the section "Pesticides and Other Organic Agricultural Chemicals."

⁵ Statistics on production of ethyl alcohol from natural sources by fermentation are issued by the Alcohol Tax Unit, U.S. Internal Revenue Service.

⁶ Statistics exclude production and sales of potassium and sodium oleate. Statistics on these oleates are included in the section "Surface-Active Agents."

⁷ Statistics exclude production and sales of potassium and sodium stearates. Statistics on these stearates are included in the section "Surface-Active Agents."

⁸ Production of urea in primary solution totaled 2,058,788 thousand pounds.

⁹ Includes estimated values for sales of urea in nitrogen compounds.

**PART III. ALPHABETICAL LIST OF INDIVIDUAL PRODUCTS, BY GROUPS,
AND NAMES OF MANUFACTURERS**

This section of the report consists of (1) a series of tables that supplement the statistical information given in parts I and II, and (2) a Directory of Manufacturers. The tables with numbers that include the letter "B" supplement the tables in part I or part II with numbers that include the letter "A"; for example, table 8B in part III supplements table 8A in part II.

Each table in part III lists alphabetically the individual items in each group for which data on production or sales were reported for 1962. The tables include data on only those chemicals for which the volume of production or sales in 1962 exceeded 1,000 pounds or for which the value of sales exceeded \$1,000. Where separate statistics for an item are given in the tables in part I or part II, an asterisk (*) precedes the name of the item in the tables in part III. The manufacturers of each product are indicated by identification codes which are listed in the Directory of Manufacturers (table 23). A few companies, however, have specifically requested that they not be identified as having produced or sold certain items. These manufacturers are indicated by a small letter "x" in the tables.

Tar Crudes

**TABLE 4B.--Tar crudes for which U.S. production or sales were reported,
identified by manufacturer, 1962**

[Tar crudes for which separate statistics are given in table 4A are marked below with an asterisk (*); products not so marked do not appear in table 4A because the reported data are accepted in confidence and may not be published. Manufacturers' identification codes shown below are taken from table 23. Table 23 identifies all U.S. producers of tar crudes (except producers that report to the Division of Bituminous Coal, U.S. Bureau of Mines)]

Product	Manufacturers' identification codes (according to list in table 23) ¹
*Crude light oil-----	CBT, RUR. ²
Light-oil distillates:	
*Benzene, specification and industrial grades-----	ACP, AXY, COJ, KFP.
*Toluene, specification and other grades-----	ACP, AXY, COJ, KFP.
*Xylene, all grades-----	ACP, AXY, KFP.
*Solvent naphtha-----	ACY, KPT, NEV, PAI.
All other light-oil distillates-----	ACP, NEV, PAI.
*Pyridine crude bases-----	ACP, KPT.
*Naphthalene, crude, solidifying at--	
*Less than 74° C-----	COF, CRT.
*74° C. to less than 76° C-----	KPT, NEV, PAI.
*76° C. to less than 79° C-----	ACP, AXY, KPT, PRD. RIL, RUR, WTC.
Crude tar-acid oils having a tar-acid content of--	
5% to less than 24%-----	ACP, AXY, COF, RIL.
24% to 51%-----	ACP, KPT, NEV, RIL, WTC.
Cresylic acid, crude-----	ACP, KPT, PRD.
*Creosote oil (Dead oil):	
*Distillate as such-----	ACP, AXY, CBT, COF, CRT, KPT, RIL, RUR, WTC.
*Creosote in coal-tar solution-----	ACP, HJS, JEN, KPT, RIL, RUR, WTC.
All other distillate products-----	ACP, KPT, PAI, PRD.
*Tar, road-----	ACP, KPT, RIL, WTC.
*Tar for other uses:	
Crude-----	KPT, RIL, WTC.
Refined-----	ACP, KPT, RIL, RUR, WTC.
Pitch of tar:	
*Soft and medium (water softening points less than 110° F., and 110° F. to 160° F.)-----	ACP, CBT, COF, JEN, KPT, RIL, RUR, WTC.
*Hard (water softening point above 160° F.)-----	ACP, KPT, RIL, WTC.
*Pitch-of-tar coke and pitch emulsion-----	CRT, JEN, RIL, WTC.

¹ Does not include manufacturers' identification codes for producers that report to the Division of Bituminous Coal, U.S. Bureau of Mines. These producers are listed in the U.S. Bureau of Mines Mineral Industry Survey, June 27, 1963, entitled "Coke Producers in the U.S. in 1962."

² Crude light oil production and sales of these two companies are not included with the U.S. Bureau of Mines figures given in table -A.

Crude Products From Petroleum and Natural Gas for Chemical Conversion

TABLE 5B.-- Crude products from petroleum and natural gas for chemical conversion for which U.S. production or sales were reported, identified by manufacturer, 1962

[Crude products from petroleum and natural gas for chemical conversion for which separate statistics are given in table 5A are marked below with an asterisk (*); products not so marked do not appear in table 5A because the reported data are accepted in confidence and may not be published. Manufacturers' identification codes shown below are taken from table 23. 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 23)
AROMATICS AND NAPHTHENES	
*Alkyl aromatics, distillates, and solvents-----	ADC, AMD, CSD, DUP, DXS, ELP, ENJ, FG, GOC, JCC, MOC, MON, OMC, PAS, PLC, SM, SOG, VPT, WYN.
*Benzene (except motor grade):	
*Benzene, 1°-----	APR, ASH, ATR, CCP, CSD, DLH, DXS, ELP, ENJ, GOC, GRS, MOC, PLC, PLP, PRO, RIC, SHO, SNT, SOG, STH, SUN, VPT, TOC, TX.
*Benzene, 2°-----	AMD, CO, DOW, SHO, SM, SOC, SOI, UCC.
*Cresylic acid, crude-----	ATR, PRD, RIC, SHO, SOI.
*Naphthalene, all grades-----	ASH, COL, CSO, SUN.
*Naphthenic acids:	
Acid number less than 150-----	RIC, SUN, TX.
Acid number 150-199-----	RIC, SM, SOC, SUN.
Acid number 200-224-----	RIC, SM, SOC.
Acid number 225-249-----	NOP, SM, SOC.
Sodium carboxylate and phenate, crude-----	ATR, GOC.
*Toluene:	
*Nitration grade, 1°-----	ASH, ATR, CCP, CSD, DLH, ENJ, GOC, GRS, LEN, MOC, PRO, RIC, SHC, SHO, SIN, SNT, SOG, SUN, TOC, TX, VPT.
*Pure commercial grade, 2°-----	DOW, MON, RIC, SHO, SM.
Solvent grade-----	ASH, CO, FG, PLP, SOI, TX, UCC.
All other-----	DLH, DXS, ELP, ENJ, RIC, SHO, SOC, SUN, TOC, VEL.
*Xylenes, mixed:	
Aviation grade-----	CSD, CSO.
*3° and 5°-----	ASH, ATR, CCP, DLH, ENJ, GRS, MOC, PRO, SIN, SOG, SNT, SUN.
All other-----	AMD, DLH, DXS, ENJ, LEN, SHO, SOC, SOG, SOI, SUN, TOC, VPT.
All other aromatics and naphthenes-----	ENJ, LEN, PLC, SM.
ALIPHATIC HYDROCARBONS	
C ₁ hydrocarbon: Methane-----	CCP, MOC, PAN, SOI, UCC.
*C ₂ hydrocarbons:	
*Acetylene-----	ACY, DOW, DUP, G, MNO, MON, PFG, UCC, x.
*Ethane-----	CCP, COR, ENJ, MOC, PAN, SHC, SM, SOI, TX, UCC, USI.
*Ethylene-----	CCP, DOW, DUP, EKX, ELP, ENJ, GOC, JCC, KPP, MOC, MON, OMC, PET, PLC, RIC, SHC, SM, SNO, SOI, TX, UCC, USI.
C ₂ and C ₃ hydrocarbons, mixed-----	ENJ, SM.
*C ₃ hydrocarbons:	
*Propane-----	AMD, ASH, CCP, CSD, DLH, DXS, ENJ, MOC, OMC, PAN, PLC, PLP, PRO, RIC, SHM, SHO, SIN, SM, SNT, SOG, SOI, SPI, TXB, UCC, UOC, USI.
*Propane-propylene mixture-----	ELP, GOC, PLC, TX.
*Propylene-----	ASH, CCP, DOW, EKX, ELP, ENJ, JCC, MOC, MON, PET, PLC, RIC, SHC, SHO, SIN, SOG, SOI, SPI, SUN, TXB, UCC, UOC.
*C ₄ hydrocarbons:	
*1,3-Butadiene, grade for rubbers (elastomers)-----	CPY, DOW, DUP, ELP, ENJ, FRS, GGC, PET, PLC, PTT, SHC, SM, SOC, SPI, TUS, TXB, UCC.
*Butadiene and butylene fractions-----	DOW, MON, PLC, PRO, SHC, SHO, SIN, SOC, SPI.
*n-Butane-----	CCP, CSD, DXS, ELP, MOC, OMC, PAN, PLC, PLP, PRO, SHM, SHO, SM, SNT, SOC, SOG, SOI, UCC, USI.

TABLE 5B.--Crude products from petroleum and natural gas for chemical conversion for which U.S. production or sales were reported, identified by manufacturer, 1962--Continued

Product	Manufacturers' identification codes (according to list in table 23)
ALIPHATIC HYDROCARBONS--Continued	
*C ₄ hydrocarbons--Continued	
*1-Butene-----	ELP, PLC, PTT, SPI, TXB.
2-Butene-----	FLC, PTT, SPI, TXB.
*1-Butene and 2-butene mixture-----	AMJ, CCF, ENJ, GOC, MDC, PLC, SHG, SOC, SOI, TX.
*Isobutane-----	CCF, DXS, ELP, MDC, QMC, PAN, PLC, SHM, SHO, SOI, UCC, USI.
*Isobutylene-----	CCF, ENJ, PTT, SIN.
All other-----	APR, JCC, FLC, SM, SOI, UCC, USI.
*C ₅ hydrocarbons:	
Isopentane (2-Methylbutane)-----	APR, CCF, CSD, ENJ, PLC, SHM, SOI, UCC.
Isoprene (2-Methyl-1,3-butadiene)-----	ENJ, GFR, FLC, SHC.
n-Pentane-----	APR, FLC.
All other-----	ENJ, MDC, PAS, PLC, USI.
C ₆ hydrocarbons:	
Diisopropyl (2,3-Dimethylbutane)-----	FLC.
*Hexane-----	DLH, ENJ, FLC, FRO, SOG.
Isohexane-----	ENJ.
Nohexane (2,2-Dimethylbutane)-----	FLC.
All other-----	APR, PLC.
C ₇ hydrocarbons:	
*n-Heptane-----	CSD, EKX, ENJ, PLC, FRO, JOG.
*Heptenes, mixed-----	ENJ, GOC, HOU, SIN, TID.
All other-----	FLC.
C ₈ hydrocarbons:	
*Diisobutylene (Diisobutene)-----	ATR, PTT, SHC, TX.
n-Octane-----	ENJ, PLC.
2,2,4-Trimethylpentane (Iso-octane)-----	ENJ.
All other-----	FLC.
Hydrocarbons, C ₉ and above:	
*1-Dodecene (Tetrapropylene)-----	ACC, AME, CG, DXS, ENJ, GOC, MDC, PRO, RIC, SNT, SOC, SUN, TX.
Eicosane-----	ATR.
*Nonene (Tripropylene)-----	AME, ENJ, GOC, PRO, SUN.
Pentadecene-----	CG.
*Polybutene-----	CSD, SOC, SOI, TX.
Tridecene concentrate-----	ENJ.
Triisobutylene-----	ATR, PTT.
All other-----	ACC, CG, EKX, ENJ, GOC, HOU, KEN, PLC, RIC, SOC, SOI, TID.
*Hydrocarbon derivatives:	
1-Butanethiol-----	PAS.
tert-Butyl mercaptan (2-Methyl-2-propanethiol)-----	PAS, FLC.
Di-tert-butyl disulfide-----	FLC.
Di-tert-nonyl polysulfide-----	PAS.
tert-Dodecyl mercaptan-----	PAS.
Ethyl mercaptan (Ethanethiol)-----	CSD, PAS, SOC.
Isopropyl mercaptan-----	PAS, SOC.
Methyl mercaptan (Methanethiol)-----	ACC, PAS.
tert-Octyl mercaptan-----	PLC.
n-Propyl mercaptan (1-Propanethiol)-----	PAS.
All other-----	EKX, PAS, FLC, SOC.

Cyclic Intermediates

TABLE 7B.-- Cyclic intermediates for which U.S. production or sales were reported, identified by manufacturer, 1962

[Cyclic intermediates for which separate statistics are given in table 7A are marked below with an asterisk (-); cyclic intermediates not so marked do not appear in table 7A because the reported data are accepted in confidence and may not be published. Manufacturers' identification codes shown below are taken from table 23. An x signifies that the manufacturer did not consent to his identification with the designated product. Appendix B lists alphabetically all the important common names of cyclic intermediates usually encountered in the trade and gives the corresponding standard (Chemical Abstracts) name under which the manufacturers' identification codes are given in this table.]

Chemical	Manufacturers' identification codes (according to list in table 23)
Aceanthryleno[2,1-a]aceanthrylene-5,13-dione-----	AHC.
5-Acetamido-2-aminobenzenesulfonic acid-----	G.
p-Acetamidobenzoic acid-----	DUF.
2-Acetamido-3-chloroanthraquinone-----	AHC, G.
8-Acetamido-1-(2-hydroxy-5-[N-methylsulfamido]- phenylazo)-2-naphthol.	TRC.
*Acetanilide, tech-----	EKT, MRK, SW.
Acetic acid, phenyl ester-----	KF.
Acetoacetanilide-----	FMP, UCC.
o-Acetoacetanilide-----	FMP, UCC.
p-Acetoacetophenetidide-----	KPC.
o-Acetoacetotoluidide-----	FMP, UCC.
1'-Acetonaphthone-----	GIV.
Acetone, phenylhydrazone-----	DUP.
Acetophenone, tech-----	ACP, UCC.
p-Acetotoluidide-----	ACY, SDH.
Acetoxy-3-methylbenzoic acid-----	EK.
N-Acetylanthranilic acid-----	DUP.
p-Acetylbenzenesulfonamide-----	LIL.
p-Acetylbenzenesulfonic acid, sodium salt-----	LIL.
p-Acetylbenzenesulfonylurethane-----	LIL.
N-Acetylsulfanilyl chloride-----	AU7, MRK.
Adenine-----	ARA.
Alkylbenzene-----	ATR.
-,dl-5-Allyl-6-Imino-1-methyl-5-(1-methyl-2-pentynyl)- barbituric acid.	LIL.
Aminoaceanthryleno[2,1-a]aceanthrylene-5,13-dione-----	AHC.
*4'-Aminoacetanilide (Acetyl-p-phenylenediamine)-----	DUP, G, KPC, NAC, TRC.
3'-Aminoacetophenone-----	SDH.
4'-Aminoacetophenone-----	NEG.
*5-Amino-2-(p-aminoanilino)benzenesulfonic acid-----	CMG, DUF, G, TRC, VFC, YAW.
1-Amino-2-(3-amino-4-sulfoanilino)-2-anthraquinonesul- fonic acid.	TRC.
1-Amino-4-(4-amino-3-sulfoanilino)-2-anthraquinonesul- fonic acid.	TRC.
5-Amino-2-anilino benzenesulfonic acid-----	NAC.
*2-(p-Aminoanilino)-5-nitrobenzenesulfonic acid-----	ALT, CMG, DUP, NAC, TRC, VPC.
3-Amino-p-anisamide-----	G.
3-Amino-p-anisnillide-----	FCW.
5-Amino-2-(o-anisidino)benzenesulfonic acid-----	TRC.
*1-Aminoanthraquinone and salt-----	ACY, AHC, DUP, G, KPC, MAY, NAC, TRC.
*2-Aminoanthraquinone and salt-----	ACY, DUF, G, NAC, TRC.
1-Amino-2-anthraquinonecarboxylic acid-----	DUP.
1-Amino-2-anthraquinonesulfonic acid-----	G.
5(and 8)-Amino-1-anthraquinonesulfonic acid-----	TRC.
N-(4-Amino-1-anthraquinonyl)anthranilic acid-----	G.
N-(5-Amino-1-anthraquinonyl)anthranilic acid-----	DUP.
N-(8-Amino-1-anthraquinonyl)anthranilic acid-----	DUP.
N-[5(and 8)-Amino-1-anthraquinonyl]anthranilic acid-----	DUP.
4-Aminoantipyrene-----	SDW.
*6-Amino-3,4'-azodi(benzenesulfonic acid)-----	CMG, G, KPC, NAC.
8-Aminobenz[a]acridin-7(12H)-one-----	NAC.
*1-Amino-4-benzamidoanthraquinone-----	ACY, MAY, NAC, TRC.

TABLE 7B.-- *Cyclic intermediates for which U.S. production or sales were reported, identified by manufacturer, 1962--Continued*

Chemical	Manufacturers' identification codes (according to list in table 23)
1-Amino-5-benzamidoanthraquinone-----	AHC, G, NAC, TRC.
6-[p-(p-Aminobenzamido)benzamido]-1-naphthol-3-sulfonic acid.	DUF.
*6-(p-Aminobenzamido)-1-naphthol-3-sulfonic acid-----	DUF, G, TRC, VFC.
4'-Aminobenzanilide-----	TRC.
4'-Aminobenzanilide-----	G.
*2-Amino-p-benzenedisulfonic acid [SO ₃ H=1]-----	DUF, G, NAC.
2-Aminobenzimidazole-----	EX.
5-Amino-2-benzimidazolinone-----	DUF.
p-Aminobenzoic acid, tech-----	DUF, G, NAC.
p-Aminobenzoic acid, diethylaminoethyl ester (Procaine)---	SDW.
2-Amino-6-benzothiazolecarboxylic acid-----	DUF.
2-Amino-1-(p-benzylthiophenyl)-1,3-propanediol-----	X.
5(and 8)-Amino-8(and 5)-bromo-1,6(and 1,7)-anthraquinonedisulfonic acid.	TRC.
*1-Amino-4-bromo-2-anthraquinonesulfonic acid and sodium salt.	AHC, DUF, G, KFC, NAC, TRC.
*2-Amino-1-bromo-3-chloroanthraquinone-----	AHC, KFC, MAY.
*1-Amino-2-bromo-4-hydroxyanthraquinone-----	DUF, ICC, KFC, TRC.
1-Amino-4-bromo-2-methylantraquinone-----	AHC.
1-Amino-2-bromo-4-(p-toluidino)anthraquinone-----	AHC, G.
*1-Amino-5-chloroanthraquinone-----	ACY, AHC, DUF, MAY, NAC, TRC.
1-Amino-5(and 8)-chloroanthraquinone-----	ACY, DUF.
1-Amino-8-chloroanthraquinone-----	DUF.
*2-Amino-3-chloroanthraquinone-----	AHC, G, MAY, TRC.
4-Amino-6-chloro-m-benzenedisulfonamide-----	ABB, KFC, TRC.
5-Amino-2-chlorobenzoic acid-----	TRC.
2-Amino-6-chlorobenzothiazole hydrochloride-----	DUF.
o-(3-Amino-4-chlorobenzoyl)benzoic acid-----	AHC, G, MAY.
4-Amino-6-chloro-N,N'-dimethyl-m-benzenesulfonamide-----	ABB.
2-Amino-5-chloro-4-ethylbenzenesulfonic acid-----	ACY, SW.
*2-Amino-4-chlorophenol-----	DUF, MEE, NAC.
*6-Amino-4-chloro-1-phenol-2-sulfonic acid-----	CMG, DUF, NAC, TRC.
3-Amino-6-chloropyridazine-----	ACY.
*2-Amino-5-chloro-p-toluenesulfonic acid [SO ₃ H=1]-----	ACY, HCC, SUC, SW.
*6-Amino-4-chloro-m-toluenesulfonic acid [SO ₃ H=1]-----	ACY, DUF, HCC, SDH, SW.
2-Amino-p-cresol-----	TRC.
*1-Amino-2,4-dibromoanthraquinone-----	AHC, DUF, G, ICC, KFC, NAC, TRC.
2-Amino-4,5-dichlorobenzenesulfonic acid-----	SW.
4'-Amino-2',5'-diethoxybenzanilide-----	G.
3-Amino-7-diethylamino-5-phenylphenazium chloride-----	DUF.
5-Amino-2-(2,3-dihydro-2-oxobenzimidazol-5-ylamino)-benzenesulfonic acid.	DUF.
2-Amino-N,N'-dimethyl-1-phenol-4-sulfonamide-----	G.
2-Amino-3,5-dinitro-N-ethylbenzenesulfonamide-----	EKT.
5-Amino-2-(2-ethoxyanilino)benzenesulfonic acid, sodium salt.	NAC.
5-Amino-6-ethoxy-2-naphthalenesulfonic acid-----	DUF.
3-Amino-6-ethoxypyridazine-----	ACY.
p-Amino-N-ethyl-N-1-naphthylbenzamide-----	G.
2-Amino-5-ethyl-1,3,4-thiadiazole-----	ACY.
1-Amino-4-hydroxyanthraquinone-----	G.
3-Amino-2-hydroxyanthraquinone-----	G, NAC.
2-Amino-4-hydroxybenzenearsonic acid-----	SDW.
8-[4-(8-Amino-1-hydroxy-3,6-disulfo-2-naphthylazo)-5-methoxy-o-tolylazo]-1-naphthol-3,6-disulfonic acid, benzenesulfonate.	TRC.
3-Amino-6-hydroxy-2-methylphenazine (Tolazine base)-----	NAC.

TABLE 7B.-- Cyclic intermediates for which U.S. production or sales were reported, identified by manufacturer, 1962--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
N-(3-Amino-4-hydroxyphenylsulfonyl)anthranilic acid-----	TRC.
5-Aminoisophthalic acid-----	G.
N-(4-Amino-3-methoxy-1-anthraquinonyl)-p-toluenesulfonamide.	DUP.
4-(4-Amino-3-methoxy-6-methylphenylazo)acetanilide-----	TRC.
m-(4-Amino-3-methoxyphenylazo)benzenesulfonic acid-----	DUP, TRC.
3-Amino-6-methoxypyridazine-----	ACY.
1-Amino-2-methoxy-4-(p-toluenesulfonamido)anthraquinone--	G, KPC, TRC.
7-(4-Amino-5-methoxy-o-tolylazo)-1,3-naphthalenedisulfonic acid.	TRC.
8-(4-Amino-5-methoxy-o-tolylazo)-1-naphthol-3,6-disulfonic acid, benzenesulfonate.	TRC.
4'-Amino-N-methylacetanilide-----	CMG, G, NAC.
1-Amino-2-methylanthraquinone-----	AHC, DUP.
4'-Amino-6'-methyl-m-benzanisidide-----	G.
2-Amino-5-(6-methyl-2-benzothiazolyl)benzenesulfonic acid--	G.
8-Amino-7-methyl-2-phenazinol-----	DUP.
2-Amino-4-methylpyridine-----	RIL.
2-Amino-5-methylpyridine-----	RIL.
2-Amino-6-methylpyridine-----	RIL.
2-Amino-4-methylpyrimidine (2-Amino-4-methyldiazine)-----	ACY.
2-Amino-4-(methylsulfonyl)phenol-----	TRC.
2-Amino-5-methyl-1,3,4-thiadiazole-----	ACY.
1-Amino-2-methyl-4-(p-toluidino)anthraquinone-----	AHC.
1-Aminonaphth[2,3-c]acridan-5,8,14-trione-----	DUP.
4-Aminonaphth[2,3-c]acridan-5,8,14-trione-----	DUP.
6-Aminonaphth[2,3-c]acridan-5,8,14(13H)trione-----	G.
1(and 4)-Aminonaphth[2,3-c]acridine-5,8,14(13H)trione-----	DUP.
2-Amino-1,5-naphthalenedisulfonic acid-----	ACY, SDH, SW.
*3-Amino-1,5-naphthalenedisulfonic acid (Cassella acid)-----	G, NAC, TRC.
3-Amino-2,7-naphthalenedisulfonic acid-----	TRC.
4-Amino-1,5-naphthalenedisulfonic acid-----	NAC.
4-Amino-1,6-naphthalenedisulfonic acid-----	DUP.
*6-Amino-1,3-naphthalenedisulfonic acid (Amino I acid)-----	ACY, CMG, DUP, G, NAC, TRC.
*7-Amino-1,3-naphthalenedisulfonic acid (Amino G acid)-----	ACY, DUP, G, NAC, TRC.
2-Amino-1-naphthalenemethanesulfonic acid-----	ACY.
1-Amino-2-naphthalenesulfonic acid (o-Naphthionic acid)-----	DUP.
2-Amino-1-naphthalenesulfonic acid (Tobias acid)-----	ACY, SUC, SW, x.
4 (and 5)-Amino-1-naphthalenesulfonic acid-----	ACY, TRC.
5-Amino-1-naphthalenesulfonic acid (Laurent's acid)-----	DUP, NAC.
*5-Amino-2-naphthalenesulfonic acid (1,6-Cleve's acid)-----	ALL, DUP, G, NAC, TRC.
*5 (and 8)-Amino-2-naphthalenesulfonic acid (Cleve's acid, mixed).	ALL, DUP, G, NAC.
*6-Amino-2-naphthalenesulfonic acid (Broenner's acid)-----	KLS, NAC, SMA, TRC.
*8-Amino-1-naphthalenesulfonic acid (Peri acid)-----	DUP, NAC, SDC, TRC.
*8-Amino-2-naphthalenesulfonic acid (1,7-Cleve's acid)-----	ALL, DUP, G, NAC, TRC.
7-Amino-1,3,6-naphthalenetrisulfonic acid-----	DUP.
8-Amino-1,3,6-naphthalenetrisulfonic acid (Koch's acid)-----	DUP, NAC.
4-Amino-1,3,5-naphthalenetrisulfonic acid, 4,5-sultam, trisodium salt.	DUP.
5-Amino-1-naphthol-----	NAC.
5-Amino-2-naphthol-----	SDH.
5 (and 8)-Amino-2-naphthol-----	G.
*8-Amino-2-naphthol-----	ALL, CMG, DUP, G, SDH, TRC, VPC.
8-Amino-1-naphthol-3,6-disulfonic acid, benzenesulfonate--	TRC.
7-Amino-1-naphthol-3,6-disulfonic acid (2R acid), monosodium salt.	DUP, NAC.
*8-Amino-1-naphthol-3,6-disulfonic acid (H acid), monosodium salt.	DUP, MON, NAC.

TABLE 7B.--Cyclic intermediates for which U.S. production or sales were reported, identified by manufacturer, 1962--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
8-Amino-1-naphthol-5,7-disulfonic acid (Chicago acid) (2S acid), monosodium salt.	DUP, NAC.
*1-Amino-2-naphthol-4-sulfonic acid (1,2,4-acid)-----	ACY, CMG, DUP, G, NAC, TRC, VPC.
*6-Amino-1-naphthol-3-sulfonic acid (J acid), sodium salt---	ACY, CMG, DUP, G, NAC, TRC.
*7-Amino-1-naphthol-3-sulfonic acid (Gamma acid), sodium salt.	DUP, G, NAC, TRC.
8-Amino-1-naphthol-5-sulfonic acid (S acid), sodium salt---	NAC.
3-Amino-5-(m-nitrobenzamido)-p-toluenesulfonic acid-----	G.
*2-Amino-5-nitrobenzenesulfonic acid [SO ₃ H=1]-----	ACY, DUP, G, NAC.
4-Amino-3-nitrobenzoic acid-----	DUP.
*2-Amino-4-nitrophenol-----	DUP, G, NAC, TRC.
2-Amino-5-nitrophenol-----	NAC.
6-Amino-4-nitro-1-phenol-2-sulfonic acid-----	G, TRC.
1-2-Amino-1-(p-nitrophenyl)-1,3-propanediol-----	PD.
4-Amino-4'-nitro-2,2'-stilbenedisulfonic acid-----	TRC.
2-Amino-5-nitrothiazole-----	EKT.
3'-Aminoanilic acid-----	CMG, TRC.
4'-Aminoanilic acid-----	DUP.
p-Aminophenethyl alcohol-----	EKT.
o-Aminophenol-----	VPC.
p-Aminophenol-----	ABB, DUP, SDC, VPC.
*2-Amino-1-phenol-4-sulfonamide-----	CMG, DUP, G, NAC, TRC, VPC.
*2-Amino-1-phenol-4-sulfonic acid-----	CWN, DUP, KPC, NAC, TRC.
m-(p-Aminophenylazo)benzenesulfonic acid-----	KPC, TRC.
*p-(p-Aminophenylazo)benzenesulfonic acid-----	ACY, CMG, DUP, G, NAC, TRC.
7-(4-Aminophenylazo)-1,3-naphthalenedisulfonic acid-----	TRC.
2-(p-Aminophenyl)-6-methylbenzothiazole-----	DUP, NAC.
2-(p-Aminophenyl)-6-methyl-7-benzothiazolesulfonic acid and salt.	DUP.
*1-(m-Aminophenyl)-5-oxo-2-pyrazoline-3-carboxylic acid----	DUP, TRC, VPC.
2-Aminopyridine-----	NEP, RIL.
4-Aminopyridine-----	RIL.
2-Aminopyrimidine-----	ACY.
5-Aminosalicyclic acid-----	KPC, TRC.
N-(4-Amino-3-sulfoanthraquinonyl)anthranilic acid-----	G.
2-Amino-5-(p-sulfophenylazo)benzenesulfonic acid-----	DUP.
2-Aminothiazole-----	ACY, MRK.
1-Amino-4-(p-toluenesulfonamido)-2-anthraquinonesulfonic acid.	KPC.
1-Amino-4-(p-toluenesulfonamido)-2-anthraquinonesulfonic acid, sodium salt.	G, TRC.
*4-Amino-m-toluenesulfonic acid [SO ₃ H=1]-----	ACY, DUP, G, MEE, SNA.
*6-Amino-m-toluenesulfonic acid [SO ₃ H=1]-----	DUP, NAC, SDH, SW.
5-Amino-o-toluenesulfonic acid [SO ₃ H=1]-----	TRC.
5-Amino-2-(p-toluidino)benzenesulfonic acid-----	DUP, NAC, TRC.
m-(4-Amino-3-tolylazo)benzenesulfonic acid-----	TRC.
7-(4-Amino-o-tolylazo)-1,3-naphthalenedisulfonic acid-----	TRC.
7-(4-Amino-o-tolylazo)-1,5-naphthalenedisulfonic acid-----	TRC.
4-(4-Amino-m-tolylazo)-m-toluenesulfonic acid-----	TRC.
N-(4-Amino-m-tolyl)-p-benzoquinoneimine-----	DUP.
*16-Aminoviolanthrone-----	ACY, G, TRC.
*2-Amino-3,5-xylenesulfonic acid [SO ₃ H=1]-----	ALT, NAC, SDH, STG, WJ.
*Aniline (Aniline oil)-----	ACY, DOW, DUP, NAC.
Aniline hydrochloride-----	ACY.
1-Anilino-2-anthraquinonecarboxylic acid-----	DUP.
2-Anilinoethanol-----	UCC.
8-Anilino-5-(p-hydroxyanilino)-1-naphthalenesulfonic acid---	VPC.
*Anilinoethanesulfonic acid and salt-----	ALT, DUP, KPC, NAC, TRC.
*8-Anilino-1-naphthalenesulfonic acid (Phenyl peri acid)----	CMG, DUP, G, NAC, SDC.
*6-Anilino-1-naphthol-3-sulfonic acid (Phenyl J acid)-----	ALT, CMG, DUP, G, NAC, TRC.

TABLE 7B.--Cyclic intermediates for which U.S. production or sales were reported, identified by manufacturer, 1962--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
7-Anilino-1-naphthol-3-sulfonic acid (Phenyl gamma acid)---	DUP, NAC, VPC.
o-Anisaldehyde-----	ASL.
Anisic acid-----	HN.
o-Anisic acid-----	ACY.
o-Anisidine-----	ALL, DUP, KPC, MON.
p-Anisidine-----	DUP, MON.
o-Anisidinomethanesulfonic acid-----	DUP, G, NAC, TRC, VPC.
2-(o-Anisidino)-5-nitrobenzenesulfonic acid-----	TRC.
Anisole, tech-----	KFC, GIV, LIL.
4-(o-Anisylazo)-o-anisidine-----	KFC.
Anthracene, refined-----	ACP.
*Anthranilic acid (o-Aminobenzoic acid)-----	DUP, LEM, MEE, NAC.
Anthranilic acid, sodium salt-----	x.
Anthra[1,9]pyrazol-6(2H)-one (Pyrazoleanthrone)-----	AHC, DUP, G.
*Anthraquinone, 100%-----	ACY, DUP, G, TRC.
*2-Anthraquinonecarboxylic acid-----	ACY, NAC, PCW.
*1,5-Anthraquinonedisulfonic acid-----	ACY, AHC, DUP, TRC.
1,5-Anthraquinonedisulfonic acid, disodium salt-----	DUP, G, TRC.
*1,5(and 1,8)-Anthraquinonedisulfonic acid and salt-----	CMG, DUP, TRC.
1,8-Anthraquinonedisulfonic acid-----	DUP.
*1,8-Anthraquinonedisulfonic acid, potassium salt-----	AHC, G, NAC, TRC, VPC.
*2,6-Anthraquinonedisulfonic acid and salt-----	AHC, DUP, G, KPC, NAC, TRC.
*1-Anthraquinonesulfonic acid and salt-----	ACY, AHC, DUP, G, KPC, MAY, MEE, NAC, TRC.
2-Anthraquinonesulfonic acid and salt (Silver salt)-----	ACY, DUP.
1,1'-[3,5(and 1,8)-Anthraquinonylenediamino]bisnaphth- [2,3-c]acridan-5,8,14-trione.	DUP.
*N,N'-(1,5-Anthraquinonylene)dianthranilic acid-----	ACY, AHC, DUP, TRC.
N,N'-(1,5-Anthraquinonylene)dioxamic acid-----	G, MEE.
1-(1-Anthraquinonyl)-1,2-hydrazinedisulfonic acid, disodium salt.	G.
*Anthraquin (1,5-Dihydroxyanthraquinone)-----	ACY, CMG, DUP, G, NAC, TRC.
Anthrone-----	AHC.
Arsanilic acid and salt, tech-----	WHL.
4',4''-Azobis[4-biphenylcarboxylic acid]-----	DUP, TRC.
4,4'-Azobis[p-phenylbenzoic acid]-----	G.
*Barbituric acid-----	ABB, KF, LIL.
Barbituric acid, sodium derivative-----	ABB.
*Benzaldehyde, tech-----	BPC, HN, TNP.
Benzamide-----	MAY.
4-(4-Benzamido-1-anthraquinonylamino)naphth[2,3-c]acridan- 5,8,14-trione.	DUP.
1-Benzamido-4-bromoanthraquinone-----	KPC.
1-Benzamido-4-chloroanthraquinone-----	G, TRC.
*1-Benzamido-5-chloroanthraquinone-----	ACY, AHC, DUP, G, MAY, NAC, TRC.
5-Benzamido-1,4-dichloroanthraquinone-----	TRC.
1-(4-Benzamido-2,5-diethoxyphenyl)-3-methyl-3- (2-sulfoethyl) triazene.	G.
[3-(4-Benzamido-6-methoxy-m-tolyl)-1-methyltriazene-3-yl]- acetic acid.	G.
8-Benzamido-1-naphthol-3,5-disulfonic acid-----	G.
1-Benzamido-4-(p-toluenesulfonamido)anthraquinone-----	AHC.
Benzanilide-----	DUP.
*7H-Benz[de]anthracen-7-one (Benzanthrone)-----	ACY, AHC, ATL, CMG, DUP, G, KPC, MAY, NAC, SDC, TRC.
m-Benzenedisulfonic acid-----	KFC.
Benzenesulfonamide-----	NES.
Benzenesulfonic acid-----	EK, UPF.
Benzenesulfonic acid, ethylene glycol ester-----	NES.
Benzenesulfonic acid, methyl ester-----	EK.
Benzenesulfonic acid, n-propyl ester-----	NES.
Benzenesulfonyl chloride-----	NES.

TABLE 7B.--Cyclic intermediates for which U.S. production or sales were reported, identified by manufacturer, 1962--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
Benzhydrol (Diphenylmethanol)-----	HEX, TEK.
*Benzidine hydrochloride-----	FIN.
*Benzidine hydrochloride and sulfate-----	CWN, NAC, x.
Benzil (Bibenzoyl)-----	LEM.
Benzilic acid-----	BPC, LEM.
2-Benzofuranacetoneitrile-----	EK.
*Benzoic acid, tech-----	ACC, HK, HN, KLK, MON, TNP.
Benzoin-----	BPC, LEM.
Benzonitrile-----	TNP, x.
1,2,3-Benzotriazin-4(LH)-one-----	MEE.
1H-Benzotriazole-----	MEE, RZL.
Benzoyl acetic acid, ethyl ester-----	FMP.
*o-Benzoylbenzoic acid-----	ACY, DUP, G, NAC.
Benzoyl chloride-----	HK, HN, TNP.
2-Benzoyl-4-sulfobenzoic acid-----	DUP.
2-Benzoyl-4'-(p-toluenesulfonamido)acetanilide-----	EK.
Benzylamine-----	TCO, MLS.
Benzyl chloroformate-----	RSA.
Benzyl disulfide-----	CGW, MOO.
Benzylethanolamine-----	MLS.
Benzyl ether (Dibenzyl ether)-----	BPC, TEK.
4-(N-Benzyl-N-ethylamino)-o-toluenesulfonic acid-----	NAC.
N-Benzyl-N-ethyl-m-toluidine-----	DUP, NAC.
4-Benzylideneiminoantipyrine-----	SDW.
N-Benzylmethylamine-----	ABB.
p-(Benzyloxy)phenol-----	EK.
Benzyl polysulfide-----	HK.
2-Benzylpyridine-----	RIL.
Benzyltrimethyl ammonium hydroxide-----	MLS.
Benzyltrimethyl ammonium methoxide-----	MLS.
3,3'-Bianthra[1,9]pyrazole-6,6' (2H,2'H)-dione (Pyrazoleanthrone yellow)-----	DUP, G.
[3,3'-Bi-7H-benz[de]anthracen]-7,7'-dione-----	DUP.
*[4,4'-Bi-7H-benz[de]anthracen]-7,7'-dione-----	ACY, AHC, DUP, MAY, NAC.
endo-cis-Bicyclo[2,2,1]hept-5-ene-2,3-dicarboxylic anhydride-----	NAC.
[1,1'-Binaphthalene]-8,8'-dicarboxylic acid-----	DUP, G.
Biphenyl-----	DOW, MON, UCC.
2,2'-Biquinoline-----	EK.
*1,4-Bis[1-anthraquinorylamino]anthraquinone-----	ACY, AHC, G, MAY, TRC.
1,4-Bis[1-anthraquinorylamino]anthraquinone and 1,4-Bis[5-chloro-1-anthraquinorylamino]anthraquinone (mixed)-----	TRC.
1,5-Bis[1-anthraquinorylamino]anthraquinone-----	DUP.
1,4-Bis(1-anthraquinorylamino)-5-benzamidocanthraquinone-----	TRC.
Bis[1-anthraquinorylamino]violanthrene-----	G.
x, x'-Bis[5-tert-butyl-6-hydroxy-m-tolyl]mesitol-----	ACY.
4,4'-Bis[diethylamino]benzhydrol-----	G.
4,4'-Bis[diethylamino]benzhydrol salt, 2,7-naphthalene- disulfonic acid mixture-----	DUP, TRC.
*4,4'-Bis[diethylamino]benzophenone (Ethyl ketone base)-----	DSC, DUP, SDH.
4-[Bis(p-diethylaminophenyl)methyl]-2,7-naphthalene- disulfonic acid, leuco form-----	TRC.
4,4'-Bis(dimethylamino)benzhydrol (Michler's hydrol)-----	DSC, DUP, SDH.
*4,4'-Bis(dimethylamino)benzophenone (Michler's ketone)-----	DSC, DUP, G, NAC, SDH.
1,5 (and 1,8)-Bis[2,4-dinitrophenoxy]-4,8 (and 4,5)-di- nitroanthraquinone-----	DUP.
x,x-Bis[4-(N-ethyl-4'-sulfobenzylamino)-2-tolyl]-x- hydroxy-p-toluenesulfonic acid-----	TRC.
x,x-Bis[4-(N-ethyl-4'-sulfobenzylamino)-2-tolyl]-p- toluenesulfonic acid-----	TRC.

TABLE 7B.-- Cyclic intermediates for which U.S. production or sales were reported, identified by manufacturer, 1962--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
4,4'-Bis[p-hydroxyphenyl]valeric acid-----	x.
N,N'-Bis(2-hydroxypropyl)-2-methylpiperazine-----	WYN.
Bis[p-nitrophenyl] ether-----	x.
2'-Bromoacetophenone-----	EK.
p-Bromoaniline-----	EK.
4-Bromoanisole-----	EK, ICO.
*3-Bromo-7H-benz[de]anthracen-7-one (Bromobenzanthrone)---	AHC, DUP, G, MAY, NAC.
Bromobenzene, mono-----	DOW.
p-Bromobenzenesulfonyl chloride-----	EK.
4-Bromobenzophenone-----	ICO.
Bromochlorobenzene-----	DOW.
2-Bromo-6-chloro-4-nitroaniline-----	KFC.
Bromocyclopentane-----	ARA.
2-Bromodibenzofuran-----	G.
p-Bromo-N,N-diethylaniline-----	EK.
Bromoethylbenzene-----	DOW.
2-Bromo-3'-hydroxyacetophenone-----	SDH.
1-Bromo-4-(N-methylacetamido)anthraquinone-----	G.
1-Bromo-4-methylaminoanthraquinone-----	AHC, DUP, G.
2-Bromo-3-methylanthraquinone-----	DUP.
3'-Bromo-4'-methyl-2-biphenylcarboxylic acid-----	DUP.
6-Bromo-3-methyl-7H-dibenz[f,i]isoquinoline-2,7(3H)- dione.	G.
1-Bromonaphthalene-----	EK.
4-Bromonaphthalic anhydride-----	G.
β -Bromophenol-----	RSA.
m-Bromophenol-----	EK.
Bromopicrin-----	EK.
2-Bromopyridine-----	RIL.
3-Bromopyridine-----	RIL.
α -Bromotoluene-----	BPC, EK, RSA.
o-Bromotoluene-----	EK.
p-Bromotoluene-----	EK.
1-Bromo-2,4,6-triethylbenzene-----	DUP.
N-Butylacetanilide-----	UCC.
p-n-Butylaminobenzoic acid, ethyl ester-----	ICO.
p-Butylaniline-----	DUP.
2-tert-Butylanthraquinone-----	DUP.
p-tert-Butylbenzaldehyde-----	GIV.
n-Butylbenzene-----	PIC.
sec-Butylbenzene-----	PIC.
tert-Butylbenzene-----	PIC.
p-tert-Butylbenzoic acid-----	SHC.
o-(p-tert-Butylbenzoyl)benzoic acid-----	DUP.
6-Butyl-o-cresol [OH=1]-----	KPT.
2-tert-Butyl-p-cresol-----	AGY.
2'-tert-Butyl-4',6'-dimethylacetophenone-----	GIV.
2-tert-Butyl-4-ethylphenol-----	AGY.
5-tert-Butylisophthalic acid-----	x.
N'-n-Butyl-4-methoxymetanilamide-----	KLS.
N'-Butyl-4-methoxymetanilamide-----	G.
2-tert-Butyl-5-methylanisole-----	GIV.
o-sec-Butylphenol-----	DOW.
p-sec-Butylphenol-----	DOW.
o-tert-Butylphenol-----	TNA.
p-tert-Butylphenol-----	DOW, KPT, UCP.
Butylphenols, mixed-----	DOW, UCP.
p-tert-Butyltoluene-----	GIV, SHC.
5-tert-Butyl-1,2,3-trimethylbenzene-----	GIV.

TABLE 7B.--Cyclic intermediates for which U.S. production or sales were reported, identified by manufacturer, 1962--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
5-tert-Butyl-m-xylene-----	GIV.
Butyropenone-----	TBK.
Carbazole, refined-----	SDC.
1-(4-Carbonyl-o-anisyl)-3-methyl-3-(2-sulfoethyl) triazene-	G.
N,N'-Carbonylbis[4-methoxymetanic acid]-----	G.
N,N'-Carbonylbis[4-methoxy-6-nitrometanic acid]-----	G.
6-(and 2)-Carboxybenzene-2-(and 4)-diazo-1-oxide-----	DUP.
5'-(o-Carboxybenzoyl)-2-chlorooxanilic acid-----	G.
3-Carboxy-2-(and 4)-hydroxybenzenediazonium sulfate-	G, NAC.
3-Carboxymethyl-1-(4-chloro-o-tolyl)-3-ethyltriazene-----	G.
3-Carboxymethyl-1-(5-chloro-o-tolyl)-3-methyltriazene-----	G.
3-(Carboxymethyl)-3-methyl-1-p-tolyltriazene-----	G.
5-(o-Carboxyphenylsulfamoyl)anthranilic acid-----	TRC.
3-(2-Carboxy-4-sulfophenyl)-1-(2,5-dichlorophenyl)-	G.
3-ethyltriazene.	
3-(2-Carboxy-4-sulfophenyl)-3-ethyl-1-(5-nitro-o-anisyl)-	G.
triazene.	
Cedrene-----	GIV.
Chelidamic acid-----	G, SDW.
Chlorendic acid-----	HK.
2'-Chloroacetacetanilide-----	FMP, UCC.
4'-Chloroacetophenone-----	LIL.
m-Chloroaniline-----	DUP, G.
*o-Chloroaniline-----	DUP, MON, NAC, VFC.
p-Chloroaniline-----	DUP, MON.
2-(chloroanilino)ethanol-----	EKT.
3-(o-Chloroanilino)propionitrile-----	DUP.
5-Chloro-o-anisidine [NH ₂ = 1] (4-Chloro-o-anisidine	KLS, VFC.
[OCH ₃ = 1]).	
5-Chloro-o-anisidine hydrochloride-----	G.
4-Chloroanthranilic acid-----	DUP.
*1-Chloroanthraquinone-----	ACY, AHC, DUP, G, MAY, NAC, TRC.
*2-Chloroanthraquinone-----	ACY, G, NAC, TRC.
N-(3-Chloro-2-anthraquinonyl)-1-amino-2-anthraquinone-	TRC.
carboxamide.	
3-Chloro-2-anthraic acid-----	G.
o-Chlorobenzaldehyde-----	HN, NAC, SDH.
p-Chlorobenzaldehyde-----	HN.
Chloro-7H-benz[de]anthracen-7-one (Chlorobenzanthrone)----	ACY, KPC, TRC.
*Chlorobenzene, mono-----	ACS, DOW, DUP, DVC, GGY, HK, HKD, MON, MTO, OMC, PPG, UPM.
1-Chlorobenzene-4-methylsulfone-----	TRC.
4-Chlorobenzenesulfonic acid-----	TRC.
p-Chlorobenzenesulfonamide-----	ACY.
4-Chlorobenzenesulfonyl chloride-----	NES, TRC.
4-Chlorobenzhydrol-----	ABB.
1-(4-Chlorobenzhydrol)-4-methylpiperazine-----	ABB.
o-Chlorobenzoic acid-----	HN, SDH.
p-Chlorobenzoic acid-----	HN.
p-Chlorobenzonitrile-----	EK.
5-Chloro-2-benzoxazolinone-----	MEE.
*o-(p-Chlorobenzoyl)benzoic acid-----	ACY, AHC, DUP, G, NAC.
p-Chlorobenzoyl chloride-----	HN.
4,4'-(o-Chlorobenzylidene)di-2,5-xylylidene-----	G.
2-Chloro-5-(o-carboxyphenylsulfamoyl)benzoic acid-----	OPC, TRC.
5-Chloro-2-(p-chlorophenoxy)aniline-----	G.
Chloro-(p-chlorophenyl)phenylmethane-----	TBK.
2-Chloro-10-(3-chloropropyl)phenothiazine-----	SCH.
2-Chloro-5-(chlorosulfonyl)benzoic acid-----	TRC.
4-Chloro-m-cresol-----	OTA.
2-Chloro-1,4-diethoxy-5-nitrobenzene-----	G.

TABLE 7B. --Cyclic intermediates for which U.S. production or sales were reported, identified by manufacturer, 1962--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
2-Chloro-N,N-diethyl-4-nitroaniline----- N-(3-Chloro-9,10-dihydroxy-2-anthryl)acetamide-bis[acid sulfate].	DUF. G.
4'-Chloro-2',5'-dimethoxyacetacetanilide-----	PCW.
4-Chloro-2,5-dimethoxyaniline-----	PCW.
5-Chloro-2,4-dimethoxyaniline-----	ALL, PCW.
4-Chloro-2,5-dimethoxynitrobenzene-----	PCW.
4-Chloro-N,N-dimethyl-3-nitrobenzenesulfonamide-----	G.
5-Chloro-4,7-dimethyl-3(2H)-thianaphenone-----	NAC.
*1-Chloro-2,4-dinitrobenzene (Dinitrochlorobenzene)-----	DUF, KFC, NAC, SDC.
1-Chloro-2,4-dinitrobenzene and 2-chloro-1,3-dinitro- benzene mixture.	DUF.
2-Chloro-3,5-dinitrobenzenesulfonic acid-----	G.
5-Chloro-2,4-dinitrobenzenesulfonic acid-----	TRC.
4-Chloro-3,5-dinitro- <i>m, p, x</i> -trifluorotoluene-----	MEE.
3-Chlorodiphenylamine-----	SK.
Chlorodiphenylmethane-----	OPC, TBK.
<i>o</i> -Chloro-(and/or <i>p</i>)-dodecyltoluene [CH ₃ = 1]-----	ORO.
<i>p</i> -((2-Chloroethyl)methylamino)benzaldehyde-----	G.
2-Chloro-N-ethyl-5-nitrobenzenesulfonamide-----	G.
Chloroformic acid, phenyl ester-----	EK.
4-Chloro-3-hydrazinobenzenesulfonic acid-----	G.
1-Chloro-4-hydroxyanthraquinone-----	AHC.
5'-Chloro-3-hydroxy-2-naphthol- <i>o</i> -anisidide-----	PCW, SDH.
6-Chloroisatoic anhydride-----	MEE.
5-Chloro-4-isopropylmetanilic acid-----	SW.
4-Chlorometanilic acid-----	DUF, G.
5-Chlorometanilic acid-----	DUF, NAC.
*6-Chlorometanilic acid-----	DUF, G, KFC, SW.
5-Chloro-2-methoxybenzenediazonium chloride-----	G.
N-(5-Chloro-2-methoxyphenylazo)sarcosine-----	ATL, SDH.
*1-Chloro-2-methylanthraquinone-----	ACY, AHC, CMG, G, KFC, NAC, TRC.
6-Chloro-2-methylbenzo-1,3-thiaza-2-thionium chloride-----	DUF.
5-Chloro-2-methylbenzothiazole-----	EK.
6-Chloro-2-methyl-7-chlorosulfamoyl-2H-1,2,4-benzo- thiadiazin-3(4H)-one, 1,1-dioxide.	ABB.
4-(Chloromethyl)-1,2-dimethylbenzene-----	BPC.
6-Chloro-2-methyl-7-(N-methylsulfamoyl)-2H-1,2,4- benzothiadiazin-3(4H)-one, 1,1-dioxide.	ABB.
<i>x</i> -Chloromethyl naphthalene, crude-----	BPC.
4-Chloro-N-methyl-3-nitrobenzenesulfonamide-----	TRC.
2-Chloro-5-(N-methylsulfamoyl)sulfanilamide-----	ABB.
4-Chloro-3-(3-methyl-5-oxo-2-pyrazolin-1-yl)benzene- sulfonic acid.	DUF, G.
Chloronaphthalenes-----	ACY, KFT.
8-Chloro-1-naphthalenesulfonic acid, sodium salt-----	G.
8-Chloro-1-naphthalenesulfonyl chloride-----	G.
*2-Chloro-4-nitroaniline (<i>o</i> -Chloro- <i>p</i> -nitroaniline)-----	ACY, DOW, DUF, SUC.
*4-Chloro-2-nitroaniline (<i>p</i> -Chloro- <i>o</i> -nitroaniline)-----	DOW, DUF, KFC, NAC, VPC.
*1-Chloro-5-nitroanthraquinone-----	ACY, DUF, MAX, NAC, TRC.
1-Chloro-5 (and 8)-nitroanthraquinone-----	DUF.
1-Chloro-8-nitroanthraquinone-----	DUF, TRC.
1-Chloro-2-nitrobenzene (Chloro- <i>o</i> -nitrobenzene)-----	DUF, KFC, MON, UFM.
*1-Chloro-2 (and 4)-nitrobenzene (Chloronitrobenzenes, <i>o</i> - and <i>p</i> -).	DUF, KFC, SDC.
*1-Chloro-3-nitrobenzene (Chloro- <i>m</i> -nitrobenzene)-----	DUF, G, MON, UFM.
1-Chloro-4-nitrobenzene (Chloro- <i>p</i> -nitrobenzene)-----	DUF, KFC, MON, UFM.
*4-Chloro-3-nitrobenzenesulfonamide-----	DUF, EKT, G, ICC, KFC, TRC.
4-Chloro-3-nitrobenzenesulfonamide-----	TRC.
2-Chloro-5-nitrobenzenesulfonic acid-----	ACY, CMG, NAC.

TABLE 7B.--Cyclic intermediates for which U.S. production or sales were reported, identified by manufacturer, 1962--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
*2-Chloro-5-nitrobenzenesulfonic acid, sodium salt-----	DUF, G, TRC.
4-Chloro-3-nitrobenzenesulfonic acid-----	NAC, TRC.
*4-Chloro-3-nitrobenzenesulfonyl chloride-----	DUF, EKT, KFC, TRC.
2-Chloro-5-nitrobenzoic acid-----	TRC.
4-Chloro-3-nitrobenzoic acid-----	PCW.
*o-(4-Chloro-3-nitrobenzyl)benzoic acid-----	AHG, G, KPC, NAC.
4-Chloro-3-nitrophenyl methyl sulfone-----	TRC.
2-Chloro-4-nitrotoluene-----	DUF.
2-Chloro-6-nitrotoluene-----	DUF.
*4-Chloro-2-nitrotoluene-----	BUC, DUF, KPC.
*4-Chloro-3-nitrotoluene-----	BUC, DUF, KPC.
m-Chlorophenol-----	EK.
o-Chlorophenol-----	DOW, MON.
p-Chlorophenol-----	DOW, MON.
p-Chlorophenylacetone trile-----	ICO, TBK.
1-(o-Chlorophenyl)-2-aminethyl acetate-----	LIL.
4-Chloro- <i>o</i> -phenyl- <i>o</i> -cresol-----	MON.
4-Chloro- <i>o</i> -phenylenediamine-----	FMT.
1-(m-Chlorophenyl)-3-methyl-2-pyrazolin-5-one-----	TRC.
1-(p-Chlorophenyl)-3-methyl-2-pyrazolin-5-one-----	TRC.
1-(o-Chlorophenyl)-2-nitroethanol-----	LIL.
2-Chloro-4-phenylphenol-----	DOW.
<i>o</i> -(p-Chlorophenyl)-2-pyridinemethanol-----	RIL.
Chlorophenylsilanes-----	SPD.
4-Chlorophthalic acid-----	DUF, SW.
Chlorophthalic anhydride-----	HK, MON.
N ¹ -(6-Chloro-3-pyridazinyl)sulfanilamide-----	ACY.
2-Chloropyridine-----	FMT, NEF.
6-Chloroquinoline-----	DUF.
*2-Chloroquinazolin-----	AHG, HSH, NAC, TRC.
7-Chloro-4-quinoline-----	SDW.
4-(7-Chloro-4-quinolylamino)- <i>o</i> -diethylamino- <i>o</i> -cresol-----	PD.
4-(7-Chloro-4-quinolylamino)- <i>o</i> -diethylamino- <i>o</i> -cresol hydrochloride.	PD.
6-Chloroquinophthalone-----	DUF.
4-Chlororesorcinol-----	G, KPC.
2-Chloro-5-sulfamoylbenzoic acid-----	TRC.
8-Chlorotheophylline-----	MAL.
2-Chlorothiaxanthene-----	KF.
m-Chlorotoluene-----	BFC, HK.
o-Chlorotoluene-----	HN.
p-Chlorotoluene-----	HN.
* <i>o</i> -Chlorotoluene (Benzyl chloride)-----	BFC, HK, HN, MON, TNP.
1-Chloro-5- <i>p</i> -toluenesulfonamidocanthraquinone-----	AHG.
5-Chloro- <i>o</i> -toluenesulfonic acid-----	G.
6-Chloro- <i>m</i> -toluidine-----	BUC.
3-Chloro- <i>o</i> -toluidine [NH ₂ = 1]-----	DUF.
3-Chloro- <i>p</i> -toluidine [NH ₂ = 1]-----	DUF.
4-Chloro- <i>o</i> -toluidine [NH ₂ = 1] and hydrochloride-----	ACY, KFC, PCW.
*5-Chloro- <i>o</i> -toluidine [NH ₂ = 1]-----	BUC, DUF, KFC, NAC, SDH.
*5-Chloro- <i>o</i> -toluidine hydrochloride [NH ₂ = 1]-----	ALL, ATL, AUG, KL3, SDH.
N-(5-Chloro- <i>o</i> -tolylazo)sarcosine-----	ATL, BUC.
1-(5-Chloro- <i>o</i> -tolyl)-1-tetrazene-----	G.
(4-Chloro- <i>o</i> -tolylthio)acetic acid-----	ACY, G, NAC.
3-Chloro- <i>o</i> , <i>o</i> , <i>o</i> -trifluoro-6-nitrotoluene-----	MEE.
4-Chloro- <i>o</i> , <i>o</i> , <i>o</i> -trifluoro-3-nitrotoluene-----	G, KPC.
p-Chloro- <i>o</i> , <i>o</i> , <i>o</i> -trifluorotoluene-----	HK.
4-Chloro- <i>o</i> , <i>o</i> , <i>o</i> -trifluoro- <i>m</i> -toluidine-----	KPC.
2-Chloro-1,3,5-trinitrobenzene-----	EK.
Chlorotriphenylmethane-----	EK.

TABLE 7B.--Cyclic intermediates for which U.S. production or sales were reported, identified by manufacturer, 1962--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
α -Chloro-p-xylene-----	BPC.
2-Chloro-p-xylene-----	DUP.
4-Chloro-2,5-xylenesulfonyl chloride-----	NAC.
4-Chloro-3,5-xyleneol-----	OTA.
4-Chloro-2,5-xylylthioacetic acid-----	NAC.
Chrysazin (1,8-Dihydroxyanthraquinone)-----	DUP, G.
Cinnamoyl chloride-----	TBK.
s-Collidine (2,4,6-Trimethylpyridine)-----	KPT, RIL.
*Cresols: ¹	
m-Cresol-----	XPT.
o-Cresols:	
From coal tar-----	KPT, PRD.
From petroleum-----	MER, PRD, SW.
*p-Cresol-----	ACY, HPC, SW.
Cresols, mixed: ¹	
*(m,p)-Cresol:	
*From coal tar-----	ACP, KPT, PRD.
*From petroleum-----	MER, PIT, PRD.
*(o,m,p)-Cresol:	
From coal tar-----	ACP, KPT.
From petroleum-----	PIT, PRD.
2,3-Cresotic acid-----	DOW.
*Cresylic acid, refined: ¹	
*From coal tar-----	ACP, ACY, KPT, PRD.
*From petroleum-----	MER, PIT, PRD, SHO, SM, SOC.
*Cumene-----	ACP, DOW, GOC, HFC, PLC, SHC, SOC, x.
4-[(2-Cyanoethyl)ethylamino]-o-tolualdehyde-----	G.
p-[(2-Cyanoethyl)ethylamino]-o-tolualdehyde-----	DUP.
p-[(2-Cyanoethyl)methylamino] benzaldehyde-----	DUP, G.
8-Cyano-1-naphthalenesulfonic acid-----	DUP.
Cyanuric chloride-----	ACY, GGY, NIL.
*Cyclohexane-----	CO, DUP, GOC, PLC, PLP, SOG.
1,4-Cyclohexanedicarboxylic acid, dimethyl ester-----	x.
1,2-Cyclohexanedicarboxylic anhydride-----	NAC.
*Cyclohexanol-----	CS, DOW, DUP, MDN, NAC.
Cyclohexanone-----	CS, DUP, NAC.
Cyclohexanone oxime-----	NAC, x.
Cyclohexene-----	KF, PLC.
4-Cyclohexene-1,2-dicarboximide-----	CHO.
4-Cyclohexene-1,2-dicarboxylic anhydride-----	NAC.
Cyclohexylamine-----	ABB, x.
p-Cyclohexyloxybenzoic acid-----	LIL.
N-(Cyclohexyloxy)benzoic acid, 3-(2-methylpiperidino)- propyl ester, sulfate-----	LIL.
Cyclohexyl-2-propanone-----	GIV, TBK.
Cyclopentanepropionic acid-----	ARA.
Cyclopentene-----	PLC.
(2-Cyclopenten-1-yl)acetone-----	LIL.
p-Cymene-----	GLD, HNW, HFC.
Decylbenzene-----	NAC.
1,5 (and 1,8)-Diacetamidoanthraquinone-----	KPC.
4,4'-Diacetylamino-3,3'-dinitrotriphenyl-----	KPC.
N,N-Diacetyl-4,4'-diaminobiphenyl-----	KPC.
N,N-Diallylcamphoramic acid-----	WYT.
N ² ,N ² -Diallylmelamine-----	ACY.
*1,4-Diaminoanthraquinone-----	DUP, G, NAC, TRC.
1,5-Diaminoanthraquinone-----	ACY, DUP, G, TRC.
1,5 (and 1,8)-Diaminoanthraquinone-----	ACY, KPC, TRC.
*2,6-Diaminoanthraquinone-----	AHC, DUP, G, KPC, NAC, TRC, VPC.

See footnote at end of table.

TABLE 7B.--Cyclic intermediates for which U.S. production or sales were reported, identified by manufacturer, 1962--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
1,4-Diamino-2,3-anthraquinonedicarbonitrile-----	DUF.
1,4-Diamino-2,3-anthraquinonedicarboximide-----	DUF.
4,8-Diaminoanthrarufin-----	ICC.
*2,4-Diaminobenzenesulfonic acid [SO ₃ H=1]-----	DUF, G, NAC, TRC.
*4,4'-Diamino-2,2'-biperyldisulfonic acid-----	ACY, KFC, NAC.
4,4'-Diamino-1,1'-dianthraquinonyl-3,3'-disulfonic acid, disodium salt.	TRC.
3,7-Diaminodibenzothiophenedisulfonic acid, 5,5-dioxide, disodium salt.	ACY.
Diaminodibromodi-p-toluidinoanthraquinone-----	AHC.
1,4-Diamino-2,3-dichloroanthraquinone-----	DUF.
1,5-Diamino-4,8-dihydroxyanthraquinone-----	VPC.
1,5 (and 1,8)-Diamino-4,8 (and 4,5)-dihydroxyanthraquinone--	DUF.
3,6-Diamino-2,7-dimethylacridine-----	DUF.
3,6-Diamino-2,7-dimethylacridine sulfate-----	DUF.
4,4'-Diamino-3,3'-dimethyltriphenylmethane-----	ACY.
5,6-Diamino-1-naphthalenesulfonic acid-----	G.
1,4-Diamino-5-nitroanthraquinone-----	G.
4,6-Diamino-5-nitroso-2-phenylpyrimidine-----	ARA.
2,4-Diamino-6-phenyl-s-triazene-----	PH, TNP.
2,6-Diaminopyridine-----	NEP, RIL.
*4,4'-Diamino-2,2'-stilbenedisulfonic acid-----	ACY, DUF, G, NAC, SDH, TRC, VPC.
Diaminotetrabromoanthraquinone-----	AHC.
4,6-Diamino-m-toluenesulfonic acid [SO ₃ H=1]-----	NAC.
1,5-Dianilino-2,6-anthraquinonedicarboxylic acid-----	G, NAC.
*2,4-Dianilino-1-hydroxyanthraquinone-----	AHC, G, TRC.
o-Dianisidine-----	ALL.
1,2-Dianthroyl-1,2-ethanediol-----	AHC.
Diarylguanidine-----	DUF.
1,5-Dibenzamidoanthraquinone-----	G, TRC.
4,9-Dibenzamido-3',4',6',7'-diphthaloylcarbazole-----	AHC.
*4,5'-Dibenzamido-1,1'-iminodianthraquinone-----	ACY, AHC, DUF, G, MAY, NAC, TRC.
5,5'-Dibenzamido-1,1'-iminodianthraquinone-----	ACY.
5,5'-Dibenzamido-1,1',4,4'-trianthrimide-----	AHC.
2-Dibenzofuranol-----	G.
*1,5-Dibenzoylnaphthalene-----	ACY, AHC, DUF, G, HST, TRC, VPC.
1,2,6,7,7'-Dibenzopyrene-7,14-quinone-----	AHC, TRC.
Dibenzylamine-----	ML.
N,N'-Dibenzylethylenediamine-----	WYT.
N,N'-Dibenzylethylenediamine diacetate-----	WYT.
2,4-Dibromoacetophenone-----	WYT.
*3,9-Dibromo-7H-benz[de]anthracen-7-one-----	AHC, DUF, G, MAY, NAC, TRC.
m-Dibromobenzene-----	EK.
p-Dibromobenzene-----	DOW.
Dibromoethylbenzene-----	DOW.
2,6-Dibromo-1,5-naphthalenediol-----	EK.
X-Dibromothianthrene-----	TRC.
Dibromoviolanthrone-----	G.
1,4-Dibutoxy-2-morpholino-5-nitrobenzene-----	MEE.
2,4-Di-tert-butylphenol-----	DOW, KFT.
2,4-Dichloroaniline-----	EK.
3,4-Dichloroaniline-----	DUF, MDN.
*2,5-Dichloroaniline and hydrochloride [NH ₂ =1]-----	ALL, DUF, KLS, NAC, SDH, VPC.
*1,5-Dichloroanthraquinone-----	ACY, AHC, DUF, G, MAY, NAC, TRC.
1,5 (and 1,8)-Dichloroanthraquinone-----	DUF, NAC.
*1,8-Dichloroanthraquinone-----	AHC, NAC, TRC.
2,3-Dichloroanthraquinone-----	TRC.

TABLE 7B.-- Cyclic intermediates for which U.S. production or sales were reported, identified by manufacturer, 1962--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
4,5-Dichloro-1,8-anthraquinonedisulfonic acid-----	G.
3-(3,4-Dichlorobenzamido)-1-phenyl-2-pyrazolin-5-one-----	EK.
m-Dichlorobenzene-----	EK.
*o-Dichlorobenzene-----	ACS, CPD, DOW, DUP, DVC, MDN, OMC, PFG, SCC, SVT, WOI.
o-(and p)-Dichlorobenzene-----	GGY, HKD, MTD, UFM.
*p-Dichlorobenzene-----	ACS, CPD, DOW, DUP, DVC, HK, MDN, PFG, SCC, SVT, WOI.
*3,3'-Dichlorobenzidine base and salts-----	ALL, CWN, NAC, x.
2,4-Dichlorobenzoic acid-----	HN.
o-(3,4-Dichlorobenzoyl)benzoic acid-----	TRC.
2,4-Dichlorobenzoyl chloride-----	HN.
2,3-Dichloro-5,6-dicyanobenzoquinone-----	LIL.
8,18-Dichloro-5,15-diethyl-5,15-dihydroindolo(3,2-b:3',2'-m)triphenodioxazine-----	KPC.
2,5-Dichloro-3,6-dihydroxy-p-benzoquinone-----	EK.
2',7'-Dichlorofluorescein-----	EK.
2,5-Dichloro--hydrazinobenzene-sulfonic acid-----	G.
7,16-Dichloroindanthrene-----	AHC.
Dichloroisoviolanthrone-----	AHC.
*2,5-Dichloro-4-(3-methyl-5-oxo-2-pyrazolin-1-yl)benzene-sulfonic acid.	ACT, CMG, DUP, G, TRC, VPC.
Dichloromethylphenylsilane-----	DCC, UCS.
2,4-Dichloro-1-naphthol-----	EK.
*2,6-Dichloro-4-nitroaniline-----	DUP, ERT, G, KPC, MEE, PCW.
1,4-Dichloro-5-nitroanthraquinone-----	TRC.
1,2-Dichloro-4-nitrobenzene-----	DUP, MDN, NAC.
*1,4-Dichloro-2-nitrobenzene (Nitro-p-dichlorobenzene)-----	DUP, KPC, NAC, VPC.
2,4-Dichlorophenol-----	DOW, MDN.
3,6-Dichloropyridazine-----	ACT.
4,7-Dichloroquinoline-----	SDW.
3,5-Dichlorosalicylic acid-----	ICD.
*2,5-Dichlorosulfanilic acid [SO ₂ H=1]-----	CMG, DUP, G, VPC.
2,5-Dichloro-4-sulfobenzene-diazonium sulfate-----	TRC.
p,α-Dichlorotoluene-----	HN.
2,6-Dichlorotoluene-----	DUP, G.
2,4-Dichloro-5-(p-toluenesulfonamido)-1-naphthol-----	EK.
2,4-Dichloro-3,5-xyleneol-----	OTA.
Dicyclohexylamine-----	ABB, MON.
Dicyclohexylcarbodiimide-----	ACT, G, KK.
Dicyclopentadiene and cyclopentadiene-----	ENJ, UCC.
Dicyclopentadiene dioxide-----	UCC.
2,4-Di(1,1-dimethylpropyl)phenol (Di-tert-amylphenol)-----	FAB.
2,5-Diethoxyaniline-----	ALL.
p-Diethoxybenzene-----	G.
p-Diethylaminobenzaldehyde-----	G, NAC.
α-(2-Diethylaminoethyl)-α-phenylcyclohexanemethanol, hydrochloride.	ACT.
m-Diethylaminophenol (N,N-Diethyl-3-aminophenol)-----	ACT, DUP, MON.
3-Diethylaminopropiophenone-----	ACT.
4-Diethylamino-o-tolualdehyde-----	DUP.
*N,N-Diethylaniline-----	ACT, DSC, DUP, NAC, SDH.
N,N-Diethyl-m-anisidine-----	DUP.
Diethylbenzene-----	DOW, KPP.
N,N-Diethylcyclohexylamine-----	DUP.
N,N-Diethylmetanilic acid-----	DUP.
*N ¹ ,N ¹ -Diethyl-4-methoxymetanilamide-----	G, KLS, PCW.
N,N-Diethyl-p-nitrosoaniline-----	G.
N,N-Diethyl-4-nitroso-m-anisidine hydrochloride-----	DUP.
N,N-Diethyl-p-phenylenediamine-----	DUP.
Diethyl terephthaloyldiacetate-----	G.

TABLE 7B.-- Cyclic intermediates for which U.S. production or sales were reported, identified by manufacturer, 1962--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
N,N-Diethyl-m-toluidine-----	DUF.
N ² ,N ² -Diformyltoluene-2,5-diamine [CH ₃ =1]-----	NAC.
6,15-Dihydroanthraquinonazine-----	TRC.
3,4-Dihydro-3,4-dioxo-1-naphthalenesulfonic acid-----	EK.
2,3-Dihydro-4H-pyran-----	QKO.
1,5 (and 1,8)-Dihydroxyanthraquinone-----	DUT, NAC.
3,4-Dihydroxybenzoic acid (Protocatechuic acid)-----	AME.
2,4-Dihydroxybenzophenone-----	EK.
Dihydroxydinitroanthraquinone-----	DUF.
1,5-Dihydroxy-4,8-dinitroanthraquinone-----	AHC, KFC, VPC.
1,5 (and 1,8)-Dihydroxy-4,8 (and 4,5)-dinitroanthraquinone-----	TRC.
1,8-Dihydroxy-4,5-dinitro-2,6-anthraquinonedisulfonic acid	DUP.
17 α ,21-Dihydroxy-16 α -methylpregna-1,4,9(11)-triene-3,20-	SDH.
dione, 21-(ethyl carbonate).	
4,5-Dihydroxy-2,7-naphthalenedisulfonic acid (Chromotropic	HSH, NAC.
acid).	
*6,7-Dihydroxy-2-naphthalenesulfonic acid-----	FMI, G, IDC, NAC.
3,5-Dihydroxy-2-naphthoic acid-----	G.
4,5-Dihydroxy-3-(p-sulfopheryloxy)-2,7-naphthalenedisul-	EK.
fonic acid, trisodium salt.	
*16,17-Dihydroxyviolanthrone (Dihydroxydibenzanthrone)-----	ACY, AHC, DUF, G, MAY, NAC, TRC.
m-Diiodobenzene-----	EK.
N,N'-Diisopropyl-p-phenylenediamine-----	DUF.
2',4'-Dimethoxyacetophenone-----	DUP.
2,5-Dimethoxyacetophenone-----	BFC.
2,5-Dimethoxyaniline-----	EKT, KLS.
1,5 (and 1,8)-Dimethoxyanthraquinone-----	TRC.
2,5-Dimethoxybenzaldehyde-----	CWN.
m-Dimethoxybenzene-----	ACY, DUF, G, ICO, KFC.
p-Dimethoxybenzene-----	G, ICO.
*3,3'-Dimethoxybenzidine-----	ALL, CWN, DUP, SDH.
3,3'-Dimethoxybenzidine hydrochloride-----	CWN.
2,4-Dimethoxybenzoic acid-----	ACY, DUP.
1,1-(3,3'-Dimethoxy-4,4'-biphenylene)bis[3-methyl-3-(2-	G.
sulfoethyl) triazene].	
*1,4-Dimethoxy-2-nitrobenzene-----	DUP, EKT, G.
3,4-Dimethoxyphenethylamine (Homoveratrylamine)-----	LIL, OPC.
(3,4-Dimethoxyphenyl)acetic acid-----	LIL.
(3,4-Dimethoxyphenyl)acetone trile-----	LIL.
16,17-Dimethoxyviolanthrone-----	AHC, MAY, TRC.
p-Dimethylaminobenzaldehyde-----	FN.
α -Dimethylamino-o-cresol-----	TKL.
6-Dimethylamino-2-(2-(2,5-dimethyl-1-phenyl-3-pyrryl)-	x.
viryl)-1-methyl-1-quinolinium methyl sulfate.	
o-(2-Dimethylaminoethyl)phenol-----	RH.
2-[(2-Dimethylaminoethyl)ethylamino]pyridine (non-	ABB.
medicinal grade).	
o-(Dimethylaminoethyl)-p-butylphenol-----	RH.
3-[(Dimethylamino)methyl]indole-----	GLV.
6-(Dimethylaminoethyl)-2-methoxy-4-nitrophenol-----	MEE.
6-Dimethylamino-1-methylquinazoliniummethyl sulfate-----	x.
m-Dimethylaminophenol-----	ACY.
N-(p-Dimethylaminophenyl)-1,4-naphthoquinonimine-----	NAC.
6-Dimethylaminoquinaldine-----	EK.
*N,N-Dimethylaniline-----	ACY, DSC, DUP, NAC, SDH.
Di[(2-methyl)aziridinyl]phenyl phosphine oxide-----	ICC.
7,12-Dimethylbenz[a]anthracene-----	EK.
*N,N-Dimethylbenzylamine-----	ICC, MLS, x.
*2,2'-Dimethyl-1,1'-bianthraquinone-----	ACY, AHC, CMO, DUF, G, KFC, NAC, TRC.
2,4-Di(1-methylbutyl)phenol-----	PAS.

TABLE 7B.-- Cyclic intermediates for which U.S. production or sales were reported, identified by manufacturer, 1962--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
5,5-Dimethyl-1,3-cyclohexanedione-----	EKT.
N,N-Dimethylcyclohexylamine-----	DUP, MON.
2',7'-Dimethylfluoran-----	WLM.
Dimethylhydantoin-----	GLX.
2,5-Dimethylhydroquinone-----	ACY.
2,6-Dimethylhydroquinone-----	ACY.
2,8-Dimethyl-1,3 β -hydroxy-9(13 β)-ceroxonone-----	WLM.
1,3-Dimethyl-4-imidazolin-2-one-----	MRA.
2,3-Dimethylindole-----	DUP.
*N,N-Dimethyl-p-nitrosaniline-----	ACY, DUP, G, NAC.
N,N-Dimethyl-p-phenylenediamine-----	NAC.
N,N-Dimethyl-p-phenylenediamine hydrochloride-----	EK.
N,N-Dimethyl-p-phenylenediamine sulfate-----	EK.
2,5-Dimethylphenylpyrrole-----	X.
2,5-Dimethyl-1-phenyl-3-pyrrolecarboxyaldehyde-----	X.
1,4-Dimethylpiperazine-----	JCC.
2,6-Dimethylpiperidine-----	RIL.
p-(1,1-Dimethylpropyl)phenol-----	KPT, PAS, UCP.
N,N-Dimethylsulfanilic acid-----	G.
2,4-Dinitroaniline-----	ACY, KPC.
p-(2,4-Dinitroanilino)phenol-----	ATL, DUP, G, NAC.
1,5(and 1,8)-Dinitroanthraquinone-----	ACY, AHC, KPC, TRC.
2,4-Dinitro-N,N'-(1,5-anthraquinonylene)dioxamic acid-----	TRC.
m-Dinitrobenzene-----	DUP, NAC.
2,4-Dinitrobenzenesulfonic acid-----	G.
3,5-Dinitrobenzoic acid-----	GAM, SAL.
3,5-Dinitrobenzoyl chloride-----	EK.
Dinitro(3,3'-bi-7H-benz[de]anthracen)-7,7'-dione-----	DUP, MAY.
*4,5-Dinitrochryszazin-----	AHC, DUP, EKT, G.
2,6-Dinitro-N,N-di-n-propyl- α,α,α -trifluoro-p-toluidine-----	X.
*2,4-Dinitrophenol, tech-----	DUP, KPC, NAC, SDC.
2,4-Dinitrophenylhydrazine-----	EK.
3,5-Dinitrosalicylic acid-----	EK.
3,5-Dinitrosalicylic acid, monosodium salt-----	EK.
p-Dinitrosobenzene-----	FIN.
*4,4'-Dinitro-2,2'-stilbenedisulfonic acid-----	ACY, DUP, G, NAC, SDH, TRC.
2,4-Dinitrotoluene-----	DUP, NAC.
2,4(and 2,6)-Dinitrotoluene-----	DUP, MOB.
1,5-Diphenoxyanthraquinone-----	AHC.
1,5(and 1,8)-Diphenoxyanthraquinone-----	DUP, KPC.
1,8-Diphenoxyanthraquinone-----	AHC, EKT.
Diphenylacetaldehyde-----	BPC.
Diphenylacetic acid-----	BPC, LIL.
Diphenylamine-----	ACY, DOW, DUP.
6,8-Diphenylamino-1-naphthalenesulfonic acid-----	NAC.
2,8-Diphenylanthraquinone-1'(S)2',5'(S)6'-dithiazole-----	AHC.
Diphenylcarbamoyl chloride-----	EK.
1,1-Diphenylethylene-----	EK.
N,N'-Diphenylethylenediamine-----	DOW, DUP, RPC.
1,3-Diphenyl-1,3-propanedione-----	EK.
1,3-Diphenyl-2-propanone-----	TBK.
1,3-Diphenyltriazene-----	NAC.
2,5-Dithiobiurea-----	ACY.
Dithiodibenzoic acid-----	KF, MEE.
*1,4-Di(p-toluidino)anthraquinone-----	AHC, ATL, CMG, G, NAC, TRC.
1,5-Di(p-toluidino)anthraquinone-----	AHC.
1,8-Di(p-toluidino)anthraquinone-----	AHC.
Di-o-tolylcarbodiimide-----	DUP.
Divinylbenzene-----	DOW, KPP.
1,3-Di-2,6-xyllylguanidine-----	ACY.

TABLE 7B.-- Cyclic intermediates for which U.S. production or sales were reported, identified by manufacturer, 1962--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
*Dodecylbenzene (including tridecylbenzene)-----	ATR, CO, MDN, NAC, SOC.
Dodecylmethylbenzene-----	x.
Dodecylmethylbenzyl chloride-----	UCF, x.
*Dodecylphenol-----	G, MDN, x.
Ethanediyliidenetetraphenol (Tetraphenolethane)-----	SHC.
(o-Ethoxybenzoyl)acetone trile-----	ACY.
6-Ethoxy-2-mercaptobenzothiazole-----	ARA, DUP.
2-Ethoxynaphthalene-----	DUP.
2-Ethoxy-1-naphthoyl chloride-----	ICO.
2-Ethoxy-1-naphthylamine-----	DUP.
2-Ethoxy-1-nitronaphthalene-----	DUP.
N ¹ -(6-Ethoxy-3-pyridazinyl)sulfenilamide-----	ACY.
3-Ethylamino-p-cresol-----	DUP.
3-Ethylamino-p-toluenesulfonic acid [SO ₃ H=1]-----	DUP, G.
*N-Ethylaniline, refined-----	ACY, DUF, NAC, SDH.
*2-(N-Ethylanilino)ethanol-----	DUP, EKT, G.
[2-(N-Ethylanilino)ethyl]trimethylammonium chloride-----	DUP.
(N-Ethylanilino)propionitrile-----	EKT.
o-(N-Ethylanilino)-m-toluenesulfonic acid-----	DUP.
*o-(N-Ethylanilino)-p-toluenesulfonic acid-----	G, ICC, NAC, SDH, TRC, WJ.
N-Ethyl-p-anisidine-----	EKT.
N-Ethylantranilic acid-----	G, SDH.
2-Ethylantraquinone-----	G, NAC.
*Ethylbenzene-----	ACP, DOW, ENJ, FG, KPP, KPT, MON, SHC, SKC, SNT, TOC, UCC.
o-(p-Ethylbenzoyl)benzoic acid-----	G, NAC.
Ethylbenzyl chloride-----	BPC.
9-Ethylcarbazole-----	DUP.
N-Ethylcyclohexen-1-ylamine-----	x.
N-Ethyl-1-naphthylamine-----	DSC, DUF, NAC.
p-Ethylphenol-----	ACY.
*N-Ethyl-N-phenylbenzylamine-----	DUP, NAC, SDH.
*2-Ethyl-2-phenylmalonic acid, diethyl ester-----	BPC, MAL, VPC.
5-Ethyl-2-picoline (2-Methyl-5-ethylpyridine) (MEP)-----	UCC.
2-Ethylpyridine-----	RIL.
N-Ethyl-5-sulfoanthranilic acid-----	G, SDH.
6-Ethyl-1,1,4,4-tetramethyl-1,2,3,4-tetrahydronaphthalene-----	GIV.
N-Ethyl-m-toluidine-----	DUP, NAC.
N-Ethyl-o-toluidine-----	DUP.
3-(N-Ethyl-m-toluidino)-1,2-propanediol-----	EKT.
*3-(N-Ethyl-m-toluidino)propionitrile-----	DUP, EKT, G.
1-Ethylcyclohexanol-----	AIR.
Fluoren-9-one-----	EK.
o-Fluoroaniline-----	NEP.
1-Fluoro-2,4-dinitrobenzene-----	EK.
o-Fluorotoluene-----	EK.
4'-Formylacetanilide-----	BPC, KF.
4-Formyl-m-benzenedisulfonic acid-----	G, SDH.
m-Formylbenzenesulfonic acid, sodium salt-----	G.
*o-Formylbenzenesulfonic acid (o-Sulfobenzaldehyde)-----	G, ICC, NAC, SDH, VPC.
Furan-----	DUP.
Furfuryl alcohol-----	QRO.
Hexachlorobenzene-----	KPT, SOC.
Hexachlorocyclopentadiene-----	HK, VEL.
Hexachlorophenyl ether-----	DOW.
N-Hexadecylmorpholine-----	APD.
Hexahydrophthalic anhydride-----	PTT.
Hexamethylbenzene-----	EK.
2,2',4,4',6,6'-Hexanitrodiphenylamine-----	EK.
*p-Hydrazinobenzenesulfonic acid-----	G, SDH, STG.
3-Hydrazino-5-nitro-p-toluenesulfonic acid [SO ₃ H=1]-----	WJ.

TABLE 7B.--Cyclic intermediates for which U.S. production or sales were reported, identified by manufacturer, 1962--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
4-Hydrazino-m-toluenesulfonic acid-----	G.
Hydroabietyl alcohol-----	HFC.
Hydroquinone, tech-----	CRS, EKT.
4'-Hydroxyacetanilide-----	TRC.
2'-Hydroxyacetophenone-----	KF, PRR.
3'-Hydroxyacetophenone-----	SDH.
4'-Hydroxyacetophenone-----	KF, PRR.
3'-Hydroxyacetophenone benzoate-----	SDH.
3-Hydroxy-2-anthraic acid-----	G.
p-Hydroxybenzaldehyde-----	DCW.
2-Hydroxy-11H-benzo[a]carbazole-3-carboxylic acid-----	G.
p-Hydroxybenzoic acid-----	HN.
p-Hydroxybenzoic acid, butyl ester-----	HN, ICO.
p-Hydroxybenzoic acid, ethyl ester-----	HN, ICO.
p-Hydroxybenzoic acid, methyl ester-----	HN, ICO.
p-Hydroxybenzoic acid, propyl ester-----	HN, ICO.
4-Hydroxycoumarin-----	ABB.
4-(2-Hydroxyethoxy)acetanilide-----	TRC.
3-(N-2-Hydroxyethylamolino)propionitrile-----	ICC.
3-(N-2-Hydroxyethylamolino)propionitrile acetate-----	EKT.
4-(2-Hydroxyethyl)pyridine-----	RIL.
N-2-Hydroxyethyl-o-toluidine-----	EKT.
2-Hydroxy- α^1, α^2 -mesitylenediol-----	ACY.
2-Hydroxy-3-methylcinchoninic acid-----	G.
3-Hydroxy-2-methylcinchoninic acid-----	DUP.
N-Hydroxymethylphthalamide-----	ACY.
7-Hydroxy-1-naphthalenecarbamic acid, methyl ester-----	TRC.
3-Hydroxy-2-naphthanilide (Naphthol AS)-----	ATL, PCW.
1-Hydroxy-2-naphthoic acid-----	NAC.
2-Hydroxy-1-naphthoic acid-----	BL.
3-Hydroxy-2-naphthoic acid (B.O.N.)-----	AUG, DUP, HN, NAC, PCW, SW.
1-Hydroxy-2-naphthoic acid, phenyl ester-----	EK.
3-Hydroxy-3-naphtho-o-toluidide-----	ATL, KFC, PCW.
N-(7-Hydroxy-1-naphthyl)acetamide-----	CMG, G, TRC.
N-(7-Hydroxynaphthyl)benzamide-----	TRC.
N-(7-Hydroxy-1-naphthyl)-3-nitrobenzamide-----	TRC.
1-[4'-(p-Hydroxyphenylazo)-1,1-biphenyl-4-azo]-2-naphthol-6,8-disulfonic acid-----	TRC.
1-[4'-(p-Hydroxyphenylazo)-3,3'-dimethyl-1,1-biphenyl-4-azo]-2-naphthol-6,8-disulfonic acid-----	TRC.
2-(3-Hydroxypropyl)pyridine-----	RIL.
2-Hydroxy-4-sulfo-1-naphthalenediazonium hydroxide, inner salt-----	ACY.
2-Imidazolidinone-----	SEY.
2-Imidazolidinone modifications-----	RH.
4-Imidazolin-2-one-----	MRA.
*1,1'-Iminobis[4-aminoanthraquinone]-----	ACY, AHC, CMG, DUP, G, MAY, NAC, TRC.
1,1'-Iminobis[4-benzamidoanthraquinone]-----	ACY, MAY.
1,1'-Iminobis[5-benzamidoanthraquinone]-----	AHC, G, TRC.
6,6'-Iminobis[1-naphthol-3-sulfonic acid]-----	DUP, NAC.
1,1'-Iminobis[4-nitroanthraquinone]-----	ACY, AHC, DUP, MAY, TRC.
*1,1'-Iminodianthraquinone (Dianthrimide)-----	ACY, AHC, DUP, G, MAY, TRC.
2,2'-Iminodipyridine-----	RIL.
1,3-Indandione-----	PIC.
1-Iodonaphthalene-----	EK.
Isatin-----	NAC.
Isatoic anhydride-----	MEE.

TABLE 7B.--Cyclic intermediates for which U.S. production or sales were reported, identified by manufacturer, 1962--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
*Isocyanic acid derivatives:	
Bitolylene diisocyanate (TODI)-----	CWN, NAC.
Dianisidine diisocyanate (DADI)-----	CWN.
*Diphenylmethane 4,4'-diisocyanate (MDI)-----	CWN, DUP, MDB, NAC.
-,4'-Methylenebis[o-tolylisocyanate]-----	CWN.
p-Nitrophenylisocyanate-----	EK.
Phenylisocyanate-----	CWN, OTC.
Polycarbonates (complex)-----	MDB.
Polymethylene polyphenylisocyanate-----	CWN.
Toluene 2,4-diisocyanate-----	DUP.
Toluene 2,4- and 2,6-diisocyanate (65/35 mixture)-----	DUP, NAC.
*Toluene 2,4- and 2,6-diisocyanate (80/20 mixture)-----	DUP, MDB, NAC.
Toluene diisocyanate mixture, other-----	MDB.
Other isocyanic acid derivatives-----	CWN, DUP.
Isonicotinic acid-----	RIL.
Isonicotinic acid, methyl ester-----	RIL.
Isonitrosopropiophenone-----	NFP.
Isophorone-----	UCC.
Isophthalic acid (1,3-Benzenedicarboxylic acid)-----	ACC, SOC.
5,5'-Isopropylidenebis(2-hydroxy-m-xylene-x, y'-diol)-----	ARK.
*-,4'-Isopropylidenediphenol (Bisphenol A)-----	DOW, MEN, SHC, UCP.
-,4'-Isopropylidenediphenol, ethoxylated-----	AFD.
4,4'-Isopropylidenediphenol, propoxylated-----	AFD.
o-Isopropylphenol-----	TNA.
Isothiocyanic acid, phenyl ester-----	EK.
*Isoviolanthrone (Isodibenzanthrone)-----	ACY, AHC, DUP, G, MAY, TRC.
*Leuco-1,4-diaminoanthraquinone-----	ACY, AHC, DUP, G, ICC, MAY, TRC.
*Leuco quinizarin (1,4,9,10-Anthratetrol)-----	ACY, HSH, ICC, KPC, NAC, TRC.
*Leuco tetrahydroxyanthraquinone-----	G, ICC, TRC.
2,4-Lutidine-----	ACP, KPT.
3,4-Lutidine-----	RIL.
2,6-Lutidine-----	RIL.
Melamine-----	ACY, RCI.
dl-p-Mentha-1,8-diene (Limonene)-----	GIV, HWI.
p-Mentha-1,4(8)diene-----	GIV.
o-Mercaptobenzoic acid-----	MED.
Metanilamide-----	TRC, VPC.
Metanilamide-----	G.
*Metanilic acid (m-Aminobenzenesulfonic acid)-----	ACY, DUP, NAC, TRC.
1-Methoxyanthraquinone-----	G.
4-Methoxy-3-nitrobenzanilide-----	FCW.
4-Methoxy-6-nitrometanilic acid-----	DUP.
2-Methoxy--nitrophenol-----	MEI.
p-Methoxyphenylacetic acid-----	PRR, TBK.
5-Methoxy-m-phenylenediamine (m-Diaminoanisole)-----	KPC.
4'-Methoxypropiophenone-----	LIL.
N ¹ -(6-Methoxy-3-pyridaziryl)sulfanilamide-----	ACY.
*1-Methylaminoanthraquinone-----	AHC, DUP, G, KPC.
1-Methylamino-4-(p-toluidino)anthraquinone-----	G.
N-Methylaniline-----	ACY, CMB, DUP.
2-(N-Methylanilino)ethanol-----	G.
3-(N-Methylanilino)propionitrile-----	DUP.
5-Methyl-o-anisidine [NH ₂ =1]-----	BUC, DUP, TRC.
N-Methylantranilic acid-----	G, ICC.
2-Methylantraquinone-----	ACY, NAC.
1-(3-Methyl-2-antraquinonylamino)-5-(7-oxo-7H-benz[de]-anthracen-3-ylamino)anthraquinone-----	DUP.
2-Methylaziridine-----	ICC.
3-Methylbenzo[f]quinoline-----	ACY.
3-Methylbenzyl alcohol-----	UCC.
N-Methylbenzylamine-----	MLS.

TABLE 7B.--Cyclic intermediates for which U.S. production or sales were reported, identified by manufacturer, 1962--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
Methyl benzyl ether-----	UCC.
1-Methylcarbostyryl-----	EK.
3-Methylcholanthrene-----	EK.
Methylcyclohexane-----	DOW, PLC.
Methylcyclohexenes, mixed-----	FLC.
N-Methylcyclohexylamine-----	DUP.
N-Methylenedianiline-----	DUP.
4,4'-Methylenebis[2-chloroaniline]-----	DUP, TRC.
4,4'-Methylenebis[N,N-diethylaniline]-----	ACY, DSC, DUP, NAC, SDH.
*4,4'-Methylenebis[N,N-dimethylaniline] (Methane base)----	DUP.
4,4'-Methylenebis[N,N-dimethyl-3-nitroaniline]-----	DUP, NAC.
5,5'-Methylenebis[toluene-2,4-diamine]-----	DOW, NAC.
Methylenedianiline-----	HN.
Methylenedisulicylic acid-----	TRC.
N-Methyl-2-heptadecylbenzimidazoliummethylol sulfate----	DUP.
6-Methyl-2-(2-methyl-6-quinolyl)-7-benzothiazolesulfonic acid.	MEE.
4-Methylmercapto-m-cresol-----	KPT, VEL.
Methylnaphthalene, crude-----	RL.
1-Methylnaphthalene-----	RL.
2-Methylnaphthalene-----	RL.
N-Methyl-4'-nitroacetanilide-----	G, NAC.
N-Methyl-p-nitroaniline-----	EK, G.
4-Methyl-2-nitroanisole-----	DUP.
N-(5-Methyl-4-nitro-o-anisyl)-p-toluenesulfonamide-----	G.
*2-Methyl-1-nitroanthraquinone-----	AHC, DUP, G, NAC, TRC.
N-Methyl-N-nitroso-p-toluenesulfonamide-----	EK.
Methyl-5-norbornene-2,3-dicarboxylic anhydride-----	IOC.
Methylnorbornene-2,3-dicarboxylic anhydride, isomers-----	NAC.
m-(3-Methyl-5-oxo-2-pyrazolin-1-yl)benzenesulfonamide-----	TRC, VPC.
p-(3-Methyl-5-oxo-2-pyrazolin-1-yl)benzenesulfonamide-----	CMG.
m-(3-Methyl-5-oxo-2-pyrazolin-1-yl)benzenesulfonic acid----	G, VPC.
*p-(3-Methyl-5-oxo-2-pyrazolin-1-yl)benzenesulfonic acid----	ACY, ALT, DUP, G, KPC, TRC, VPC.
6-(3-Methyl-5-oxo-2-pyrazolin-1-yl)-1,3-naphthalene- disulfonic acid.	TRC.
4-(3-Methyl-5-oxo-2-pyrazolin-1-yl)-m-toluenesulfonic acid [SO ₃ H=1].	G, TRC.
1-Methyl-1-phenylhydrazine-----	EK.
1-Methyl-2-phenylindole-----	G.
1-Methyl-2-phenylindole-3-carboxaldehyde-----	G.
5-Methyl-3-phenyl-4-isoxazolecarboxylic acid-----	IOC, x.
5-Methyl-3-phenyl-4-isoxazolecarboxylic acid hydrochloro- ride.	IOC.
*3-Methyl-1-phenyl-2-pyrazolin-5-one (Developer Z)-----	DOW, DUP, NAC, SDW, VPC.
Methylpropylcarbonylbarbituric acid-----	LIL.
2-Methylpyrazine-----	WYN.
3-Methyl-2-pyrazolin-5-one-----	DUP.
1-Methylpyrrole-----	ASL, x.
1-Methyl-2,4-(1H,3H)quinolinedione-----	G.
*α-Methylstyrene-----	ACP, DOW, HFC.
N-Methyl-5-sulfoanthranilic acid-----	EK.
2-Methylsulfonyl-4-nitroaniline-----	EKT.
4-(Methylsulfonyl)-2-nitrophenol-----	TRC.
Methyltetrahydrobenzaldehyde-----	UCC.
m-Methylthioaniline-----	ACY.
p-Methylthioaniline-----	EVN.
5-Methyl-p-toluenesulfon-o-anisidide-----	G.
3-Methyl-6-(p-toluidino)-7H-dibenz[f,i]isoquinoline- 2,7(3H)-dione.	AHC, G.
3-Methyl-1-(p-tolyl)-2-pyrazolin-5-one-----	VPC.

TABLE 7B.--Cyclic intermediates for which U.S. production or sales were reported, identified by manufacturer, 1962 --Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
6'-Methyl-4'-p-tolylsulfonamido-m-benzanisisdide-----	G.
*Naphthalene, solidifying at 79° C. or above (refined Flake):	
From domestic crude naphthalene-----	ACY, KPT, RIL, STN, SW.
From imported crude naphthalene-----	ACF, KPT.
1,3-Naphthalenediol-----	EK.
1,5-Naphthalenediol (1,5-Dihydroxynaphthalene)-----	NAC.
1,5-Naphthalenedisulfonic acid-----	NAC, TRC.
2,7-Naphthalenedisulfonic acid-----	DUP, NAC.
1-Naphthalenesulfonic acid-----	TRC.
1-Naphthalenesulfonic acid, sodium salt-----	TRC.
2-Naphthalenesulfonic acid-----	ACY, NAC.
2-Naphthalenesulfonic acid, sodium salt-----	ACY, FIN.
2-Naphthalenesulfonyl chloride-----	DUP, G.
*1,4,5,8-Naphthalenetetracarboxylic acid-----	G, KPC, TRC.
1,3,6-Naphthalenetrisulfonic acid-----	G, TRC.
*Naphthalic anhydride-----	DUP, G, NAC.
*Naphthalimide-----	DUP, G, NAC.
*Naphthonic acid (4-Amino-1-naphthalenesulfonic acid)-----	ACY, DUP, NAC.
Naphthonic acid, sodium salt-----	DUP, NAC.
1-Naphthol (α -Naphthol)-----	DUP, NAC.
2-Naphthol, tech. (β -Naphthol)-----	ACY, NAC, SW.
p-Naphtholbenzein-----	EK.
1-Naphthol-3,6-disulfonic acid, monosodium salt-----	TRC.
2-Naphthol-3,6-disulfonic acid (R acid)-----	ATL.
2-Naphthol-3,6-disulfonic acid, disodium salt-----	ACY, G, NAC, TRC, WJ.
*2-Naphthol-6,8-disulfonic acid (G acid)-----	ATL, DUP, TRC.
2-Naphthol-6,8-disulfonic acid, dipotassium salt-----	G.
*2-Naphthol-6,8-disulfonic acid, disodium salt-----	ACY, NAC.
1-Naphthol-4-sulfonic acid (Neville & Winther's acid)-----	ATL, DUP, NAC.
1-Naphthol-5-sulfonic acid-----	NAC, TRC.
1-Naphthol-8-sulfonic acid-----	G, VPC.
2-Naphthol-5-sulfonic acid-----	VPC.
*2-Naphthol-6-sulfonic acid (Schaeffer's acid)-----	NAC, SNA, TMS.
*2-Naphthol-6-sulfonic acid, sodium salt-----	ACY, TRC, WJ.
2-Naphthol-7-sulfonic acid-----	DUP.
1-Naphthol-3-sulfonic acid, benzenesulfonate, sodium salt-----	G.
1-Naphthol-8-sulfonic acid sultone (1,8-Naphthosultone)-----	DUP, TRC.
1,4-Naphthoquinone-----	ACY.
Naphthostyryl-----	DUP.
*Naphth[1,2]oxadiazole-5-sulfonic acid-----	CMG, DUP, G, NAC, TRC, VPC.
N-1-Naphthylacetamide-----	EK.
1-Naphthylamine (α -Naphthylamine)-----	DUP, NAC.
2-Naphthylamine (β -Naphthylamine)-----	KLS.
p-2-Naphthylaminophenol (N-(p-Hydroxyphenyl)-2-naphthyl- amine)-----	G, NAC.
*2-(Naphthylthio)acetic acid-----	ACY, G, KPC.
Nicotinonitrile (3-Cyanopyridine)-----	NEP, RIL.
Nitro-aceanthra [2,1-a]aceanthrylene-5,13-dione-----	AHC.
4'-Nitroacetanilide-----	G, TRC.
4'-Nitro-o-acetanisidide-----	DUP.
2-Nitro-p-acetanisidide-----	DUP, SDH.
3'-Nitroacetophenone-----	SDH.
4'-Nitroacetophenone-----	NES.
5'-Nitro-o-acetotoluidide-----	DUP.
*m-Nitroaniline-----	AUG, ACY, DUP, TRC.
o-Nitroaniline-----	KPC, MON.
*p-Nitroaniline-----	KPC, MON, SDC, UFM.
3-(4-Nitroanilino)-1-(2,4,6-trichlorophenyl)-2-pyrazolin- 5-one.	EK.

TABLE 7B.-- Cyclic intermediates for which U.S. production or sales were reported, identified by manufacturer, 1962 --Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
*4-Nitro-o-anisidine [NH ₂ =1]-----	BUC, DUF, KPC, SDH.
*5-Nitro-o-anisidine [NH ₂ =1]-----	ACY, AUG, DUF, G, KLS.
5-Nitro-o-anisidine sulfate [NH ₂ =1]-----	DUF.
2-Nitro-p-anisidine [NH ₂ =1]-----	DUF.
o-Nitroanisole-----	DUF, MON.
p-Nitroanisole-----	DUF.
1-Nitroanthraquinone-----	DUF.
1'-Nitroanthraquinone-2'-carboxyaminoaceanthra[2,1-a]- aceanthrylene-5,13-dione.	AHC.
*1-Nitro-2-anthraquinonecarboxylic acid-----	AHC, DUF, G, NAC, TRC.
*5-Nitro-1-anthraquinonesulfonic acid-----	DUF, MAY, NAC, TRC.
5(and 8)-Nitro-1-anthraquinonesulfonic acid-----	AHC, DUF, TRC.
8-Nitro-1-anthraquinonesulfonic acid-----	NAC.
8-Nitro-1-anthraquinonesulfonic acid, sodium salt-----	DUF, TRC.
2-(1-Nitro-2-anthraquinonyl)anthra[2,3]oxazole-5,10-dione-	G, NAC.
m-Nitrobenzaldehyde-----	NAC, SDH.
6-[p-(p-Nitrobenzamido)benzamido]-1-naphthol-3-sulfonic acid.	DUF.
6-(p-Nitrobenzamido)-1-naphthol-3-sulfonic acid-----	DUF.
4'-Nitrobenzanilide-----	G, TRC.
*Nitrobenzene-----	ACY, DUF, G, MON, NAC.
3-Nitrobenzenesulfonanilide-----	G.
m-Nitrobenzenesulfonic acid-----	DUF, NAC.
m-Nitrobenzenesulfonic acid, potassium salt-----	ACY.
m-Nitrobenzenesulfonic acid, sodium salt-----	G, KPC, MAY, MEE, MON, MRA.
5'-Nitro-o-benzenesulfonotoluidide-----	DUF.
m-Nitrobenzenesulfonyl chloride-----	G.
o-Nitrobenzenesulfonyl chloride-----	EK.
p-Nitrobenzenesulfonyl chloride-----	EK.
5-Nitro-2(3H)-benzimidazolone-----	DUF.
m-Nitrobenzoic acid-----	HK, SDH, WAY.
p-Nitrobenzoic acid-----	DUF.
p-Nitrobenzoic acid, isobutyl ester-----	ICO.
m-Nitrobenzoyl chloride-----	HK.
p-Nitrobenzoyl chloride-----	HK.
m-Nitrobenzyl alcohol-----	DUF.
4'-Nitro-4-biphenylcarboxylic acid-----	DUF, TRC.
3-Nitro-4-chloro-N,N-dimethylbenzenesulfonamide-----	EKT.
2-Nitro-p-cresol-----	DUF, SW.
Nitrocyclohexane-----	x.
Nitrodiphenylamine-----	ACY.
4-Nitro-6-(5-hydroxy-3-methyl-1-phenyl-4-pyrazolylazo)- 1-phenol-2-sulfonic acid.	TRC.
5-Nitro-1H-indazole-----	EK.
5-Nitroisophthalic acid-----	G, GAM.
1-Nitronaphthalene-----	DUF, NAC.
3-Nitro-1,5-naphthalenedisulfonic acid-----	G, TRC.
8(and 5)-Nitro-1(and 2)-naphthalenesulfonic acid-----	G.
4-Nitronaphthalic anhydride-----	G.
*7(and 8)-Nitronaphth[1,2]oxadiazole-5-sulfonic acid-----	G, NAC, TRC, VPC.
4'-Nitrooxanilic acid-----	DUF.
p-Nitrophenethyl acetate-----	EKT.
Nitrophenethyl alcohol-----	EKT.
m-Nitrophenol-----	EK.
o-Nitrophenol-----	DUF.
*p-Nitrophenol-----	DUF, G, MON, SDC, UPM.
p-Nitrophenol, sodium salt-----	MON, UPM.
p-Nitrophenylacetic acid-----	BFC, EK, ICO.
p-Nitrophenylacetoni trile-----	ICC.
4'-(p-Nitrophenyl)acetophenone-----	DUF, G.

TABLE 7B.-- Cyclic intermediates for which U.S. production or sales were reported, identified by manufacturer, 1962--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
2-(m-Nitrophenyl)-1,3-dioxolane-----	DUP.
4-Nitro-o-phenylenediamine-----	DUP, FMT.
(p-Nitrophenyl)hydrazine-----	EK.
2-(4-Nitrophenyl)-(2H)-naphtho[1,2]triazole-6,8-disulfonic acid.	TRC.
1-(m-Nitrophenyl)-5-oxo-2-pyrazoline-3-carboxylic acid----	DUP, VFC.
3-Nitrophthalic acid-----	EK.
Nitrophthalic anhydride-----	EK.
4-Nitrophthalimide-----	DUP.
5-Nitro-4,6-pyrimidinediol-----	KF.
2-Nitrosorecinol-----	EK.
5-Nitrosalicylaldehyde-----	EK.
3(and 5)-Nitrosalicylic acid-----	G.
p-Nitrosophenol-----	ACY, DUP, NAC.
β-Nitrostyrene-----	OWN.
2-[4-(4-Nitro-2-sulfosulyryl)-3-sulfophenyl]-2H-naphtho- [1,2]triazole-5-sulfonic acid.	TRC.
m-Nitrotoluene-----	NAC.
o-Nitrotoluene-----	DUP, NAC.
p-Nitrotoluene-----	DUP, NAC.
Nitrotoluene mixtures-----	DUP, NAC.
*5-Nitro-o-toluenesulfonic acid [SO ₃ H=1]-----	ACY, DUF, G, NAC, SDH, TRC.
*3-Nitro-p-toluenesulfonic acid [SO ₃ H=1]-----	CMG, KFC, TRC.
4-Nitro-o-toluidine [NH ₂ =1]-----	DUP.
*5-Nitro-o-toluidine [NH ₂ =1]-----	DUP, KLS, SDH.
*2-Nitro-p-toluidine [NH ₂ =1]-----	ACY, DUF, KFC, NAC, SDH, SW.
5-Nitro-2-p-toluidinobenzenesulfonic acid-----	DUP.
*16-Nitroviolanthrone-----	ACY, G, MAY, TRC.
2-Nitro-m-xylene-----	DUP.
4-Nitro-m-xylene-----	DUP.
Nitroxylenes, mixed-----	DUP, NAC.
2-tert-Noryl-p-cresol-----	USR.
Noryl-dinorylphenol, mixture-----	G, JCC.
*Norylphenol-----	ENJ, G, JCC, MDN, RH, UFM, USR.
2,5-Norbornadiene-----	SHC.
Octylphenol-----	RH.
7-Oxabicyclo[4.1.0]heptane-----	ARA.
6-Oxo-6H-anthra[9,1]isothiazole-3-carbonyl chloride-----	DUP.
*1-(7-Oxo-7H-benz[de]anthracen-3-ylamino)anthraquinone-----	ACY, AHC, DUF, G, TRC.
*1,1'-(7-Oxo-7H-benz[de]anthracen-3,9-ylene)diimino- dianthraquinone.	ACY, AHC, DUP, G, MAY, TRC.
2-Oxocyclohexanecarboxylic acid, ethyl ester-----	ARA.
2-Oxocyclopentanecarboxylic acid, ethyl ester-----	ARA.
*5-Oxo-1-phenyl-2-pyrazoline-3-carboxylic acid-----	NAC, SDW, VFC.
5-Oxo-1-phenyl-2-pyrazoline-3-carboxylic acid, ethyl ester-	G.
*5-Oxo-1-(p-sulfophenyl)-2-pyrazoline-3-carboxylic acid (Pyrazolone T).	ALT, CMG, G, KFC, VFC.
4,4'-Oxydianiline-----	x.
Pentachloronitrobenzene-----	CMC.
Pentadecyltoluene-----	CO.
1,1,3,3,5-Pentamethylindan-----	GIV.
Pentyl-naphthalenes (Amylnaphthalenes)-	PAS.
o-Pentylphenol (o-Amylphenol)-----	PAS.
3,4,9,10-Perlynenetetracarboxylic acid-----	G.
3,4,9,10-Perlynenetetracarboxylic diimide-----	G.
Phenethylamine-----	MES.
β-Phenethylamine sulfate-----	MES.
o-Phenetidine-----	MDN.
p-Phenetidine-----	DOW, DUP, MDN.

TABLE 7B.-- Cyclic intermediates for which U.S. production or sales were reported, identified by manufacturer, 1962--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
*Phenol:	
*Natural:	
*From coal tar: ¹	
39° C., m.p.-----	KPT, PRD.
*82 $\frac{1}{2}$ -8 $\frac{1}{2}$ -----	ACP, KPT.
All other-----	ACP, ACY, KPT, PRD.
*From petroleum-----	MER, PIT, PRD, SW.
*Synthetic:	
By caustic fusion:	
U.S.P.-----	MAL, MDN, RCI.
All other-----	HKD.
From chlorobenzene by liquid-phase hydrolysis: U.S.P.---	DOW.
From chlorobenzene by vapor-phase hydrolysis: U.S.P.---	UCP.
*From cumene-----	ACP, HPC, MDN, SHC, SOC.
Phenolsulfonaphthalein, sodium salt-----	EK.
*1-Phenol-4-sulfonic acid-----	DOW, MDN, UPF.
2-Phenoxypropionic acid-----	ICO.
α -Phenoxypropionyl chloride-----	ICO, OPC.
Phenylacetamide-----	BPC.
Phenylacetic acid (α -Toluic acid)-----	BPC, GIV, TBK.
Phenylacetic acid, ethyl ester, tech-----	BPC, MAL, TBK.
Phenylacetic acid, potassium salt-----	BPC, OPC, TBK.
Phenylacetic acid, sodium salt-----	BPC, OPC.
*Phenylacetoneitrile (α -Tolunitrile)-----	BPC, OPC, GIV, SDW, TBK.
2-Phenylacetophenone-----	EK.
4'-Phenylacetophenone-----	DUP, G.
2-Phenylanthr[2,3]oxazole-5,10-dione-----	G.
*p-Phenylazoaniline (p-Aminoazobenzene) and hydrochloride--	ACY, DUF, G, KPC, NAC.
4-Phenylazodiphenylamine-----	EK.
4-Phenylazo-1-naphthylamine-----	DUP.
1-Phenyl-1,3-butanedione-----	EK.
2-Phenylbutyric acid-----	BPC.
3-Phenyl-o-cresol-----	RBC.
N-Phenyl-dibenzylamine-----	DUP.
N,N'-p-Phenylenebis[acetamide]-----	ACY.
*m-Phenylenediamine-----	ACY, DUF, G, NAC, PDC.
*o-Phenylenediamine-----	FMT, MEE, MPT, TRC.
p-Phenylenediamine-----	ACY, BFG, SW.
1-Phenylephrine base, crude-----	GAN.
Phenyl-1,2-ethanediol-----	ARA.
Phenyl ether (Diphenyl oxide)-----	DOW.
d(-)-Phenylglycine-----	PRR.
2-Phenylglycine-----	ICO.
Phenylglycine, sodium salt-----	DUP, NAC.
5-Phenylhydantoin-----	ABB.
Phenylhydrazine-----	DOW.
Phenylhydrazine hydrochloride-----	EK, G.
*2,2'-(Phenylimino)diethanol (Phenyl-diethanolamine)-----	DUP, EKT, G, KPC, TRC, UCC.
Phenylmalonic acid, diethyl ester-----	BPC.
o-Phenylphenol-----	DOW, RCI.
o-Phenylphenol, chlorinated-----	DOW.
o-Phenylphenol, sodium salt-----	DOW, RCI.
p-Phenylphenol-----	DOW.
N-Phenyl-p-phenylenediamine-----	DUP, USR.
Phenylphosphonic acid-----	VIC.
Phenylphosphonic acid, sodium salt-----	VIC.
Phenyl-2-propanone-----	ORT, SK.
Phenyl 2-pyridyl ketone-----	RIL.
Phenyl 4-pyridyl ketone-----	RIL.
Phenyl sulfide-----	EK.

See footnote at end of table.

TABLE 7B.--Cyclic intermediates for which U.S. production or sales were reported, identified by manufacturer, 1962--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
Phenyl tetramer-----	SPD.
1-Phenyl-2-thiourea-----	EK.
Phloroglucinol-----	MRT.
Phthalazinone-----	KPC.
Phthalic acid-----	KF.
Phthalic acid, disodium salt-----	MEE.
*Phthalic anhydride-----	ACC, ACP, ACY, GRH, KPP, KPT, MON, NAC, PCC, RCI, SOC, SW, THG, UCC, WTC.
Phthalic anhydride residue-----	SOC, SW.
Phthalide-----	FMT, NAC.
Phthalimide-----	DOW, DUP, MEE, NAC, SFA.
Phthalocyanine, iron derivative-----	DUP.
Phthaloyl chloride (Phthalyl chloride)-----	MON.
Picolines: ¹	
*2-Picoline (α -Picoline)-----	ACP, KPT, RIL, UCC.
3-Picoline (β -Picoline)-----	RIL.
4-Picoline (γ -Picoline)-----	RIL, UCC.
Picoline (3,4-mixture)-----	ACP, KPT.
Picolinic acid-----	NEP.
Picramic acid and salt-----	DUP.
Picric acid (Trinitrophenol)-----	DUP, NAC, SDG.
Piperazine mixture, crude-----	JCC.
*Piperidine-----	ABB, DUP, MRK, RIL.
3-Piperidinopropiophenone hydrochloride-----	AGY.
Polychlorobiphenyl-----	MON.
Polydodecylbenzene-----	CO.
Polyethylbenzene (80% Diethylbenzene)-----	UCC.
Polypentadecyltoluene-----	CO, ICC.
Potassium phenoxide-----	DUP.
Primuline base-----	DUP.
Primulinesulfonic acid-----	ATL.
Propargyl benzene sulfonate-----	ABB.
*Propiophenone-----	CMG, LIL, OPC, TBK.
Pyranthrone-----	AHC, TRC.
Pyridine, refined: ¹	
*2° Pyridine-----	ACP, KPT, RIL.
Other grades-----	KPT.
Pyridine hydrochloride-----	EK.
3-Pyridinemethanol-----	RIL.
Pyridine-N-oxide-----	RIL.
3-Pyridinol-----	NEP.
2(1H)-Pyridone-----	FMT.
2-Pyrimidinol-----	GGY.
Pyromellitic acid-----	DUP.
Pyromellitic dianhydride-----	DUP.
Fyrrolidine-----	ASL.
2-Fyrrolidinone-----	G.
Quinaldine-----	AGY, DUP.
*Quinizarin-----	AGY, AHC, CMG, DUP, EKT, G, HSH, ICC, KPC, MAY, NAC, TRC.
2-Quinizarinsulfonic acid-----	NAC, PAT.
Quinoline:	
1° and 2° Quinoline-----	ACP, KPT.
Other grades-----	EK.
2,4-Quinolinediol-----	DUP.
Quinoline yellow, base-----	NAC.
8-Quinolinol, magnesium complex-----	EK.
Quinophthalone-----	DUP.

See footnote at end of table.

TABLE 7B.--Cyclic intermediates for which U.S. production or sales were reported, identified by manufacturer, 1962--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
Resorcinol, monoacetate (nonmedicinal grade)-----	KPC.
Resorcinol, tech-----	KPC.
β -Resorcylic acid-----	ACY, KPC, MEE.
α -Resorcylic acid, lead salt-----	ACY.
Salicylaldehyde-----	HN.
Salicylanilide-----	PCW.
*Salicylic acid, tech-----	CFC, DOW, HN, MON, SDH.
Salicylic acid, ammonium chromium complex-----	TRC.
Salicylic acid, sodium chromium complex-----	TRC.
Salicylic acid, sodium salt (crude)-----	DOW.
Salicylideneaminoguanidine oleate-----	DUP.
Sodium phenoxide-----	DUP, FIN.
2,2'-Stilbenedisulfonic acid-----	KPC.
Styphnic acid, lead salt-----	REM.
*Styrene, all grades-----	CSD, DOW, ELP, FG, KPP, MON, SHC, SKC, SNT, UCC
4'-Sulfamoylacetanilic acid-----	ACY.
5-Sulfamoylanthranilic acid-----	TRC.
p-Sulfamoylbenzoic acid-----	ABB.
N-Sulfamoyl-2-benzoxazolinone-----	TRC.
Sulfanilic acid (p-Aminobenzenesulfonic acid) and salt-----	ACT, NAC.
4-Sulfonanthranilic acid-----	CMG, TRC.
5-Sulfoisophthalic acid, dimethyl ester-----	X.
4,4'-Sulfonyldiphenol (4,4'-Dihydroxydiphenylsulfone)-----	G, MON, UPF, WTC.
4-Sulfoptthalic acid-----	UWN.
Terephthalic acid-----	ACC, DUP, SOC.
Terephthalic acid dihydrazide-----	DUP.
*Terephthalic acid, dimethyl ester-----	ACC, DUP, EKT, HPC.
Terephthalonitrile-----	EK.
Terphenyl (Phenylbiphenyl)-----	ARA, MON.
3,3',4,4'-Tetraaminodiphenyl-----	KPC.
Tetraaminophthalocyanine, copper derivative-----	DUP.
Tetrabromobisphenol A-----	DOW.
Tetrabromophenolphthalein, ethyl ester-----	EK.
Tetrabromophthalic anhydride-----	MCH.
Tetrabromo-8,16-pyranthredione-----	G, NAC, TRC.
1,3,6,8-Tetrabromopyrene-----	G, KPC.
1,4,5,8-Tetrachloroanthraquinone-----	AHC, DUP, G, NAC, TRC.
1,2,4,5-Tetrachlorobenzene-----	DOW, HK.
Tetrachlorodiphenol-----	MON.
Tetrachloronitrobenzene-----	SDH.
2,3,2,6-Tetrachlorotoluene-----	DUP.
Tetrachloroviolanthrone-----	AHC.
Tetraacylbenzene-----	CO.
Tetrahydrofuran-----	DUP.
Tetrahydro-2-methylfuran-----	WKO.
Tetrahydrophthalic anhydride-----	PTT.
1,4,5,8-Tetrahydroxyanthraquinone-----	ACY, NAC.
1,4,5,8-Tetrakis[1',1'',1''',1''''-anthraquinonylamino]- anthraquinone (Pentanthrimide).-----	AHC, NAC, TRC.
p-(1,1,3,3-Tetramethylbutyl)phenol-----	G.
N,N,N',N'-Tetramethyl-p-phenylenediamine-----	EK.
Tetra-nitrophthalocyanine, copper derivative-----	DUP.
2-(2-Thenylamino)pyridine-----	ABB.
Thianthrene-----	TRC.
Thianthrene-X,Y-dicarboxylic acid-----	TRC.
Thianthrene-X,Y-dinitrile-----	TRC.
Thioanisole-----	GAM, PIT.
3,3'-Thiobis[7H-benz[de]anthracen-7-one]-----	AHC, DUP, G.
4,4'-Thiodianiline-----	ACY, DUP.
2-Thiophenecarboxaldehyde-----	ABB.

TABLE 7B.--Cyclic intermediates for which U.S. production or sales were reported, identified by manufacturer, 1962--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
sym-Thymol-----	GIV.
*o-Toluidine-----	GWN, DUP, NAC.
o-Toluidine hydrochloride-----	DUP, EK, KPC.
Toluene-2,4-diamine (4-m-Tolylethylenediamine)-----	ACY, BL, DUP, G, NAC, SDC, TRC.
Toluene-2,4-disulfonic acid-----	G.
o-Toluenesulfonamide-----	MON.
o-(and p)-Toluenesulfonamide-----	ACY, NES.
p-Toluenesulfonamide-----	MON.
o-(and p)-Toluenesulfonic acid-----	MON, NAC, NES, SW, UPF.
p-Toluenesulfonic acid-----	ACY, TN.
p-Toluenesulfonic acid, 2-chloroethyl ester-----	G.
p-Toluenesulfonic acid, ethyl ester-----	ATL, NAC, VPC.
p-Toluenesulfonic acid, methyl ester-----	AHC, MON, VPC.
p-Toluenesulfonic acid monohydrate-----	UPP.
p-Toluenesulfono-o-toluidide-----	DUP.
p-Toluenesulfonyl chloride-----	MON.
o-Toluenethiol-----	RBC.
p-Toluenethiol-----	EVN.
p-Tolhydroquinone (Methylhydroquinone)-----	EKT.
m-Toluic acid-----	CWL.
o-Toluic acid-----	CWL.
p-Toluic acid-----	CWL.
m-Toluidine-----	DUP, NAC.
o-Toluidine-----	DUP, NAC.
o-Toluidine hydrochloride-----	ACY, EK.
p-Toluidine-----	DUP, NAC.
Toluidines, mixed-----	DUP.
m-Toluidinomethanesulfonic acid-----	TRC, VPC.
o-Toluidinomethanesulfonic acid-----	DUP, TRC.
8-(p-Toluidino)-1-naphthalenesulfonic acid-----	NAC.
2-(p-Toluidino)-5-nitrobenzenesulfonic acid-----	TRC.
o-Tolunitrile-----	EK.
p-Tolunitrile-----	EK.
*o-(p-Tolucyl)benzoic acid-----	ACY, DUP, G, NAC, TRC.
o-Tolylacetnitrile-----	BPC.
*4-(o-Tolylazo)-o-toluidine-----	ACY, DUP, G, KLS, NAC, SDH, TRC.
4-(o-Tolylazo)-o-toluidine hydrochloride-----	G.
2,2'-(m-Tolylimino)diethanol-----	EKT, G, TRC.
4,5,6-Triamino-pyrimidine sulfate-----	KF.
3,4',5-Tribromosalicylanilide-----	MEE.
1,1,1-Tri-(5-tert-butyl-4-hydroxy-2-methylphenyl)butane-----	AHC.
2,4,6-Trichloroaniline-----	EK.
1,2,3(and 1,2,4)-Trichlorobenzene-----	PPG.
1,2,4-Trichlorobenzene-----	DON, HK.
N,2,6-Trichloro-p-benzoquinoneimine-----	EK.
1,2,4-Trichloro-5-nitrobenzene-----	ALI, PCW.
Trichlorophenylsilane-----	UCS.
o,2,6-Trichlorotoluene (Benzotrichloride)-----	HK, TNP.
o,2,4-Trichlorotoluene-----	HN.
o,2,4(and o,2,6)-Trichlorotoluene-----	EPC.
1,3,5-Triethylbenzene-----	DUP.
o,2,4-Trifluoro-m-cresol-----	MEE.
o,2,4-Trifluoro-4-nitro-m-cresol-----	MEE.
o,2,4-Trifluorotoluene-----	ACC, HK.
o,2,4-Trifluoro-m-toluidine-----	MEE.
o,2,4-Trifluoro-o-toluidine-----	MEE.
3,4,5-Trimethoxybenzoic acid-----	ICO.
2,4,5-Trimethylaniline (Pseudocumidine)-----	NAC.
1,2,4-Trimethylbenzene (Pseudocumene)-----	ENJ, PLC.
2,3,3-Trimethyl-3H-indole-----	G.
1,3,3-Trimethyl- Δ^2 , α -indolineacetaldehyde-----	DUP, G.

TABLE 7B.--Cyclic intermediates for which U.S. production or sales were reported, identified by manufacturer, 1962--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
1,3,3-Trimethyl-2-methyleneindoline-----	DUP, G.
Trimethylphenylammonium iodide-----	EK.
1,2,4-Trimethylpyrazine-----	WYN.
1,3,5-Trinitrobenzene-----	EK.
Triphenylmethanol-----	EK.
α,α,α' -Tris(dimethylamino)mesitol-----	TKL.
2,4,6-Tris(dimethylaminomethyl)phenol-----	RH.
Tris(2-methyl-1-aziridinyl)phosphine oxide-----	IOC.
*6,6'-Ureylenebis[1-naphthol-3-sulfonic acid] (J acid urea)	ACY, ATL, CMG, G, NAC, TRC, VPC.
Veratraldehyde (3,4-Dimethoxybenzaldehyde)-----	GIV, LIL, SLV.
p-Vinylbenzenesulfonic acid, sodium salt-----	DUP.
2-Vinylcyclohexene-----	UCC.
4-Vinylcyclohexene-----	UCC.
2,2'-Vinylenebis[benzimidazole]-----	PLC.
5-Vinyl-2-picoline (MVP)-----	TRC.
2-Vinylpyridine-----	PLC.
4-Vinylpyridine-----	RIL.
*Violanthrone (Dibenzanthrone)-----	RIL.
9-Xanthene-carboxylic acid-----	ACY, AHC, DUP, G, KPC, MAY, TRC.
m-Xylene-----	MAL.
*o-Xylene-----	PLC, SNT, SOC.
	ASH, CCP, GSD, CSO, DLH, ENJ, GRS, PLC, RIC, SIN, SNT,
	SOC, TOC.
*p-Xylene-----	CSD, ENJ, SIN, SNT, SOC.
Xylenesulfonic acid-----	NES.
Xylenol crystals-----	ACP, KPT.
Xylenols:	
Low b.p.-----	PIT, PRD.
Medium b.p.-----	KPT, PCC, PIT, PRD.
Not classified as to b.p.-----	PRD.
Xylidines:	
2,4-Xylidine (m-4-Xylidine)-----	DUP, NAC.
2,5-Xylidine (p-Xylidine)-----	DUP.
Original mixture-----	DUP, NAC.
4-(2,4-Xylylazo)-o-toluidine-----	NAC.
4-(2,5-Xylylazo)-o-toluidine-----	ACY.
4-(Xylylazo)xylidine-----	G.
4-(2,4-Xylylazo)-2,5-xylidine-----	NAC.
All other cyclic intermediates-----	ACY, APD, CWN, GAM, ICC, KF, LIL, MON, PCW, SWR.

¹ Does not include manufacturers' identification codes for producers that report to the Division of Bituminous Coal, U.S. Bureau of Mines. These producers are listed in the U.S. Bureau of Mines Mineral Industry Survey *Coke Producers in the United States in 1962*, June 27, 1963.

Dyes

TABLE 8B.--Coal-tar dyes for which U.S. production or sales were reported, identified by manufacturer, 1962

[Dyes for which separate statistics are given in table 8A are marked below with an asterisk (*); dyes not so marked do not appear in table 8A because the reported data are accepted in confidence and may not be published. Manufacturers' identification codes shown below are taken from table 23. 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 23)
ACID DYES	
*Acid yellow dyes:	
Acid Yellow 1-----	ACY.
Acid Yellow 2-----	DUF.
*Acid Yellow 3-----	ACY, DUF, G, NAC.
Acid Yellow 4-----	SDH.
Acid Yellow 7-----	NAC.
Acid Yellow 9-----	ACY.
*Acid Yellow 11-----	CMG, DUF, VPC.
Acid Yellow 14-----	TRC.
*Acid Yellow 17-----	ACY, ATL, BKS, CMG, DUF, G, NAC, SDH, TRC, VPC.
*Acid Yellow 23-----	ACY, G, KPC, MRX, NAC, SDH, TRC, VPC.
Acid Yellow 25-----	G.
Acid Yellow 29-----	G, TRC.
Acid Yellow 34-----	G, NAC.
Acid Yellow 35-----	VPC.
*Acid Yellow 36-----	DUF, G, NAC, TRC.
Acid Yellow 38-----	NAC.
*Acid Yellow 40-----	ACY, DUF, G, NAC, TRC, VPC.
*Acid Yellow 42-----	ACY, G, KPC, TRC, VPC.
*Acid Yellow 44-----	G, KPC, NAC, TRC, VPC.
*Acid Yellow 54-----	ACY, BKS, CMG, G, NAC, TRC, VPC.
Acid Yellow 60-----	NAC.
Acid Yellow 63-----	KPC, NAC.
Acid Yellow 65-----	TRC.
*Acid Yellow 73-----	NAC, NYC, SDH, SMA.
Acid Yellow 76-----	TRC.
Acid Yellow 90-----	NAC.
Acid Yellow 95-----	CMQ.
*Acid Yellow 99-----	CMG, G, NAC, TRC, VPC.
Acid Yellow 114-----	CMG, TRC.
Acid Yellow 121-----	G.
Acid Yellow 124-----	DUF, NAC.
Acid Yellow 127-----	TRC.
Acid Yellow 128-----	TRC.
Acid Yellow 129-----	TRC.
Acid Yellow 151-----	ACY.
Acid Yellow 152-----	ACY.
Other acid yellow dyes-----	ACY, ALT, DUF, VPC.
*Acid orange dyes:	
*Acid Orange 1-----	ALT, BKS, G, NAC.
Acid Orange 2-----	NAC, TRC.
Acid Orange 5-----	ACY.
Acid Orange 6-----	NAC.
*Acid Orange 7-----	ACY, ATL, G, KPC, NAC, PDC, TRC, YAW, x.
*Acid Orange 8-----	ACY, DUF, G, NAC, TRC.
*Acid Orange 10-----	ACY, ATL, DUF, G, NAC, TRC, YAW.
Acid Orange 11-----	SDH.
Acid Orange 12-----	NAC.
Acid Orange 19-----	G.

TABLE 8B.-- Coal-tar dyes for which U.S. production or sales were reported, identified by manufacturer, 1962--Continued

Dye	Manufacturers' identification codes (according to list in table 23)
ACID DYES--Continued	
*Acid orange dyes--Continued	
*Acid Orange 24-----	ACY, DUP, G, NAC, TRC, YAW.
Acid Orange 28-----	NAC.
Acid Orange 31-----	KPC.
Acid Orange 32-----	VPC.
Acid Orange 34-----	ACY.
Acid Orange 45-----	NAC, TRC.
Acid Orange 49-----	TRC.
Acid Orange 50-----	KPC.
Acid Orange 51-----	CMG, NAC, TRC.
Acid Orange 52-----	NAC.
Acid Orange 56-----	G.
*Acid Orange 60-----	CMG, DUP, G.
Acid Orange 62-----	TRC.
Acid Orange 63-----	G, TRC.
Acid Orange 64-----	ACY, DUP, NAC.
Acid Orange 69-----	ACY.
Acid Orange 72-----	G.
*Acid Orange 74-----	CMG, G, NAC, TRC.
Acid Orange 76-----	NAC, TRC.
Acid Orange 85-----	NAC.
Acid Orange 86-----	NAC, TRC.
Acid Orange 114-----	ACY.
Other acid orange dyes-----	ALT, TRC, VPC.
*Acid red dyes:	
*Acid Red 1-----	ACY, BKS, BL, DUP, G, KPC, NAC, TRC, VPC, YAW.
*Acid Red 4-----	ATL, CMG, DUP, G, TRC, VPC, YAW.
*Acid Red 12-----	G, NAC, TRC.
*Acid Red 14-----	DUP, G, NAC.
Acid Red 17-----	NAC, TRC.
*Acid Red 18-----	ACY, DUP, G, NAC, TRC.
Acid Red 25-----	TRC.
*Acid Red 26-----	ACY, ATL, G, NAC, x.
Acid Red 27-----	NAC, TRC.
Acid Red 29-----	NAC.
Acid Red 32-----	G, NAC.
Acid Red 33-----	NAC, YAW.
Acid Red 34-----	DUP, NAC.
Acid Red 35-----	G, KPC.
*Acid Red 37-----	CMG, DUP, G, NAC, TRC.
Acid Red 39-----	NAC.
Acid Red 42-----	G.
Acid Red 51-----	MYC.
Acid Red 52-----	G.
Acid Red 57-----	TRC.
Acid Red 60-----	TRC.
Acid Red 66-----	KPC, NAC.
*Acid Red 73-----	ACY, DUP, G, NAC, TRC.
Acid Red 76-----	NAC.
Acid Red 80-----	G.
*Acid Red 85-----	ACY, ALT, ATL, CMG, DUP, G, NAC, TRC, VPC, YAW.
*Acid Red 87-----	AMS, NAC, NYC, SDH.
*Acid Red 88-----	ACY, DUP, G, NAC, TRC, YAW.
*Acid Red 89-----	G, KPC, TRC.
*Acid Red 92-----	NYC, SDH, VPC.
Acid Red 94-----	NYC.
Acid Red 97-----	G, TRC.
Acid Red 99-----	CMG, NAC, TRC, VPC.

TABLE 8B.--Coal-tar dyes for which U.S. production or sales were reported, identified by manufacturer, 1962--Continued

Dye	Manufacturers' identification codes (according to list in table 23)
ACID DYES--Continued	
*Acid red dyes--Continued	
Acid Red 104-----	KPC.
Acid Red 106-----	YAW.
Acid Red 109-----	VPC.
Acid Red 113-----	DUP.
*Acid Red 114-----	ATL, BKS, DUP, G.
*Acid Red 115-----	G, NAC, TRC.
Acid Red 119-----	NAC.
Acid Red 133-----	G.
Acid Red 134-----	TRC, VPC.
*Acid Red 137-----	ACY, DUP, G, NAC, TRC.
*Acid Red 151-----	ACY, KPC, TRC, YAW.
Acid Red 167-----	BKS, NAC, TRC.
Acid Red 175-----	DUP.
Acid Red 178-----	DUP.
Acid Red 179-----	CMG, TRC.
*Acid Red 182-----	ACY, BKS, CMG, DUP, G, NAC.
*Acid Red 183-----	CMG, TRC, VPC.
Acid Red 184-----	TRC.
*Acid Red 186-----	ACY, BKS, CMG, DUP, G, TRC.
Acid Red 190-----	ACY.
Acid Red 191-----	TRC.
Acid Red 192-----	TRC.
Acid Red 194-----	TRC.
Acid Red 197-----	DUP.
Acid Red 207-----	NAC.
Acid Red 211-----	NAC.
Acid Red 212-----	TRC.
Acid Red 213-----	TRC.
Acid Red 259-----	NAC.
Acid Red 292-----	ACY.
Other acid red dyes-----	ACY, ALT, TRC, VPC.
*Acid violet dyes:	
*Acid Violet 1-----	CMG, G, NAC.
*Acid Violet 3-----	ACY, DUP, NAC, TRC, YAW.
Acid Violet 6-----	NAC.
*Acid Violet 7-----	CMG, DUP, G, KPC, NAC, TRC, VPC.
Acid Violet 11-----	G.
Acid Violet 12-----	DUP, G, TRC.
Acid Violet 13-----	DUP.
Acid Violet 14-----	TRC.
*Acid Violet 17-----	DUP, G, SDH, TRC.
Acid Violet 21-----	DUP.
Acid Violet 29-----	HSH.
Acid Violet 34-----	AHC, NAC.
*Acid Violet 43-----	AHC, DUP, HSH.
Acid Violet 49-----	ACY, NAC.
Acid Violet 56-----	CMG, G.
Acid Violet 58-----	G.
Acid Violet 76-----	NAC.
Acid Violet 78-----	NAC.
Other acid violet dyes-----	ALT, DUP.
*Acid blue dyes:	
Acid Blue 1-----	G, NAC.
*Acid Blue 7-----	ACY, G, NAC, SDH.
*Acid Blue 9-----	G, NAC, SDH, VPC.
Acid Blue 10-----	KPC, NAC.
Acid Blue 13-----	DUP.

TABLE 8B.--Coal-tar dyes for which U.S. production or sales were reported, identified by manufacturer, 1962--Continued

Dye	Manufacturers' identification codes (according to list in table 23)
ACID DYES--Continued	
*Acid blue dyes--Continued	
Acid Blue 15-----	DUP, G.
Acid Blue 20-----	ACY, NAC.
Acid Blue 22-----	ACY, G, NYC.
Acid Blue 23-----	NAC, TRC.
*Acid Blue 25-----	CMG, DUP, G, NAC, TRC.
Acid Blue 26-----	NAC.
Acid Blue 27-----	G.
Acid Blue 29-----	PDC, TRC.
Acid Blue 34-----	NAC.
Acid Blue 35-----	NAC.
*Acid Blue 40-----	AHC, G, NAC, TRC.
*Acid Blue 41-----	CMG, G, NAC.
*Acid Blue 43-----	ACY, G, NAC, TRC.
*Acid Blue 45-----	ACY, CMG, DUP, G, NAC, TRC.
Acid Blue 47-----	AHC, DUP.
Acid Blue 48-----	SUC.
Acid Blue 58-----	DUP.
*Acid Blue 59-----	G, NAC, TRC.
Acid Blue 62-----	G, VPC.
Acid Blue 63-----	NAC.
Acid Blue 64-----	NAC.
Acid Blue 67-----	CMG, NAC.
Acid Blue 69-----	DUP, G.
Acid Blue 74-----	DUP, NAC.
*Acid Blue 78-----	AHC, DUP, G, NAC.
Acid Blue 79-----	DUP.
Acid Blue 80-----	NAC, TRC.
Acid Blue 81-----	AHC.
Acid Blue 83-----	G.
Acid Blue 89-----	NAC.
*Acid Blue 90-----	G, NAC, TRC.
Acid Blue 92-----	NAC.
Acid Blue 93-----	SUC.
Acid Blue 99-----	NAC.
Acid Blue 102-----	G, NAC, TRC.
Acid Blue 104-----	DUP, G, NAC.
Acid Blue 109-----	NAC.
Acid Blue 110-----	NYC.
*Acid Blue 113-----	CMG, DUP, G.
Acid Blue 118-----	G, NAC.
Acid Blue 120-----	G, KPC, NAC.
Acid Blue 122-----	DUP.
Acid Blue 137-----	NAC.
Acid Blue 145-----	DUP.
Acid Blue 154-----	TRC.
*Acid Blue 158 and 158A-----	ACY, BKS, CMG, DUP, G, NAC, TRC, VPC.
Acid Blue 159-----	G.
Acid Blue 165-----	DUP.
Acid Blue 179-----	G.
Other acid blue dyes-----	ALT, G, PAT, TRC, VPC.
*Acid green dyes:	
Acid Green 1-----	ACY, NAC.
*Acid Green 3-----	ACY, DUP, G, NAC, SDH, TRC, VPC.
Acid Green 5-----	G.
*Acid Green 9-----	ACY, DUP, G, NAC, VPC.
Acid Green 10-----	NAC.
*Acid Green 12-----	G, NAC, TRC.

TABLE 8B.--Coal-tar dyes for which U.S. production or sales were reported, identified by manufacturer, 1962--Continued

Dye	Manufacturers' identification codes (according to list in table 23)
ACID DYES--Continued	
*Acid green dyes--Continued	
*Acid Green 16-----	DUP, G, NAC, SDH, TRC.
*Acid Green 20-----	ATL, CMG, DUP, G, NAC, TRC.
Acid Green 22-----	G, NAC.
*Acid Green 25-----	AHC, CMG, G, KPC, NAC, TRC, VPC.
Acid Green 35-----	TRC.
Acid Green 41-----	AHC, VPC.
Acid Green 44-----	VPC.
*Acid Green 50-----	ACY, G, NAC, VPC.
Other acid green dyes-----	ALT, DUP, TRC, VPC.
*Acid brown dyes:	
Acid Brown 1-----	G.
Acid Brown 2-----	KPC.
Acid Brown 6-----	G.
*Acid Brown 14-----	ACY, DUP, G, KPC, NAC, TRC, YAW.
Acid Brown 19-----	TRC.
Acid Brown 22-----	DUP.
Acid Brown 28-----	TRC.
Acid Brown 29-----	DUP.
Acid Brown 31-----	G.
Acid Brown 45-----	TRC.
Acid Brown 96-----	ACY.
Acid Brown 97-----	ACY.
Acid Brown 98-----	ACY, TRC.
Acid Brown 152-----	G.
Acid Brown 158-----	G.
Acid Brown 223-----	G.
Acid Brown 243-----	G.
Acid Brown 273-----	ACY.
Other acid brown dyes-----	ALT, DUP, G, VPC.
*Acid black dyes:	
*Acid Black 1-----	ACY, ATL, BKS, CMG, DUP, G, KPC, NAC, PDC, SDH, TRC, YAW.
Acid Black 2-----	ACY, NAC.
Acid Black 12-----	NAC.
Acid Black 13-----	NAC.
Acid Black 15-----	NAC.
Acid Black 16-----	NAC.
Acid Black 18-----	NAC.
*Acid Black 24-----	CMG, DUP, G, NAC.
Acid Black 26, 26A, and 26B-----	DUP, NAC, TRC.
Acid Black 29-----	NAC.
*Acid Black 41-----	DUP, G, NAC.
*Acid Black 48-----	ACY, AHC, CMG, DUP, G, NAC, TRC.
Acid Black 52-----	G, NAC, TRC.
Acid Black 53-----	NAC.
Acid Black 58-----	CMG, TRC.
Acid Black 60-----	TRC.
Acid Black 92-----	ACY.
Acid Black 107-----	G, NAC.
Acid Black 140-----	G.
Other acid black dyes-----	ALT, BL, DUP, TRC, VPC.

TABLE 8B.--Coal-tar dyes for which U.S. production or sales were reported, identified by manufacturer, 1962--Continued

Dye	Manufacturers' identification codes (according to list in table 23)
AZOIC DYES AND COMPONENTS	
<i>Azoic Compositions</i>	
Azoic yellow dyes:	
*Azoic Yellow 1-----	ALL, ATL, G, HST, VPC.
*Azoic Yellow 2-----	ALL, ATL, G, HST, x.
Azoic Yellow 3-----	ATL, G.
Azoic Yellow 10-----	DUP.
Azoic orange dyes:	
*Azoic Orange 3-----	ALL, ATL, G, HST, SNA, x.
Azoic Orange 4-----	G.
*Azoic red dyes:	
*Azoic Red 1-----	ALL, ATL, BUC, G, HST, x.
*Azoic Red 2-----	ALL, ATL, AUG, BUC, G, x.
*Azoic Red 6-----	ALL, ATL, BUC, DUP, G, HST, SNA, VPC, x.
Azoic Red 13-----	G.
Azoic Red 14-----	G.
Azoic Red 15-----	G.
*Azoic Red 16-----	ATL, AUG, G.
Azoic Red 73-----	G.
Azoic Red 74-----	G.
Other azoic red dyes-----	ATL, BUC, G, VPC, x.
Azoic violet dyes:	
*Azoic Violet 1-----	ALL, ATL, G, HST, SNA, x.
Other azoic violet dyes-----	G.
Azoic blue dyes:	
Azoic Blue 2-----	ATL, G.
*Azoic Blue 3-----	ALL, ATL, DUP, G, HST, x.
Azoic Blue 4-----	G.
Azoic Blue 5-----	G.
Azoic Blue 6-----	ATL, G.
Azoic Blue 8-----	G.
Other azoic blue dyes-----	G.
Azoic green dyes:	
Azoic Green 1-----	ATL, G.
Other azoic green dyes-----	VPC.
*Azoic brown dyes:	
Azoic Brown 9-----	ATL, G, HST, x.
Azoic Brown 10-----	G.
Azoic Brown 26-----	G.
Other azoic brown dyes-----	ATL, G, VPC, x.
*Azoic black dyes:	
Azoic Black 1-----	G, HST.
Azoic Black 2-----	ATL, DUP.
Azoic Black 4-----	ALL, ATL, G.
Azoic Black 15-----	G.
Other azoic black dyes-----	ATL, G, VPC.
All other azoic compositions-----	ALL.
<i>Azoic Diazo Components, Bases</i>	
<i>(Fast Color Bases)</i>	
Azoic Diazo Component 1, base-----	SDH.
Azoic Diazo Component 2, base-----	ATL, KPC.
*Azoic Diazo Component 3, base-----	KLS, SDH, VPC.
Azoic Diazo Component 4, base-----	ALL, G, KLS, SDH.
Azoic Diazo Component 5, base-----	SDH.
Azoic Diazo Component 8, base-----	DUP.
Azoic Diazo Component 9, base-----	DUP, KPC, VPC.

TABLE 8B.--Coal-tar dyes for which U.S. production or sales were reported, identified by manufacturer, 1962--Continued

Dye	Manufacturers' identification codes (according to list in table 23)
AZOIC DYES AND COMPONENTS--Continued	
<i>Azoic Diazo Components, Bases (Fast Color Bases)--Continued</i>	
Azoic Diazo Component 10, base----- *Azoic Diazo Component 12, base----- *Azoic Diazo Component 13, base----- Azoic Diazo Component 14, base----- Azoic Diazo Component 20, base----- Azoic Diazo Component 24, base----- Azoic Diazo Component 28, base----- *Azoic Diazo Component 32, base----- Azoic Diazo Component 41, base----- Azoic Diazo Component 42, base----- *Azoic Diazo Component 43, base----- Other azoic diazo components, bases-----	G, KLS, VPC. ALL, DUP, KLS, KPC, SDH. ALL, AUG, BUC, KLS, KPC, SDH. KPC. ALL, G. KLS. ALL, AUG, G, KLS. ALL, ATL, AUG, BUC, DUP, G, KLS, KPC, SDH, SNA. ALL, G. ALL, KLS. ALL, CWN, DUP, G, SNA. G, VPC.
<i>Azoic Diazo Components, Salts (Fast Color Salts)</i>	
*Azoic Diazo Component 1, salt----- Azoic Diazo Component 2, salt----- *Azoic Diazo Component 3, salt----- Azoic Diazo Component 4, salt----- *Azoic Diazo Component 5, salt----- *Azoic Diazo Component 6, salt----- *Azoic Diazo Component 8, salt----- *Azoic Diazo Component 9, salt----- Azoic Diazo Component 10, salt----- *Azoic Diazo Component 11, salt----- *Azoic Diazo Component 12, salt----- *Azoic Diazo Component 13, salt----- Azoic Diazo Component 14, salt----- *Azoic Diazo Component 20, salt----- *Azoic Diazo Component 28, salt----- Azoic Diazo Component 32, salt----- Azoic Diazo Component 34, salt----- Azoic Diazo Component 35, salt----- *Azoic Diazo Component 36, salt----- Azoic Diazo Component 37, salt----- Azoic Diazo Component 41, salt----- *Azoic Diazo Component 42, salt----- Azoic Diazo Component 44, salt----- *Azoic Diazo Component 43, salt----- *Azoic Diazo Component 49, salt----- Other azoic diazo components, salts-----	G, KLS, KPC, ALL, G, KLS. ALL, AUG, BUC, G, KLS, KPC, NAC, SDH, VPC. ALL. AUG, G, KLS, KPC, SDH, VPC. AUG, G, KLS, KPC. ALL, AUG, G, KPC. ALL, AUG, BUC, G, KLS, KPC, NAC, SDH, VPC. G, KLS, SDH. ALL, G, KLS, KPC. ALL, AUG, BUC, G, KLS, KPC, SDH, VPC. ALL, AUG, BUC, KLS, KPC, NAC, SDH, VPC. G, KPC. ALL, G, SDH. ALL, AUG, BUC, G, KLS, NAC, SDH, VPC. ALL, KLS. G. G. ALL, G, KPC, NAC. G. ALL, G. ALL, G, KLS. G. ALL, G, KLS, KPC, NAC. G, KLS, KPC, SDH. HUC, G.
<i>Azoic Coupling Components (Naphthol AS and Derivatives)</i>	
Azoic Coupling Component 1----- *Azoic Coupling Component 2----- *Azoic Coupling Component 3----- *Azoic Coupling Component 4----- *Azoic Coupling Component 5----- *Azoic Coupling Component 7----- Azoic Coupling Component 8----- Azoic Coupling Component 10----- Azoic Coupling Component 11-----	AUG. ACY, ATL, AUG, BUC, G, NAC, PCW. AUG, G, PCW. AUG, G, KPC, PCW. ALL, G, KPC, PCW, SDH. AUG, BUC, G, KPC, NAC, PCW. G, KPC, PCW. ATL, PCW. G, PCW.

TABLE 8B.--Coal-tar dyes for which U.S. production or sales were reported, identified by manufacturer, 1962--Continued

Dye	Manufacturers' identification codes (according to list in table 23)
AZOIC DYES AND COMPONENTS--Continued	
Azotic Coupling Components (Naphthol 4S and Derivatives)--Continued	
Azotic Coupling Component 12-----	ALL, AUG, BUC, G, KPC, PCW.
Azotic Coupling Component 13-----	ALL, G, PCW.
*Azotic Coupling Component 14-----	ALL, ATL, AUG, BUC, G, PCW.
Azotic Coupling Component 15-----	G.
Azotic Coupling Component 16-----	G, SDH.
*Azotic Coupling Component 17-----	ACY, ALL, ATL, AUG, BUC, DUP, G, PCW.
*Azotic Coupling Component 18-----	ACY, ATL, BUC, DUP, G, NAC, PCW.
Azotic Coupling Component 19-----	G, PCW.
*Azotic Coupling Component 20-----	ALL, ATL, AUG, BUC, DUP, G, KPC, NAC, PCW.
*Azotic Coupling Component 21-----	ALL, ATL, AUG, BUC, KPC, PCW.
Azotic Coupling Component 23-----	G, PCW.
Azotic Coupling Component 24-----	G, PCW.
*Azotic Coupling Component 29-----	AUG, G, PCW.
*Azotic Coupling Component 34-----	ALL, ATL, BUC, G, PCW.
*Azotic Coupling Component 35-----	ALL, G, KPC, PCW.
Azotic Coupling Component 36-----	G.
*Azotic Coupling Component 43-----	ALL, ATL, G.
Other azotic coupling components-----	ATL, G.
BASIC DYES	
Basic yellow dyes:	
Basic Yellow 1-----	DUP.
*Basic Yellow 2-----	ACY, DUP, NAC.
Basic Yellow 5-----	NAC.
Basic Yellow 10-----	G.
Basic Yellow 11-----	DUP, G, NAC.
Basic Yellow 13-----	DUP, G, NAC.
Basic Yellow 15-----	DUP.
Basic Yellow 26-----	ACY.
Basic Yellow 27-----	ACY.
Other basic yellow dyes-----	G, DUP.
*Basic orange dyes:	
*Basic Orange 1-----	ACY, DUP, G, NAC.
*Basic Orange 2-----	ACY, DUP, G, NAC, PDC, TRC.
Basic Orange 10-----	VPC.
Basic Orange 14-----	G, VPC.
Basic Orange 17-----	NAC.
*Basic Orange 21-----	DUP, G, NAC, VPC.
Basic Orange 24-----	DUP.
Basic Orange 25-----	DUP.
Basic Orange 26-----	DUP.
Basic Orange 31-----	ACY.
Basic red dyes:	
Basic Red 1-----	DUP, G, NAC.
*Basic Red 2-----	DUP, G, NAC.
Basic Red 9-----	ACY, SUC.
Basic Red 13-----	G, NAC.
Basic Red 14-----	DUP, G, NAC.
Basic Red 15-----	DUP, G.
Basic Red 16-----	DUP.
Basic Red 17-----	DUP.
Basic Red 18-----	DUP.
Basic Red 30-----	ACY.

TABLE 8B.--Coal-tar dyes for which U.S. production or sales were reported, identified by manufacturer, 1962--Continued

Dye	Manufacturers' identification codes (according to list in table 23)
BASIC DYES--Continued	
Basic violet dyes:	
*Basic Violet 1-----	ACY, DSC, NAC, SUC.
Basic Violet 2-----	ACY.
*Basic Violet 3-----	DSC, DUP, G, NAC, SDH.
*Basic Violet 4-----	DSC, DUP, G, NAC.
Basic Violet 7-----	G.
*Basic Violet 10-----	ACY, DUP, G, NAC.
Basic Violet 13-----	DSC.
Basic Violet 14-----	ACT, NYC.
Basic Violet 15-----	DUP.
Basic Violet 16-----	DUP, G.
Other basic violet dyes-----	DUP.
*Basic blue dyes:	
*Basic Blue 1-----	DSC, G, NAC, SDH.
Basic Blue 3-----	G.
Basic Blue 4-----	DUP.
Basic Blue 5-----	DSC, SDH.
Basic Blue 6-----	ACY, NAC.
*Basic Blue 7-----	DSC, DUP, G, NAC, SDH.
*Basic Blue 9-----	ACY, G, NAC, SDH.
Basic Blue 11-----	DSC, DUP.
Basic Blue 12-----	G.
Basic Blue 21-----	DUP, NAC.
Basic Blue 22-----	DUP, NAC.
*Basic Blue 26-----	DSC, DUP, G, NAC, SDH.
Basic Blue 35-----	DUP.
Basic Blue 36-----	DUP.
Basic Blue 38-----	ACY, DUP.
Basic Blue 39-----	DUP.
Basic green dyes:	
*Basic Green 1-----	ACY, DSC, DUP, NAC, SDH.
Basic Green 3-----	DUP.
*Basic Green 4-----	ACY, DSC, NAC, SDH.
Basic Green 5-----	ACY.
Other basic green dyes-----	DUP.
Basic brown dyes:	
*Basic Brown 1-----	ACY, DUP, G, NAC, TRC.
Basic Brown 2-----	G, NAC.
*Basic Brown 4-----	ACY, DUP, G, NAC, TRC.
Basic black dyes:	
Basic Black 3-----	G.
Other basic black dyes-----	DUP.
DIRECT DYES	
*Direct yellow dyes:	
*Direct Yellow 4-----	ACY, DUP, G, NAC, TRC.
*Direct Yellow 5-----	ACY, G, NAC.
*Direct Yellow 6-----	ACY, DUP, G, NAC, TRC.
Direct Yellow 7-----	ATL.
Direct Yellow 8-----	G, NAC.
Direct Yellow 9-----	DUP.
*Direct Yellow 11-----	ACY, DUP, G, NAC, TRC.
*Direct Yellow 12-----	BKS, DUP, G, NAC, TRC.
Direct Yellow 19-----	TRC.
Direct Yellow 20-----	TRC.
Direct Yellow 23-----	DUP.
Direct Yellow 26-----	DUP, NAC.

TABLE 8B. --Coal-tar dyes for which U.S. production or sales were reported, identified by manufacturer, 1962--Continued

Dye	Manufacturers' identification codes (according to list in table 23)
DIRECT DYES--Continued	
*Direct yellow dyes--Continued	
Direct Yellow 27-----	G.
*Direct Yellow 28-----	ATL, DUP, G, NAC, TRC.
*Direct Yellow 29-----	ATL, DUP, G.
Direct Yellow 39-----	TRC.
Direct Yellow 41-----	ALT, TRC.
*Direct Yellow 44-----	BKS, CMG, DUP, G, NAC, TRC, VPC.
*Direct Yellow 50-----	ATL, BL, DUP, G, NAC, TRC, VPC.
*Direct Yellow 59-----	ATL, DUP, NAC.
Direct Yellow 63-----	DUP.
*Direct Yellow 81-----	BKS, NAC, TRC.
*Direct Yellow 84-----	G, NAC, TRC.
Direct Yellow 103-----	NAC.
Direct Yellow 105-----	TRC.
Direct Yellow 106-----	TRC.
Direct Yellow 107-----	G.
Direct Yellow 114-----	ACY.
Other direct yellow dyes-----	ACY, ALT, ATL, DUP, FAB, KPC, TRC, VPC.
*Direct orange dyes:	
*Direct Orange 1-----	BKS, KPC, NAC, TRC, VPC.
Direct Orange 6-----	KPC, NAC.
*Direct Orange 8-----	ATL, DUP, G, NAC, TRC.
Direct Orange 10-----	KPC, NAC.
Direct Orange 11-----	G.
*Direct Orange 15-----	ACY, DUP, G, NAC, TRC.
*Direct Orange 26-----	ATL, DUP, G, NAC, TRC.
Direct Orange 29-----	ATL, BKS, TRC.
*Direct Orange 34-----	ACY, CMG, DUP, G, NAC.
*Direct Orange 37-----	ACY, CMG, DUP, G, TRC.
Direct Orange 38-----	NAC.
Direct Orange 39-----	BKS, G.
Direct Orange 40-----	DUP.
Direct Orange 42-----	ATL, TRC.
Direct Orange 48-----	DUP.
Direct Orange 55-----	DUP, NAC.
Direct Orange 59-----	G, DUP.
Direct Orange 61-----	TRC.
Direct Orange 67-----	NAC, VPC.
Direct Orange 70-----	TRC.
*Direct Orange 72-----	ACY, ATL, BKS, BL, NAC, TRC, VPC.
*Direct Orange 73-----	DUP, G, TRC, VPC.
Direct Orange 74-----	DUP.
Direct Orange 76-----	DUP.
Direct Orange 78-----	DUP, VPC.
Direct Orange 79-----	DUP.
Direct Orange 80-----	DUP, VPC.
*Direct Orange 81-----	DUP, G, NAC, VPC.
Direct Orange 83-----	G, NAC.
Direct Orange 88-----	DUP.
*Direct Orange 102-----	ACY, DUP, G, NAC.
Direct Orange 110-----	TRC.
Other direct orange dyes-----	ALT, ATL, BKS, BL, DUP, VPC.
*Direct red dyes:	
*Direct Red 1-----	ATL, DUP, G, KPC, NAC, TRC, YAW.
*Direct Red 2-----	ATL, BKS, DUP, NAC, TRC.
*Direct Red 4-----	NAC, TRC, VPC.
Direct Red 5-----	NAC.
Direct Red 7-----	YAW.

TABLE 8B. --Coal-tar dyes for which U.S. production or sales were reported, identified by manufacturer, 1962--Continued

Dye	Manufacturers' identification codes (according to list in table 23)
DIRECT DYES--Continued	
*Direct red dyes--Continued	
*Direct Red 10-----	ACY, KPC, NAC, TRC.
*Direct Red 13-----	ATL, DUP, G, KPC, NAC, TRC, YAW.
*Direct Red 16-----	ATL, G, KPC, NAC, TRC.
Direct Red 20-----	G, NAC.
*Direct Red 23-----	ACY, ATL, BKS, CMG, DUP, G, KPC, NAC, TRC.
*Direct Red 24-----	ATL, BKS, BL, KPC, NAC, TRC, VPC.
*Direct Red 26-----	ATL, BKS, CMG, DUP, G, NAC, TRC, VPC.
*Direct Red 28-----	ATL, DUP, NAC, TRC.
Direct Red 30-----	VPC.
*Direct Red 31-----	ATL, DUP, G, NAC, TRC.
Direct Red 32-----	DUP, NAC.
*Direct Red 37-----	ATL, G, KPC, NAC, TRC, YAW.
*Direct Red 39-----	ATL, G, NAC, TRC, YAW.
Direct Red 46-----	TRC.
Direct Red 53-----	NAC.
Direct Red 62-----	TRC.
Direct Red 72-----	G, TRC.
Direct Red 73-----	DUP.
*Direct Red 75-----	ACY, CMG, DUP, G, NAC.
Direct Red 76-----	NAC.
*Direct Red 79-----	CMG, G, KPC, NAC, TRC, VPC.
*Direct Red 80-----	BKS, BL, CMG, DUP, G, KPC, NAC, TRC, VPC.
*Direct Red 81-----	ACY, ALT, ATL, BKS, BL, CMG, DUP, G, KPC, NAC, TRC, VPC.
*Direct Red 83-----	ALT, ATL, BES, CMG, DUP, KPC, NAC, TRC.
Direct Red 84-----	G, NAC, TRC.
Direct Red 86-----	NAC.
Direct Red 94-----	DUP, NAC.
Direct Red 99-----	NAC.
Direct Red 100-----	TRC.
Direct Red 111-----	G.
Direct Red 117-----	DUP.
*Direct Red 122-----	CMG, DUP, G, NAC, TRC, VPC.
*Direct Red 123-----	G, KPC, NAC.
Direct Red 127 and 127A-----	DUP, NAC.
Direct Red 128-----	NAC.
Direct Red 139-----	VPC.
Direct Red 148-----	DUP.
*Direct Red 149-----	CMG, DUP, G, NAC, TRC.
*Direct Red 152-----	CMG, DUP, NAC.
Direct Red 153-----	CMG, NAC, VPC.
Direct Red 155-----	G.
Direct Red 195-----	NAC.
Direct Red 209-----	TRC.
Other direct red dyes-----	ALT, BL, DUP, TRC.
*Direct violet dyes:	
*Direct Violet 1-----	DUP, KPC, NAC, TRC.
Direct Violet 7-----	G, NAC.
*Direct Violet 9-----	ATL, DUP, G, KPC, NAC, TRC.
Direct Violet 14-----	NAC.
Direct Violet 22-----	DUP, NAC.
Direct Violet 30-----	KPC.
Direct Violet 47-----	DUP, G.
*Direct Violet 48-----	DUP, NAC, TRC.
Direct Violet 49-----	NAC.
Direct Violet 51-----	DUP, NAC.
Direct Violet 60-----	NAC.

TABLE 8B. --Coal-tar dyes for which U.S. production or sales were reported, identified by manufacturer, 1962--Continued

Dye	Manufacturers' identification codes (according to list in table 23)
DIRECT DYES--Continued	
*Direct violet dyes--Continued	
Direct Violet 67-----	DUP, NAC.
Direct Violet 68-----	DUP.
Other direct violet dyes-----	ALT.
*Direct blue dyes:	
*Direct Blue 1-----	ACY, ATL, BKS, BL, DUP, G, KPC, NAC, TRC, YAW.
*Direct Blue 2-----	ATL, BKS, BL, DUP, FAB, G, KPC, NAC, TRC, VPC, YAW.
Direct Blue 3-----	NAC.
*Direct Blue 6-----	ACY, ATL, BL, DUP, G, KPC, NAC, TRC, YAW.
*Direct Blue 8-----	ACY, DUP, G, KPC, NAC, TRC.
Direct Blue 10-----	DUP.
*Direct Blue 14-----	ATL, DUP, NAC, TRC.
*Direct Blue 15-----	ATL, DUP, G, NAC, TRC.
Direct Blue 21-----	TRC.
*Direct Blue 22-----	ATL, CMG, DUP, NAC.
*Direct Blue 24-----	BKS, NAC, YAW.
*Direct Blue 25-----	DUP, G, NAC, TRC, YAW.
*Direct Blue 26-----	ATL, DUP, NAC, TRC.
Direct Blue 27-----	DUP.
Direct Blue 47-----	ACY.
Direct Blue 52-----	NAC.
Direct Blue 55-----	NAC.
Direct Blue 61-----	NAC, YAW.
Direct Blue 66-----	DUP, VPC.
*Direct Blue 67-----	DUP, NAC, TRC, VPC.
*Direct Blue 71-----	DUP, G, NAC, TRC, VPC.
Direct Blue 74-----	DUP.
Direct Blue 75-----	TRC.
*Direct Blue 76-----	ATL, BL, DUP, G, NAC, TRC, VPC.
*Direct Blue 78-----	ATL, CMG, DUP, G, NAC, TRC, VPC.
Direct Blue 79-----	TRC.
*Direct Blue 80-----	ALT, ATL, BKS, BL, DUP, G, NAC, TRC.
*Direct Blue 86-----	ACY, ANG, ATL, BKS, CMG, DUP, FAB, G, ICC, KPC, NAC, TMS, TRC, VPC.
*Direct Blue 98-----	ALT, ATL, BKS, BL, G, ICC, KPC, STD, TRC, VPC.
Direct Blue 99-----	G.
Direct Blue 100-----	ALT, BKS, NAC.
Direct Blue 104-----	DUP.
*Direct Blue 120 and 120A-----	ATL, BKS, DUP, G, NAC, TRC.
*Direct Blue 126-----	DUP, G, NAC, TRC, VPC.
Direct Blue 127-----	G.
Direct Blue 130-----	NAC.
Direct Blue 133-----	G.
Direct Blue 136-----	G.
Direct Blue 138-----	G.
Direct Blue 143-----	DUP.
Direct Blue 151-----	ATL, NAC, TRC.
Direct Blue 180-----	BKS, TRC.
Direct Blue 199-----	G.
Direct Blue 218-----	KPC.
Direct Blue 238-----	ACY.
Direct Blue 241-----	TRC.
Other direct blue dyes-----	ALT, ATL, BL, DUP, FAB, G, NAC, TRC, VPC.
*Direct green dyes:	
*Direct Green 1-----	ACY, ATL, BKS, DUP, G, KPC, NAC, TRC, YAW.
*Direct Green 6-----	ACY, ATL, BKS, DUP, G, KPC, NAC, TRC, YAW.
*Direct Green 8-----	ATL, NAC, TRC, YAW.
Direct Green 11-----	NAC.

TABLE 8B.--Coal-tar dyes for which U.S. production or sales were reported, identified by manufacturer, 1962--Continued

Dye	Manufacturers' identification codes (according to list in table 23)
DIRECT DYES--Continued	
*Direct green dyes--Continued	
Direct Green 12-----	DUP, NAC, TRC.
Direct Green 14-----	NAC.
Direct Green 15-----	DUP.
Direct Green 26-----	NAC, TRC.
Direct Green 27-----	ATL, NAC, TRC.
Direct Green 28-----	TRC.
*Direct Green 38-----	DUP, G, NAC, TRC.
Direct Green 39-----	G.
Direct Green 41-----	DUP.
Direct Green 45-----	VPC.
Direct Green 47-----	DUP, G.
Other direct green dyes-----	ACY, ALT, ATL, BL, DUP.
*Direct brown dyes:	
*Direct Brown 1-----	ACY, ATL, BKS, BL, DUP, NAC.
*Direct Brown 1A-----	ATL, G, TRC, YAW.
*Direct Brown 2-----	ACY, ATL, BKS, BL, DUP, G, KPC, NAC, TRC, YAW.
*Direct Brown 6-----	DUP, G, KPC, NAC, TRC.
Direct Brown 11-----	NAC.
Direct Brown 21-----	DUP.
Direct Brown 25-----	DUP, NAC.
Direct Brown 27-----	G.
Direct Brown 29-----	NAC.
*Direct Brown 31-----	ATL, DUP, G, KPC, NAC, PCO, YAW.
Direct Brown 32-----	G.
Direct Brown 33-----	DUP, NAC.
Direct Brown 35-----	NAC.
Direct Brown 40-----	DUP, KPC.
Direct Brown 44-----	G, YAW.
Direct Brown 48-----	KPC.
Direct Brown 49-----	ACY.
Direct Brown 59-----	ACY.
*Direct Brown 74-----	DUP, KPC, NAC.
*Direct Brown 95-----	ALT, ATL, DUP, G, KPC, NAC, TRC, YAW.
Direct Brown 101-----	G.
Direct Brown 105-----	DUP.
Direct Brown 106-----	G, NAC.
*Direct Brown 111-----	DUP, G, TRC, VPC.
Direct Brown 112-----	DUP, NAC.
Direct Brown 125-----	G.
*Direct Brown 154-----	DUP, G, TRC, YAW.
Other direct brown dyes-----	ALT, ATL, BL, DUP, NAC, TRC, VPC, YAW.
*Direct black dyes:	
Direct Black 3-----	DUP.
*Direct Black 4-----	ATL, DUP, G, NAC, TRC, YAW.
Direct Black 8-----	ATL, TRC, YAW.
*Direct Black 9-----	ATL, BKS, DUP, G, NAC, TRC.
*Direct Black 17-----	BKS, G, NAC, TRC.
*Direct Black 19-----	ATL, BKS, G, NAC, TRC.
*Direct Black 22-----	ATL, CMG, DUP, G, KPC, NAC, TRC, VPC, YAW.
Direct Black 36-----	KPC.
Direct Black 37-----	DUP, KPC, NAC.
*Direct Black 38-----	ACY, ATL, BKS, BL, DUP, FAB, G, KPC, NAC, TRC, YAW.
Direct Black 41-----	G.
Direct Black 44-----	TRC.
Direct Black 45-----	TRC.
*Direct Black 51-----	ATL, DUP, G, KPC, NAC, TRC.
Direct Black 55-----	DUP.

TABLE 8B. --Coal-tar dyes for which U.S. production or sales were reported, identified by manufacturer, 1962--Continued

Dye	Manufacturers' identification codes (according to list in table 23)
DIRECT DYES--Continued	
*Direct black dyes--Continued	
Direct Black 56-----	NAC, TRC.
Direct Black 61-----	TRC.
Direct Black 67-----	DUP, NAC.
Direct Black 71-----	ATL, NAC.
Direct Black 74-----	NAC.
Direct Black 75-----	G.
Direct Black 78-----	BKS, DUP, NAC, TRC.
*Direct Black 80-----	ATL, BKS, BL, FAB, G, KPC, NAC, TRC, VPC, YAW.
Direct Black 109-----	G.
Direct Black 123-----	G.
Direct Black 130-----	ACY.
Other direct black dyes-----	ALT, ATL, BL, G, TRC, VPC, YAW.
DISPERSE DYES	
*Disperse yellow dyes:	
Disperse Yellow 1-----	DUP, G.
Disperse Yellow 2-----	DUP.
*Disperse Yellow 3-----	DUP, EKT, G, HSH, ICC, KPC, NAC, SDH, STD, TRC.
*Disperse Yellow 5-----	EKT, G, ICC.
Disperse Yellow 8-----	DUP, TRC.
Disperse Yellow 17-----	KPC.
Disperse Yellow 23-----	DUP, EKT.
Disperse Yellow 28-----	KPC.
Disperse Yellow 31-----	G.
Disperse Yellow 32-----	DUP.
Disperse Yellow 33-----	EKT, ICC, KPC.
Disperse Yellow 34-----	EKT.
Disperse Yellow 37-----	EKT, KPC.
Disperse Yellow 42-----	DUP, G, TRC.
Disperse Yellow 54-----	DUP, G.
Disperse Yellow 57-----	ACY.
Other disperse yellow dyes-----	BL, DUP, EKT, G, ICC, KPC.
*Disperse orange dyes:	
*Disperse Orange 3-----	DUP, EKT, G, ICC, KPC, STD, TRC.
*Disperse Orange 5-----	EKT, G, KPC.
Disperse Orange 6-----	KPC.
Disperse Orange 16-----	KPC.
*Disperse Orange 17-----	EKT, G, HSH, ICC, KPC, NAC, STD.
Disperse Orange 21-----	TRC.
Disperse Orange 25-----	DUP.
Disperse Orange 26-----	DUP.
Disperse Orange 28-----	KPC.
Disperse Orange 29-----	KPC.
Disperse Orange 38-----	TRC.
Other disperse orange dyes-----	BL, EKT, ICC.
*Disperse red dyes:	
*Disperse Red 1-----	DUP, EKT, G, ICC, KPC, NAC, SDH, STD, TRC.
Disperse Red 4-----	G.
*Disperse Red 5-----	EKT, G, HSH, ICC, KPC, NAC, SDH, STD, TRC.
Disperse Red 7-----	KPC.
Disperse Red 9-----	ACY, DUP, KPC.
*Disperse Red 11-----	DUP, G, KPC, TRC.
*Disperse Red 13-----	DUP, G, ICC, KPC.
*Disperse Red 15-----	G, HSH, ICC, KPC, NAC.
*Disperse Red 17-----	DUP, EKT, G, HSH, ICC, KPC, SDH, STD, TRC.
Disperse Red 20-----	NAC.

TABLE 8B. --Coal-tar dyes for which U.S. production or sales were reported, identified by manufacturer, 1962--Continued

Dye	Manufacturers' identification codes (according to list in table 23)
DISPERSE DYES--Continued	
*Disperse red dyes--Continued	
Disperse Red 21-----	EKT.
Disperse Red 22-----	KPC.
Disperse Red 27-----	KPC.
Disperse Red 30-----	EKT, TRC.
Disperse Red 31-----	ICC.
Disperse Red 32-----	G.
Disperse Red 55-----	TRC.
Disperse Red 59-----	DUP, G.
Disperse Red 60-----	DUP, KPC.
Disperse Red 61-----	DUP.
Disperse Red 62-----	DUP.
Disperse Red 65-----	DUP.
Disperse Red 66-----	KPC.
Other disperse red dyes-----	DUP, EKT, G, ICC.
Disperse violet dyes:	
*Disperse Violet 1-----	DUP, G, ICC, KPC, STD, TRC.
*Disperse Violet 4-----	DUP, G, ICC, KPC, NAC.
Disperse Violet 8-----	G.
Disperse Violet 11-----	EKT, NAC.
Disperse Violet 14-----	DUP.
Disperse Violet 18-----	DUP.
Disperse Violet 26-----	DUP.
Disperse Violet 27-----	DUP.
Other disperse violet dyes-----	EKT, G, ICC.
*Disperse blue dyes:	
*Disperse Blue 1-----	G, KPC, TRC.
*Disperse Blue 3-----	EKT, G, ICC, KPC, NAC, STD, TRC.
*Disperse Blue 7-----	G, HSH, ICC, KPC, NAC, TRC.
Disperse Blue 8-----	DUP.
Disperse Blue 9-----	G, ICC.
Disperse Blue 19-----	KPC.
Disperse Blue 27-----	EKT.
Disperse Blue 41-----	NAC.
Disperse Blue 51-----	G.
Disperse Blue 55-----	TRC.
Disperse Blue 59-----	DUP.
Disperse Blue 60-----	DUP.
Disperse Blue 61-----	DUP.
Disperse Blue 62-----	DUP.
Disperse Blue 63-----	DUP.
Disperse Blue 64-----	DUP.
Disperse Blue 67-----	DUP.
Disperse Blue 70-----	KPC.
Other disperse blue dyes-----	EKT, G, ICC, VPC.
Disperse brown dyes:	
Disperse Brown 2-----	DUP.
Other disperse brown dyes-----	EKT, G, ICC.
Disperse black dyes:	
*Disperse Black 1-----	ATL, DUP, G, KPC, TRC.
Disperse Black 2-----	DUP, TRC.
Disperse Black 6-----	DUP, KPC.
Disperse Black 7-----	YAW.
*Disperse Black 9-----	BL, DUP, EKT, G, KLS, KPC, NAC.
Other disperse black dyes-----	DUP, EKT, ICC, YAW.

TABLE 8B. --Coal-tar dyes for which U.S. production or sales were reported, identified by manufacturer, 1962--Continued

Dye	Manufacturers' identification codes (according to list in table 23)
FIBER-REACTIVE DYES	
Reactive yellow dyes:	
Reactive Yellow 1-----	AHC.
Reactive Yellow 2-----	TRC.
Reactive Yellow 3-----	TRC.
Reactive Yellow 4-----	AHC.
Reactive Yellow 6-----	TRC.
Reactive Yellow 7-----	AHC.
Reactive Yellow 18-----	AHC.
Other reactive yellow dyes-----	AHC, HST.
Reactive orange dyes:	
Reactive Orange 2-----	AHC, TRC.
Reactive Orange 4-----	AHC.
Other reactive orange dyes-----	HST.
Reactive red dyes:	
Reactive Red 1-----	AHC.
Reactive Red 2-----	AHC.
Reactive Red 3-----	AHC.
Reactive Red 4-----	TRC.
Reactive Red 5-----	AHC.
Reactive Red 6-----	AHC.
Reactive Red 8-----	AHC.
Reactive Red 11-----	AHC.
Reactive Red 13-----	AHC.
Reactive Red 16-----	TRC.
Other reactive red dyes-----	HST.
Reactive violet dyes:	
Reactive Violet 1-----	AHC.
Reactive Violet 2-----	TRC.
Other reactive violet dyes-----	HST.
Reactive blue dyes:	
Reactive Blue 2-----	TRC.
Reactive Blue 3-----	AHC.
Reactive Blue 4-----	AHC.
Reactive Blue 5-----	TRC.
Reactive Blue 9-----	AHC.
Other reactive blue dyes-----	HST.
Reactive brown dye: Reactive Brown 1-----	TRC.
Reactive black dyes:	
Reactive Black 1-----	TRC.
Other reactive black dyes-----	HST.
FLUORESCENT BRIGHTENING AGENTS	
Fluorescent Brightening Agent 1-----	GGY.
Fluorescent Brightening Agent 2-----	FBC.
Fluorescent Brightening Agent 4-----	ACY.
Fluorescent Brightening Agent 6-----	ACY.
Fluorescent Brightening Agent 8-----	ACY.
Fluorescent Brightening Agent 9-----	ACY, TRC.
Fluorescent Brightening Agent 22-----	GGY.
Fluorescent Brightening Agent 24-----	GGY.
Fluorescent Brightening Agent 25-----	G.
Fluorescent Brightening Agent 28-----	ACY, DUP.
Fluorescent Brightening Agent 29-----	TRC.
Fluorescent Brightening Agent 30-----	G.
Fluorescent Brightening Agent 33-----	G.
Fluorescent Brightening Agent 34-----	DUP.
Fluorescent Brightening Agent 37-----	TRC.
Fluorescent Brightening Agent 45-----	TRC.

TABLE 8B. --Coal-tar dyes for which U.S. production or sales were reported, identified by manufacturer, 1962--Continued

Dye	Manufacturers' identification codes (according to list in table 23)
FLUORESCENT BRIGHTENING AGENTS--Continued	
Fluorescent Brightening Agent 46-----	GGY.
Fluorescent Brightening Agent 49-----	S.
Fluorescent Brightening Agent 52-----	S.
Fluorescent Brightening Agent 54-----	GGY.
Fluorescent Brightening Agent 66-----	SDH.
Fluorescent Brightening Agent 67-----	G.
*Fluorescent Brightening Agent 68-----	ACY, CCW, SDH.
Fluorescent Brightening Agent 71-----	ACY, G.
Fluorescent Brightening Agent 75-----	G.
Fluorescent Brightening Agent 102-----	DUP.
Fluorescent Brightening Agent 108-----	G.
Fluorescent Brightening Agent 109-----	G.
Fluorescent Brightening Agent 110-----	G.
Fluorescent Brightening Agent 125-----	ACY.
Fluorescent Brightening Agent 134-----	TRC.
Fluorescent Brightening Agent 135-----	TRC.
Fluorescent Brightening Agent 136-----	TRC.
Fluorescent Brightening Agent 139-----	TRC.
Fluorescent Brightening Agent 142-----	TRC.
Other fluorescent brightening agents-----	ACY, CCW, DUP, FBC, G, GGY, S, VPC.
FOOD, DRUG, AND COSMETIC COLORS	
<i>Food, Drug, and Cosmetic Dyes</i>	
*FD&C Blue No. 1-----	BAT, KON, NAC, SDH, WJ.
FD&C Blue No. 2-----	KON, NAC, SDH.
FD&C Green No. 1-----	NAC, WJ.
FD&C Green No. 2-----	NAC, WJ.
FD&C Green No. 3-----	WJ.
*FD&C Red No. 2-----	BAT, KON, NAC, SDH, STG, WJ.
*FD&C Red No. 3-----	BAT, KON, NAC, STG.
*FD&C Red No. 4-----	BAT, KON, NAC, SDH, STG, WJ.
FD&C Violet No. 1-----	NAC.
*FD&C Yellow No. 5-----	BAT, KON, NAC, SDH, STG, WJ.
*FD&C Yellow No. 6-----	BAT, KON, NAC, SDH, STG, WJ.
Other food, drug, and cosmetic dyes-----	WJ.
<i>Drug and Cosmetic Dyes</i>	
D&C Black No. 1-----	KON, NAC, YAW.
D&C Blue No. 1-----	KON.
D&C Blue No. 2-----	KON.
D&C Blue No. 4-----	NAC.
D&C Blue No. 6-----	KON, NAC.
D&C Blue No. 7-----	KON.
D&C Brown No. 1-----	NAC.
D&C Green No. 1-----	KON.
D&C Green No. 5-----	KON, NAC.
D&C Green No. 6-----	KON, NAC.
D&C Green No. 8-----	KON, SDH.
D&C Orange No. 3-----	KON, NAC.
*D&C Orange No. 4-----	KON, NAC, SNA, TMS.
*D&C Orange No. 5-----	KON, SNA, TMS.
D&C Orange No. 10-----	TMS.
D&C Orange No. 15-----	SNA.
D&C Orange No. 17-----	KON, SNA.
D&C Red No. 2-----	KON, SNA.

TABLE 8B. --Coal-tar dyes for which U.S. production or sales were reported, identified by manufacturer, 1962--Continued

Dye	Manufacturers' identification codes (according to list in table 23)
FOOD, DRUG, AND COSMETIC COLORS--Continued	
<i>Drug and Cosmetic Dyes--Continued</i>	
D&C Red No. 3-----	KON, SNA, TMS.
D&C Red No. 4-----	KON.
D&C Red No. 6-----	SNA, TMS.
*D&C Red No. 7-----	KON, SNA, TMS.
D&C Red No. 8-----	KON, SNA.
D&C Red No. 9-----	KON, SNA, TMS.
D&C Red No. 10-----	KON, SNA.
D&C Red No. 11-----	KON, SNA.
D&C Red No. 12-----	SNA, TMS.
D&C Red No. 13-----	KON, SNA, TMS.
D&C Red No. 17-----	NAC.
D&C Red No. 18-----	NAC.
*D&C Red No. 19-----	KON, NAC, SNA, TMS.
*D&C Red No. 21-----	KON, SNA, TMS.
D&C Red No. 22-----	KON.
*D&C Red No. 27-----	SDH, SNA, TMS.
D&C Red No. 28-----	KON, SNA.
D&C Red No. 30-----	KON.
D&C Red No. 31-----	KON.
D&C Red No. 33-----	KON, NAC.
D&C Red No. 34-----	KON, TMS.
D&C Red No. 35-----	SNA.
*D&C Red No. 36-----	KON, SNA, TMS.
D&C Red No. 37-----	NAC.
D&C Red No. 39-----	NAC, SDH.
D&C Violet No. 1-----	KON.
D&C Violet No. 2-----	KON, NAC.
D&C Yellow No. 5-----	KON, SNA, TMS.
D&C Yellow No. 6-----	KON.
D&C Yellow No. 7-----	NAC, TMS.
D&C Yellow No. 8-----	NAC.
D&C Yellow No. 10-----	KON, NAC.
D&C Yellow No. 11-----	NAC.
<i>Drug and Cosmetic Dyes, External</i>	
Ext. D&C Green No. 1-----	NAC.
Ext. D&C Orange No. 3-----	KON, NAC.
Ext. D&C Orange No. 4-----	NAC.
Ext. D&C Red No. 1-----	NAC.
Ext. D&C Red No. 2-----	TMS.
Ext. D&C Red No. 11-----	NAC.
Ext. D&C Red No. 13-----	KON.
Ext. D&C Red No. 14-----	NAC.
Ext. D&C Red No. 15-----	KON, NAC.
Ext. D&C Violet No. 2-----	KON.
Ext. D&C Yellow No. 1-----	KON, NAC.
Ext. D&C Yellow No. 3-----	KON.
Ext. D&C Yellow No. 5-----	KON.
Ext. D&C Yellow No. 7-----	KON.
MORDANT DYES	
*Mordant yellow dyes:	
Mordant Yellow 1-----	ACY, G, PDC, TRC.
Mordant Yellow 5-----	DUP, NAC, TRC.

TABLE 8B. --Coal-tar dyes for which U.S. production or sales were reported, identified by manufacturer, 1962--Continued

Dye	Manufacturers' identification codes (according to list in table 23)
MORDANT DYES--Continued	
*Mordant yellow dyes--Continued	
*Mordant Yellow 8-----	DUP, G, NAC.
Mordant Yellow 10-----	DUP, NAC.
Mordant Yellow 14-----	NAC.
*Mordant Yellow 16-----	ACY, DUP, NAC.
Mordant Yellow 18-----	PDC.
Mordant Yellow 20-----	NAC, TRC.
Mordant Yellow 26-----	NAC, VPC.
Mordant Yellow 29-----	G.
Mordant Yellow 30-----	TRC.
Mordant Yellow 36-----	PDC.
*Mordant orange dyes:	
*Mordant Orange 1-----	ACY, G, KPC, NAC, PDC, TRC.
Mordant Orange 3-----	VPC.
Mordant Orange 4-----	G.
*Mordant Orange 6-----	ATL, G, TRC.
Mordant Orange 8-----	NAC, TRC.
Mordant Orange 30-----	NAC.
*Mordant red dyes:	
*Mordant Red 3-----	ACY, AHC, G, KPC, NAC.
*Mordant Red 7-----	ACY, CMG, NAC, PDC, TRC, VPC.
Mordant Red 8-----	G.
*Mordant Red 9-----	G, HSH, MRX, NAC.
Mordant Red 11-----	ACY, NAC.
Mordant Red 19-----	PDC.
Mordant Red 59-----	TRC.
Mordant Red 64-----	PDC.
Mordant violet dyes:	
Mordant Violet 1-----	NAC.
Mordant Violet 5-----	KPC, NAC, PDC.
Mordant Violet 11-----	G.
Mordant Violet 20-----	G.
*Mordant blue dyes:	
*Mordant Blue 1-----	DUP, G, KPC, NAC, TRC.
Mordant Blue 3-----	G, NAC.
Mordant Blue 7-----	NAC, TRC.
*Mordant Blue 9-----	G, NAC, TRC.
Mordant Blue 13-----	HSH, NAC.
Mordant Blue 32-----	CMG.
Mordant green dyes:	
Mordant Green 9-----	NAC.
Mordant Green 11-----	ACY.
Mordant Green 36-----	DUP, PDC, TRC.
Mordant Green 47-----	NAC.
*Mordant brown dyes:	
*Mordant Brown 1-----	ACY, CMG, DUP, G, KPC, NAC, TRC, YAW.
Mordant Brown 4-----	PDC.
Mordant Brown 7-----	CMG.
Mordant Brown 13-----	NAC.
Mordant Brown 15-----	G.
Mordant Brown 17-----	G.
Mordant Brown 18-----	DUP, NAC.
*Mordant Brown 19-----	G, NAC, TRC.
Mordant Brown 21-----	G.
*Mordant Brown 33-----	DUP, NAC, PDC, TRC.
*Mordant Brown 40-----	CMG, DUP, G, NAC, PDC, TRC, VPC.
Mordant Brown 43-----	G.
Mordant Brown 50-----	TRC.

TABLE 8B. --Coal-tar dyes for which U.S. production or sales were reported, identified by manufacturer, 1962--Continued

Dye	Manufacturers' identification codes (according to list in table 23)
MORDANT DYES--Continued	
*Mordant brown dyes--Continued	
Mordant Brown 63-----	TRC.
Mordant Brown 70-----	DUP, PDC.
Other mordant brown dyes-----	VPC.
*Mordant black dyes:	
*Mordant Black 1-----	G, NAC, TRC.
Mordant Black 3-----	G, NAC, TRC.
Mordant Black 5-----	G, NAC, TRC.
Mordant Black 7-----	G.
Mordant Black 8-----	VPC.
Mordant Black 9-----	G, NAC, VPC.
*Mordant Black 11-----	G, NAC, TRC, VPC.
*Mordant Black 13-----	AHC, G, HSH, KPC, NAC, TRC.
Mordant Black 16-----	NAC.
*Mordant Black 17-----	ACY, DUP, G, NAC, TRC.
Mordant Black 19-----	PDC.
Mordant Black 26-----	TRC.
*Mordant Black 38-----	CMG, DUP, G, NAC, VPC.
OXIDATION BASES	
Oxidation Base 8 and 8A-----	ACY.
Oxidation Base 21-----	PDC.
Oxidation Base 22-----	ACY.
Oxidation Base 25-----	ACY.
Other oxidation bases-----	ACY.
SOLVENT DYES	
*Solvent yellow dyes:	
Solvent Yellow 1-----	ACY.
*Solvent Yellow 2-----	DUP, FH, G, KPC, PAT.
*Solvent Yellow 3-----	DUP, G, KPC, NAC, SDH.
Solvent Yellow 13-----	ACY, G, TRC.
*Solvent Yellow 14-----	ACY, DUP, FH, G, KPC, NAC, PAT, SDH, TRC.
Solvent Yellow 16-----	PAT.
Solvent Yellow 19-----	G.
Solvent Yellow 29-----	G, NAC.
Solvent Yellow 33-----	ACY, NAC.
Solvent Yellow 34-----	ACY, DUP.
Solvent Yellow 40-----	NAC.
Solvent Yellow 42-----	NAC.
Solvent Yellow 43-----	G.
Solvent Yellow 44-----	ACY, G, NAC.
Solvent Yellow 45-----	DUP, NAC.
*Solvent Yellow 47-----	ACY, DUP, G, NAC.
Solvent Yellow 53-----	NAC.
Solvent Yellow 56-----	ACY.
Solvent Yellow 66-----	NAC.
Solvent Yellow 71-----	ACY.
Solvent Yellow 72-----	ACY.
Other solvent yellow dyes-----	DSC, DUP, KPC.
*Solvent orange dyes:	
Solvent Orange 2-----	KPC.
*Solvent Orange 3-----	ACY, DSC, G, NAC.
Solvent Orange 5-----	G, TRC.
*Solvent Orange 7-----	ACY, G, NAC.
Solvent Orange 20-----	ACY, G, NAC.

TABLE 8B. --Coal-tar dyes for which U.S. production or sales were reported, identified by manufacturer, 1962--Continued

Dye	Manufacturers' identification codes (according to list in table 23)
SOLVENT DYES--Continued	
*Solvent orange dyes--Continued	
Solvent Orange 23-----	NAC.
Solvent Orange 24-----	DUP.
Solvent Orange 25-----	ACY, DUP.
Solvent Orange 31-----	NAC.
Solvent Orange 48-----	ACY.
Other solvent orange dyes-----	DSC, DUP, FH, KPC, PAT.
*Solvent red dyes:	
Solvent Red 8-----	G.
Solvent Red 22-----	G.
*Solvent Red 24-----	ACY, DUP, FH, G, NAC, PAT, SDH.
*Solvent Red 26-----	ACY, KPC, NAC.
Solvent Red 27-----	NAC.
Solvent Red 33-----	DUP.
Solvent Red 34-----	DUP.
Solvent Red 35-----	G.
Solvent Red 40-----	G.
*Solvent Red 49-----	ACY, DUP, G.
Solvent Red 52-----	G, KPC.
Solvent Red 60-----	NAC.
Solvent Red 63-----	NAC.
Solvent Red 65-----	NAC.
Solvent Red 68-----	NAC.
Solvent Red 69-----	DUP.
Solvent Red 74-----	NAC.
Solvent Red 76-----	NAC.
Solvent Red 80-----	ACY.
Solvent Red 105-----	ACY.
Other solvent red dyes-----	ACY, DSC, DUP, FH, KPC, PAT.
Solvent violet dyes:	
Solvent Violet 7-----	NAC.
*Solvent Violet 8-----	ACY, DSC, NAC.
Solvent Violet 9-----	DSC.
Solvent Violet 13-----	HSH, KPC.
Solvent Violet 17-----	NAC.
Other solvent violet dyes-----	DSC, PAT.
Solvent blue dyes:	
Solvent Blue 3-----	ACY, SW.
*Solvent Blue 4-----	DSC, DUP, G, NAC, NYC, SDH.
Solvent Blue 5-----	DSC, NAC.
Solvent Blue 7-----	ACY, NAC.
Solvent Blue 9-----	G.
Solvent Blue 11-----	G.
Solvent Blue 12-----	DUP, NAC.
Solvent Blue 16-----	NAC.
Solvent Blue 30-----	NAC.
Solvent Blue 31-----	NAC.
Solvent Blue 32-----	KPC.
Solvent Blue 36-----	DUP, NAC.
Solvent Blue 37-----	DUP.
*Solvent Blue 38-----	ACY, DUP, NAC.
Solvent Blue 43-----	NAC.
Solvent Blue 58-----	ACY.
Solvent Blue 59-----	ACY.
Solvent Blue 60-----	ACY.
Other solvent blue dyes-----	DSC, G, KPC, PAT.

TABLE 8B.--Coal-tar dyes for which U.S. production or sales were reported, identified by manufacturer, 1962--Continued

Dye	Manufacturers' identification codes (according to list in table 23)
SOLVENT DYES--Continued	
*Solvent green dyes:	
Solvent Green 1-----	ACY, DSC, SDH.
Solvent Green 2-----	G.
*Solvent Green 3-----	ACY, ATL, CMG, G, HSH, KPC, NAC.
Solvent Green 10-----	DUP.
Solvent Green 11-----	DUP.
Other solvent green dyes-----	DSC, NAC.
Solvent brown dyes:	
Solvent Brown 11-----	G.
Solvent Brown 12-----	DSC, G.
Solvent Brown 17-----	DUP.
Solvent Brown 19-----	DUP.
Solvent Brown 20-----	ACY, DUP.
Solvent Brown 21-----	NAC.
Solvent Brown 38-----	ACY.
Other solvent brown dyes-----	DSC, FH, G, PAT.
Solvent black dyes:	
Solvent Black 3-----	NAC.
Solvent Black 5-----	ACY, NAC.
Solvent Black 7-----	ACY, NAC.
Solvent Black 12-----	NAC.
Solvent Black 13-----	NAC.
Solvent Black 17-----	DUP.
Solvent Black 20-----	NAC.
Other solvent black dyes-----	ACY, DSC, FH.
SULFUR DYES	
Sulfur yellow dyes:	
Sulfur Yellow 2-----	NAC.
Leuco Sulfur Yellow 2-----	NAC.
Solubilized Sulfur Yellow 2-----	ACY, AUG.
Sulfur Yellow 4-----	DUP, SDC.
Sulfur Orange dye: Sulfur Orange 1-----	SDC.
Sulfur red dyes:	
*Sulfur Red 1-----	ACY, DUP, NAC.
Leuco Sulfur Red 1-----	NAC.
Sulfur Red 6-----	ACY, DUP, NAC.
Leuco Sulfur Red 6-----	NAC.
Sulfur Red 8-----	DUP.
Sulfur blue dyes:	
Sulfur Blue 5-----	ACY.
*Sulfur Blue 7-----	ACY, DUP, NAC, SDC.
Leuco Sulfur Blue 7-----	NAC, SDC.
Solubilized Sulfur Blue 7-----	ACY.
Sulfur Blue 9-----	ACY, NAC.
Leuco Sulfur Blue 9-----	NAC.
Sulfur Blue 11-----	DUP, NAC.
Sulfur Blue 13-----	ACY.
Solubilized Sulfur Blue 13-----	ACY.
Sulfur Blue 15-----	ACY, DUP, NAC.
Sulfur Blue 16-----	NAC.
Sulfur green dyes:	
Sulfur Green 1-----	NAC.
Leuco Sulfur Green 1-----	NAC.
*Sulfur Green 2-----	DUP, NAC, SDC.
Leuco Sulfur Green 2-----	SDC.
Sulfur Green 3-----	NAC.

TABLE 8B. --Coal-tar dyes for which U.S. production or sales were reported, identified by manufacturer, 1962--Continued

Dye	Manufacturers' identification codes (according to list in table 23)
SULFUR DYES--Continued	
Sulfur green dyes--Continued	
Leuco Sulfur Green 3-----	NAC.
Sulfur Green 11-----	DUP.
Sulfur Green 14-----	DUP.
Sulfur Green 16-----	AUG.
Sulfur brown dyes.	
Sulfur Brown 3-----	SDC.
Leuco Sulfur Brown 3-----	SDC.
*Sulfur Brown 10-----	AUG, DUP, NAC, SDC.
Leuco Sulfur Brown 10-----	NAC, SDC.
Sulfur Brown 14-----	ACY.
Solubilized Sulfur Brown 14-----	ACY.
Sulfur Brown 20-----	DUP.
Sulfur Brown 26-----	DUP, NAC.
Sulfur Brown 30-----	ACY.
Sulfur Brown 33-----	SDC.
Sulfur Brown 37-----	SDC.
Leuco Sulfur Brown 37-----	SDC.
Sulfur Brown 39-----	DUP.
Sulfur Brown 40-----	DUP.
Sulfur Brown 43-----	NAC.
Leuco Sulfur Brown 43-----	NAC.
Sulfur Brown 44-----	NAC.
Leuco Sulfur Brown 44-----	NAC.
Sulfur Brown 45-----	NAC.
Sulfur Brown 50-----	NAC.
Sulfur Brown 76-----	ACY.
Other sulfur brown dyes-----	ACY.
Sulfur black dyes:	
*Sulfur Black 1-----	ACY, DUP, NAC, SDC.
Leuco Sulfur Black 1-----	NAC, SDC.
Solubilized Sulfur Black 1-----	ACY.
Sulfur Black 2-----	DUP, NAC.
Leuco Sulfur Black 2-----	NAC.
Solubilized Sulfur Black 2-----	ACY.
Sulfur Black 6-----	G.
Leuco Sulfur Black 6-----	NAC.
Sulfur Black 10-----	ACY, DUP.
Leuco Sulfur Black 10-----	NAC.
Solubilized Sulfur Black 10-----	ACY.
Sulfur Black 11-----	G, SDC.
Leuco Sulfur Black 11-----	SDC.
Other sulfur black dyes-----	G.
VAT DYES	
*Vat yellow dyes:	
Vat Yellow 1, 12-1/2%-----	NAC.
*Vat Yellow 2, 8-1/2%-----	ACY, AHC, ATL, DUP, G, HST, KPC, NAC, TRC, VPC.
Solubilized Vat Yellow 2, 2%-----	AHC, G.
Vat Yellow 3, 12-1/2%-----	DUP.
*Vat Yellow 4, 12-1/2%-----	ACY, AHC, CMG, G, HST, KPC, NAC, TRC, VPC.
*Solubilized Vat Yellow 4, 37-1/2%-----	AHC, G, HST.
Vat Yellow 10, 10%-----	G.
Vat Yellow 13, 6-1/2%-----	AHC.

TABLE 8B. -- Coal-tar dyes for which U.S. production or sales were reported, identified by manufacturer, 1962--Continued

Dye	Manufacturers' identification codes (according to list in table 23)
VAT DYES--Continued	
*Vat yellow dyes--Continued	
Vat Yellow 14, 12-1/2%-----	TRC.
Vat Yellow 15, 11-1/2%-----	ACY.
Vat Yellow 16, 16-2/3%-----	DUP.
Vat Yellow 21, 9-1/2%-----	ATL, DUP.
Vat Yellow 22, 10%-----	DUP, G.
Vat Yellow 41, 9%-----	ACY.
Other vat yellow dyes-----	MAY, NAC, TRC, VPC.
*Vat orange dyes:	
*Vat Orange 1, 20%-----	AHC, CMG, G, HST, NAC, TRC, VPC.
*Solubilized Vat Orange 1, 26%-----	AHC, G, HST.
*Vat Orange 2, 12%-----	ACY, AHC, CMG, DUP, G, KPC, NAC, TRC.
*Vat Orange 3, 13-1/2%-----	CMG, DUP, G, KPC, NAC, TRC.
*Vat Orange 4, 6%-----	ACY, CMG, DUP, NAC.
*Vat Orange 5, 10%-----	ACY, DUP, HST, KPC.
*Solubilized Vat Orange 5, 30%-----	AHC, G, HST.
Vat Orange 7, 11%-----	G, HST, TRC.
*Vat Orange 9, 12%-----	ACY, AHC, CMG, DUP, G, KPC, NAC, TRC.
Vat Orange 11, 6%-----	DUP, NAC.
*Vat Orange 15, 10%-----	ACY, AHC, G, KPC, NAC, TRC, VPC.
Vat Orange 23, 17-1/2%-----	DUP.
Vat Orange 24-----	DUP.
Other vat orange dyes-----	DUP, G, SDC, VPC.
*Vat red dyes:	
*Vat Red 1, 13%-----	ACY, DUP, HST, KPC.
*Solubilized Vat Red 1, 37%-----	AHC, G, HST.
*Vat Red 10, 18%-----	G, NAC, TRC.
Solubilized Vat Red 10, 31%-----	G, NAC.
Vat Red 12, 8-1/2%-----	DUP.
*Vat Red 13, 11%-----	DUP, G, NAC, TRC.
Vat Red 14, 10%-----	G, HST.
*Vat Red 15, 10%-----	G, HST, KPC, TRC.
Vat Red 16, 11%-----	DUP.
Vat Red 17, 10%-----	G.
Vat Red 27, 7-1/2%-----	DUP.
Vat Red 29, 18%-----	G, NAC.
*Vat Red 32, 20%-----	DUP, G, NAC.
Vat Red 35, 12-1/2%-----	NAC, TRC.
Vat Red 41, 20%-----	HST.
Vat Red 44, 17%-----	TRC.
Vat Red 52, 10%-----	DUP.
Vat Red 53, 12%-----	DUP.
Vat Red 56-----	ACY.
Vat Red 62-----	DUP.
Other vat red dyes-----	DUP, G.
*Vat violet dyes:	
*Vat Violet 1, 11%-----	ACY, DUP, G, MAY, NAC, TRC.
Solubilized Vat Violet 1, 26%-----	AHC, G.
*Vat Violet 2, 20%-----	ACY, G, NAC, VPC.
Vat Violet 3, 15%-----	G, HST, NAC.
Solubilized Vat Violet 3, 43%-----	G.
*Vat Violet 9, 12%-----	AHC, DUP, G, MAY, NAC, TRC.
Vat Violet 12, 10%-----	DUP.
*Vat Violet 13, 6-1/4%-----	ACY, AHC, CMG, DUP, G, NAC, TRC.
Vat Violet 14, 12-1/2%-----	DUP, NAC.
*Vat Violet 17, 12-1/2%-----	DUP, G, NAC.
Other vat violet dyes-----	NAC.

TABLE 8B. --Coal-tar dyes for which U.S. production or sales were reported, identified by manufacturer, 1962--Continued

Dye	Manufacturers' identification codes (according to list in table 23)
VAT DYES--Continued	
*Vat blue dyes:	
Vat Blue 1, 20%	DUP, NAC.
Solubilized Vat Blue 1, 25%	G.
Vat Blue 3, 16%	HST.
*Vat Blue 4, 10%	ACY, DUP, G.
*Vat Blue 5, 16%	ATL, DUP, HST, NAC, VPC.
*Solubilized Vat Blue 5, 38%	AHC, G, HST, NAC.
*Vat Blue 6, 8-1/3%	ACY, AHC, DUP, G, KPC, MAY, NAC, TRC, VPC.
*Solubilized Vat Blue 6, 17-1/2%	AHC, G, HST.
Vat Blue 7, 12-1/2%	NAC.
Solubilized Vat Blue 9, 35%	G.
Vat Blue 12, 6-1/2%	DUP.
*Vat Blue 14, 8-1/3%	DUP, G, NAC, TRC.
Vat Blue 16, 16%	ACY, DUP, NAC.
*Vat Blue 18, 13%	ACY, AHC, DUP, G, KPC, MAY, NAC, TRC.
*Vat Blue 20, 14%	ACY, AHC, DUP, G, KPC, MAY, NAC, TRC.
Vat Blue 29	G.
Vat Blue 39, 12%	G.
Vat Blue 43	DUP, SDC.
Vat Blue 53	G.
Vat Blue 60	DUP.
Vat Blue 61, 16%	DUP.
Other vat blue dyes	G, SDC, x.
*Vat green dyes:	
*Vat Green 1, 6%	ACY, AHC, DUP, G, KPC, MAY, NAC, TRC.
Solubilized Vat Green 1, 12-1/2%	AHC, G, HST.
*Vat Green 3, 10%	ACY, AHC, DUP, G, KPC, MAY, NAC, TRC.
*Solubilized Vat Green 3, 26%	AHC, G, HST.
*Vat Green 8, 8-1/2%	AHC, DUP, G, NAC.
*Vat Green 9, 12-1/2%	ACY, DUP, G, MAY, NAC, SDC, TRC.
Vat Green 15, 17%	NAC.
Vat Green 18, 8%	DUP.
Vat Green 19, 13%	DUP.
Vat Green 20, 6%	DUP.
Other vat green dyes	SDC, VPC.
*Vat brown dyes:	
*Vat Brown 1, 11%	ACY, AHC, DUP, G, KPC, MAY, NAC, TRC.
Solubilized Vat Brown 1, 17%	AHC, G.
*Vat Brown 3, 11%	ACY, AHC, DUP, G, KPC, MAY, NAC, TRC, VPC.
*Vat Brown 5, 13%	ACY, G, HST, KPC, NAC, VPC.
Solubilized Vat Brown 5, 17%	G.
Vat Brown 6, 17-1/2%	TRC.
Vat Brown 11, 12%	MAY.
Vat Brown 12, 12-1/2%	DUP, NAC.
Vat Brown 13, 17%	MAY.
Vat Brown 14, 12%	HST.
Vat Brown 20, 10-1/2%	CMG, DUP, G, NAC.
Vat Brown 25, 11-1/2%	G.
Vat Brown 29, 13%	ACY.
Vat Brown 31, 28%	KPC.
Vat Brown 38, 20%	AHC.
Vat Brown 40, 14%	DUP.
Vat Brown 51	DUP.
Vat Brown 52	TRC.
Other vat brown dyes	DUP, G, MAY, NAC, SDC, VPC.

TABLE 8B. --Coal-tar dyes for which U.S. production or sales were reported, identified by manufacturer, 1962.--Continued

Dye	Manufacturers' identification codes (according to list in table 23)
VAT DYES--Continued	
*Vat black dyes:	
Solubilized Vat Black 1, 27-1/2%-----	AHC, G, HST.
*Vat Black 9, 16%-----	ACY, G, NAC, TRC.
Vat Black 11, 17-1/2%-----	ACY.
Vat Black 13, 14%-----	DUP, NAC.
Vat Black 14, 11-1/2%-----	DUP.
Vat Black 17-----	ACY.
Vat Black 18, 15-1/2%-----	G, NAC.
Vat Black 21, 18-1/2%-----	ACY.
Vat Black 22, 19%-----	ACY, TRC.
*Vat Black 25, 12-1/2%-----	ACY, AHC, DUP, G, KPC, MAY, NAC, TRC.
Vat Black 26, 24%-----	NAC.
*Vat Black 27, 12-1/2%-----	ACT, AHC, CMG, DUP, G, KPC, MAY, NAC, TRC.
Vat Black 30, 14-1/2%-----	TRC.
Vat Black 36-----	DUP.
Vat Black 38-----	G.
Other vat black dyes-----	ACY, AHC, DUP, G, NAC, SDC, TRC, VPC.
All other dyes-----	PAT, VPC, WLM.

Synthetic Organic Pigments

TABLE 11B.--Synthetic organic pigments for which U.S. production or sales were reported, identified by manufacturer, 1962

[Synthetic organic pigments for which separate statistics are given in table 11A are marked below with an asterisk (*); products not so marked do not appear in table 11A because the reported data are accepted in confidence and may not be published. Manufacturers' identification codes shown below are taken from table 23. An x signifies that the manufacturer did not consent to his identification with the designated product.]

Synthetic organic pigment	Manufacturers' identification codes (according to list in table 23)
TONERS	
*Yellow toners:	
*Hansa yellows:	
*Pigment Yellow 1, C.I. 11 680-----	ACY, AHC, AMS, DUP, EAK, FCL, G, HAR, HCC, HSH, IMP, KCW, KON, MRX, PPG, S, SDH, SNA, SUC, SW, WDC.
*Pigment Yellow 3, C.I. 11 710-----	HAR, HCC, HST, IMP, KCW, KON, PPG, S, SW.
Pigment Yellow 4, C.I. 11 665-----	HSH, SNA.
Pigment Yellow 5, C.I. 11 660-----	IMP.
Pigment Yellow 6, C.I. 11 670-----	CIK, IMP.
Pigment Yellow 9, C.I. 11 720-----	SNA.
Pigment Yellow 49, C.I. 11 765-----	AHC.
Pigment Yellow 74-----	DUP, SW.
All other Hansa yellows-----	DUP, HCC, IMP, KCW, SDH, SNA, SW, WDC.
Benzidine yellows:	
*Pigment Yellow 12, C.I. 21 090-----	ACY, AMS, DUP, FCL, G, HAR, HCC, HSH, ICC, IMP, KON, LVY, MRX, S, SDH, SNA, SUC, SW, WDC.
*Pigment Yellow 13, C.I. 21 100-----	ANC, FCL, G, HST, ICC, IMP, ROM, S, SNA, SW.
*Pigment Yellow 14, C.I. 21 095-----	ACY, AMS, ANC, DUP, G, HAR, HCC, HST, ICC, IMP, KON, MRX, ROM, S, SDH, SNA, SW, x.
*Pigment Yellow 17, C.I. 21 105-----	ACY, AMS, ANC, DUP, HST, ICC, IMP, SDH, SNA, SW.
All other benzidine yellows-----	HST, ICC, IMP, SW.
Pigment Yellow 16, C.I. 20 040-----	HST.
Pigment Yellow 18, C.I. 49 005-----	IMP.
(Basic Yellow 2), C.I. 41 000, fugitive-----	MRX.
(Vat Yellow 1), C.I. 70 600-----	HAR, TRC.
(Vat Yellow 20), C.I. 68 420-----	HAR.
All other-----	ACY, DUP, HAR, ICC, S, SW.
*Orange toners:	
*Pigment Orange 1, C.I. 11 725-----	HAR, KCW, SNA.
*Pigment Orange 2, C.I. 12 060-----	FCL, G, IMP, KON, SDH, SUC, SW.
*Pigment Orange 5, C.I. 12 075-----	ACY, EAK, HSH, IMP, SNA, SUC, SW.
Pigment Orange 9-----	DUP.
*Pigment Orange 13, C.I. 21 110-----	ACY, AMS, G, HAR, ICC, IMP, KON, S, SW.
Pigment Orange 15, C.I. 21 130-----	HAR.
*Pigment Orange 16, C.I. 21 160-----	ANC, DUP, G, HAR, HST, ICC, IMP, S, SDH, SNA, SW.
(Vat Orange 2), C.I. 59 705-----	G.
(Vat Orange 3), C.I. 59 300-----	HAR, TRC.
(Vat Orange 4), C.I. 59 710-----	HAR.
(Vat Orange 7), C.I. 71 105-----	G, ICC.
All other-----	ANC, HAR, ICC, KON, SDH, SW.
*Red toners:	
*Naphthol reds:	
*Pigment Red 2, C.I. 12 310-----	EAK, G, HAR, HCC, IMP, KCW, KON, S, SW.
*Pigment Red 5, C.I. 12 490-----	AHC, ANC, DUP, G, HAR, HST, ICC, IMP, ROM, S, SDH, SNA, SW.
Pigment Red 7, C.I. 12 420-----	AHC, S.
Pigment Red 9, C.I. 12 460-----	IMP.
Pigment Red 10, C.I. 12 440-----	KCW.
*Pigment Red 13, C.I. 12 395-----	HAR, IMP, KCW, SW.

See note at end of table for definition of abbreviations.

TABLE 11B.-- Synthetic organic pigments for which U.S. production or sales were reported, identified by manufacturer, 1962-- Continued

Synthetic organic pigment	Manufacturers' identification codes (according to list in table 23)
TONERS--Continued	
*Red toners--Continued	
*Naphthol reds--Continued	
Pigment Red 14, C.I. 12 380-----	DUP.
Pigment Red 15, C.I. 12 465-----	DUP.
*Pigment Red 17, C.I. 12 390-----	ACY, BLN, FCL, HAR, ICC, IMP, ROM, S, SNA, SW.
*Pigment Red 18, C.I. 12 350-----	HAR, HSH, IMP, SW.
Pigment Red 19, C.I. 12 400-----	DUP, HAR.
*Pigment Red 22, C.I. 12 315-----	ACY, DUP, FCL, HAR, IMP, MRX, SNA, SW.
*Pigment Red 23, C.I. 12 355-----	ACY, ANC, DUP, FCL, G, HAR, HCC, ICC, IMP, S, SDH, SNA, SUC, SW.
*Pigment Red 31, C.I. 12 360-----	ANC, ICC, SNA, SW.
All other naphthol reds-----	ANC, DUP, ICC, IMP, KCW, SDH, SW, x.
*Pigment Red 1, C.I. 12 070, dark-----	ACY, AMS, APC, CIK, EAK, FCL, HAR, HCC, HSH, IMP, KON, LVY, SNA, SUC, SW, WDC.
*Pigment Red 1, C.I. 12 070, light-----	ACY, EAK, HCC, HSH, IMP, KON, PPG, SDH, SNA, SUC, SW, WDC.
*Pigment Red 3, C.I. 12 120-----	ACY, APC, BLN, CIK, DUP, EAK, FCL, HAM, HAR, HCC, HSH, IMP, KCW, KON, MRX, PPG, SDH, SNA, SUC, SW, WDC.
*Pigment Red 4, C.I. 12 085-----	ACY, AMS, FCL, G, HCC, HSH, IMP, KON, MRX, SDH, SNA, SUC, SW, WDC.
Pigment Red 6, C.I. 12 090-----	DUP, G, SW.
*Pigment Red 38, C.I. 21 120-----	DUP, G, HAR, ICC, SNA, SW.
Pigment Red 40, C.I. 12 170-----	IMP.
Pigment Red 41, C.I. 21 200-----	G, HAR.
*Pigment Red 48, C.I. 15 865-----	ACY, AMS, BLN, DUP, FCL, G, HAR, HCC, HSH, IMP, KON, LVY, S, SNA, SW, WDC.
Pigment Red 49, C.I. 15 630:	
*Barium toner-----	ACY, AMS, CIK, FCL, HCC, IMP, KON, LVY, SDH, SNA, SUC, SW, UHL, WDC.
*Calcium toner-----	ACY, AMS, EAK, FCL, G, HCC, IMP, KON, LVY, PPG, SDH, SNA, SUC, SW.
*Sodium toner-----	ACY, AMS, CIK, FCL, G, HCC, KON, SDH, SUC, SW.
All other Pigment Red 49 toners-----	KON.
*Pigment Red 52, C.I. 15 860-----	AMS, HAR, HCC, HSH, IMP, SNA, SUC, SW.
Pigment Red 53, C.I. 15 585:	
*Barium toner-----	ACY, ADC, AMS, BLN, CIK, FCL, HCC, IMP, KON, LVY, MRX, SDH, SNA, SUC, SW.
Sodium toner-----	ADC, KON.
Pigment Red 54, C.I. 14 830:	
*Calcium toner-----	IMP, MRX, SDH.
Sodium toner-----	G.
Pigment Red 55, C.I. 15 820-----	DUP, HAR.
*Pigment Red 57, C.I. 15 850, calcium toner-----	ADC, AMS, BLN, CIK, DUP, FCL, HAR, HCC, HSH, IMP, KON, LVY, S, SDH, SNA, SUC, SW.
Pigment Red 58, C.I. 15 825-----	DUP, IMP.
*Pigment Red 63, C.I. 15 880-----	FCL, HAR, HSH, IMP, SNA, SW.
Pigment Red 64, C.I. 15 800-----	HAR.
Pigment Red 78-----	DUP.
Pigment Red 81, C.I. 45 160, fugitive-----	BLN, G, KCW, SNA.
*Pigment Red 81, C.I. 45 160, PMA-----	BLN, DUP, G, IMP, KON, LVR, LVY, MGR, MRX, NYC, S, SNA.
*Pigment Red 81, C.I. 45 160, PTA-----	ACY, AMS, BLN, DUP, FCL, G, HCC, IMP, KCW, KON, MGR, MRX, S, SDH, SNA.
Pigment Red 87, C.I. 73 310-----	HAR.
Pigment Red 88-----	HAR.

See note at end of table for definition of abbreviations.

TABLE 11B.--Synthetic organic pigments for which U.S. production or sales were reported, identified by manufacturer, 1962--Continued

Synthetic organic pigment	Manufacturers' identification codes (according to list in table 23)
TONERS--Continued	
*Red toners--Continued	
*Pigment Red 90, C.I. 45 380-----	ACY, AMS, FCL, ICC, IMP, LVR, LVY, NYC, SDH, SNA.
Pigment Red 123-----	HAR.
(Vat Red 10), C.I. 67 000-----	HAR.
(Vat Red 29), C.I. 71 140-----	HAR.
All other-----	DUP, HAM, HAR, HCC, HSH, S, SW, TRC, x.
*Violet toners:	
Pigment Violet 1, C.I. 45 170, fugitive-----	BLN, UHL.
*Pigment Violet 1, C.I. 45 170, PMA-----	BLN, G, IMP, MRX, NYC.
*Pigment Violet 1, C.I. 45 170, PTA-----	ACY, AMS, BLN, CIK, DUP, FCL, G, HCC, IMP, KON, MRX, S, SNA.
*Pigment Violet 3, C.I. 42 535, fugitive-----	ACY, ADC, AMS, BLN, HCC, IMP, LVY, MGR, NYC, SDH, SUC, UHL.
*Pigment Violet 3, C.I. 42 535, PMA-----	ADC, AMS, BLN, CIK, DUP, EAK, G, HCC, IMP, KON, LVR, LVY, MGR, MRX, NYC, PPG, S, SDH, SNA, SUC, SW, UHL, WDC.
*Pigment Violet 3, C.I. 42 535, PTA-----	ACY, AMS, G, HCC, IMP, KON, MRX, SNA, SW.
(Vat Violet 1), C.I. 60 010-----	DUP.
(Vat Violet 2), C.I. 73 385-----	HAR.
(Vat Violet 3), C.I. 73 395-----	HAR.
All other-----	ACY, G, HAR, ICC, x.
*Blue toners:	
*Pigment Blue 1, C.I. 42 595, PMA-----	ADC, BLN, DUP, EAK, G, HCC, IMP, KON, LVR, LVY, MGR, MRX, NYC, SDH, SNA, SW, UHL.
*Pigment Blue 1, C.I. 42 595, PTA-----	AMS, G, HAR, IMP, MGR, SNA, SW.
Pigment Blue 2, C.I. 44 045, fugitive-----	BLN.
Pigment Blue 2, C.I. 44 045, PMA-----	G, LVR.
Pigment Blue 2, C.I. 44 045, PTA-----	G.
Pigment Blue 3, C.I. 42 140, PMA-----	MGR.
*Pigment Blue 9, C.I. 42 025, PMA-----	IMP, LVR, MRX, NYC, UHL.
*Pigment Blue 9, C.I. 42 025, PTA-----	BLN, G, IMP, MGR, MRX, SDH.
Pigment Blue 10, C.I. 44 040, PMA-----	IMP, SDH.
Pigment Blue 10, C.I. 44 040, PTA-----	IMP.
*Pigment Blue 14, C.I. 42 600, PMA-----	DUP, G, IMP, NYC.
Pigment Blue 14, C.I. 42 600, PTA-----	DUP, NYC.
*Pigment Blue 15, C.I. 74 160, alpha form-----	ACY, AHC, ANG, DUP, G, HAR, ICC, IMP, SNA, SUC, SW, TMS, TRC.
*Pigment Blue 15, C.I. 74 160, beta form-----	ACY, DUP, IMP, KON, LVY, SNA, SUC, SW, TMS.
*Pigment Blue 19, C.I. 42 750A-----	ACY, ERD, NYC, SUC, SW.
Pigment Blue 22, C.I. 69 810-----	DUP, IMP, TRC.
*Pigment Blue 25, C.I. 21 180-----	DUP, G, HAR, ICC.
(Basic Blue 7), C.I. 42 595, PTA-----	DUP.
(Vat Blue 4), C.I. 69 800-----	G.
(Vat Blue 6), C.I. 69 825-----	AHC, TRC.
All other-----	G, HAR, IMP, SDH.
*Green toners:	
*Pigment Green 1, C.I. 42 040, PMA-----	BLN, G, IMP, MGR, MRX, NYC, UHL.
*Pigment Green 1, C.I. 42 040, PTA-----	BLN, IMP, KON, MGR, SDH.
*Pigment Green 2, C.I. 42 040 and C.I. 49 005, PMA-----	ADC, CIK, G, IMP, LVY, MGR, MRX, S, SDH, SNA.
*Pigment Green 2, C.I. 42 040 and C.I. 49 005, PTA-----	ACY, ADC, AMS, BLN, DUP, G, IMP, KON, MGR, MRX, S, SDH, SNA, UHL.
*Pigment Green 4, C.I. 42 000, fugitive-----	BLN, G, UHL.
Pigment Green 4, C.I. 42 000, PMA-----	ADC, BLN.
*Pigment Green 4, C.I. 42 000, PTA-----	ACY, AMS, IMP, MGR, SNA.

See note at end of table for definition of abbreviations.

TABLE 11B.--Synthetic organic pigments for which U.S. production or sales were reported, identified by manufacturer, 1962--Continued

Synthetic organic pigment	Manufacturers' identification codes (according to list in table 23)
TONERS--Continued	
Green toners--Continued	
*Pigment Green 7, C.I. 74 260-----	ACY, DUP, G, HAR, SNA, SUC, SW, TMS, TRC.
*Pigment Green 8, C.I. 10 006-----	DUP, EAK, G, HSH, IMP, KCW, SNA, SW.
Pigment Green 10, C.I. 12 775-----	DUP.
All other-----	HAR.
*Brown toners:	
Pigment Brown 1, C.I. 12 480-----	AHC.
Pigment Brown 2, C.I. 12 071-----	HSH, SDH.
*Pigment Brown 3, C.I. 21 010, fugitive-----	HSH, KON.
*Pigment Brown 3, C.I. 21 010, PMA-----	BLN, KCW.
Pigment Brown 5, C.I. 15 800-----	HAR, SNA.
(Vat Brown 3), C.I. 69 015-----	G.
All other-----	HSH, ICC, SDH, SW.
Black toners:	
Pigment Black 1, C.I. 50 440-----	SNA.
All other-----	BLN, DUP, G, HAM, MGR, SNA, UHL.
LAKES	
*Yellow lakes:	
(Acid Yellow 1), C.I. 10 316-----	IMP.
(Acid Yellow 3), C.I. 47 005-----	IMP, LVR.
(Acid Yellow 23), C.I. 19 140-----	HAR, IMP, KON, MGR, MRX.
(Natural Yellow 10), C.I. 75 720-----	IMP.
Orange lakes:	
*Pigment Orange 17, C.I. 15 510-----	CIK, CPC, IMP, KCW, MGR.
(Acid Orange 8), C.I. 15 575-----	IMP.
All other-----	AFC, HAM.
*Red lakes:	
*Pigment Red 60, C.I. 16 105-----	BLN, DUP, HSH, KON, MRX, SNA.
Pigment Red 83, C.I. 58 000-----	IMP, KCW, KON, MRX, SNA, SW, UHL.
(Acid Red 17), C.I. 16 180-----	IMP, KCW.
(Acid Red 25), C.I. 16 050-----	KON.
* (Acid Red 26), C.I. 16 150-----	CPC, EAK, HAM, IMP, KCW, UHL.
(Acid Red 27), C.I. 16 185-----	KON.
(Natural Red 4), C.I. 75 470-----	KON.
(Natural Red 24), C.I. 75 280-----	IMP.
All other-----	AFC, IMP.
*Violet lakes:	
*Pigment Violet 5, C.I. 58 055-----	BLN, DUP, HAR, IMP, SNA.
Pigment Violet 12, C.I. 58 050-----	HAR.
(Acid Violet 17), C.I. 42 650-----	BLN.
All other-----	HCC, SW.
*Blue lakes:	
Pigment Blue 17, C.I. 74 180-----	BLN, CPC.
*Pigment Blue 24, C.I. 42 090-----	ADC, AMS, BLN, CIK, ICC, IMP, KON, LVI, MGR, SDH, SNA.
(Acid Blue 104), C.I. 42 735-----	CPC, KCW.
All other-----	LVR.
Green lakes:	
(Acid Green 3), C.I. 42 085-----	BLN, CPC.
All other-----	AFC.
*Black lakes: (Natural Black 3), C.I. 75 291-----	CPC, KON, NYC.

Note.--The C.I. (Colour Index) numbers shown in this report are the identifying codes given in the second 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) acids, respectively.

Medicinal Chemicals

TABLE 13B.-- Medicinal chemicals for which U.S. production or sales were reported, identified by manufacturer, 1962

[Medicinal chemicals for which separate statistics are given in table 13A in pt. II are marked below with an asterisk (*); medicinal chemicals not so marked do not appear in table 13A because the reported data are accepted in confidence and may not be published. Manufacturers' identification codes shown below are taken from table 23. 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 23)
MEDICINAL CHEMICALS, ANTIBIOTICS	
*Antibiotics for human or veterinary use:	
*Bacitracin-----	COM, PBS, PEN, PFZ.
Chloramphenicol-----	PD.
7-Chloro-6-demethyltetracycline-----	ACY.
Chlortetracycline hydrochloride-----	ACY.
Cycloheximide-----	UPJ.
Cycloserine-----	COM.
*Dihydrostreptomycin-----	L.LL, MRK, OMS, PFZ.
Erythromycin-----	ABB, L.LL.
Fumagillin-----	ABB.
Gramicidin-----	BAX, PEN.
*Necmycin, base-----	ACY, MRK, OMS, PEN, PFZ, UPJ.
Novobiocin-----	MRK, x.
Nystatin-----	OMS.
Oleandomycin-----	PFZ.
Oleandomycin triacetate-----	PFZ.
Oxytetracycline hydrochloride-----	PFZ.
Paromomycin-----	x.
Penicillin salts:	
Benzathine penicillin G-----	PFZ, WYT.
Benzathine penicillin V-----	WYT.
Chloroprocaïne penicillin O-----	UPJ.
Hydratamine penicillin V-----	ABB.
NEP penicillin-----	MRK.
Penicillin V-----	L.LL.
*dl-3-Phenoxyethylpenicillin and potassium salt-----	BRS, PFZ, WYT.
*Potassium penicillin G-----	ABB, L.LL, MRK, OMS, PFZ, WYT.
Potassium penicillin V-----	ABB, L.LL.
*Procaine penicillin G-----	ABB, L.LL, MRK, OMS, PFZ, WYT.
Sodium 2,6-dimethoxyphenylpenicillin-----	BRS.
Sodium methylphenylisoxazolylpenicillin-----	BRS.
*Sodium penicillin G-----	MRK, OMS, PFZ.
Sodium penicillin O-----	UPJ.
Polymixin B sulfate-----	PFZ.
Ristocetin-----	ABB.
Streptomycin-----	L.LL, MRK, OMS, PFZ.
*Tetracycline-----	ACY, BRS, PFZ.
Thiostrepton-----	OMS.
Tyrothricin-----	BAX, PEN.
Vancomycin-----	L.LL.
Viomycin-----	PFZ.
Other-----	BRS, OMS.
*Antibiotics for animal feed supplements, food preservation, and crop spraying:	
Aterrimin-----	DMC.
*Bacitracin-----	COM, DLI, GPR, DMC, PBS, PEN.
Chlortetracycline hydrochloride-----	ACY.
Hgromycin B-----	L.LL.
Novobiocin mixture-----	x.
Oxytetracycline hydrochloride-----	PFZ.
Penicillin salts:	
Benzathine penicillin G-----	WYT.
*Procaine penicillin G-----	ABB, L.LL, MRK, OMS, PFZ, WYT.

TABLE 13B. -- Medicinal chemicals for which U.S. production or sales were reported, identified by manufacturer, 1962--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
MEDICINAL CHEMICALS, ANTIBIOTICS--Continued	
*Antibiotics for animal feed supplements, food preservation, and crop spraying--Continued	
Streptomycin-----	MRK, PFZ.
Tylosin-----	LIL.
MEDICINAL CHEMICALS, BENZENOID	
Acetylglycol salicylate-----	ICO.
*Acetylsalicylic acid (Aspirin)-----	CFC, DOW, MLS, MON, NOR, PYL, SDG.
Acetylsalicylic acid, aluminum basic salt-----	ABB. SCH.
*Alkaloids and related products:	
Anisotropine methylbromide-----	EN.
Berberine hydrochloride-----	PEN.
Caffeine sodium benzoate-----	MAL.
Colchicine-----	PEN.
*Dihydrocodeinone bitartrate-----	EN, MAL, MRK, PEN.
Dihydrohydroxycodeinone hydrochloride-----	EN.
Eserine salicylate-----	PEN.
Ethylmorphine hydrochloride-----	MAL, MRK.
Homatropine-----	HEX, SPC.
Homatropine hydrobromide-----	SPC.
*Homatropine methyl bromide-----	EN, HEX, SPC.
Hydrastine hydrochloride-----	PEN.
Lobelia sulfate-----	ABB.
d-3-Methoxy-N-methylmorphinan hydrobromide-----	HOF.
Papaverine hydrochloride, synthetic-----	LIL.
Quinidine sulfate-----	HEX.
Rauwolfia serpentina (Alseroxylon) fraction-----	RK.
Reserpine-----	CBP, PEN.
Tubocurarine-----	ABB, OMS.
*Amino acids:	
dl-Acetyltryptophane-----	SDW.
dl-Tryptophane-----	SDW.
3-(2-Aminobutyl)indole acetate-----	X.
3,5-Diiodotyrosine-----	EK.
dl-Phenylalanine-----	SDW.
l-Tyrosine-----	PFN.
*p-Aminobenzoic acid and derivatives:	
p-Aminobenzoic acid-----	LEM.
Benzocaine (Ethyl p-aminobenzoate)-----	ABB, LEM.
Butacaine sulfate-----	ABB.
n-Butyl p-aminobenzoate-----	ABB.
Di(n-butyl p-aminobenzoate)trinitrophenol-----	ABB.
2-Diethylaminoethyl 4-amino-2-propoxybenzoate hydrochloride.	SDW.
Isobutyl p-aminobenzoate (Cycloform)-----	ICO.
ω-Methoxypoly(ethyleneoxy)ethyl p-butylaminobenzoate-----	CBP.
Procaine base-----	ABB, LEM.
Procaine hydrochloride-----	ABB, LEM.
Propyl p-aminobenzoate-----	ICO.
*p-Butylaminobenzoic acid, 2-dimethylaminoethyl ester (Tetracaine) base and hydrochloride.	ICO, RSA, SDW.
p-Aminobenzoic acid salts:	
Calcium p-aminobenzoate-----	LEM.
Magnesium p-aminobenzoate-----	LEM.
Potassium p-aminobenzoate-----	GAN, LEM.
Sodium p-aminobenzoate-----	GAN, LEM.
8-Amino-6-methoxyquinoline-----	GAM.
2-(p-Aminophenyl)-2-ethylglutarimide-----	CBP.

TABLE 13B.--Medicinal chemicals for which U.S. production or sales were reported, identified by manufacturer, 1962--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
MEDICINAL CHEMICALS, BENZENOID--Continued	
1-[(4-Amino-2-propyl-5-pyrimidinyl)methyl]-2-picolinium chloride hydrochloride.	MRK.
4-Aminosalicylic acid-----	MLS.
4-Aminosalicylic acid salts:	
Calcium 4-aminosalicylate-----	MLS.
Potassium 4-aminosalicylate-----	HEX, MLS.
Sodium 4-aminosalicylate-----	MLS.
p-AnisoIn (4,4'-DimethoxybenzoIn)-----	SPC.
Anthranilic acid, cadmium salt-----	MAL.
*Antihistamines:	
2-(Benzhydryloxy)-N,N-dimethylethylamine 8-chloro-theophyllinate.	SRL.
2-(Benzhydryloxy)-N,N-dimethylethylamine (Diphenhydramine) hydrochloride.	PD.
2-[Benzyl(2-dimethylaminoethyl)amino]pyridine (N,N-Dimethyl-N'-benzyl-N'-pyridylethylenediamine).	CBP.
2-[Benzyl(2-dimethylaminoethyl)amino]pyridine citrate---	CBP.
2-[Benzyl(2-dimethylaminoethyl)amino]pyridine hydrochloride.	CBP.
2-[(p-Bromo- α -phenylbenzyl)oxy]-N,N-dimethylethylamine (Bromodiphenhydramine) hydrochloride.	PD.
2-[1-(p-Bromophenyl)-3-dimethylaminopropyl]pyridine (Parabromidylamine) maleate.	SCH.
α -2-[1-(p-Bromophenyl)-3-dimethylaminopropyl]pyridine maleate.	SCH.
1-(4-Chlorobenzhydryl)-4-(p-tert-butylbenzyl)piperazine dihydrochloride.	PFZ.
1-(p-Chlorobenzhydryl)-4-(3-methylbenzyl)piperazine (Meclizine) dihydrochloride.	PFZ.
1-(4-Chlorobenzhydryl)-4-methylpiperazine hydrochloride--	ABB, BUR.
2-[p-Chloro- α -(2-dimethylaminoethoxy)benzyl]pyridine----	SCH.
l-2-[p-Chloro- α -(2-dimethylaminoethoxy)benzyl]pyridine--	SCH.
*2-[p-Chloro- α -(2-dimethylaminoethyl)benzyl]pyridine (Chlorpheniramine) maleate.	HEX, SCH, x.
d-2-[p-Chloro- α -(2-dimethylaminoethyl)benzyl]pyridine maleate.	SCH.
1-(p-Chlorophenyl)-2-phenyl-4-pyrrolidyl-2-butanol-----	LIL.
1-(p-Chlorophenyl)-2-phenyl-4-pyrrolidyl-1-butene diphosphate, hydrobromide and hydrochloride.	LIL.
2-[α -(2-Dimethylaminoethoxy)- α -methylbenzyl]pyridine succinate (2-(Methyl-2'-dimethylaminoethoxybenzyl)-pyridine succinate).	BKC.
2-[1-(2-(2-Dimethylaminoethyl)inden-3-yl)ethyl]pyridine maleate.	CBP.
2-[(2-Dimethylaminoethyl) (p-methoxybenzyl)amino]pyridine maleate.	MRK.
2-[(2-Dimethylaminoethyl) (p-methoxybenzyl)amino]-pyrimidine (N,N-Dimethyl-N'-p-methoxybenzyl-N',2-pyrimidylethylenediamine).	NEP.
2-[(2-Dimethylaminoethyl)thenylamino]pyridine fumarate (N,N-Dimethyl-N',2-pyridyl-N',2'-thenylethylenediamine fumarate).	ABB.
2-[(2-Dimethylaminoethyl)thenylamino]pyridine hydrochloride (N,N-Dimethyl-N',2-pyridyl-N',2'-thenylethylenediamine hydrochloride).	ABB, SDW.
2-[(2-Dimethylaminoethyl)thenylamino]pyridine o-(p-hydroxybenzoyl)benzoate.	LIL.

TABLE 13B.-- Medicinal chemicals for which U.S. production or sales were reported, identified by manufacturer, 1962--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
MEDICINAL CHEMICALS, BENZENOID--Continued	
*Antihistamines--Continued	
N-(2'-Dimethylamino-2'-methyl)ethylphenothiazine hydrochloride.	MON.
*2-[3-(Dimethylamino)-1-phenylpropyl]pyridine (Pheniramine) maleate.	HEX, SCH, x.
10-(2-Dimethylaminopropyl)phenothiazine hydrochloride---	WYT.
N,N-Dimethyl-2-(o-methyl-x-phenylbenzyloxy)ethylamine citrate.	RIK.
N,N-Dimethyl-2-(o-methyl-x-phenylbenzyloxy)ethylamine hydrochloride.	RIK.
N,N-Dimethyl-2-(x-phenyl-o-tolyloxy)ethylamine dihydrogen citrate (Phenyltoloxamine).	BRS.
N,N-Dimethyl-N'-(2-pyridyl)-N'-(5-chloro-2-thenyl)-ethylenediamine citrate.	MON.
Phenindamine-----	HOF.
*Antimony, arsenic, and bismuth compounds:	
Acetarsone (N-Acetyl-4-hydroxy-m-arsanilic acid)-----	SDW.
Arsanilic acid (p-Aminobenzenearsonic acid)-----	SAL.
Bismuth resorcinol-----	NEP.
*Bismuth salicylate, basic-----	MAL, NOR, PEN.
*Bismuth subgallate-----	BKC, MAL, PEN.
p-Carbamidobenzenearsonic acid-----	LIL, PYL, WHL.
4-Hydroxy-3-nitrobenzenearsonic acid-----	SAL.
p-Nitrobenzenearsonic acid-----	SAL.
Sodium antimony(III)-bis(catechol-2,4-disulfonate) (Fouadin).	SDW.
Barbiturates:	
5-Ethyl-1-methyl-5-phenylbarbituric acid (Mephobarbital)	SDW.
*5-Ethyl-5-phenylbarbituric acid (Phenobarbital)-----	BPC, GAN, MAL, SDW.
*5-Ethyl-5-phenylbarbituric acid, sodium salt-----	BPC, GAN, MAL, SDW.
Benzaldehyde-----	HN.
Benzoic acid-----	MON.
Benzoic acid, ammonium salt-----	PEN.
*Benzothiadiazine dioxide derivatives:	
3-Benzyl-3,4-dihydro-6-(trifluoromethyl)-2H-1,2,4-benzothiadiazine-7-sulfonamide 1,1-dioxide (Benzhydroflumethiazide).	QMS.
3-Benzylthiomethyl-6-chloro-2H-1,2,4-benzothiadiazine-7-sulfonamide 1,1-dioxide.	PFZ.
6-Chloro-2H-1,2,4-benzothiadiazine-7-sulfonamide 1,1-dioxide (Chlorothiazide).	MRK.
6-Chloro-3-chloromethyl-3,4-dihydro-2-methyl-2H-1,2,4-benzothiadiazine-7-sulfonamide 1,1-dioxide.	ABB.
6-Chloro-3-dichloromethyl-3,4-dihydro-2H-1,2,4-benzothiadiazine 1,1-dioxide.	SCH.
6-Chloro-3,4-dihydro-2H-1,2,4-benzothiadiazine-7-sulfonamide 1,1-dioxide.	CBP, MRK.
6-Chloro-3,4-dihydro-2-methyl-3-(2,2,2-trifluoroethylthiomethyl)-2H-1,2,4-benzothiadiazine-7-sulfonamide 1,1-dioxide.	PFZ.
7-Chloro-3-methyl-2H-1,2,4-benzothiadiazine 1,1-dioxide-	SCH.
3,4-Dihydro-6-trifluoromethyl-2H-1,2,4-benzothiadiazine-7-sulfonamide 1,1-dioxide.	QMS.
1-[2-(Benzylcarbamoyl)ethyl]-2-isonicotinoylhydrazine----	PFZ.
N,N'-Bis(3-nitrobenzenesulfonyl)ethylenediamine-----	SAL.
Bis(3-nitrophenyl) disulfide-----	ACY.
a-Butoxyfenchonic acid diethylethylenediamide and hydrochloride.	CBP.

TABLE 13B.-- Medicinal chemicals for which U.S. production or sales were reported, identified by manufacturer, 1962--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
MEDICINAL CHEMICALS, BENZENOID--Continued	
2-Butoxy-N-[2-(diethylamino)ethyl]cinchoninamide (Dibucaine) hydrochloride.	RSA.
4-[3-(p-Butoxyphenoxy)propyl]morpholine (Pramoxine) hydrochloride.	ABB.
4-N-Butyl-2-(p-hydroxyphenyl)-1-phenyl-3,5-pyrazolidine- dione.	GGY.
Carbamic acid, 2-hydroxy-2-phenylbutyl ester-----	ARP.
Carbamic acid, β -hydroxyphenethyl ester-----	ARP.
Chloramine T (N-Chloro-p-toluenesulfonamide, sodium derivative).	MON.
5-Chloro-2-benzoxazolidinone-----	x.
7-Chloro-4-(4-diethylamino-1-methylbutylamino)quinoline--	SDW.
7-Chloro-4-(4-[ethyl(2-hydroxyethyl)amino]-1-methylbutyl- amino)quinoline sulfate.	SDW.
2-(4-Chlorophenyl)tetrahydro-3-methyl-4H-1,3-thiazin-4- one, 1,1-dioxide.	SDW.
3-(4-Chloro-3-sulfamoylphenyl)-3-hydroxyphthalimidine	GGY.
Chlorothymol-----	OPC.
Cozymase-----	PSB.
1-Cyclohexyl-3-diethylamino-1-phenyl-1-propanol ethiodide	ACY.
α -Cyclohexyl- α -phenyl-1-piperidinepropanol-----	ACY, SDW.
Desoxyanisoin-----	SPC.
2,4-Diamino-5-(p-chlorophenyl)-6-ethylpyrimidine-----	BUR.
2,6-Diamino-3-phenylazopyridine hydrochloride-----	HOF, NEP.
2,5-Diaminotoluene sulfate-----	EK.
4-(5H-Dibenzo[a,d]cyclohepten-5-ylidene)-1-methylpiperi- dine.	MRK.
4,5-Dichloro-m-benzenedisulfonamide-----	MRK.
1,1-Dichloro-2-(o-chlorophenyl)-2-(p-chlorophenyl)ethane-	EDC.
4,7-Dichloroquinoline-----	SDH.
α -Diethylamino-2,6-acetoxyiside-----	AST.
6-(2-Diethylaminoethoxy)-2-dimethylaminobenzothiazole hydrochloride.	HOF.
1-[p-(p-Diethylaminoethoxy)phenyl]-1-p-tolyl-2-(p-chloro- phenyl) ethanol.	BKC.
β -Diethylaminoethyl diphenylthioacetate hydrochloride----	x.
2-Diethylaminoethyl fluorene-9-carboxylate hydrochloride	SRL.
Diethylaminopropiophenone-----	BKC.
10,11-Dihydro-N,N-dimethyl-5H-dibenzo[a,d]cycloheptene- 4,7-propylamine.	MRK.
3,4-Dihydroxyphenylacetic acid-----	LIL.
1-3-(3,4-Dihydroxyphenyl)-2-methylalanine-----	MRK.
N,N-Diisopropylaminoethyl xanthene-9-carboxylate metho- bromide.	SRL.
6,7-Dimethoxy-1-(4-ethoxy-3-methoxybenzyl)-3-methylquino- line phosphate (Dioxyline phosphate).	LIL.
α -d-4-Dimethylamino-1,2-diphenyl-3-methyl-2-propoxybutane hydrochloride.	LIL.
2-Dimethylaminoethanol, p-acetamidobenzoic acid salt-----	RIK.
4-(2-Dimethylaminoethoxy)-N-(3,4,5-trimethoxybenzoyl)- benzylamine hydrochloride.	HOF.
p, α -Dimethylbenzyl camphorate, diethanolamine salt-----	x.
([(2,3-Dimethyl-5-oxo-1-phenyl-3-pyrazolin-4-yl)methyl]- amino)methanesulfonic acid, sodium salt (Dipyron).	SDW.
3,4-Dimethyl-2-phenylmorpholine-----	x.

TABLE 13B.-- Medicinal chemicals for which U.S. production or sales were reported, identified by manufacturer, 1962--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
MEDICINAL CHEMICALS, BENZENOID--Continued	
N,N-Dimethyl-4-piperidylidene-1,1-diphenylmethane methyl sulfate (Diphemanil methyl sulfate)	SCH.
Dimethyl-p-toluidine-----	EK, PYL, RSA.
3,5-Dinitrobenzamide-----	SAL.
N-(2,6-Dioxo-3-piperidyl)phthalimide (Thalidomide)-----	BKC.
Diphenylacetyl-diethylaminoethanol hydrochloride-----	CBP.
Dipropylene glycol salicylate-----	CP.
p-(Di-n-propylsulfamyl)benzoic acid-----	MRK.
Dithiosalicylic acid-----	LIL.
*Dyes, medicinal:	
Acriflavine (3,6-Diamino-10-methylacridine chloride)---	NAC.
2,4-Diamino-4'-ethoxyazobenzene hydrochloride-----	KON.
Gentian violet-----	NAC, SDH.
Iodocyanine-----	EK.
Methylene blue-----	ACY, NAC.
Pyrvinium pamoate-----	x.
Scarlet red (Phenol red)-----	NAC.
Other-----	NAC, x.
Estrogens, nonsteroid:	
3,4-Bis(p-acetoxyphenyl)-2,4-hexadiene-----	SCH.
Chlorotrianisene-----	BKC.
α, α' -Diethyl-4,4'-stilbenediol (Diethylstilbestrol)---	LIL, SPC.
Estrogens, steroid:	
Estrogenic substance-----	ORG.
Piperazine estrone sulfate-----	ABB.
N-Ethyl-3,3'-diphenyldipropylamine-----	SPC.
N-Ethyl-3,3'-diphenyldipropylamine citrate-----	SPC.
N-Ethyl-3,3'-diphenyldipropylamine hydrochloride-----	SPC.
Ethyl 1-methyl-4-phenylisonipecotate-----	SDW, WYT.
α -Ethyl- α -phenylglutarimide (Doriden)-----	CBP.
N-Ethyl-3-piperidyl benzilate methobromide-----	LKL.
N-Ethyl-3-piperidyl diphenylacetate hydrochloride-----	LKL.
Ethyl salicylate carbonate-----	ICO, PD.
Gallic acid-----	MAL.
Gentisic acid, sodium salt-----	ICO.
Glycol monosalicylate-----	RDA.
Guaiacol, liquid and crystalline-----	HN, MON.
*Guaiacol glyceryl ether-----	GAN, HEX, ICO.
Hesperidin methyl chalcone-----	SKG.
*1-Hexadecylpyridinium chloride-----	GAN, HEX, ICO.
Hexahydro-1-methyl-4-phenylazepine-4-carboxylic acid, ethyl ester, citrate salt.	WYT.
Hexylresorcinol-----	HEX, MRK.
Hydantoin derivatives:	
5,5-Diphenylhydantoin-----	PD.
5,5-Diphenylhydantoin, sodium salt-----	PD.
3-Ethyl-5-phenylhydantoin-----	ABB.
1-Hydrazinonaphthalazine hydrochloride-----	CBP.
p-Hydroxyacetanilide-----	ABB, MLS, NEP.
17 β -Hydroxy-3-androstanone benzoate-----	ORG.
p-Hydroxybenzoic acid esters:	
n-Butyl p-hydroxybenzoate (Butoben)-----	HN, ICO.
Ethyl p-hydroxybenzoate-----	HN, ICO.
Methyl p-hydroxybenzoate-----	HN, ICO, LEM, PYL.
Propyl p-hydroxybenzoate-----	HN, ICO, PYL.
o-(p-Hydroxybenzoyl)benzoic acid-----	LIL.
4-Hydroxycoumarin-----	FIN.
N-(2-Hydroxyethyl)gentisamide-----	ICO.

TABLE 13B.--Medicinal chemicals for which U.S. production or sales were reported, identified by manufacturer, 1962--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
MEDICINAL CHEMICALS, BENZENOID--Continued	
2,2'-(2-Hydroxyethylimino)bis[N-(α , α -dimethylphenethyl)-N-methylacetamide].	WYT.
3-Hydroxy-1-methylpyridinium bromide dimethylcarbamate----	HOF.
*Imidazole derivatives:	
2-Benzyl-2-imidazole (Tolazoline) hydrochloride-----	ORT, SPG.
1-Methyl-2-undecyl-3-benzylimidazolium bromide-----	LIL.
α -2-(1,2,3,4-Tetrahydro-1-naphthyl)-2-imidazole hydrochloride.	PFZ.
Isonicotinic acid hydrazide-----	NEP, RIL.
Mandelic acid (Phenylglycolic acid)-----	MAL.
Mandelic acid derivatives:	
Calcium mandelate-----	MAL.
Hexamethylenetetramine mandelate-----	LEM, NEP, PYL, TNC.
Menthyl salicylate-----	ICO.
homo-Menthyl salicylate-----	ICO.
*Mercury compounds:	
o-Chloromercuriphenol (o-Hydroxyphenylmercuric chloride)	MTL.
Ethylmercurithiosalicylic acid-----	LIL.
Ethylmercurithiosalicylic acid, sodium salt (Thimerosal)	LIL, PYL.
Hydroxymercuri-4-nitro-o-cresol anhydride-----	ABB.
Merbromin (Dibromohydroxymercurifluorescein, sodium salt).	HYN.
Mercuric salicylate-----	MTL.
Phenylmercuric acetate-----	WRC.
Phenylmercuric benzoate-----	MTL, WRC.
Phenylmercuric borate-----	MTL, WRC.
Phenylmercuric nitrate-----	MTL, WRC.
2-Methoxyethyl p-methoxycinnamate-----	GIV.
5-(o-Methoxyphenoxy)methyl-2-oxazolidinone-----	ACT.
2-(p-Methoxyphenyl)-1,3-indandione-----	SCH.
2-Methylbenzothiazole-----	FMT.
3,3'-Methylenebis(4-hydroxycoumarin)	ABB, FIN.
5-Methyl-3-isoxazolecarboxylic acid, 2-benzylhydrazide----	HOF.
3-Methyl-2-phenylmorpholine hydrochloride-----	GGY.
3-Methyl-2-phenylvaleric acid, 1-methyl-4-piperidyl ester, methyl sulfate salt (Pentapiperide methyl sulfate).	x.
2-Methyl-1-piperidinepropanol, benzoate (Piperocaine)----	LIL.
2-Methyl-1-piperidinepropanol, benzoate (Piperocaine) hydrochloride.	LIL.
N-Methyl-3-piperidyl benzilate methobromide-----	LKL.
N-Methylpiperidyl-3-methylphenothiazine hydrochloride hydrate.	NEP.
3-(2-Methyl-1-piperidyl)propyl p-cyclohexyloxybenzoate----	LIL.
N-Methyl-N-2-propylbenzylamine hydrochloride-----	ABB.
2-Naphthol (β -Naphthol)-----	FIN.
Neostigmine bromide-----	HEX, MED, RSA.
Neostigmine methyl sulfate-----	HEX, MED.
Nikethamide (Coramine)-----	CBP.
Phenacaine ((Di-p-ethoxyphenyl)acetamidine) hydrochloride-	SDW.
Phenacetin (Acetophenetidin)-----	DOW, MON.
Phenolphthalein-----	MON.
Phenolphthalein, yellow-----	WLI.
Phenolsulfonic acid salts:	
Aluminum phenolsulfonate-----	MAL.
Ammonium phenolsulfonate-----	SAL.
Calcium phenolsulfonate-----	MAL.
Copper phenolsulfonate-----	MAL.
Sodium phenolsulfonate-----	MAL, SAL.
Zinc phenolsulfonate-----	MAL.

TABLE 13B.--Medicinal chemicals for which U.S. production or sales were reported, identified by manufacturer, 1962--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
MEDICINAL CHEMICALS, BENZENOID--Continued	
Phenothiazine-----	CLV.
Phenylacetylurea (Phenurone)-----	ABB.
1-Phenylcyclohexaneglycolic acid, 1-methyl-1,4,5,6-tetrahydro-2-pyrimidinemethanol ester.	PFZ.
1-Phenylcyclopentanecarboxylic acid, 2-(2-diethylaminoethoxy)ethyl ester, citrate.	PFZ.
Phenylethylhydrazine dihydrogen sulfate-----	NEP.
2-Phenyl-1,3-indandione-----	GAN, SPC.
*Phenylsulfonyleurea derivatives:	
1-(p-Acetylphenylsulfonyl)-3-cyclohexylurea-----	I.LL.
1-Butyl-3-p-tolylsulfonyleurea-----	HST, x.
1-(p-Chlorophenylsulfonyl)-3-propylurea-----	PFZ.
1-(2H)-Phthalazine-----	NAC, SDH.
Piperazine derivatives:	
N-Benzhydryl-N ¹ -methylpiperazine base and hydrochloride	BUR.
N-(β -Cyclohexyl- β -hydroxy- β -phenyl)ethyl-N ¹ -methylpiperazine methosulfate.	ABB.
N-(β , β -Diphenyl- β -hydroxy)ethyl-N ¹ -methylpiperazine dihydrochloride.	ABB.
Podophyllin powder-----	ABB.
Primaquine (8-(4-Amino-1-methylbutylamino)-6-methoxyquinoline) phosphate.	PD.
Pyrazine-2-carboxamide-----	MRK.
2-Pyridinemethanol tartrate-----	HOF.
Pyrogalllic acid-----	MAL.
*8-Quinolinol and derivatives:	
5-Chloro-7-Iodo-8-quinolinol (Iodochlorohydroxyquinoline)	CBP, LEM, MTL, PYL.
*5,7-Diiodo-8-quinolinol-----	ABB, LEM, MTL, PYL, RSA, SRL.
8-Hydroxyquinoline-5-sulfonic acid-----	LEM, MTL.
*8-Quinolinol-----	GAM, LEM, MTL.
8-Quinolinol benzoate-----	GAM, LEM.
8-Quinolinol citrate-----	GAM.
8-Quinolinol, magnesium salt-----	FMT.
8-Quinolinol sulfate (Quinosol)-----	GAM, LEM, MTL, PYL.
Resorcinol-----	LEM.
Resorcinol dimethyl ether-----	ASL.
Resorcinol monoacetate-----	FIN.
Resorcinol monobenzoate-----	EKT.
Roentgenographic contrast media:	
3-Acetamido-2,4,6-triiodobenzoic acid and sodium salt (Acetrizoate sodium).	MAL.
3-(3-Amino-2,4,6-triiodophenyl)-2-ethylpropionic acid (Iodopanoic acid).	SDW.
3,5-Diacetamido-2,4,6-triiodobenzoic acid, sodium salt (Sodium diatrizoate).	SDW.
3,5-Dipropionamido-2,4,6-triiodobenzoic acid and sodium salt (Sodium diprotriisoate).	MAL.
Ethyl (iodophenyl)hendecanoate-----	x.
Sodium o-iodohippurate dihydrate-----	MAL.
Salicylamide-----	CFC, x.
*Salicylic acid-----	DOW, HN, MON, SDH.
*Salicylic acid salts:	
Calcium salicylate-----	DOW.
Magnesium salicylate-----	MAL.
Potassium salicylate-----	x.
*Sodium salicylate-----	DOW, HN, MON.
Strontium salicylate-----	DOW, MAL, TNC.
All other-----	TNC.

TABLE 13B.-- Medicinal chemicals for which U.S. production or sales were reported, identified by manufacturer, 1962--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
MEDICINAL CHEMICALS. BENZENOID--Continued	
Salol (Phenyl salicylate)-----	DCW, MAL, PEN.
Sodium benzyl succinate-----	LEM.
Succinimide derivatives:	
N,2-Dimethyl-2-phenylsuccinimide-----	PD.
N-Methyl-2-phenylsuccinimide-----	PD.
8-Succinoylfluoranthene (hydrocholeretic)-----	SRL.
*Sulfa drugs:	
6-Acetamido-4-hydroxy-3-(4'-sulfamoylphenylazo)-2,7-naphthalenedisulfonic acid, disodium salt.	SDW.
N ¹ -Acetyl-N ⁴ -(3,4-dimethyl-5-isoxazolyl)sulfanilamide---	HOF.
N ¹ -Acetylsulfamethoxy pyridazine-----	ACY.
4'-(Acetylsulfamoyl)phthalanilic acid-----	LEM.
Benzoylsulfanilamide-----	ACY.
Benzoylsulfanilamide, sodium salt-----	ACY.
p-Benzylaminobenzenesulfonamide-----	SDW.
N ¹ -(2,4-Dimethoxy-6-pyrimidinyl)sulfanilamide-----	HOF.
N ¹ -(3,4-Dimethyl-5-isoxazolyl)sulfanilamide-----	HOF.
N ¹ -(5-Ethyl-1,3,4-thiadiazol-2-yl)sulfanilamide-----	ACY.
N ¹ -(5-Methyl-3-isoxazolyl)sulfanilamide-----	HOF.
N ¹ -(5-Methyl-1,3,4-thiadiazol-2-yl)sulfanilamide-----	ACY.
4'-(p-Nitrophenylsulfamoyl)acetanilide (N ⁴ -Acetyl-N ¹ -(4-nitrophenyl)sulfanilamide).	SAL.
p-Nitrosulfathiazole-----	SDW.
Succinylsulfathiazole-----	LEM, MRK.
Sulfabromomethazine, sodium salt-----	MRK.
Sulfadiazine-----	ACY.
Sulfadiazine, sodium salt-----	ACY.
Sulfaguandine-----	ACY.
Sulfamerazine-----	ACY.
Sulfamerazine, sodium salt-----	ACY.
Sulfamethazine-----	ACY.
Sulfamethoxy pyridazine-----	ACY.
Sulfanilamide (p-Aminobenzenesulfonamide)-----	MRK.
Sulfanilamide-----	SAL.
N-Sulfanilylacetamide (Sulfacetamide)-----	LEM, PYL, SCH.
N-Sulfanilylacetamide, sodium salt-----	LEM, SCH.
Sulfapyridine-----	ACY, MRK.
Sulfapyridine, sodium salt-----	ACY.
Sulfaquinoxaline-----	MRK.
Sulfathiazole-----	ACY, MRK.
Sulfathiazole, sodium salt-----	ACY, MRK.
[Sulfonylbis(p-phenyleneimino)]dimethanesulfonic acid, disodium salt.	ABB.
4'-(2-Thiazolylsulfamoyl)phthalanilic acid-----	LEM, MRK.
*Sympathomimetic (Adrenergic) agents:	
d-N-Benzyl-N,α-dimethylphenethylamine hydrochloride-----	x.
*d-N-α-Dimethylphenethylamine (Desoxyephedrine) hydrochloride.	ABB, GAN, HEX.
*dl-N-α-Dimethylphenethylamine (Desoxyephedrine) hydrochloride.	HEX, FRR.
3,4-Dihydroxynorephedrine (3,4-Dihydroxyphenylpropanolamine) hydrochloride.	SDW.
N,α-Dimethylphenethylamine (Desoxyephedrine) base-----	HEX.
l-N,α-Dimethylphenethylamine-----	ABB.
m-Hydroxynorephedrine-----	SDW.
m-Hydroxynorephedrine bitartrate-----	x.
*α-(Isopropylaminomethyl)protocatechuyl alcohol (Isoproterenol).	ABB, GAN, SPC.

TABLE 13B.--Medicinal chemicals for which U.S. production or sales were reported, identified by manufacturer, 1962--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
MEDICINAL CHEMICALS, BENZENOID--Continued	
*Sympathomimetic (Adrenergic) agents--Continued	
o-Methoxy-N, α -3-methylphenethylamine [1-(o-Methoxyphenyl)-2-methylaminopropane] hydrochloride (Methoxyphenamine).	x.
Methylaminoethanolicatechol, racemic----- α -(1-Methylaminoethyl)benzyl alcohol (Pseudoephedrine) hydrochloride.	DOD, VB. BUR, GAN.
α -(1-Methylaminoethyl)benzyl alcohol sulfate----- N-[2-(3,4-Methylenedioxyphenyl)isopropyl]- α -aminomethyl-protocatechuyl alcohol hydrochloride (Caytine).	GAN. LKL.
*dl- α -Methylphenethylamine (Amphetamine) base----- α -Methylphenethylamine salts: α -Methylphenethylamine hydrochloride----- α -Methylphenethylamine sulfate----- All other-----	HEX, ORT, SK. PRR. HEX, PRR. PRR. HEX.
d- α -Methylphenethylamine (Dextroamphetamine) base----- l- α -Methylphenethylamine salts: l- α -Methylphenethylamine hydrochloride----- d- α -Methylphenethylamine sulfate-----	HEX. HEX, PRR, SK. GAM, GAN, HEX, ICO, NEP, ORT.
*Norephedrine (Phenylpropanolamine) hydrochloride----- trans-2-Phenylcyclopropanamine sulfate----- l-Phenylephrine base-----	x. GAN, SPC. GAN, HEX, SDW, SPC.
*Phenylephrine hydrochloride-----	
Tannin albuminate (Tannalbin)-----	PYL.
2-(4-Thiazolyl)benzimidazole-----	MRK.
Thiosalicylic acid-----	LIL.
Thymol-----	GIV, HNW, OPC.
Thymol iodide-----	MAL.
Thymolphthalein-----	FIN.
3-o-Toloxyl-2-propanediol (o-Cresyl α -glyceryl ether)---	BKL, HEX.
*Tranquilizers:	
2-(n-Butylaminomethyl)-2-ethoxy-1,4-benzodioxane-----	LIL.
1-(p-Chlorobenzhydryl)-4-[2-(2-hydroxyethoxy)ethyl] diethylenediamine dihydrochloride.	PFZ.
1-(p-Chlorobenzhydryl)-4-[2-(2-hydroxyethoxy)ethyl] diethylenediamine pamoate.	PFZ.
2-Chloro-10-(3-dimethylaminopropyl)phenothiazine (Chlorpromazine) hydrochloride.	SK.
2-Chloro-10-[4-(2-hydroxyethyl)piperazinyl]propylphenothiazine.	SCH.
7-Chloro-2-methylamino-5-phenyl-3H-1,4-benzodiazepine-4-oxide hydrochloride.	HOF.
2-Chloro-10-[3-(1-methyl-4-piperazinyl)propyl]phenothiazine dimaleate (Prochlorperazine dimaleate).	SK.
2-(p-Chlorophenyl)-3-methyl-2,3-butanediol-----	LIL.
10-(2-Diethylaminopropyl)phenothiazine-----	NEP.
10-(r-Dimethylaminopropyl)phenothiazine (Promazine) hydrochloride.	WTT.
10-[3-[4-(2-Hydroxyethyl)-1-piperazinyl]propyl]-2-trifluoromethylphenothiazine (Fluphenazine) dihydrochloride.	SCH.
α -(4-Piperidyl)benzhydrol (Azacyclonal) hydrochloride---	BKC.
6-(Trifluoromethyl)-1,2,4-benzothiadiazine-7-sulfonamide 1,1-dioxide.	OMS.
2-Trifluoromethyl-10-(3-dimethylaminopropyl)phenothiazine (Triflupromazine) hydrochloride.	OMS.
2-Trifluoromethyl-10-[3-(methyl-4-piperazinyl)propyl]phenothiazine dihydrochloride.	SK.

TABLE 13B.-- Medicinal chemicals for which U.S. production or sales were reported, identified by manufacturer, 1962--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
MEDICINAL CHEMICALS, BENZENOID--Continued	
*Tranquilizers--Continued	
4-(3-[2-(Trifluoromethyl)phenothiazin-10-yl]propyl)-1-piperazine ethanol dihydrochloride.	OMS.
Triphosphopyridine nucleotide-----	PBS.
Tropine benzhydryl ether methanesulfonate-----	x.
*Vitamins:	
*B ₂ (Riboflavin) (100%):	
For animal and poultry consumption-----	COM, GPR, HCF, MRK. PBS.
For human consumption-----	HOF. MRK.
B ₆ (Pyridoxine)-----	HCF, MRK.
*B ₁₂ (100%):	
Feed grade-----	COM, GPR, IMC, MRK, PBS.
Pharmaceutical-----	IMC. MRK.
U.S.P. Crystalline-----	MRK.
E (α-Tocopherol)-----	HOF.
E (α-Tocopherol acetate)-----	HCF.
Folic acid-----	ACY.
K (Menadione) sodium bisulfite-----	ABB.
K ₁ (2-Methyl-3-phytyl-1,4-naphthoquinone)-----	MRK.
*K ₃ (Menadione) (2-Methyl-1,4-naphthoquinone)-----	ABB. HET. HFT.
K ₃ (Menadione) (2-Methyl-1,4-naphthoquinone) sodium bisulfite.	HET, WHL.
K ₄ (2-Methyl-1,4-naphthalenediol diacetate and di-phosphate, tetrasodium salt).	HOF.
K ₅ (4-Amino-2-methyl-1-naphthol)-----	PD.
Magnesium nicotinate-----	NEP.
*Niacin (Nicotinic acid):	
Animal feed grade-----	OKL, KPT. MRK. NEP. RIL.
Medicinal grade-----	ABB. ACP, KPT, MRK, NOP, RIL, SCR.
*Niacinamide (Nicotinamide)-----	MRK, NEP, PD, RIL, SCR.
Nicotinamide hydrochloride-----	NEP.
Riboflavin-5'-phosphate, monosodium salt-----	HCF.
MEDICINAL CHEMICALS, NONBENZENOID	
2-Acetamido-5-nitrothiazole-----	ACY.
5-Acetamido-1,3,4-thiadiazole-2-sulfonamide-----	ACY.
Acetylcarbromal (1-Acetyl-3-(2-bromo-2-ethylbutyral urea)	MLS.
*Acetylcholine bromide-----	EK.
*Acetylcholine chloride-----	MRK, RSA.
Acetyl-β-methylcholine chloride-----	
Acrylic acid copolymer-----	RSA.
Alkaloids and related products:	
Digitalis glucosides:	
Digitonin-----	
All other-----	PEN.
Veratrum viride (Alkavervir)-----	BUR.
All other-----	PEN, RIK.
*Amino acids:	
Acetylmethionine-----	LIL.
β-Alanine-----	DOW.
Arginine-----	BFG, NOP.
Arginine glutamate-----	GNM.
l(+)-Arginine hydrochloride-----	GNM.
dl-Aspartic acid-----	GNM.
Aspartic acid, magnesium salt-----	HEX, NAC.
Aspartic acid, potassium salt-----	WYT.

TABLE 13B.-- Medicinal chemicals for which U.S. production or sales were reported, identified by manufacturer, 1962--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
MEDICINAL CHEMICALS, NONBENZENOID--Continued	
*Amino acids--Continued	
Glutamic acid salts:	
1(+)-Glutamic acid-----	IMC.
1(+)-Glutamic acid hydrochloride-----	IMC, LEM.
1(+)-Glutamic acid, monoammonium salt-----	GAM, IMC.
1(+)-Glutamic acid, monopotassium salt-----	IMC.
Glycine (Aminoacetic acid)-----	BPC, DOW.
Glycine hydrochloride-----	EK.
Histidine hydrochloride-----	GAM.
1(+)-Lysine hydrochloride-----	MRK, PFZ.
1(+)-Lysine hydrochloride (feed grade)-----	MRK.
1(+)-Lysine monohydrochloride-----	DUP.
dl-Methionine (except feed grade)-----	DOW, LEM.
Methionine, feed grade-----	DOW.
dl-Valine-----	DOW.
Amino acid mixtures-----	CUT, STA.
2-Amino-5-nitrothiazole-----	ACY.
3-Amino-2-oxazolidinone-----	NOR.
Amyl nitrite (Isoamyl nitrite)-----	MAL.
*Barbiturates:	
5-Allyl-5-sec-butylbarbituric acid-----	SDW.
5-Allyl-5-(2-cyclopenten-1-yl)barbituric acid and salt-----	GAN.
5-Allyl-5-isobutylbarbituric acid and salt-----	GAN.
*5-Allyl-5-(1-methylbutyl)barbituric acid (Secobarbital) and sodium salt.	BPC, GAN, LIL.
5-Allyl-5-(1-methylbutyl)-5-thiobarbituric acid (Surital).	PD.
5-sec-Butyl-5-ethylbarbituric acid-----	ABB, GAN.
5-sec-Butyl-5-ethylbarbituric acid, sodium salt-----	ABB, BPC, GAN.
5-(1-Cyclohexen-1-yl)-1,5-dimethylbarbituric acid-----	GAN, SDW.
5-(1-Cyclohexen-1-yl)-1,5-dimethylbarbituric acid, sodium salt.	SDW.
5-(1-Cyclohexen-1-yl)-5-ethylbarbituric acid and salt-----	SDW.
5,5-Diethylbarbituric acid (Barbital)-----	GAN.
5,5-Diethylbarbituric acid, sodium salt-----	GAN.
5-Ethyl-5-isoamylbarbituric acid and salt-----	BPC, GAN, LIL.
5-Ethyl-5-isopropylbarbituric acid and salt-----	ABB.
5-Ethyl-5-(1-methyl-1-butenyl)barbituric acid-----	x.
*5-Ethyl-5-(1-methyl-n-butyl)barbituric acid (Pentobarbital).	ABB, BPC, GAN.
*5-Ethyl-5-(1-methyl-n-butyl)barbituric acid, sodium salt.	ABB, BPC, GAN.
5-Ethyl-5-(1-methyl-n-butyl)-2-thiobarbituric acid and salt.	ABB.
5-Ethyl-4-n-pentylbarbituric acid, sodium salt-----	BPC.
Betaine base-----	HFT.
Betaine hydrate-----	HFT.
Betaine hydrochloride-----	HFT, LEM.
*Bile acids and salts:	
Bile salts, natural conjugated, unoxidized-----	LIL.
Bilirubin-----	PFN.
Cholic acid-----	SRL, WIL.
Dehydrocholic acid-----	MRK, WIL.
Dehydrocholic acid, sodium salt-----	WIL.
Desoxycholic acid-----	MRK, WIL.
*Ketocholeic acids-----	MRK, SRL, WIL.
Ox bile extract-----	ABB.

TABLE 13B.-- Medicinal chemicals for which U.S. production or sales were reported, identified by manufacturer, 1962--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
MEDICINAL CHEMICALS, NONBENZENOID--Continued	
Bismuth compounds:	
2-Propylvaleric acid and bismuth salt-----	x.
Sodium bismuth triglycolamate-----	x.
Bromocamphor, mono-----	MAL, PEN.
Calcium lactophosphate-----	MAL.
Calcium succinate-----	LEM.
Camphor, synthetic, U.S.P.-----	HNW.
Camphoric acid-----	PRR, PYL.
Camphoric anhydride-----	PRR.
Camposulfonic acid-----	PRR, PYL.
Camposulfonic acid, calcium salt-----	PYL.
*Carbohydrates and derivatives:	
Aurothioglucose-----	SCH.
Carboxymethylcellulose, sodium salt (medicinal grade)---	CBF.
Cellulose, oxidized-----	EKT.
Dextran-----	COM, PHR.
Fructose (Levulose)-----	DLI.
Galactose-----	PFN.
Glucoheptonic acid, calcium salt-----	PFN.
Gluconic acid salts:	
Ammonium gluconate-----	PFZ.
*Calcium gluconate (including feed grade)-----	DLI, MAL, PFZ, WHL.
Copper gluconate-----	PFZ.
Iron (ferrous) gluconate-----	PFZ.
Magnesium gluconate-----	PFZ.
Manganese gluconate-----	PFZ.
Potassium gluconate-----	PFZ.
Glucosamine hydrochloride-----	PFZ.
Hexosediphosphoric acid salts:	
Calcium hexosediphosphate-----	SBR.
All other-----	SBR.
Maltose-----	PFN.
Methyl glucamine-----	ABB.
Sucrose octa-acetate-----	PD.
Xylose-----	PFN.
l-Xylose-----	PFN.
Carbromal (Bromodiethylacetylcarbamide)-----	
2-Chlorothiophene-----	MLS.
β-Chlorovinylethylethynyl carbinol-----	GAM.
*Choline salts:	ABB.
Choline bicarbonate-----	COM.
*Choline bitartrate-----	ACY, CFC, HFT.
*Choline chloride, for animal and poultry feed, and for use as an intermediate.	COM, HFT, RH.
Choline chloride, medicinal grade-----	CFC, HFT.
*Choline dihydrogen citrate-----	ACY, CFC, HFT.
*Tricholine citrate-----	ACY, CFC, HFT.
Coenzyme A-----	PBS.
Cyclopentanol-----	LIL.
Cyclopentyl bromide-----	LIL.
l-Cyclopentyl-2-methylpropylamine (Cyclopentamine) hydrochloride.	LIL.
Diallylacetic acid-----	x.
Diethylaminocarbethoxybicyclohexyl (Dicyclomine) hydrochloride.	BKC.
2-Diethylaminoethanol bitartrate-----	x.
3,3-Diethyl-5-methyl-2,4-piperidinedione-----	HOF.
3,5-Diiodo-4-pyridone-N-acetic acid, diethanolamine salt-	SDW.

TABLE 13B.-- Medicinal chemicals for which U.S. production or sales were reported, identified by manufacturer, 1962--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
MEDICINAL CHEMICALS, NONBENZENOID--Continued	
N,x-Dimethylcyclohexaneethylamine (1-Cyclohexyl-2-methylaminopropane) (Propylhexedrine).	SK.
Divinyl ether-----	MRK.
Ethyl carbamate (Urethane)-----	FMP.
2-Ethyl-cis-crotonyl urea-----	MLS.
5-Ethyl-3,5-dimethyl-2,4-oxazolinedione-----	ABB.
Ethylenediamine dihydroiodide-----	PYL, RSA, WHL.
Ethyl iodide-----	FMT, RSA.
2-Ethyl-2-methylsuccinimide-----	PD.
Ethyl nitrite-----	MAL.
1-Ethyl-3-(5-nitro-2-thiazolyl)urea-----	MRK.
Ethynylcyclohexyl carbamate-----	L.L.L.
dl-Glutamine-----	L.L.L.
Glutathione (oxidized)-----	SBR.
Hendecanoic (Undecylenic) acid, zinc salt-----	LEM, MCO.
Heparin sodium-----	ABB, RIK.
Hexamethyldiaminoisopropanol diiodide-----	SDW.
*Hexamethylenbis(trimethylammonium chloride) (Hexamethonium chloride).	HEX, NEP, RSA.
Hexamethylenetetramine-----	HN.
Hexokinase-----	PBS.
Hormones:	
17 α -Acetoxy-6 α -methylprogesterone-----	JUL.
17 α -Acetoxyprogesterone-----	JUL.
Adrenocorticotrophic hormone (ACTH)-----	ARP, ORG, WIL.
Dehydroasandrosterone alcohol-----	JUL.
Desoxycorticosterone acetate-----	ORG.
Desoxycorticosterone glucoside-----	JUL.
21-Desoxy-9 α -fluoro-6 α -methylprednisolone-----	x.
11-Desoxy-17-hydroxycorticosterone acetate-----	INI.
Dexamethasone-----	MRK, SCH.
Dexamethasone acetate (9 α -Fluoro-11 β ,17 α , 21-trihydroxy-16 α -methylpregna-1,4-diene-3,20-dione, 21-acetate).	SCH.
9 α ,11 β -Dichloro-17 α ,21-dihydroxypregna-1,4-diene-3,20-dione, 21-acetate.	
Dienediol-----	UPJ.
17 α ,21-Dihydroxypregn-4-en-3,20-dione, 21-acetate-----	JUL.
17 α -Ethinyl-17 β -hydroxy-5(10)-estren-3-one-----	SRL.
9 α -Fluorohydrocortisone acetate-----	UPJ.
9 α -Fluoroprednisolone-----	UPJ.
Fluoroxymesterone-----	UPJ.
*Hydrocortisone alcohol and acetate-----	MRK, PFZ, UPJ.
Hydrocortisone diethylaminoacetate hydrochloride-----	PFZ.
17-Hydroxy-11-dehydrocorticosterone (Cortisone) and acetate.	MRK, SCH, UPJ.
17 β -Hydroxy-17 α -methylandrostando[3,2-c]pyrazole-----	SDW.
11 α -Hydroxyprogesterone-----	UPJ.
Methylprednisolone-----	x.
Methyltestosterone-----	JUL.
*Prednisolone-----	MRK, SCH, UPJ.
Prednisolone acetate-----	SCH.
*Prednisone-----	MRK, SCH, UPJ.
Progesterone-----	JUL. x.
Sitosterol B-----	UPJ.
Testosterone-----	JUL.
Trienediol-----	UPJ.

TABLE 13B.-- Medicinal chemicals for which U.S. production or sales were reported, identified by manufacturer, 1962--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
MEDICINAL CHEMICALS, NONBENZENOID--Continued	
Hormones--Continued	
Triamcinolone-----	ACV, OMS.
3 β ,17 α ,21-Trihydroxypregn-5-en-20-one-3,21-diacetate-----	JTL.
Hydantoin derivatives:	
*Allantoin-----	
N-(5-Nitro-2-furfurylidene)-1-aminohydantoin-----	FIN, HFT, SOL, SPC.
trans-[4-(Hydroxydi-2-thienylmethyl)cyclohexyl]trimethyl-	NOR.
ammonium bromide-----	SCH.
1-(Hydroxymethyl)cyclohexanecetic acid, sodium salt-----	NEP.
2-Hydroxy-4-methylisobutyric acid, calcium salt-----	MON.
1-Hydroxy-4-(methylthio)butyric acid, calcium salt-----	DUP.
4,5-Imidazoledicarboxamide (Glycarbylamide)-----	MRK.
2-Iodoethyl-1,3-dioxolane-4-methanol-----	x.
Iodomethanesulfonic acid, sodium salt-----	SDW.
Iron (ferrous) oxalate-----	BKL.
α -Ketoglutaric acid-----	LIL.
Lecithin, purified-----	ARP.
Magnesium citrate-----	MAL.
1-Mercaptomethylimidazole-----	LIL.
*Mercury compounds:	
N-[3-(Carboxymethylmercaptomercuri)-2-methoxypropyl]- α -	WYT.
aphoramate, disodium salt-----	
3-Chloromercuri-2-methoxypropylurea-----	LKL.
Ethylmercuric chloride-----	LIL.
β -Methoxy- γ -hydroxymercuric propylamide of camphoric	FIN.
acid, sodium salt with theophylline-----	
Methoxyoximercuripropylsuccinyl urea-----	LKL.
Theophylline methoxyoximercuripropyl succinylurea-----	LKL.
2-Methyl-2-propyl-1,3-propanediol-----	ABB, ICO.
5-Nitro-2-furaldehyde acetylhydrazone-----	NOR.
5-Nitro-2-furaldehyde diacetate-----	NOR.
5-Nitro-2-furaldehyde semicarbazone-----	NOR.
5-Nitro-2-furaldehyde semioxazide-----	NOR.
N-(5-Nitro-2-furfurylidene)-3-amino-2-oxazolidene-----	NOR.
Nucleic acid-----	SBR.
Nucleic acid salts-----	SBR.
[2-(Octahydro-1-azocinyl)ethyl]guanidine sulfate-----	CBP.
Pantolactone, racemic-----	ABB, CKL, PRR.
Phytic acid-----	STA.
Phytic acid, calcium salt-----	STA.
*Piperazine-----	
*Piperazine derivatives:	
N-Aminoethylpiperazine-----	UCC.
1-Diethylcarbonyl-4-methylpiperazine dihydrogen citrate-----	ACY.
Dimethylaminoethyl-4-methylpiperazine-----	UCC.
Methyl-N-methyl-N-piperazine acetate-----	ABB.
N-Methylpiperazine-----	UCC.
Piperazine adipate-----	JCC, PYL, RDA.
Piperazine calcium ethylenediamine tetraacetate (Perin)-----	EN.
Piperazine citrate-----	JCC, RDA, RSA.
*Piperazine dihydrochloride-----	ACY, DOW, JCC, PYL, WHL.
Piperazine hexahydrate-----	JCC, RDA.
*Piperazine hydrochloride-----	DOW, JCC, RDA.
Piperazine phosphate-----	BUR, JCC, PYL, RDA, WHL.
Piperazine sulfate-----	JCC, RDA.
Piperazine tartrate-----	PYL, RDA.
6-Propyl-2-thiouracil-----	ACY.

TABLE 13B.--Medicinal chemicals for which U.S. production or sales were reported, identified by manufacturer, 1962--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
MEDICINAL CHEMICALS. NONBENZENOID--Continued	
*Purine derivatives:	
Adenine hydrochloride-----	SBR.
Adenosine-----	SBR.
Adenosine-5-phosphoric acid-----	PBS. SBR.
Adenosinetriphosphoric acid-----	SBR.
Adenosinetriphosphoric acid, salt-----	PBS. SBR.
Adenylic acid-----	SBR.
*Caffeine:	
Natural-----	GNF, MYW.
Synthetic-----	MON. PFZ.
Caffeine citrate-----	MAL. MRK.
6-Chloropurine-----	BUR.
Theobromine, sodium acetate-----	MAL.
Theophylline (1,3-Dimethylxanthine) derivatives:	
Theophylline aminoisobutanol-----	GAN.
*Theophylline ethylenediamine (Aminophylline)-----	GAN. LEM. SRL.
Theophylline ethylenediamine, sodium biphosphate-----	GAN.
Theophylline monoethanolamine-----	LIL.
Theophylline sodium acetate-----	MAL.
Uric acid-----	SCL.
1-Pyrrolidine-acetoxyliidide hydrochloride-----	EN.
Sodium caprylate-----	TNC.
Sodium tartrate-----	MAL.
Succinylcholine dichloride-----	ABB, SPC.
Sulfosuccinic acid, bis(2-ethylhexyl) ester-----	ACT.
Terpinol hydrate-----	PEN.
*Tetramethylammonium chloride-----	ASL. EK. RSA.
Tetramethylammonium hydroxide-----	RSA.
Thiosemicarbazide-----	FMT.
2-Thiouracil-----	ACY.
Thymidine-----	SBR.
*Tranquillizers:	
2-Methyl-2-sec-butyl-1,3-propanediol dicarbamate-----	x.
2-Methyl-2-n-propyl-1,3-propanediol dicarbamate (Meprobanate).-----	ABB. BKL. ICO. PEN. x.
*Trihalogenated compounds:	
Bis(2,2,2-trifluoroethyl) ether-----	TBK.
Bromoform (Tribromomethane)-----	DOW.
Iodoform-----	MAL. PEN.
2,2,2-Tribromoethanol-----	SDW.
1,1,1-Trichloro-2-methyl-2-propanol-----	BPC. PD.
3,5,5-Trimethyl-2,4-oxazolidinedione-----	ABB.
3-Tropanol (Tropine)-----	SPC.
Uridine-----	SBR.
Uridine triphosphate-----	PBS. SBR.
1-Vinyl-2-pyrrolidione iodine complex polymer-----	G.
*Vitamins:	
A. from all sources:	
A acetate-----	EF. HOF. MRK. PFZ.
A acetate (feed grade)-----	HOF.
A alcohol-----	CW. HOF.
*A palmitate-----	EK. HOF. MRK. PFZ.
A palmitate (feed supplement)-----	EK. HOF.
B ₁ (Thiamin hydrochloride)-----	HOF. MRK.
B ₁ (Thiamin nitrate)-----	HOF. MRK.
Biotin-----	HOF.

TABLE 13B.-- Medicinal chemicals for which U.S. production or sales were reported, identified by manufacturer, 1962--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
MEDICINAL CHEMICALS, NONBENZENOID--Continued	
*Vitamins--Continued	
*C (Ascorbic acid) and derivatives:	
*Ascorbic acid-----	HOF, MRK, PFZ.
Ascorbic acid, calcium salt-----	MRK, PFZ.
Ascorbic acid, sodium salt-----	HOF, MRK, PFZ.
Ascorbyl palmitate-----	PFZ.
β-Carotene-----	HOF.
*D ₂ (Irradiated ergosterol)-----	DGS, DLI, SCR, VTM.
*D ₃ (Irradiated animal sterol)-----	DGS, DLI, NOP, VTM.
Inositol-----	STA.
*Pantothenic acid and Derivatives:	
Pantothenic acid-----	DLI.
Pantothenic acid, d-calcium salt-----	ACY, MRK, PD, x.
*Pantothenic acid, dl-calcium salt-----	ABB, CKL, HFT, LIL, MRK, NOP.
Pantothenic acid, sodium salt-----	PD.
d-Pantothenic alcohol (α,γ-Dihydroxy-N-(3-hydroxy- propyl)-β,β-dimethylbutyramide.	HOF.
dl-Pantothenyl alcohol-----	HOF.
Provitamin D ₃ (7-Dehydrocholesterol)-----	JUL.
All other nonbenzenoid medicinal chemicals-----	NEP, x.

Flavor and Perfume Materials

TABLE 14B.--Flavor and perfume materials for which U.S. production or sales were reported, identified by manufacturer, 1962

[Flavor and perfume materials for which separate statistics are given in table 14A are marked below with an asterisk (*); those not so marked do not appear in table 14A because the reported data are accepted in confidence and may not be published. Manufacturers' identification codes shown below are taken from table 23. 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 23)
FLAVOR AND PERFUME MATERIALS, CYCLIC	
<i>Benzenoid and Naphthalenoid</i>	
2'-Acetonaphthone (Methyl β -naphthyl ketone)-----	GIV, TBK.
Acetophenone-----	GIV, TBK..
7-Acetyl-6-ethyl-1,1,4,4-tetramethyl-1,2,3,4-tetrahydro-naphthalene.	GIV, TBK.
p-Allylanisole-----	GIV.
Allyl phenoxycetate-----	GIV.
-4-Allylveratrole (Eugenyl methyl ether)-----	FB, GIV, TBK.
*Anethole (p-Propenylanisole)-----	FB, GIV, GLD, HW, HPC.
*p-Anisaldehyde (p-Methoxybenzaldehyde)-----	GIV, ICO, OPC, TBK.
Anisole (Methyl phenyl ether)-----	GIV, ICO.
Anisyl acetate-----	GIV, TBK.
Anisyl alcohol-----	GIV, TBK.
*Benzophenone-----	G, GAM, GIV, ICO, NEO, TBK.
*Benzyl acetate-----	GIV, OPC, RDA, SHL, TBK.
*Benzyl alcohol-----	BPC, GIV, NEO, OPC, SHL, TBK, TNP.
Benzyl benzoate-----	MON, TBK, TNP.
*Benzyl butyrate-----	FB, GIV, TBK.
*Benzyl cinnamate-----	GIV, ICO, TBK.
Benzyl ether-----	OPC, SHL.
Benzyl formate-----	TBK.
Benzyl glyceryl acetal-----	GIV.
Benzyl isoeugenyl ether-----	GIV, TBK.
Benzyl isopentyl ether-----	GIV.
Benzyl phenylacetate (Benzyl α -toluate)-----	TBK.
*Benzyl propionate-----	FB, GIV, OPC, TBK.
Benzyl salicylate-----	GIV, TBK.
α -Bromostyrene-----	TBK.
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 (α -Methyl- β -(p-tert-butylphenyl)propionaldehyde).	GIV.
5-tert-Butyl-1,2,3-trimethyl-4,6-dinitrobenzene (5-tert-Butyl-4,6-dinitrohemimellitene).	GIV.
5-tert-Butyl-2,4,6-trinitro-m-xylene (Musk xylol)-----	GIV.
Carvacrol (2-p-Cymenol)-----	GIV.
*Cinnamaldehyde-----	FB, GIV, OPC, RDA, TBK.
Cinnamic acid-----	BPC.
Cinnamyl acetate-----	FB, GIV, TBK.
*Cinnamyl alcohol-----	FB, GIV, NEO, RDA, TBK.
Cinnamyl anthranilate-----	FEL, GIV, RT.
Cinnamyl cinnamate-----	TBK.
Cinnamyl formate-----	TBK.
Cinnamyl isovalerate-----	TBK.
Cinnamyl propionate-----	GIV.
trans-Decahydro-2-naphthol-----	IFF.
p, α -Dimethylbenzyl alcohol (p-Methylphenylmethylcarbinol)---	GIV.
α , α -Dimethylphenethyl acetate-----	GIV, IFF, RDA, TBK.
α , α -Dimethylphenethyl alcohol-----	IFF.
α , α -Dimethyl-3-phenyl-1-propanol-----	IFF, TBK.

TABLE 14B.--Flavor and perfume materials for which U.S. production or sales were reported, identified by manufacturer, 1962--Continued

Material	Manufacturers' identification codes (according to list in table 23)
FLAVOR AND PERFUME MATERIALS, CYCLIC--Continued	
Benzenoid and Naphthalenoid--Continued	
4,6-Dinitro-1,1,3,3,5-pentamethylindan-----	GIV.
Diphenylmethane-----	TBK.
1,3-Diphenyl-2-propanone (Dibenzyl ketone)-----	GIV.
Dipropylene glycol salicylate-----	SHL.
*2-Ethoxynaphthalene (Ethyl β -naphthyl ether)-----	GIV, ICO, TBK.
Ethyl anisate-----	ICO.
Ethyl anthranilate-----	FB, FMT.
Ethyl benzoate-----	TBK.
Ethyl cinnamate-----	GIV, TBK.
Ethyl α , β -epoxy- β -methylhydrocinnamate-----	GIV, TBK.
2-Ethylhexyl salicylate-----	FEL.
*Ethyl 3-phenylglycidate-----	GIV, TBK, VPC.
Ethyl salicylate-----	TBK.
Ethylvanillin-----	MON, RDA.
*Eugenol-----	FB, GIV, ICO, LUE, NEO, PEN, RT, TBK, UNG, VLY.
Eugenol acetate-----	FB, GIV.
*Hexylcinnamaldehyde-----	GIV, IFF, TBK.
Hydratropaldehyde (α -Phenylpropionaldehyde)-----	GIV.
Hydratropaldehyde, dimethyl acetal-----	GIV.
Hydrocinnamaldehyde (3-Phenylpropionaldehyde)-----	GIV, TBK.
2-Hydroxypropyl p-N,N-bis(2-hydroxypropyl)aminobenzoate-----	SHL.
Isobutyl cinnamate-----	TBK.
*Isobutyl phenylacetate (Isobutyl α -toluate)-----	FB, GIV, MYW, OPC, TBK.
*Isobutyl salicylate-----	FB, GIV, TBK.
*Isoeugenol-----	FB, GIV, RDA, SHL, TBK, VLY.
Isoeugenyl acetate-----	TBK.
*Isopentyl salicylate (Amyl salicylate)-----	FB, GIV, ICO, OPC, TBK.
p-Isopropylbenzaldehyde (Cumaldehyde)-----	GIV.
p-Isopropyl- α -methylhydrocinnamaldehyde (Cyclamen aldehyde)	GIV, RDA, VPC.
4'-Methoxyacetophenone-----	GIV, ICO.
2-Methoxynaphthalene (Methyl β -naphthyl ether)-----	GIV, TBK.
4-(α -Methoxyphenyl)butanone-----	TBK.
4'-Methylacetophenone (Methyl p-tolyl ketone)-----	TBK.
p-Methylanisole (p-Cresyl methyl ether)-----	GIV, TBK.
*Methyl anthranilate-----	DOW, FB, GIV, MEE, OPC, UNG.
Methyl benzoate-----	HN, TBK.
* α -Methylbenzyl acetate-----	GIV, TBK, VLY.
p-Methylbenzyl acetate-----	ICO, IFF.
* α -Methylcinnamaldehyde-----	GIV, VLY, VPC.
*Methyl cinnamate-----	FB, ICO, TBK.
Methyl N-methylanthranilate (Dimethyl anthranilate)-----	GIV, OPC.
Methyl phenylacetate (Methyl α -toluate)-----	GIV, TBK.
*Methyl salicylate (Synthetic wintergreen oil)-----	OPC, DOW, HN, MON, PEN.
* α -Pentylcinnamaldehyde (α -Amylcinnamaldehyde)-----	GIV, IFF, NED, RDA, TBK, VLY.
*Phenethyl acetate-----	GIV, IFF, NED.
Phenethyl alcohol-----	GIV, IFF, OPC.
Phenethyl formate-----	IFF.
*Phenethyl isobutyrate-----	GIV, IFF, TBK, VPC.
Phenethyl isovalerate-----	FB, GIV.
Phenethyl methacrylate-----	GIV.
Phenethyl phenylacetate (Phenethyl α -toluate)-----	GIV, IFF, TBK.
Phenethyl propionate-----	IFF.
Phenethyl salicylate-----	IFF, TBK.
*2-Phenoxyethyl isobutyrate-----	GIV, IFF, TBK.
Phenylacetaldehyde (α -Tolualdehyde)-----	GIV, TBK.

TABLE 14B.--Flavor and perfume materials for which U.S. production or sales were reported, identified by manufacturer, 1962--Continued

Material	Manufacturers' identification codes (according to list in table 23)
FLAVOR AND PERFUME MATERIALS, CYCLIC--Continued	
<i>Benzenoid and Naphthalenoid--Continued</i>	
Phenylacetaldehyde, dimethyl acetal----- o-Phenylanisole (2-Methoxybiphenyl)----- 4-Phenyl-3-buten-2-one (Benzylidene acetone)----- *3-Phenyl-1-propanol (Hydrocinnamic alcohol)----- 3-Phenyl-1-propyl acetate----- 5-Propenyl-2-ethoxyphenol (Propenylguaiethol)----- *4-Propenylveratrole (Isoeugenyl methyl ether)----- p-Propylanisole----- Salicylaldehyde----- Styrolyl acetate----- 1,2,3,6-Tetrahydro-2,3,5-trimethylbenzaldehyde----- p-Tolualdehyde (p-Methylbenzaldehyde)----- p-Tolyl acetate (p-Cresyl acetate)----- p-Tolyl isobutyrate (p-Cresyl isobutyrate)----- p-Tolyl phenylacetate (p-Cresyl α -toluate)----- α -(Trichloromethyl)benzyl acetate (Rosetone)----- p-3, α -Trimethylphenethyl alcohol----- Vanillin----- All other-----	GIV, TBK. GIV. FB, MYW. FB, GIV, OPC, TBK. GIV. ICO, SHL. GIV, ICO, TBK. GIV. DOW. FB. IFF. GIV, HN. GIV. IFF. GIV, TBK. ICO, TBK. IFF. MON, SILV. FB, VPC.
<i>Terpenoid, Heterocyclic, and Alicyclic</i>	
Acetyl ethyl tetramethyl tetralin----- Allyl ionone----- Amyris acetate----- Bornyl acetate----- 4-tert-Butylcyclohexanol----- 4-tert-Butylcyclohexyl acetate----- Cadinene----- Carvone (Carvol)----- *Caryophyllene----- Cedranone----- Cedrenol----- Cedrol----- *Cedryl acetate----- *Citral (Geranial)----- Citral dimethyl acetal----- Citronellal----- *Citronellol----- *Citronellyl acetate----- Citronellyl butyrate----- *Citronellyl formate----- *Citronellyl isobutyrate----- Citronellyl oxycetaldehyde----- Citronellyl propionate----- *Coumarin----- Cyclohexadecanolide----- Cyclohexylcyclohexanone----- Cyclopentanone----- Dihydrogeraniol----- Dihydroterpinyl acetate----- *Essential oils, chemically modified: Cedarwood acetate----- Citronella oil, acetone condensation product----- Ethyl oxyhydrate----- Quaiacwood acetate-----	TBK. GIV, IFF. GIV, TBK. FEL, GIV. IFF. DOW, IFF, VPC. FB. FB, FRM, OPC. FB, GIV, GLD. TBK. GIV. GIV, IFF, TBK, UNG. GIV, IFF, NEO, TBK, UNG. FB, GIV, LUE, MYW, NEO, RT, TBK, UNG, VLY. GIV, VLY. FB, GIV, IFF, TBK. FB, GIV, IFF, OPC, TBK, VLY. GIV, IFF, TBK, VLY. GIV, VLY. FB, GIV, IFF, TBK. GIV, IFF, TBK. IFF, TBK. IFF. DOW, MON, NEO, RDA, TBK. IFF. GIV. ARA. ICO. GIV. FB. CP. FEL, FLO, LUE, RT, VND, VPC. FB, GIV, TBK.

TABLE 14B.-- Flavor and perfume materials for which U.S. production or sales were reported, identified by manufacturer, 1962--Continued

Material	Manufacturers' identification codes (according to list in table 23)
FLAVOR AND PERFUME MATERIALS, CYCLIC--Continued	
Terpenoid, Heterocyclic, and Alicyclic--Continued	
*Essential oils, chemically modified--Continued	
Lavandin, acetylated-----	FEL, UNG.
Rosemary oil, acetylated-----	FB, UNG.
Sassafras oil, hydrogenated-----	GIV.
Spike lavender oil, acetylated-----	FB.
α -Purfural mercaptan-----	RT.
*Geraniol-----	FB, GIV, GLD, IFF, NEO, OPC, SHL, TBK, UNG, VLY.
*Geranyl acetate-----	FEL, GIV, IFF, NEO, TBK, UNG, VLY.
Geranyl butyrate-----	GIV.
*Geranyl formate-----	GIV, IFF, TBK, VLY.
Geranyl isovalerate-----	FB, TBK.
Geranyl phenylacetate (Geranyl α -toluate)-----	GIV, TBK.
2-Hexyl-2-cyclopenten-1-one-----	IFF.
*Hydrocoumarin (3,4-Dihydrocoumarin)-----	FB, GIV, ICO, NEO, OPC, TBK.
*Hydroxycitronellal-----	GIV, GLD, IFF, NEO, OPC, TBK, VLY.
*Hydroxycitronellal, dimethyl acetal-----	FB, GIV, TBK.
4-(4-Hydroxy-4-methylpentyl)-3-cyclohexene-1-carboxaldehyde-----	IFF.
Indole-----	DOW, GIV.
*Ionones:	
α -Ionone-----	GIV, MYW, NEO, TBK.
β -Ionone-----	MYW, NEO, TBK.
Ionone (α - and β -)-----	GIV, IFF, LUE, MYW, TBK.
Isoborneol (Isobornyl alcohol)-----	RDA, TBK.
*Isobornyl acetate-----	FB, GIV, OPC, RDA, TBK, UNG.
Isobutylfuryl propionate-----	VPC.
Isobutylquinoline-----	FMT, IFF.
Isopropylquinoline-----	FMT.
Isopulegol-----	GIV.
Isosafrole-----	GIV.
d-Limonene-----	FLA, RT, SKG.
*Linalool-----	FB, FEL, GIV, GLD, HOF, IFF, NEO, SHL, TBK, UNG.
*Linalyl acetate-----	DOW, FB, GIV, GLD, HOF, LUE, NEO, SHL, TBK, UNG.
Linalyl cinnamate-----	TBK.
Linalyl isobutyrate-----	TBK.
Linalyl propionate-----	FB.
p-Menth-1-en-3-one-----	GIV.
*Menthol, synthetic:	
Tech-----	GIV, ICO.
U.S.P.-----	GIV, GLD, HNW, NEO.
Menthone-----	GIV, HNW, NEO.
Menthyl acetate-----	GIV.
6-Methylcoumarin-----	GIV.
*Methylionones:	
Methyl- α -ionone-----	GIV, IFF, MYW, NEO.
Methyl- β -ionone-----	IFF, TBK.
Methylionone (α - and β -)-----	GIV, LUE, MYW, TBK, UNG.
Methyl- γ -ionone-----	TBK.
Methyl- δ -ionone-----	TBK.
7-Methyl-3-methylene-1,6-octadiene-----	IFF.
*Nerol-----	FB, GIV, GLD, IFF, TBK.
*Nonyl acetate-----	DOW, SHL, VLY.
Phellandrene-----	IOC.
*Piperonal (Heliotropin)-----	GIV, NEO, SHL, TBK.
Pseudolinalyl acetate (Myrcenyl acetate, principally)-----	IFF.

TABLE 14B.--Flavor and perfume materials for which U.S. production or sales were reported, identified by manufacturer, 1962--Continued

Material	Manufacturers' identification codes (according to list in table 23)
FLAVOR AND PERFUME MATERIALS, CYCLIC--Continued	
<i>Terpenoid, Heterocyclic, and Alicyclic--Continued</i>	
*Rhodinol-----	FB, FEL, GIV, IFF, LUE, RDA, SHL, UNG.
Rhodinyl acetate-----	FB, GIV, IFF.
Rhodinyl formate-----	GIV.
Safrole-----	FB, GIV.
Santalol-----	GIV, IFF.
Santalyl acetate-----	GIV.
Sweeteners, synthetic:	
Cyclohexanesulfamic acid-----	ABB.
Cyclohexanesulfamic acid, calcium salt-----	ABB, NRS, PBY.
Cyclohexanesulfamic acid, sodium salt-----	ABB, NRS.
Saccharin-----	MEE, MON.
Saccharin, calcium salt-----	MEE, x.
Saccharin, sodium salt-----	MEE, MON.
*Terpineols:	
α -Terpineol-----	GLD, HNW, HPC.
β -Terpineol-----	HNW.
Terpineol (α - and β -)-----	GIV, NEO.
Terpinol hydrate (Terpin hydrate), tech-----	HPC.
*Terpinyl acetate-----	GIV, HNW, OPC, RDA, TBK, UNG.
*Terpinyl propionate-----	GIV, TBK.
Tetrahydro allicimene-----	x.
3,5,5-Trimethylcyclohexanol-----	ICO.
Vertofix (Acetyl cedrene, principally)-----	x.
Vetivenol-----	FB, GIV, TBK.
*Vetiveryl acetate-----	GIV, IFF, NEO, TBK, VLY.
All other-----	FB, TBK.
FLAVOR AND PERFUME MATERIALS, ACYCLIC	
Allyl heptanoate (Allyl enanthate)-----	DOW, FB, TBK.
*Allyl hexanoate (Allyl caproate)-----	DOW, FB, GIV, TBK.
Allyl isothiocyanate (Synthetic mustard oil)-----	ICO, MRT, OPC.
Allyl sulfide (Diallyl sulfide)-----	DOW, RT.
Butyl butyrate-----	OPC, TBK.
Butyl isovalerate-----	TBK.
Butyrene (Di-n-propyl ketone)-----	TBK.
Butyryl butyl lactate-----	ICO.
Decanal (Capraldehyde) (C ₁₀)-----	GIV, TBK.
Diethyl sebacate (Ethyl sebacate)-----	FEL, TBK.
Diethyl succinate-----	UCC.
Diethyl tridecanedioate (Ethylene brassylate)-----	RDA.
3,6-Dimethyl-3-octanol-----	AIR.
*3,7-Dimethyl-1-octanol-----	GIV, TBK, VPC.
3,7-Dimethyl-3-octanol-----	GIV.
Dimethyl succinate-----	ICO.
*Ethyl butyrate-----	FB, NW, RT, TBK.
Ethyl decanoate (Ethyl caprate)-----	FB.
Ethyl decylate-----	TBK.
*Ethyl heptanoate (Ethyl enanthate)-----	FB, FEL, TBK.
Ethyl hexanoate (Ethyl caproate)-----	FB, NW, TBK.
Ethyl isovalerate-----	FB, TBK.
Ethyl laurate-----	FB.
Ethyl nonanoate (Ethyl pelargonate)-----	FB, TBK.
Ethyl octanoate (Ethyl caprylate)-----	FB.
Glutamic acid, monopotassium salt-----	GRW.

TABLE 14B.--Flavor and perfume materials for which U.S. production or sales were reported, identified by manufacturer, 1962--Continued

Material	Manufacturers' identification codes (according to list in table 23)
FLAVOR AND PERFUME MATERIALS, ACYCLIC--Continued	
*Glutamic acid, monosodium salt (Monosodium glutamate)-----	COM, GRW, HPC, IMC, MRK, PFZ.
Heptanal (Enanthaldehyde) (C ₇)-----	BAC.
Heptyl alcohol (Heptanol)-----	BAC, UCC.
Heptyl ether (Enanthic ether)-----	TBK.
cis-3-Hexen-1-ol-----	x.
Hexyl octanoate (Hexyl caprylate)-----	TBK.
cis-3-Hexyn-1-ol-----	x.
3-Hydroxy-2-butanone (Acetoin)-----	FMT.
4-Hydroxynonanoic acid, γ -lactone (γ -Nonalactone)-----	GIV, TBK.
4-Hydroxyoctanoic acid, γ -lactone (γ -Octalactone)-----	GIV, TBK.
*4-Hydroxyundecanoic acid, γ -lactone (γ -Undecalactone)-----	FB, GIV, TBK.
Isobutyl acetate-----	FB.
Isodecanoil acetate-----	VLX.
*Isopentyl butyrate (Amyl butyrate)-----	FB, GIV, NW, RT, TBK.
Isopentyl formate (Amyl formate)-----	TBK.
Isopentyl heptanoate (Amyl caproate)-----	FEL.
Isopentyl isovalerate (Amyl isovalerate)-----	FB, TBK.
Isopentyl propionate-----	FB.
Lauraldehyde (Dodecyl aldehyde) (C ₁₂)-----	GIV, TBK.
6-Methyl-5-hepten-2-one-----	GIV, TBK.
*2-Methylundecanal (2-Methylnonylacetaldehyde)-----	GIV, TBK, VFC.
Myristaldehyde-----	GIV.
Nonanal (Pelargonaldehyde) (C ₉)-----	GIV, TBK.
Nonanediol monoacetate-----	GIV.
Nonanol-----	TBK.
Nonyl acetate-----	TBK.
Nonyl acetate, isomeric (Tepyl acetate)-----	IFF, TBK.
Octanal (Caprylaldehyde) (C ₈)-----	GIV, IFF, TBK.
Octanol-----	GIV.
n-Octyl acetate-----	FB, TBK.
n-Octyl formate-----	FB.
n-Octyl isobutyrate-----	FB, ICC.
Omega decenol-----	x.
Trimethylundecenal-----	VFC.
2,6,10-Trimethyl-9-undecen-1-ol-----	GIV.
Undecanal (Hendecanaldehyde) (C ₁₁)-----	GIV, TBK.
2-Undecanone (Methyl nonyl ketone)-----	GIV.
Undecenal (Hendecenaldehyde)-----	GIV, TBK.
10-Undecen-1-ol-----	GIV.
Valerolactone-----	GIV.

Plastics and Resin Materials

TABLE 15B.--Plastics and resin materials for which U.S. production or sales were reported, identified by manufacturer, 1962

[Plastics and resin materials for which separate statistics are given in table 15A are marked below with an asterisk (*); chemicals not so marked do not appear in table 15A because the reported data are accepted in confidence and may not be published. Manufacturers' identification codes shown below are taken from table 23. 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 23)
PLASTICS AND RESIN MATERIALS, BENZENOID	
*Coumarone-indene resins-----	ACP, DSO, ENJ, ICF, NEV, NSP, PAI.
Epoxy resins:	
*Unmodified-----	CBA, DOW, JOD, RCI, SHC, UCP.
*Modified-----	ACP, AMF, BEN, CD, CM, DOW, DSO, FMP, GLD, ICF, ISO, JOB, KPT, MID, MNP, MRB, ORO, OSB, PPG, RED, SHC, SRR, WAS.
*Petroleum polymer and condensation resins-----	ACC, CFX, DUF, KPI, MCA, NEV, NSP, PAI, VEL, VSV.
*Phenolic and other tar-acid resins-----	ABS, ACP, ACR, ADM, AMR, ARK, BGC, BME, BOR, CAT, CBC, CD, CIK, CLR, CPV, DA, DSO, DUR, EVM, EW, FCD, FOM, GE, GEI, GRC, GRV, HER, HKD, HVG, ICF, INL, IRC, IRI, KMD, KPC, KRM, MCA, MID, MMM, MON, MRB, NCI, NPI, NPP, NTC, NVF, OCF, ORO, PFP, PGU, PLS, PYR, PYZ, RAB, RCD, RCI, REZ, RGC, RH, RMC, SCN, SHA, SIM, SNC, SPL, SW, SYR, SYV, TAY, TKL, UCP, USR, VAR, VSV, WAS, WCA, WRD, x.
*Phthalic alkyd resins:	
*Unmodified-----	ABR, ACP, ACY, ADM, AMF, APV, ARO, BAL, BEN, BOY, BRU, CIK, CPL, CPV, DAV, DEG, DSO, DUP, EW, FAR, FCD, FLW, FRE, FSH, GEI, GIL, GLD, GRV, HAN, HPC, HRS, ICF, JAM, JOD, JWL, KEL, KPV, KYN, LON, MCC, MCW, MID, MMM, MR, MRW, NCI, NON, NPV, ONX, ORO, PFP, PPG, PRT, RCI, RED, REL, RH, RMC, SCF, SCN, SED, SIP, SPP, SRR, SW, TV, UCP, USC, VTV, WAS, WPC.
*Modified-----	ACP, ACY, ADM, AMF, APV, ARO, BAL, BEN, BOY, CIK, CM, CPV, DAV, DSO, DUN, DUP, EW, FAR, FBR, FCD, FLW, FOC, FRE, FSH, GEI, GIL, GLD, GRG, GRV, HPC, HRS, ICF, JOD, JSC, JWL, KYN, LON, MCC, MCW, MID, MNP, MR, MRW, NON, NTL, ORO, OSB, PER, PFP, PPG, PRT, QCF, RCI, REL, RH, RMC, SCN, SED, SIP, SPP, SRR, SW, TV, VTV, WPC.
*Polyester resins-----	ACP, ACR, ACY, ADM, AMR, APD, BRR, CEL, CIK, CPV, DA, DAV, DSO, EKT, EPC, EW, FCD, FMP, FRE, GLD, GNT, ORG, GRV, GYR, HKD, HYC, ICF, INM, IPC, LAS, MCW, MFG, MOB, MRD, NOP, ORO, OSB, PFP, PLU, PPG, RCI, RH, RTF, SCN, SIC, SW, USR, UTR, VAL, x.
*Polyurethane and diisocyanate resins-----	ABE, ADM, ARO, ARO, BFG, CWN, DUF, GPM, HAP, IPI, ISO, JWL, MID, MMM, NOP, NPV, PCI, PEL, PFP, PYR, QUN, RCI, SCN, SFC, SW, UBS, WTC.
*Styrene resins:	
*Styrene-acrylonitrile (SAN), and acrylonitrile- butadiene-styrene (ABS) materials.	ACY, BFG, BOR, DOW, DUP, FIR, GRD, MON, UCP, USR, x.
*Styrene and copolymer resins (containing 50% or more styrene).	APV, ARO, BDN, BFG, BOR, BPL, CSD, DOW, DSO, DUF, FG, GLD, GNT, GOR, GRD, GRP, GYR, ILC, KPP, MCB, MON, MPL, NSP, PLA, PFG, RCC, RMC, SCC, SHC, SOL, TIC, UBS, UCF, UNC, USR, WAS.
Styrene-divinyl benzene copolymer-----	DOW, ICF, IOC, MRT, POL, RH.
All other styrene resins-----	ACC, ACP, ACY, FIR, GYR, JOB, JOD, JSC, MON, NCI, ONX, PAI, PCI, PFG, SHC, SPI, SPP, UBS, x.
*Styrene-alkyd polyesters and styrenated alkyds-----	ACY, ACP, ADM, ARO, BOR, DEG, DUF, EW, FLW, GLD, ICF, KEL, PAV, RCI, RH, SCN, SPP, SW, WTC.
Toluenesulfonamide resins-----	MON.
All other benzenoid plastics and resin materials-----	ARO, HAP, IOC, MON, NEV, NPV, RH, UCP.

TABLE 15B.--Plastics and resin materials for which U.S. production or sales were reported, identified by manufacturer, 1962--Continued

Material	Manufacturers' identification codes (according to list in table 23)
PLASTICS AND RESIN MATERIALS, NONBENZENOID	
Acrylic resins:	
Polymethylmethacrylate resins-----	ACD, ACY, CAT, DUF, ICF, RCI, RH, SAR, USF, WIC.
All other acrylic resins-----	ACV, APV, ARO, CAT, CLD, DOW, DUP, GLC, GLX, GRD, HMN, ICF, IOC, JCC, JOD, JSC, MEE, MMM, MRT, NTL, PCI, PII, QUN, RCI, RH, TRC, UBS, VAL, x.
*Alkyd resins (except phthalic)-----	ACP, ACY, ADM, AMF, AMR, APT, APV, BEN, CFV, DSO, DUN, DUF, EW, FAR, FCD, FLW, FOC, FSH, GEI, GLD, GRV, HPC, ICF, LON, MCC, MCW, MMM, ORO, QSB, PFG, PRT, RCI, RH, RMC, RUB, SCF, SCN, SPT, SRB, SW, TV, UCF, VTV.
*Dicyandiamide resins-----	ACV, APX, DEP, GGY, JSC, MRA, NOF, ONX, RFC, SNW, TRC, VAL.
Fluorocarbon resins-----	DUP, FIR, MMM.
*Polyamide resins-----	BCM, DUP, FG, FIR, GNM, KRM, NAC, POL, SNW, SPN.
*Polyethylene resins:	
*Density 0.940 and below-----	ACP, CEL, DOW, DUP, EXK, ENJ, GRP, KFP, MON, PLC, RCC, SPN, UCF, USI.
*Density over 0.940-----	ACP, CEL, DOW, DUP, ENJ, GGC, GRP, HPC, KFP, MON, PLC, UCF, USI.
*Polypropylene resins-----	AVS, DOW, EXK, ENJ, FIR, HPC, NVT, SHC.
*Polyterpene resins-----	ACP, CBY, HN, MMM, PAI, SCN.
*Rosin modifications:	
*Rosin and rosin esters, unmodified (ester gums)-----	ACP, ADM, APV, CBY, DPP, FAR, FRF, HPC, MCC, NCI, RCI, SCN, SRR, TV.
*All other rosin modifications-----	ACP, ADM, APV, BEN, CBY, CPT, DFP, DUN, FAR, FLW, FRF, HPC, JOD, KRM, KYN, MCC, MID, MON, NCI, QSB, RCI, RED, RH, SCN, SHA, UCP, VSV, x.
*Silicone resins-----	ACP, DCC, SPD, UCS.
*Urea and melamine resins:	
*Melamine-formaldehyde type-----	ACE, ACY, APV, AV, CAP, CAT, CFV, CRC, DAN, DUF, FOM, GLD, GRV, ICF, JOD, MON, MRA, NPP, PPG, RCI, RH, SW, TRC, WRD.
*Urea-formaldehyde type-----	ACP, ACY, AMR, APX, AV, BGC, BOR, BRB, BRY, CAP, CAT, CBC, CLR, CRC, DA, DAN, DEP, DUF, EDY, GDN, GGY, GLD, GRV, HNC, HPC, HRT, IPR, JOD, JSC, MDP, MMM, MEN, MRA, NPI, NTC, ONX, PC, PGU, PFG, QCF, RCI, RH, RFC, S, SFA, SIM, SNW, SOB, SW, SYT, SYV, UPL, USO, VAL, VAR, WIC, WON, WRD, x.
*Vinyl and vinyl copolymer resins:	
*Polyvinyl acetate-----	AIR, AML, APV, BFG, BOR, BOY, CEL, CST, DAN, DAV, DSO, DUF, FAR, FC, FLH, GLD, GRD, HAN, HRT, JOD, JSC, MCC, MCW, MRN, NPV, NSC, PCI, PGU, PII, PFG, QCF, RCI, REL, RFC, SCO, SED, SH, SHM, SRC, SW, SYR, UCF, USC, WAS, WIC, x.
*Polyvinyl alcohol-----	AIR, BOR, DSO, DUF, FC, GLD, PFG, SRC.
Polyvinyl butyral-----	DUF, PII, RMC, SRC, UCF.
*Polyvinyl chloride and copolymer resins (containing 50% or more polyvinyl chloride).-----	AME, ATU, BFG, BOR, CLR, CRY, CUC, DA, DOW, DSO, ESC, FUF, FIR, GNT, GRA, GYR, KYS, MGN, ONX, PWT, PFG, RUB, THC, UCF, USR.
All other vinyl resins-----	ACP, BEN, GLD, DOW, FC, FCD, G, GRD, JOD, MR, SRC, SW, x.
All other nonbenzenoid plastics and resin materials-----	ACE, BEN, DUP, GE, GEI, GLD, HPC, HVG, IOC, JOC, KRM, MDB, PLU, PTT, UCF, WTC.

Rubber-Processing Chemicals

TABLE 17B.--Rubber-processing chemicals for which U.S. production or sales were reported, identified by manufacturer, 1962

[Rubber-processing chemicals for which separate statistics are given in table 17A are marked below with an asterisk (*); chemicals not so marked do not appear in table 17A because the reported data are accepted in confidence and may not be published. Manufacturers' identification codes shown below are taken from table 23. 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 23)
RUBBER-PROCESSING CHEMICALS, CYCLIC	
*Accelerators:	
*Aldehyde-amines:	
Acetaldehyde-aniline-----	USR.
n-Butyraldehyde-aniline-----	DUP, MON, USR.
Butyraldehyde-butylidene-aniline-----	MON.
N,N'-Dibutyldithioadipamide-----	DUP.
4,4'-Dithiodimorpholine-----	MON.
3-Ethyl- β -propylacrylanilide-----	CCO.
Formaldehyde-p-toluidine (Methylene-p-toluidine)-	DUP.
Heptaldehyde-aniline-----	USR.
Triethyltrimethylenetriamine-----	USR.
p-Benzoquinone dioxime-----	CTA, DUP.
Dibenzoyl-p-quinonedioxime-----	CTA, USR.
Dibenzylamine-----	MLS, USR.
Di-N-pentamethylenethiuram tetrasulfide-----	DUP, VNC.
*Dithiocarbamic acid derivatives:	
Dibenzylidithiocarbamic acid, sodium salt-----	USR.
Dibenzylidithiocarbamic acid, zinc salt-----	USR.
Dibutylidithiocarbamic acid, N,N-dimethylcyclohexyl- amine salt.	MON.
Dibutylidithiocarbamic acid, diphenylguanidine salt----	CCO.
Dimethylethylene diphenylidithiocarbamic acid, lead salt.	CCO.
2,4-Dinitrophenyl dimethylidithiocarbamate-----	USR.
Piperidinecarbodithioic acid, piperidinium-potassium salts.	DUP.
Guanidines:	
Diccatechol borate, di-o-tolylguanidine salt-----	DUP.
Diphenylguanidine-----	ACY.
Diphenylguanidine phthalate-----	MON.
Di-o-tolylguanidine-----	ACY, DUP.
1,2,3-Triphenylguanidine-----	NAC.
2-Imidazole-2-thiol-----	DUP, RBC.
Poly-p-dinitrosobenzene-----	DUP.
*Thiazole derivatives:	
2-Benzothiazyl-N,N-diethylthiocarbonyl sulfide-----	PAS.
1,3-Bis(2-benzothiazolylmercaptoethyl)urea-----	MON.
N-tert-Butyl-2-benzothiazolesulfenamide-----	MON.
*N-Cyclohexyl-2-benzothiazolesulfenamide-----	ACY, BFG, MON, USR.
N,N-Diisopropyl-2-benzothiazolesulfenamide-----	ACY.
N-(2,6-Dimethylmorpholino)-2-benzothiazolesulfenamide--	MON.
*2,2'-Dithiobis(benzothiazole)-----	ACY, BFG, GYR, MON, USR.
*2-Mercaptobenzothiazole-----	ACY, BFG, GYR, MON, USR.
2-Mercaptobenzothiazole, sodium salt-----	ACY, GYR, MON.
2-Mercaptobenzothiazole, zinc salt-----	ACY, GYR, USR.
4-Morpholinyl-2-benzothiazyl disulfide-----	x.
N-Oxydiethylene-2-benzothiazolesulfenamide-----	ACY, MON.
Thiazoline-2-thiol-----	ACY.
All other cyclic accelerators-----	DUP, VNC.
Antioxidants:	
Aldehyde- and acetone-amines:	
Acetaldehyde-aniline hydrochloride-----	USR.
Aldol-x-naphthylamine condensate-----	BFG.
Diphenylamine-acetone-----	BFG, USR.
Phenyl-2-naphthylamine-acetone-----	USR.

TABLE 17B.--Rubber-processing chemicals for which U.S. production or sales were reported, identified by manufacturer, 1962--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
RUBBER-PROCESSING CHEMICALS, CYCLIC--Continued	
Antioxidants--Continued	
*Amino and hydroxy compounds:	
*Amino compounds:	
p-Anilinophenol-----	BFG, DUP.
N-sec-Butyl-N'-phenyl-p-phenylenediamine-----	USR.
N-Cyclohexyl-N'-phenyl-p-phenylenediamine-----	USR.
Diarylarylene diamines, mixed-----	GYR.
N,N'-Di(1-ethyl-3-methylpentyl)-p-phenylenediamine-----	EKT, UFM.
1,2-Dihydro-6-dodecyl-2,2,4-trimethylquinoline-----	MON.
1,2-Dihydro-6-ethoxy-2,2,4-trimethylquinoline-----	MON.
1,2-Dihydro-2,2,4-trimethylquinoline-----	BFG, MON.
p,p'-Dimethoxydiphenylamine-----	DUP.
N,N'-Di(1-methylheptyl)-p-phenylenediamine-----	EKT, UFM.
N,N'-Di-2-naphthyl-p-phenylenediamine-----	BFG.
4,4'-Diocetyldiphenylamine-----	BFG.
N,N'-Di-2-octyl-p-phenylenediamine-----	BFG.
N,N'-Diphenylethylenediamine-----	CCO, NOP, x.
*N,N'-Diphenyl-p-phenylenediamine-----	BFG, DUP, USR.
N,N'-Diphenyl-1,3-propanediamine-----	CCO.
N,N'-Di-o-tolylethylenediamine-----	CCO.
p-Isopropoxydiphenylamine-----	BFG.
N-Isopropyl-N'-phenyl-p-phenylenediamine-----	MON, USR.
4,4'-Methylenedianiline-----	USR.
Octyldiphenylamine-----	USR.
Octyldiphenylamine, alkylated-----	PAS.
Octyldiphenylamine mixture (mono-, nonyl-, and di-)--	BFG.
N-Phenyl-1-naphthylamine-----	DUP.
N-Phenyl-2-naphthylamine-----	BFG, DUP.
Tetramethyldiphenylethylenediamine-----	NOP.
p-(p-Toluenesulfonamide)diphenylamine-----	USR.
*Hydroxy compounds:	
p-Benzyloxyphenol-----	BFG.
4,4'-Butylidenebis(6-tert-butyl-m-cresol)-----	MON.
2,5-Di(1,1-dimethylpropyl)hydroquinone-----	MON.
N-Lauroyl-p-aminophenol-----	MIS.
2,2'-Methylenebis(6-tert-butyl-p-cresol)-----	ACY.
2,2'-Methylenebis(6-tert-butyl--ethylphenol)-----	ACY.
*Phenol, alkylated-----	BFG, CCO, GYR, MEE, PAS, PIT, USR.
Phenol, hindered-----	DUP, GYR.
Phenol, styrenated-----	BFG, GYR.
Phenolic phosphites, alkylated, and butyl bis-phenol, mixed.	BFG.
N-Stearcyl-p-aminophenol-----	MIS.
2,2'-Thiobis(4,6-di-sec-amylphenol)-----	MON.
4,4'-Thiobis(6-tert-butyl-m-cresol)-----	MON.
Blowing agents:	
N,N'-Dimethyl-N,N'-dinitrosoterephthalamide-----	DUP.
Dinitrosopentamethylenetetramine-----	AHC, DUP, NPI.
p,p'-Oxybis(benzenesulfonhydrazide)-----	USR.
Inhibitors, modifiers, and stabilizers:	
Dioresyl disulfide-----	USR.
N,4-Dinitroso-N-methylaniline-----	CTA, MON.
*N-Nitrosodiphenylamine-----	BFG, CTA, GYR, USR.
Nonyl phenyl phosphites, mixed-----	USR.
*Peptizers:	
Aryl mercaptans-----	PIT.
2-Benzamidothiophene, zinc salt-----	ACY.
2',2'''-Dithiobis(benzanilide)-----	ACY.

TABLE 17B.--Rubber-processing chemicals for which U.S. production or sales were reported, identified by manufacturer, 1962--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
RUBBER-PROCESSING CHEMICALS, CYCLIC--Continued	
*Peptizers--Continued	
Dixyllyl disulfides, mixed-----	DUP, PIT.
2-Naphthalenethiol-----	DUP.
Pentachlorobenzenethiol-----	DUP.
Pentachlorobenzenethiol, zinc salt-----	DUP.
Thiocresol-----	PIT.
Thiophenol-----	PIT.
Xylenethiol-----	DUP.
Tackifiers: p-tert-Amylphenol sulfide-----	PAS.
RUBBER-PROCESSING CHEMICALS, ACYCLIC	
*Accelerators:	
n-Butyraldehyde-butylamine-----	DUP.
Di-n-butylammonium oleate-----	DUP.
*Dithiocarbamic acid derivatives:	
*Dibutylidithiocarbamic acid, sodium salt-----	DUP, PAS, USR, VNC.
*Dibutylidithiocarbamic acid, zinc salt-----	ALC, DUP, GYR, PAS, RBC, USR, VNC.
Diethylidithiocarbamic acid, selenium salt-----	VNC.
Diethylidithiocarbamic acid, sodium salt-----	ALC, PAS, USR.
Diethylidithiocarbamic acid, tellurium salt-----	VNC.
*Diethylidithiocarbamic acid, zinc salt-----	ALC, GYR, RBC, USR, VNC.
Dimethylidithiocarbamic acid, bismuth salt-----	VNC.
Dimethylidithiocarbamic acid, copper salt-----	VNC.
Dimethylidithiocarbamic acid, lead salt-----	VNC.
*Dimethylidithiocarbamic acid, potassium salt-----	GYR, PAS, USR.
Dimethylidithiocarbamic acid, selenium salt-----	VNC.
*Dimethylidithiocarbamic acid, sodium salt-----	ALC, BFG, DUP, GYR, PAS.
Dimethylidithiocarbamic acid, sodium salt and sodium polysulfide.	BFG, GNT, USR.
*Dimethylidithiocarbamic acid, zinc salt-----	ALC, DUP, FMN, GYR, PAS, USR, WRC.
All other-----	PAS, VNC.
*Thiurams:	
Bis(dibutylthiocarbamoyl) sulfide-----	USR.
Bis(diethylthiocarbamoyl) disulfide-----	DUP, GYR, PAS.
*Bis(dimethylthiocarbamoyl) disulfide-----	BFG, CLY, DUP, GYR, PAS, RBC, USR, VNC.
*Bis(dimethylthiocarbamoyl) sulfide-----	DUP, GYR, USR.
Thiuram blend-----	VNC.
Xanthates and sulfides:	
Di-n-butylxantho disulfide-----	USR.
Di-isopropylxantho disulfide-----	BFG.
Zinc dibutylxanthate-----	USR.
All other acyclic accelerators:	
3-Ethyl-1,1-dimethyl-2-thiourea-----	VNC.
Ethylenediamine carbamate-----	DUP.
Polyoxyalkylene tetrasulfide-----	TKL.
1,1,3-Trimethyl-2-thiourea-----	VNC.
Blowing agents:	
1,1'-Azobisformamide-----	NPI, USR.
Urea-biuret mixture-----	SW.
Conditioning and lubricating agents:	
Methyl stearyl-10-sulfonic acid, sodium salt-----	DUP.
Mono- and dialkyl acid phosphates, mixed-----	DUP.
Mono- and dialkyl phosphate ammonium salts, mixed-----	DUP.
Peptizers and modifiers:	
Alkyl mercaptans, mixed-----	PLC.
*Dodecyl mercaptans-----	HK, PAS, PLC.
Zinc laurate-----	USR.
All other-----	TKL, USR.

Elastomers (Synthetic Rubbers)

TABLE 18B.--Elastomers (synthetic rubbers) for which U.S. production or sales were reported, identified by manufacturer, 1962

[Elastomers (synthetic rubbers) for which separate statistics are given in table 18A are marked below with an asterisk (*); products not so marked do not appear in table 18A because the reported data are accepted in confidence and may not be published. Manufacturers' identification codes shown below are taken from table 23. 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 23)
ELASTOMERS, CYCLIC	
*Polybutadiene-styrene type (S-type)-----	ASY, BFG, GYF, FIR, FRS, GGC, GNT, GYR, ILC, PLC, RUB, SHC, TUS, URC, USR.
*Polybutadiene-styrene-vinylpyridine type-----	BFG, FIR, GNT, GYR, PLC, USR.
*Polyurethane type-----	BFG, DUF, GNT, NCF, TKL, USR.
ELASTOMERS, ACYCLIC	
Polyacrylate ester type-----	BFG, TKL.
Polybutadiene type-----	FIR, FRS, GYR, SHC, TKL, TUS.
*Polybutadiene-acrylonitrile type (N-type)-----	BFG, FIR, FRS, GYR, HER, ILC, USR.
*Polychloroprene type (Neoprene)-----	DUF.
*Polyisobutylene-isoprene type (Butyl)-----	ENJ.
Polysulfide polymers-----	TKL.
Reaction products of natural rubber-----	GYR, HPC.
*Silicone elastomers-----	DCC, SPD, UCS.
*Stereo elastomers-----	ASY, ENJ, FRS, GGC, GYR, FLC, SHC, TUS.
All other-----	ASY, DUF, ENJ, x.

Plasticizers

TABLE 19B. -- Plasticizers for which U.S. production or sales were reported, identified by manufacturer, 1962

[Plasticizers for which separate statistics are given in table 19A are marked below with an asterisk (*); products not so marked do not appear in table 19A because the reported data are accepted in confidence and may not be published. Manufacturers' identification codes shown below are taken from table 23. 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 23)
PLASTICIZERS, CYCLIC	
Coumarone-indene plasticizer-----	NEV.
Diethylene glycol dibenzoate-----	TNP.
Di-tert-octylphenyl ether-----	DOW.
Diphenyl cyclohexane, o-, m-, p- -----	MON.
Dipropenediol dibenzoate-----	TNP.
N-Ethyl-p-toluenesulfonamide-----	MON.
Isopropylidenediphenoxypropanol-----	DOW.
Naphthalene, alkylated-----	ACC.
Phosphoric acid esters:	
* Cresyl diphenyl phosphate-----	CEL, FMP, KLK, MON, MTR, SFP.
Dibutyl phenyl phosphate-----	MON.
Diphenyl mono-o-xenyl phosphate-----	DOW.
Diphenyl octyl phosphate-----	MON.
Methyl diphenyl phosphate-----	MON.
*Tricresyl phosphate-----	CEL, FMP, KLK, MON, MTR.
*Triphenyl phosphate-----	CEL, DOW, EK, MON, MTR.
*Phthalic anhydride esters:	
Butyl benzyl phthalate-----	GRH, MON.
Butyl cyclohexyl phthalate-----	ACP.
*Butyl decyl phthalate-----	ACP, GRH, PCC, RUB, THC.
*Butyl octyl phthalate-----	ACP, EKT, GRH, MON, PCC, PFZ, UCC.
Butyl phthalyl butyl glycolate-----	MON, NOP.
Di(2-butoxyethyl) phthalate-----	DUP, FMP, GRH, KES, WTC.
*Di-butyl phthalate-----	ACP, AIR, COM, EKT, FMP, GRD, GRH, HAL, KLK, LAS, MON, PFZ, RCI, RUB, SW, WTH, UCC.
*Dicyclohexyl phthalate-----	ACP, DUP, FMP, GRH, MON, OMC.
Didecanoyl phthalate (Dioapryl phthalate)-----	ACP, GRH, WTH.
Diethylene glycol phthalate-----	ARK.
Diethyl phthalate-----	DUP, EKT, GRH, KF, MON.
*Diethyl phthalate-----	ACP, CCA, ENJ, FCP, GRH, PCC.
*Diethyl phthalate-----	ACP, BFG, EKT, ENJ, GRH, HAL, MON, FCC, PFZ, RCI, ROS, RUB, THC, UCC, WTC, WTH.
*Diisodecyl phthalate-----	CEL, DUP, EKT, FMP, KES.
*Di(2-methoxyethyl) phthalate-----	ACP, DUP, EKT, GRH, KF, KLK, MON.
Dimethyl phthalate-----	RCI.
Dinonyl phthalate-----	
Dioctyl phthalates:	
*Di(2-ethylhexyl) phthalate-----	ACP, BFG, EKT, ENJ, FCP, GRH, HAL, MON, PCC, PFZ, RCI, ROS, RUB, SW, THC, UCC, WTC, WTH.
*Diiso-octyl and mixed octyl phthalates-----	ACP, BFG, EKT, ENJ, GDL, GRH, MON, PCC, PFZ, RCI, ROS, RUB, THC, WTC, WTH.
Diphenyl phthalate-----	MON.
*Ditridecyl phthalate-----	ACP, BFG, GRH, MON, PCC, RCI, RUB, THC, UCC.
Ethyl, and methyl, phthalyl ethyl glycolate-----	MON.
*Octyl decyl phthalates:	
*Iso-octyl isodecyl phthalate-----	ACP, BFG, ENJ, GRH, PCC, PFZ, THC, UCC.
*n-Octyl n-decyl phthalate-----	ACP, GRH, HPC, MON, PCC, PFZ, RCI, THC, UCC.
Polyglycol phthalate esters-----	ACP, ARG, FMP, HPC, PFZ.
All other phthalic anhydride esters-----	ACP, ADM, DUP, FCP, FMP, MON, PCC, PFZ, RCI, UCC.

TABLE 19B.--Plasticizers for which U.S. production or sales were reported, identified by manufacturer, 1962--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
PLASTICIZERS, CYCLIC--Continued	
Tetrahydrofurfuryl oleate-----	CCW, EMR.
Toluene sulfonamide, o-, p- mixture-----	MON.
All other cyclic plasticizers-----	AV, EKT, HAL, MON, RUB, SIO, TNP.
PLASTICIZERS, ACYCLIC	
*Adipic acid esters:	
Di(2-(2-butoxyethoxy)ethyl) adipate-----	CCW, FMP, GRH, TKL.
Di(2-ethylhexyl) adipate-----	EKT, FCP, FMP, GRH, HAL, LEH, MON, PCC, PFZ, RCI, RH, RUB, THC, UCC, WM.
Diisobutyl adipate-----	FMP, GRH, HAL.
*Disodecyl adipate-----	ACP, BFG, FMP, GRH, LEH, MON, PCC, PFZ, RCI, RH, RUB, THC, UCC, WTH.
*Disooctyl adipate-----	ACP, BFG, FMP, GDL, GRH, HAL, LEH, MON, NOP, PCC, RCI, RH, RUB, WM, WTH.
*Octyl decyl adipate-----	ACP, BFG, FMP, GRH, LEH, MON, PCC, PFZ, RCI, THC.
All other adipic acid esters-----	ACP, KES, PCC, PFZ, RCI, TKL.
*Azelaic acid esters:	
Di(2-ethylhexyl) azelate-----	DUP, EKT, EMR, GRH, HAL, LEH, PFZ, RCI, THC.
Diisobutyl azelate-----	EKT, HAL, RCI.
Diiso-octyl azelate-----	EMR, GDL, LEH, RCI.
All other azelaic acid esters-----	EMR, PFZ.
Castor oil maleate-----	RH.
Citric and acetylcitric acid esters-----	MLS, PFZ.
*Complex linear polyesters and polymeric plasticizers-----	ADM, EKT, EMR, HAL, HPC, LEH, MON, PFZ, RH, ROS, UCC, WM.
Di(2-(2-butoxyethoxy)ethyl)methane-----	TKL.
*Dibutyl maleate-----	ACY, AIR, DUP, GRD, GRH, MON, RCI, RUB.
Diethylene glycol dinnonate-----	EMR, RUB.
Diiso-octyl diglycolate-----	CCA, FMP.
*Epoxidized esters:	
*Butyl epoxy stearates-----	CCW, FMP, x.
*Epoxidized soya oils-----	ADM, ARG, BAC, CCW, RCI, RH, ROS, SWT, THC, UCC.
*Octyl epoxy tallates-----	ADM, ARG, BAC, RH, ROS, THC, UCC, x.
All other-----	ADM, ARG, EMR, RCI, RH, THC, x.
Glycerol pelargonate-----	EMR.
Glycerol tributrylate and tripropionate-----	EKT.
Glycol pelargonate-----	EMR.
Isodecyl nonanoate (Isodecyl pelargonate)-----	EMR.
Lauric acid esters-----	FOR, HAL.
*Oleic acid esters:	
*Butyl oleate-----	ADM, AHC, CIN, HAL, KES, LAS, NOP, RUB, WM, WTH.
*Glycerol trioleate-----	DRW, EMR, SWT.
Methyl oleate-----	AHC, EMR, NOP, SWT.
*n-Propyl oleate-----	CHL, EMR, WM.
All other oleic acid esters-----	AHC, HAL, KES, RH, WM.
Palmitic acid esters-----	EKT, FOR, KES, RUB.
*Phosphoric acid esters-----	CEL, EKT, FMP, UCC.
Polyethylene glycol di-2-ethylhexanoate-----	UCC.
Ricinoleic and acetylricinoleic acid esters:	
*Glycerol monoricinoleate-----	BAC, GLY, HAL, NOP.
All other ricinoleic and acetylricinoleic acid esters-----	BAC, KES, RCI, UCC.
*Sebacic acid esters:	
*Dibutyl sebacate-----	EKT, GRH, HAL, PFZ, RCI, RH, WTH.
*Di(2-ethylhexyl) sebacate-----	GRD, GRH, HAL, PCC, RCI, RH, RUB, WTH.
All other sebacic acid esters-----	KES, LEH, NOP, RCI, RH, RUB, WTH.
*Stearic acid esters:	
*n-Butyl stearate-----	AHC, HAL, KES, LAS, RUB, SCP, SWT, WM, WTH.
All other stearic acid esters (caprate)-----	BAC, DRW, FMP, HK, HPC, KES, RCI, RH, ROS.
*Triethylene glycol di(caprylate-caprate)-----	DRW, FOR, GRH, RUB.
Triethylene glycol di-2-ethylbutyrate-----	HAL, UCC.
All other acyclic plasticizers-----	DUP, EKT, EXX, EMR, FMP, HAL, KES, LEH, PCC, PFZ, RH, RUB, TKL, UCC, WM.

Surface-Active Agents

TABLE 20B.--Surface-active agents for which U.S. production or sales were reported, identified by manufacturer, 1962

[Surface-active agents for which separate statistics are given in table 20A are marked below with an asterisk (*); products not so marked do not appear in table 20A because the reported data are accepted in confidence and may not be published. Manufacturers' identification codes shown below are taken from table 23. 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 23)
BENZENOID SURFACE-ACTIVE AGENTS	
<i>Not Sulfated or Sulfonated</i>	
*Amides, amines, and quaternary ammonium salts:	
*Heterocyclic amides, amines, and quaternary ammonium salts:	
1-Benzyl-2-heptadecyl-1-(2-hydroxyethyl)-2-imidazolium chloride.	PCS, UVC.
2-Dodecylisoquinolinium bromide-----	BC, ONX, WSN.
1-Dodecylpyridinium chloride-----	BC, HK.
1-Hexadecylpyridinium chloride-----	FIN.
2-(2-Lauroyloxyethyl)carbonyl-1-methylpyridinium chloride.	WTC.
1-Methyl-2-(2-stearoyloxyethyl)carbonylpyridinium chloride.	WTC.
All other-----	FIN.
Trialkyl(alkylbenzyl)ammonium salts:	
(Dodecylbenzyl)dimethylotadecylammonium chloride----	AML.
(Dodecylbenzyl)triethylammonium chloride-----	PC.
*(Dodecylbenzyl)trimethylammonium chloride-----	BC, VIS, WSN, WTC.
(Dodecylmethylbenzyl)trimethylammonium chloride-----	RH.
(Ethylbenzyl)dimethyl(mixed alkyl)ammonium chloride----	ONX, VAC.
Trialkylbenzylammonium salts:	
Benzyl(coconut oil alkyl)dimeethylammonium chloride----	AFD, BC, FIN, WSN.
Benzyl(dimehyl(mixed alkyl)ammonium chloride-----	FIN, ONX, PCS, RH, VAC, WSN.
*Benzyl(dimehylotadecylammonium chloride-----	APX, FIN, ONX, PCS, RET, WSN.
Benzyl(dimehylte tradecylammonium chloride-----	BC, SNW, WSN.
*Benzyl(dodecyl)dimeethylammonium chloride-----	DEF, ONX, SDH, WSN.
Benzylhexadecyl(dimeethylammonium chloride-----	FIN, ONX, RH, SDW.
*Benzyl(hydrogenated tallow alkyl)dimeethylammonium chloride.	ARC, GNM, ONX.
Benzyl(trimethylammonium chloride-----	CGM.
(3,4-Dichlorobenzyl)dodecyl(dimeethylammonium chloride--	ONX, SDW, WSN.
Other amides, amines, and quaternary ammonium salts:	
Benzylbis(2-hydroxyethyl)(2-stearamidomethoxyethyl)-	TRC.
ammonium chloride.	
Benzyl(ethoxylated coconut oil alkyl)dimeethylammonium	G.
chloride.	
N,N-Bis(tall oil amidoethyl)benzylamine hydrochloride,	APD.
ethoxylated.	
(Dodecylbenzyl)(2-hydroxyethyl)dimeethylammonium	PCS.
chloride.	
(Ethoxybenzyl)dimethyl(octylphenoxy)ammonium chloride-	RH.
(Ethoxybenzyl)dimethyl(octyltolyl)ammonium chloride	RH.
N-(2-Hydroxyethyl)-1,2-diphenylethylenediamine-----	APX.
(Tridecylbenzyl)diethyl(2-hydroxyethyl)ammonium	ORO.
chloride.	
*Carboxylic acid esters:	
Benzoic acid, ethoxylated tridecanol ester-----	QMC.
Dipropylene glycol salicylate-----	SBC.
Phthalic acid, castor oil polyester-----	APD.
Phthalic acid, ethoxylated castor oil polyester-----	APD.

TABLE 20B.--Surface-active agents for which U.S. production or sales were reported, identified by manufacturer, 1962--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
BENZENOID SURFACE-ACTIVE AGENTS--Continued	
<i>Not Sulfated or Sulfonated--Continued</i>	
*Carboxylic acid esters--Continued Phthalic acid, octadecyl ester, potassium salt----- Tall oil acids, alkoxyated pentylphenol - formaldehyde ester.	TRC. AFD.
*Ethers:	
*Alkylphenol - formaldehyde, alkoxyated: Di-nonylphenol - formaldehyde, ethoxyated----- (Mixed alkyl)phenol - formaldehyde, alkoxyated----- (Mixed alkyl)phenol - formaldehyde, ethoxyated----- Nonylphenol - formaldehyde, alkoxyated----- t-Octylphenol - formaldehyde, ethoxyated----- Pentylphenol - formaldehyde, alkoxyated----- Cresol, ethoxyated----- Diisobutylphenol, ethoxyated----- Dinonylphenol, ethoxyated----- *Dodecylphenol, ethoxyated----- Iso-octylphenol, ethoxyated----- (Mixed alkyl)phenol, ethoxyated----- (Mixed alkyl)phenol, ethoxyated, butyl ether----- *Nonylphenol, ethoxyated-----	PGS. RTF, VIS. RTF. RTF. SDW. AFD, RTF. VIS. G, RH. G, JCC, RTF, VIS. G, MON, PGS, UCC. DRW, NOP, QMC, TRC. G, PGS, RH. RH. AHC, APD, CLY, DOW, DRW, G, HPC, JCC, MON, QMC, PGS, RH, RTF, STP, TRC, UCC, VIS.
*Phenol, ethoxyated----- Tetradecylphenol, ethoxyated----- Tridecylphenol, ethoxyated----- Xylenol, ethoxyated----- All other----- *Phosphoric and polyphosphoric acid esters and salts: Dodecylphenol, ethoxyated and phosphated----- Nonylphenol, ethoxyated and phosphated----- All other-----	G. AFD, FBC, G, NOP, UCC. ORO. PGS. TRC, VIS. G. TXZ. CIN, G, RZL, TCC, UVC, WAY. SMC.
<i>Sulfated and Sulfonated</i>	
*Alkylphenols, ethoxyated and sulfated: Dodecylphenol, ethoxyated and sulfated----- *Nonylphenol, ethoxyated and sulfated----- Nonylphenol, ethoxyated and sulfated, ammonium salt----- n-Octylphenol, ethoxyated and sulfated----- All other-----	EFH, G, LEV. G, QMC, STP, TXZ, WTC. MYW. RH. X.
*Benzenesulfonates: Benzene-, toluene-, and xylenesulfonates: Benzenesulfonic acid, sodium salt----- p-Toluenesulfonic acid, hexadecyltrimethylammonium salt. Toluenesulfonic acid, potassium salt----- *Toluenesulfonic acid, sodium salt----- *Xylenesulfonic acid, ammonium salt----- Xylenesulfonic acid, potassium salt----- *Xylenesulfonic acid, sodium salt----- *Dodecylbenzenesulfonates: *Dodecylbenzenesulfonic acid----- Dodecylbenzenesulfonic acid, ammonium salt----- Dodecylbenzenesulfonic acid, butylamine salt----- *Dodecylbenzenesulfonic acid, calcium salt-----	NES, UPF. FIN. ATR, MYW, NES, RCD, WTC. CO, NES, PIL, STP, WTC. ATR, CO, STP, WTC. ATR, MYW, NES, RCD, WTC. ATR, CO, MYW, NES, PIL, STP, WTC. ARD, CI, CIN, CO, HLI, LEV, MON, MYW, NAC, NOP, PIL, PRX, RCD, SEY, SOC, STP, TDC, TN, TXZ, WTC. ARL, CTE, MYW, PRX. CTL, WTC. AFD, RCD, RH, RTF, SMC, STP, VIS, WTC.

TABLE 20B.--Surface-active agents for which U.S. production or sales were reported, identified by manufacturer, 1962--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
BENZENOID SURFACE-ACTIVE AGENTS--Continued	
<i>Sulfated and Sulfonated--Continued</i>	
*Benzenesulfonates--Continued	
*Dodecylbenzenesulfonates--Continued	
Dodecylbenzenesulfonic acid, diethanolamine condensate, fatty acid monoester.	MAH.
Dodecylbenzenesulfonic acid, diethanolamine salt-----	PCS, WON.
Dodecylbenzenesulfonic acid, ethylenediamine salt-----	AFD.
Dodecylbenzenesulfonic acid, isopropanolamine salt-----	SMC, WON.
*Dodecylbenzenesulfonic acid, isopropylamine salt-----	AFD, ARD, CIN, CTL, PCS, RCD, RZL, SNW, STP, WTC.
Dodecylbenzenesulfonic acid, (mixed alkyl)amine salt---	PCS, WTC.
Dodecylbenzenesulfonic acid, propoxylated ethylene diamine salt.	PCS.
*Dodecylbenzenesulfonic acid, sodium salt-----	AAC, AHC, AML, ARD, ARL, ATR, CO, CTL, DEP, EFH, DMK, HLI, HRT, LEV, MON, NAC, NOP, PG, PIL, PRX, RCD, SEY, SOC, SOS, TN, TXZ, WIC, WON, WTC.
*Dodecylbenzenesulfonic acid, triethanolamine salt-----	AML, ARL, ATR, CIN, CO, CTL, HLI, NAC, PCS, PEK, PIL, RCD, RZL, SOS, STP, UNF, WTC.
Dodecylbenzenesulfonic acid, zinc salt-----	CHM.
Other benzenesulfonates:	
Decylbenzenesulfonic acid, sodium salt-----	MON.
Didodecylbenzenesulfonic acid-----	CO.
Nonylbenzenesulfonic acid, sodium salt-----	WTC.
Pentylbenzenesulfonic acid, sodium salt-----	MON.
Tridecylbenzenesulfonic acid-----	RCD, TN, WTC.
Tridecylbenzenesulfonic acid, ammonium salt-----	PRX.
Tridecylbenzenesulfonic acid, sodium salt-----	BLA, CP, PRX, WTC.
Tridecylbenzenesulfonic acid, triethanolamine salt----	AAC, RCD.
*Lignosulfonates:	
Lignosulfonic acid, aluminum salt-----	MAR.
Lignosulfonic acid, ammonium salt-----	CRZ.
*Lignosulfonic acid, calcium salt-----	CRZ, CWP, INP, LKY, LPC, MAR, PSP, ROP.
Lignosulfonic acid, chromium salt-----	MAR.
Lignosulfonic acid, iron salt-----	CRZ, MAR.
Lignosulfonic acid, magnesium salt-----	LPC, MAR, ROP.
Lignosulfonic acid, sodium salt-----	CRZ, INP, WVA.
*Naphthalenesulfonates:	
Benzyl naphthalenesulfonic acid-----	G.
Butyl naphthalenesulfonic acid-----	SCP.
sec-Butyl naphthalenesulfonic acid-----	PFZ.
Butyl naphthalenesulfonic acid, sodium salt-----	CMG, GGY.
*Dibutyl naphthalenesulfonic acid-----	CI, G, MRA, S.
Didodecyl naphthalenesulfonic acid, sodium salt-----	PFZ.
Diisopropyl naphthalenesulfonic acid-----	DUP, G, GRD.
*Diisopropyl naphthalenesulfonic acid, sodium salt-----	G, PFZ, WTC.
Dipentyl naphthalenesulfonic acid-----	GGY.
Dipentyl naphthalenesulfonic acid, (mixed alkyl)amine salt.	VIS.
*Isopropyl naphthalenesulfonic acid-----	DUP, NAC, NOP, ONX.
Methylenebis(2-naphthalenesulfonic acid)-----	DUP.
6,6'-Methylenebis(2-naphthalenesulfonic acid), calcium salt.	DUP.
Methylnaphthalenesulfonic acid, sodium salt-----	UDI.
Methylnonyl naphthalenesulfonic acid, sodium salt-----	UDI.
Pentyl naphthalenesulfonic acid-----	ONX.
Tetrahydronaphthalenesulfonic acid, sodium salt-----	DUP.

TABLE 20B.--Surface-active agents for which U.S. production or sales were reported, identified by manufacturer, 1962--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
BENZENOID SURFACE-ACTIVE AGENTS--Continued	
<i>Sulfated and Sulfonated--Continued</i>	
*Other benzenoid surface-active agents:	
Butylhydroxybiphenylsulfonic acid-----	ICO, RBC.
Dodecylidiphenyloxidesulfonic acid, sodium salt-----	DOW.
Heptadecylmethylbenzimidazolinesulfonic acid, sodium salt.	TRC.
n-Octylphenol, ethoxylated and sulfonated-----	RH.
Petroleum sulfonic acid, water soluble (acid layer), sodium salt.	SIN, SON.
Trichlorophenol sulfate, ethanolamine salt-----	G.
NONBENZENOID SURFACE-ACTIVE AGENTS	
<i>Not Sulfated or Sulfonated</i>	
*Amides, amines, and quaternary ammonium salts:	
Acyclic quaternary ammonium salts:	
Alkyl dimethyl ammonium salts:	
Ethyl dimethyl(9-octadecyl) ammonium bromide-----	ONX.
Ethyl dimethyl octadecyl ammonium bromide-----	RCD.
Ethyl dimethyl octadecyl ammonium ethyl hydrogen phosphite.	AFD.
Ethyl dimethyl (soybean oil alkyl) ammonium bromide---	BC, WSN.
Ethyl hexadecyl dimethyl ammonium bromide-----	FIN.
Alkyl trimethyl ammonium salts:	
(Coconut oil alkyl) trimethyl ammonium chloride-----	ARC.
Dodecyl trimethyl ammonium bromide-----	DUF.
*Dodecyl trimethyl ammonium chloride-----	ARC, GNM, RCD.
*Hexadecyl trimethyl ammonium bromide-----	AHC, DUF, FIN.
*Hexadecyl trimethyl ammonium chloride-----	ARC, BC, WSN.
(Hydrogenated tallow alkyl) trimethyl ammonium chloride.	ARC.
Trimethyl (mixed alkyl) ammonium chloride-----	GNM.
Trimethyl octadecyl ammonium chloride-----	ARC.
Trimethyl (soybean oil alkyl) ammonium chloride-----	ARC.
Trimethyl (tallow alkyl) ammonium chloride-----	ARC, GNM.
Dialkyl dimethyl ammonium salts:	
Bis (coconut oil alkyl) dimethyl ammonium chloride----	ARC, GNM.
*Bis (hydrogenated tallow alkyl) dimethyl ammonium chloride.	ADM, ARC, FOR, GNM, VAC.
Didodecyl dimethyl ammonium bromide-----	ONX.
Dimethyl bis (soybean oil alkyl) ammonium chloride-----	ARC.
Dimethyldioctadecyl ammonium chloride-----	PG.
Other acyclic quaternary ammonium salts:	
(Coconut oil alkyl) bis (2-hydroxyethyl, ethoxylated)-methyl ammonium chloride.	ARC.
Decyl betaine-----	DUP.
Dodecyl (epoxypropyl) dimethyl ammonium chloride-----	TRC.
Hexadecyl betaine-----	DUP.
(2-Hydroxyethyl) dimethyl (stearamidopropyl) ammonium dihydrogen phosphate.	ACY.
(2-Hydroxypropyl) dimethyl (stearamidopropyl) ammonium nitrate.	ACY.
Methyl tris (mixed alkyl) ammonium chloride-----	ADM.
Octadecyl betaine-----	DUP.
Triethyloctadecyloxymethyl ammonium chloride-----	DAN.

TABLE 20B.--Surface-active agents for which U.S. production or sales were reported, identified by manufacturer, 1962--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
NONBENZENOID SURFACE-ACTIVE AGENTS--Continued	
<i>Not Sulfated or Sulfonated--Continued</i>	
*Amides, amines, and quaternary ammonium salts--Continued	
*Amine salts:	
*Amine acetates:	
(Coconut oil alkyl)amine acetate-----	ADM, ARC.
N-(2-Cyanoethyl)-N',N''-dioctadecyldiethylenetri- amine acetate.	TRC.
(Hydrogenated tallow alkyl)amine acetate-----	ARC, CIN.
(9-Octadeceryl)amine acetate-----	GNM.
Octadecylamine acetate-----	ACY, ARC.
Octylamine acetate-----	ARC.
(Soybean oil alkyl)amine acetate-----	ARC.
*(Tallow alkyl)amine acetate-----	ADM, ARC, GNM.
N-(Tallow alkyl)diethanolamine acetate-----	PG.
*Triethanolamine salts:	
*Oleic acid, triethanolamine salt-----	DOM, HAL, HDG, NOP, TCC.
Rosin acids, triethanolamine salt-----	RTF.
Stearic acid, triethanolamine salt-----	AML, HDG, TCC.
*Other amine salts:	
Naphthenic acids, N-(tallow alkyl)-1,3-propylene- diamine salt.	APD.
Oleic acid, 2-amino-2-methyl-1-propanol salt-----	FCH.
Oleic acid, diethylamine salt-----	WTC.
Oleic acid, morpholine salt-----	FCH.
Stearic acid, N,N,N',N'-tetrakis(2-hydroxyethyl)- ethylenediamine salt.	AHC.
*Amines, ethoxylated:	
(Coconut oil alkyl)amine, ethoxylated-----	ADM, APD, ARC, VIS.
(Hydrogenated tallow alkyl)amine, ethoxylated-----	TCH, TRC.
(Mixed alkyl)amine, ethoxylated-----	APD, G, NOP, RH, TRC.
Octadecylamine, ethoxylated-----	ARC.
Oleyl-linoleyl primary amine, ethoxylated-----	RTF.
*Rosin amine, ethoxylated-----	APD, HFC, PCS, RTF, VIS.
(Soybean oil alkyl)amine, ethoxylated-----	ARC.
(Tallow alkyl)amine, ethoxylated-----	ARC, TRC.
N-(Tallow alkyl)-1,3-propylenediamine, ethoxylated-----	ARC, PCS.
*Fatty acid - alkanolamine condensates:	
*Diethanolamine condensates:	
Capric acid - diethanolamine condensate-----	GGY, PCS, RZL.
Castor oil acids - diethanolamine condensate-----	PCS, VND.
Coconut oil acids - diethanolamine condensates:	
*(Amine/acid ratio=2/1)-----	AML, ARD, BSC, CIN, CLI, CTL, DEP, DRW, HLI, JOR, KNF, LEV, LUR, MOA, MRV, NOP, ONX, PC, PCS, PG, PNX, RCD, RZL, SBC, SEY, SNW, TCC, TXC, TXZ, UNN, UVC, VAL, VND, WTC.
*(Amine/acid ratio=1/1)-----	APX, ARD, ARL, CGL, CLI, CTL, EFH, EMK, GGY, HLI, HRT, KAL, MOA, NOP, ONX, PCS, PEK, QCP, RCD, RPC, SBC, SCO, SEY, STP, UVC.
All other ratios-----	JRG, PCS.
*Lauric acid - diethanolamine condensate-----	ARD, CLI, CTL, DRW, HLI, MOA, NOP, ONX, PCS, PG, RCD, WON, WSN, WTC.
Linoleic acid - diethanolamine condensate-----	VND.
Oleic acid - diethanolamine condensates:	
*(Amine/acid ratio=2/1)-----	CLI, CCW, MOA, MRA, ONX, RCD, RZL, STP, WTC.
*(Amine/acid ratio=1/1)-----	GGY, NOF, SBC, SCP, STP.
*Stearic acid - diethanolamine condensate-----	AML, ARD, BSC, CLI, EMR, GGY, HAL, JOR, MRA, NOP, ONX, RPC, RZL, SCO, SNW, TXC, UVC, VAL.

TABLE 20B.--Surface-active agents for which U.S. production or sales were reported, identified by manufacturer, 1962--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
NONBENZENOID SURFACE-ACTIVE AGENTS--Continued	
<i>Not Sulfated or Sulfonated--Continued</i>	
*Amides, amines, and quaternary ammonium salts--Continued	
*Fatty acid - alkanolamine condensates--Continued	
*Diethanolamine condensates--Continued	
Tall oil acids - diethanolamine condensate-----	EFH, MRA, PRC, SEY.
Tallow acids - diethanolamine condensate-----	PCS, PG, PRC, TXZ.
Other diethanolamine condensates-----	BSC, HLI, RPC, SEY.
Ethanolamine condensates:	
Coconut oil acids - ethanolamine condensate-----	APX, CLI, HRT, MOA, PCS, PG, PRC, VND, WTC.
*Lauric acid - ethanolamine condensate-----	ARD, UVC, WTC.
Myristic acid - ethanolamine condensate-----	WTC.
Oleic acid - ethanolamine condensate-----	FBC.
Stearic acid - ethanolamine condensates:	
*(Amine/acid ratio=1/1)-----	ARD, KES, STF, VND, WTC.
*(Amine/acid ratio=1/2)-----	SBC, WTC.
*All other ratios-----	CLI, CST.
Tall oil acid - ethanolamine condensate: (Amine/acid	
ratio=1/2)-----	FCH.
Isopropanolamine condensates:	
Coconut oil acids - isopropanolamine condensate----	LEV, STF.
Lauric acid - isopropanolamine condensate-----	ARC, ARD, PCS, WTC.
Oleic acid - isopropanolamine condensate-----	WTC.
Other fatty acid - alkanolamine condensates-----	WM.
Fatty acid - alkanolamine condensates, ethoxylated:	
Hydrogenated tallow acids - ethanolamine condensate,	ARC.
ethoxylated.	
Mixed fatty acids - ethanolamine condensate, ethoxy-	RTF.
lated.	
*Oleic acid - ethanolamine condensate, ethoxylated----	ARC, G, WTC.
Oleic acid - methanolamine condensate, ethoxylated----	G.
*Fatty acid - polyamine condensates:	
*Adipic and stearic acids - diethylenetriamine con-	APX.
densate.	
Azelaic and stearic acids - ethylenediamine condensate	CCW.
Coconut oil acids - diethylenetriamine condensate----	APX, NOP.
Mixed fatty acid - polyalkylenepolyamine condensate---	VIS.
Oleic acid - diethylenetriamine condensate-----	APD, HDG, PCS.
Oleic acid - diethylenetriamine condensate, acetic	PCS.
acid salt.	
Oleic acid-- N,N-dimethyl-1,3-propylenediamine con-	CCW, DUF, SNW, UVC.
densate.	
Oleic acid - ethylenediamine condensate (amine/acid	CCW.
ratio=1/2).	
Pelargonic acid - tetraethylenepentamine condensate---	AHC.
Sebacic acid - ethylenediamine condensate-----	CCW.
Stearic acid - diethylenetriamine condensate-----	APX, CST, HRT, JOR, NOP, ONX, QCP.
Stearic acid - N,N-diethylethylenediamine condensate---	CBF.
Stearic acid - N,N-diethylethylenediamine condensate	SNW.
(amine/acid ratio=1/2).	
Stearic acid - ethylenediamine condensate (amine/acid	CCW, GGY.
ratio=1/2).	
Stearic acid - tetraethylenepentamine condensate-----	AHC, ONX.
Tall oil acids - diethylene triamine condensate-----	NCW.
*Fatty acid - polyamine condensates, ethoxylated:	
Coconut oil acids - diethylenetriamine condensate,	TCC.
polyethoxylated.	

TABLE 20B.--Surface-active agents for which U.S. production or sales were reported, identified by manufacturer, 1962--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
NONBENZENOID SURFACE-ACTIVE AGENTS--Continued	
<i>Not Sulfated or Sulfonated--Continued</i>	
*Amides, amines, and quaternary ammonium salts--Continued	
*Fatty acid - polyamine condensates, ethoxylated--Con.	
Coconut oil acids - ethylenediamine condensate, monoethoxylated.	DEX, NOP.
Mixed fatty acid - alkylenediamine condensate, polyethoxylated.	G.
Oleic acid - ethylenediamine condensate, monoethoxylated.	CI, DEX, NOP, SOC, TNA.
Oleic acid - piperazine condensate, monoethoxylated---	PCS.
Palm oil acids - ethylenediamine condensate, monoethoxylated.	SCF.
Stearic acid - diethylenetriamine condensate, polyethoxylated.	APX, TCC.
Stearic acid - ethylenediamine condensate, diethoxylated.	TCC.
*Stearic acid - ethylenediamine condensate, monoethoxylated.	AHC, AML, CI, DEP, DEX, G, MRA, NOP, S, SCF, SNW.
Stearic acid - ethylenediamine condensate, polyethoxylated.	APD, EFH, TCC.
All other-----	G.
*Heterocyclic amides, amines, and quaternary ammonium salts:	
Imidazole derivatives:	
1,1-Bis(carboxymethyl)-2-undecyl-2-imidazolium hydroxide, disodium salt.	MIR.
1-Carboxymethyl-2-heptadecyl-1-(2-hydroxyethyl)-2-imidazolium hydroxide, sodium derivative, sodium salt.	MIR.
1-Carboxymethyl-1-(2-hydroxyethyl)-2-nonyl-2-imidazolium chloride, sodium salt.	PCS.
1-Carboxymethyl-1-(2-hydroxyethyl)-2-nonyl-2-imidazolium hydroxide, sodium derivative, sodium salt.	MIR.
1-Carboxymethyl-1-(2-hydroxyethyl)-2-undecyl-2-imidazolium chloride, sodium derivative, sodium salt.	PCS.
1-Carboxymethyl-1-(2-hydroxyethyl)-2-undecyl-2-imidazolium hydroxide, sodium derivative, sodium salt.	MIR.
1-Ethyl-2-(8-heptadecenyl)-1-(2-hydroxyethyl)-2-imidazolium bromide.	BC.
*2-(8-Heptadecenyl)-1-(2-hydroxyethyl)-2-imidazoline--	APD, BC, GGY, PCS, RZL, UVC.
2-(8-Heptadecenyl)-2-imidazoline-----	HDG.
2-Heptadecyl-1-(2-hydroxyethyl)-2-imidazoline-----	GGY, ONX, UVC.
2-Heptadecyl-2-imidazoline-----	SCO.
1-(2-Hydroxyethyl)-2-nonyl-2-imidazoline-----	GGY, PCS.
1-(2-Hydroxyethyl)-2-tridecyl-2-imidazolium chloride.	GGY.
1-(2-Hydroxyethyl)-2-undecyl-2-imidazoline-----	GGY, UVC.
Rosinpolyamidoimidazoline-----	GRD, PCS, UVC.
Oxazole derivatives:	
2-(8-Heptadecenyl)-4,4-bis(hydroxymethyl)-2-oxazoline	COM, NOP, SEY.
2-(8-Heptadecenyl)-4-hydroxymethyl-4-methyl-2-oxazoline.	COM.
*N-Substituted amino acids and polypeptides:	
N-[2-(Carboxymethylamino)ethyl]-N-(2-hydroxyethyl)-coconut oil amide, sodium salt.	TCC.

TABLE 20B.--Surface-active agents for which U.S. production or sales were reported, identified by manufacturer, 1962--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
NONBENZENOID SURFACE-ACTIVE AGENTS--Continued	
Not Sulfated or Sulfonated--Continued	
*Amides, amines, and quaternary ammonium salts--Continued	
*N-Substituted amino acids and polypeptides--Continued	
N-(Coconut oil acyl)sarcosine-----	GGY.
N-(Coconut oil alkyl)- β -alanine-----	GNM.
N-Dodecyl-3-iminodipropionic acid-----	GNM.
N-(2-Hydroxyethyl)-N-(2-stearamidoethyl)glycine-----	G.
N-Lauroylpolypeptide-----	MYW.
*N-Lauroylsarcosine, sodium salt-----	CF, GGY, ONX.
N-Oleoylpolypeptide-----	MYW.
N-Oleoylsarcosine, sodium salt-----	G, GGY.
Polypeptide-----	MYW.
N-Stearoylsarcosine, sodium salt-----	G, GGY.
N-(Tallow alkyl)-3-iminodipropionic acid, sodium salt-----	GNM.
*Other amides, amines, and quaternary ammonium salts:	
N,N-Bis(2-hydroxyethyl)-2-(stearamidomethoxy)ethyl-amine.	TRC.
N,N-Bis(2-hydroxyethyl)-2-(stearamidomethoxy)ethyl-amine - melamine ether condensate.	TRC.
N-(Coconut oil alkyl)-1,3-propylenediamine-----	GNM.
N-Dodecyl-diethylene triamine-----	FIN.
N-(2-Hydroxyethyl)-N,N',N''-tris(2-hydroxypropyl)-ethylenediamine.	VIS.
N-(Mixed alkyl)polyethylenepolyamine-----	CCW.
Mixed oleamides-----	FIN.
Polyethylenepolyamine, alkoxyated-----	VIS.
Stearic acid - N-(2-benzyloxyethyl)diethylenetriamine condensate (amine/acid ratio=1/2).	TRC.
Stearoylbiguanidine hydrochloride-----	G.
N-(Tallow alkyl)-1,3-propylenediamine-----	GNM.
N,N,N',N''-Tetrakis(2-hydroxyethyl)ethylenediamine-----	VIS.
N,N,N',N''-Tetrakis(2-hydroxypropyl)ethylenediamine, propoxylated and ethoxylated.	WYN.
*Carboxylic acid esters:	
Anhydrosorbitol esters:	
Anhydrosorbitol dioleate-----	APD.
Anhydrosorbitol mixed fatty acid ester-----	GLY.
Anhydrosorbitol monolaurate-----	APD, GLY.
Anhydrosorbitol mono-oleate-----	APD, GLY, HDG.
Anhydrosorbitol monopalmitate-----	APD, GLY.
Anhydrosorbitol monostearate-----	APD, GLY, HDG, FCS.
Anhydrosorbitol sesqui-oleate-----	GLY.
*Anhydrosorbitol tall oil ester-----	APD, GLY, HDG, RTF.
Anhydrosorbitol tetrastearate-----	APD.
Anhydrosorbitol trioleate-----	APD.
Anhydrosorbitol triricinoleate-----	APD.
Anhydrosorbitol tristearate-----	APD, GLY.
Diethylene glycol esters:	
Diethylene glycol distearate-----	KES.
*Diethylene glycol monolaurate-----	CCW, DRW, GLY, HAL, HDG, KAL, KES, NOP, PCS, SEY, WTC.
*Diethylene glycol mono-oleate-----	EMR, HAL, HDG, KES, WTC.
Diethylene glycol monoricinoleate-----	GLY.
*Diethylene glycol monostearate-----	AML, CCW, CIM, CLI, CP, HAL, HDG, KES, NOP, PC, FCS,
	QCP, SEY, VAL, VND, WM, WTC.
*Diethylene glycol tall oil ester-----	HDG, QCP, WTC.
All other-----	GLY.

TABLE 20B.--Surface-active agents for which U.S. production or sales were reported, identified by manufacturer, 1962--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
NONBENZENOID SURFACE-ACTIVE AGENTS--Continued	
<i>Not Sulfated or Sulfonated--Continued</i>	
*Carboxylic acid esters--Continued	
Ethoxylated anhydrosorbitol esters:	
Ethoxylated anhydrosorbitol castor oil ester-----	APD.
*Ethoxylated anhydrosorbitol monolaurate-----	APD, GLY, HDG, TCH.
Ethoxylated anhydrosorbitol mono-oleate-----	APD, GLY, HDG, TCH.
*Ethoxylated anhydrosorbitol monopalmitate-----	APD, GLY, TCH.
Ethoxylated anhydrosorbitol monostearate-----	APD, GLY, HDG, PCS, TCH.
Ethoxylated anhydrosorbitol tall oil ester-----	APD, TCH.
*Ethoxylated anhydrosorbitol trioleate-----	APD, GLY.
*Ethoxylated anhydrosorbitol tristearate-----	APD, GLY, PCS, TCH.
Ethoxylated glucose esters:	
Ethoxylated glucose distearate-----	APD.
Ethoxylated glucose oleate-----	APD.
Ethoxylated sorbitol esters:	
Ethoxylated sorbitol beeswax ester-----	APD.
Ethoxylated sorbitol distearate-----	APD.
Ethoxylated sorbitol hexaoleate-----	APD.
Ethoxylated sorbitol hexa(tall oil) ester-----	APD, RTF.
Ethoxylated sorbitol lanolin ester-----	APD.
Ethoxylated sorbitol monolaurate-----	DRW.
Ethoxylated sorbitol mono-oleate-----	APD, DRW.
Ethoxylated sorbitol monostearate-----	DRW, VAC.
Ethoxylated sorbitol pentalaurate-----	APD.
Ethoxylated sorbitol pentaoleate, acetylated-----	APD.
Ethoxylated sorbitol penta(tall oil) ester-----	APD.
Ethoxylated sorbitol tetra(laurate, oleate)-----	APD.
Ethoxylated sorbitol tetra(tall oil) ester-----	APD.
Ethylene glycol esters:	
*Ethylene glycol distearate-----	EMR, HAL, HDG, KES.
Ethylene glycol mono-oleate-----	EFH, HAL.
*Ethylene glycol monostearate-----	CCW, CLI, GLY, HAL, HDG, KES, KNF, PCS, VND, WM.
*Glycerol esters:	
Glycerol diacetyl tartrate monostearate-----	PCS, WTC.
Glycerol diester of lard-----	EFH, PCS.
Glycerol diester of mixed fatty acids-----	HAL.
Glycerol dioleate-----	KES.
*Glycerol distearate-----	EFH, KES, PCS.
Glycerol lactate palmitate-----	DRW, GLD.
Glycerol lactate stearate-----	APD, GLD.
Glycerol maleate mono-oleate-----	NOF, WTC.
Glycerol monocaprylate-----	KES.
Glycerol mono(castor oil) ester-----	HDG.
*Glycerol mono(coconut oil) ester-----	CP, DRW, EFH, HAL, HDG, JRG, WM.
*Glycerol mono(cottonseed oil) ester-----	DRW, GLD, HDG, PCS.
Glycerol monoester of hydrogenated cottonseed oil acids.	LEV.
Glycerol monoester of lard-----	EK, GLD.
*Glycerol monoester of mixed fatty acids-----	EFH, EMR, GLD, GLY, HDG, LEV.
*Glycerol monolaurate-----	DRW, GLY, HAL, KES, KNF.
*Glycerol mono-oleate-----	APD, CCW, DRW, EK, EMR, GLY, HAL, HDG, KES, PAR, PCS, VND, WAY, WM.
Glycerol monopalmitate-----	CCW, DRW.
Glycerol monoricinoleate-----	CCW.
Glycerol mono(soybean oil) ester-----	DRW.
*Glycerol monostearate-----	APX, CCW, CP, DRW, EFH, EK, GLY, HAL, KES, LUR, MCO, MRA, NOF, NW, FC, PCS, PG, SNW, TCC, VND, WM, WTC, X.
All other-----	APD, EK, WM.

TABLE 20B.--Surface-active agents for which U.S. production or sales were reported, identified by manufacturer, 1962--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
NONBENZENOID SURFACE-ACTIVE AGENTS--Continued	
Not Sulfated or Sulfonated--Continued	
*Carboxylic acid esters--Continued	
Methyl glucoside esters:	
Methyl glucoside laurate-----	HDG.
Methyl glucoside oleate-----	HDG.
*Polyethylene glycol esters:	
*Polyethylene glycol castor oil ester-----	G, GGY, GLY, KES, NOP, PCS, UVC, WTC.
*Polyethylene glycol coconut oil ester-----	ARL, GLY, NOP, ONX, PG, UVC, VND, WTC.
*Polyethylene glycol dilaurate-----	EPH, GGY, GLY, HAL, HDG, JOR, KES, PCS, UVC, WM.
*Polyethylene glycol dioleate-----	CI, EPH, GGY, GLY, HAL, KES, NOP, OTH, PCS, SPP, UVC, WM.
*Polyethylene glycol distearate-----	GLY, HAL, KES, PCS, QCP.
Polyethylene glycol mixed fatty acid esters-----	GLY, HDG.
*Polyethylene glycol monolaurate-----	ARC, BSC, CCA, DRW, GGY, GLY, HAL, HDG, JOR, KES, KNF, NOP, PCS, QCP, SYC, TCH, UVC, VND, WM.
*Polyethylene glycol mono-oleate-----	AHC, ARC, CCA, CI, CRC, DEX, DRW, EPH, G, GGY, GLY, HAL, KES, NOP, ONX, FAR, QCP, SPP, SYC, TCH, UVC, WM.
Polyethylene glycol monopalmitate-----	AFD.
Polyethylene glycol monoricinoleate-----	KES, NOP.
*Polyethylene glycol monostearate-----	ARC, AMI, APD, ARC, CCW, CIN, DEP, DEX, DRW, G, GGY, GLY, HAL, HDG, JOR, KES, RNP, NOP, PC, PCS, PD, RH, SEY, TCC, TCH, UNN, VAC, VND, WTC.
Polyethylene glycol rosin ester-----	AFD, HFC, QCP.
Polyethylene glycol sesqui(coconut oil) ester-----	JRG.
*Polyethylene glycol tall oil ester-----	AMI, APD, APX, ARC, DRW, EPH, GLY, HDG, JCC, KES, MON, NOP, OMB, PCS, RTF, TCH, UVC, WTC.
Polyethylene glycol tallow ester-----	ONX, SOG.
All other-----	CCA.
1,2-Propanediol esters:	
1,2-Propanediol distearate-----	PCS.
1,2-Propanediol mono(coconut oil) ester-----	CF.
*1,2-Propanediol monolaurate-----	CF, HAL, KES, SBC.
1,2-Propanediol mono-oleate-----	HAL, KES.
*1,2-Propanediol monostearate-----	AFD, CCW, CF, GLY, HAL, KES, PCS, PG, WTC.
All other-----	GLY.
Other carboxylic acid esters:	
Anhydrosorbitol glycerol monolaurate-----	AFD.
Coconut oil acids, ethoxylated methanol ester-----	DRW, JOR.
Diisobutylene maleate-----	RH.
Disorbitolethoxyethylpropoxypropyl diglycolate-----	AFD.
Ethoxylated 1,2-propanediol oleate-----	AFD.
Ethoxylated 1,2-propanediol stearate-----	AFD.
Pentaerythritol distearate-----	VAL.
*Polyalkylene glycol diglycolate-----	AFD, RTF, VIS.
Polyalkylene glycol dimaleate-----	VIS.
Polyalkylene glycol naphthenate-----	AFD.
Polyethylene glycol iso-octyl adipate-----	PFZ.
Polyglycerol oleate-----	WTC.
All other-----	EMR, WM.
*Ethers:	
n-Butyl alcohol, ethoxylated-----	VAC.
*Castor oil, ethoxylated-----	AHC, APD, BAC, DRW, G, NOP, RTF, TCH, VIS.
n-Decyl alcohol, ethoxylated-----	AHC, PCS.
*n-Dodecyl alcohol, ethoxylated-----	AAC, APD, DRW, DUP, G, GLY, JCC, NAC, OMC, PCS, UCC.
n-Hexadecyl alcohol, ethoxylated-----	ADM, AHC, APD, TRC.
Hydrogenated castor oil, ethoxylated-----	AFD.
*Lanolin, ethoxylated-----	AAC, APD, VIS.

TABLE 20B.--Surface-active agents for which U.S. production or sales were reported, identified by manufacturer, 1962--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
NONBENZENOID SURFACE-ACTIVE AGENTS--Continued	
Not Sulfated or Sulfonated--Continued	
*Ethers--Continued	
Mixed primary straight chain alcohols, ethoxylated-----	G, JCC, RTF.
*9-Octadecyl alcohol, ethoxylated-----	AAC, APD, DUF, G, NOP, TCH, TRC, VAC.
*n-Octadecyl alcohol, ethoxylated-----	AAC, AHC, APD, G.
Polyethylene glycol tert-dodecyl thioether-----	MON, PAS, RTF.
*Polypropylene glycol ethers:	
Poly(mixed ethylene, propylene) glycol-----	UCC, WYN.
Polypropylene glycol, ethoxylated-----	PCS, RTF, VIS, WYN.
Propyl alcohol, propoxylated and ethoxylated-----	APD.
Tridecyl alcohol, propoxylated and ethoxylated-----	FCS, X.
Rosin alcohol, ethoxylated-----	APD, HPC, TRC, VIS.
Sorbitol, ethoxylated-----	RTF.
Sperm oil alcohol, ethoxylated-----	DUF.
Tall oil alcohol, ethoxylated-----	JCC.
2,4,7,9-Tetramethyl-5-decylene-4,7-diol, ethoxylated-----	AIR.
*Tridecyl alcohol, ethoxylated-----	AAC, AHC, APD, DRW, EFH, G, GLY, JCC, MON, OMC, PCS, RTF, TCH, UCC, VIS.
Trimethylheptanol, ethoxylated-----	PCS.
Trimethylnonyl alcohol, ethoxylated-----	UCC.
Trimethylolpropane, alkoxylated-----	RTF.
Trimethylolpropane, ethoxylated-----	RTF.
*Fatty acids, potassium and sodium salts:	
Castor oil acids, potassium salt-----	BAC, OTT, SEA.
Castor oil acids, sodium salt-----	MRV, WHI.
*Coconut oil acids, potassium salt-----	ARL, DRW, LUR, OTT, FCH, TXZ.
Coconut oil acids, sodium salt-----	CON.
Corn oil acids, potassium salt-----	FCH.
Corn oil acids, sodium salt-----	LUR.
*Lauric acid, potassium salt-----	BSC, DRW, NOP.
Mixed vegetable fatty acids, potassium salt-----	AML, FCH.
*Oleic acid, potassium salt-----	AML, BSC, DAN, EFH, NOP, OTH, OTT, QCP, S, SEA, SHP, WBG.
*Oleic acid, sodium salt-----	LUR, NOP, QCP, SEA, WBG.
Olive oil acids, sodium salt-----	LUR.
Peanut oil acids, potassium salt-----	SLC.
Rosin acids, potassium salt-----	SNW.
Rosin acids, sodium salt-----	MRA, QCP.
Soya foots fatty acids, potassium salt-----	FCH.
*Soybean oil acids, potassium salt-----	CON, KAL, OTT.
Stearic acid, potassium salt-----	DEX, DRW, QCP.
*Stearic acid, sodium salt-----	LEF, LEV, MAL, NOP, WTC.
Tall oil acids, potassium salt-----	BSC, CIN, CON, KAL, LUR, OTT, FCH, PNX, QCP, WHI.
Tall oil acids, sodium salt-----	DEX, NOP, PCS, QCP, UNP.
Tallow acids, potassium salt-----	OTT.
Tallow acids, sodium salt-----	CON, LUR, NOP, QCP.
All other-----	SLC.
*Phosphoric and polyphosphoric acid esters and salts:	
Alcohols, alkoxylated and phosphated or polyphosphated:	
Dodecyl alcohol, propoxylated and polyphosphated-----	VIC.
2-Ethylhexyl alcohol, ethoxylated and phosphated-----	WAY.
Octadecyl alcohol, ethoxylated and phosphated, morpholine salt.	DUP.
Tridecyl alcohol, ethoxylated and phosphated-----	SEY.
*Alcohols, phosphated and polyphosphated:	
Decyl, octyl phosphate-----	UVC.
2-Ethylhexyl phosphate-----	UVC.

TABLE 20B.--Surface-active agents for which U.S. production or sales were reported, identified by manufacturer, 1962--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
NONBENZENOID SURFACE-ACTIVE AGENTS--Continued	
<i>Not Sulfated or Sulfonated--Continued</i>	
*Phosphoric and polyphosphoric acid esters and salts--Continued	
*Alcohols, phosphated and polyphosphated--Continued	
*2-Ethylhexyl phosphate, sodium salt-----	RZL, TXZ, UCC, UVC.
Mixed alkyl phosphate, diethanolamine salt-----	DUP.
Mixed alkyl polyphosphate-----	BCN.
Mixed mono- and dialkyl phosphate-----	DUP.
Mixed octyl, decyl, and dodecyl phosphates, morpholine salts.	DUP.
9-Octadecyl phosphate-----	DUP.
Octyl phosphate, alkylamine salt-----	DUP.
Octyl polyphosphate-----	WAY.
Octyl polyphosphate, sodium salt-----	VIC.
Tri(mixed alkyl) phosphate-----	VIC.
All other-----	x.
Other phosphoric and polyphosphoric acid esters and salts	CST, VIC.
*Other nonbenzenoid surface-active agents, not sulfated or sulfonated:	
2,4,7,9-Tetramethyl-5-decyne-4,7-diol-----	AIR.
Tridecyl alcohol, ethoxylated and carbonated, sodium salt	x, x.
All other-----	AIR, STC.
<i>Sulfated and Sulfonated</i>	
*Acids, sulfated and sulfonated:	
Acetyloleic acid, sulfonated-----	DUP.
*Oleic acid, sulfonated-----	ACT, ACY, AHC, DEX, DRW, G, LUR, MRV, NOP, PC, PFZ, QCP, SCO, SON, SWT, TN, WHI, WHW.
Ricinoleic acid, sulfonated-----	DRW, NOP.
Alcohols, sulfated and sulfonated:	
n-Decyl sulfate, sodium salt-----	DUP, ONX, PCS.
n-Decyl sulfate, triethanolamine salt-----	DUP.
3,9-Diethyl-6-tridecyl sulfate-----	UCC.
n-Dodecyl sulfate, 2-amino-2-methylpropanol salt-----	DUP.
*n-Dodecyl sulfate, ammonium salt-----	AAC, DUP, ONX, PCS, STP.
*n-Dodecyl sulfate, diethanolamine salt-----	AAC, DUP, HLI, JRG, ONX, STP.
n-Dodecyl sulfate, N,N-diethylcyclohexylamine salt-----	DUP.
n-Dodecyl sulfate, isopropanolamine salt-----	JRG, PCS.
n-Dodecyl sulfate, magnesium salt-----	AAC, HLI.
n-Dodecyl sulfate, potassium salt-----	HLI, JRG, PG.
*n-Dodecyl sulfate, sodium salt-----	AAC, DUP, HLI, MYW, ONX, PCS, PG, RCD, RET, STP.
*n-Dodecyl sulfate, triethanolamine salt-----	AAC, DUP, HLI, MYW, ONX, PCS, PG, RCD, RET, STP.
2-Ethylhexyl sulfate, sodium salt-----	AAC, UCC, WTC.
7-Ethyl-2-methyl-4-undecyl sulfate-----	UCC.
n-Hexadecyl sulfate-----	AAC, DUP.
Mixed coconut oil alkyl and sperm oil alkyl sulfate, sodium salt.	DUP.
Nonyl sulfate-----	TN.
n-Octadecyl sulfate-----	AAC, DUP, EMK, PG.
n-Octadecyl sulfate, sodium salt-----	ONX, x.
n-Octadecyl sulfate, triethanolamine salt-----	DUP.
n-Octyl sulfate, sodium salt-----	DUP, PCS.
n-Tetradecyl sulfate, sodium salt-----	ONX.
Tridecyl sulfate, sodium salt-----	AAC.
All other-----	CMG, DEX, x.

TABLE 20B.--Surface-active agents for which U.S. production or sales were reported, identified by manufacturer, 1962--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
NONBENZENOID SURFACE-ACTIVE AGENTS--Continued	
<i>Sulfated and Sulfonated--Continued</i>	
Amides, amines, and quaternary ammonium salts, sulfated and sulfonated:	
*Dicarboxylic acid amides, sulfated and sulfonated:	
N-(1,2-Dicarboxyethyl)-N-octadecylsulfosuccinamic acid, tetrasodium salt.	ACY.
N-(2-Hydroxyethyl)-N-(tallow alkyl)sulfosuccinamide----	SCP.
N-Octadecylsulfosuccinamide, disodium salt-----	ACY.
N-(Oleoyloxyisopropyl)sulfosuccinamide-----	WTC.
Fatty acid - alkanolamine condensates, sulfated:	
*Coconut oil acids - ethanolamine condensate, sulfated, potassium salt.	DEX, EMK, HRT, ONX.
Coconut oil acids - ethanolamine condensate, sulfated, sodium salt.	AML.
Coconut oil acids - isopropanolamine condensate, sulfated, sodium salt.	APX.
Lauric acid - isopropanolamine condensate, sulfated----	PCS.
Oleic acid - ethanolamine condensate, sulfated-----	SCP.
Stearic acid - diethanolamine condensate, methyl sulfate.	DUP.
Stearic acid - ethanolamine condensate, sulfated-----	NOP.
All other-----	S.
Heterocyclic amides, amines, and quaternary ammonium salts, sulfated and sulfonated:	
1-Ethyl-2-(8-heptadecenyl)-1-(2-hydroxyethyl)-2-imidazolium ethyl sulfate.	APD.
1-Ethyl-2-(8-heptadecenyl)-2-imidazolium ethyl sulfate.	APD.
N-Ethyl-N-hexadecylmorpholinium ethyl sulfate-----	APD.
N-Ethyl-N-octadecylmorpholinium ethyl sulfate-----	APD.
N-Ethyl-N-(soybean oil alkyl)morpholinium ethyl sulfate	APD.
Taurine derivatives:	
N-Cyclohexyl-N-palmitoyltaurine-----	G.
N-Methyl-N-(coconut oil acyl)taurine-----	G.
*N-Methyl-N-oleoyltaurine-----	CRC, DEF, DRW, G, HRT, MRA, NOP, VAL, WIC.
N-Methyl-N-palmitoyltaurine-----	G.
N-Methyl-N-(tall oil acyl)taurine, sodium salt-----	G.
N-Methyl-N-(tallow acyl)taurine-----	G.
N-Methyl-N-(tallow acyl)taurine, sodium salt-----	LEV.
Other amides, amines, and quaternary ammonium salts, sulfated and sulfonated:	
Dimethyldioctadecylammonium ethyl sulfate-----	RFC.
Dimethyldioctadecylammonium methyl sulfate-----	ONX.
Ethyl dimethyl(mixed alkyl)ammonium ethyl sulfate-----	x.
N-(2-Hydroxyethyl)-N,N',N'-tris(2-hydroxypropyl)-ethylenediamine, disteate methyl sulfate.	DUP.
Lauric acid, 2-sulfoacetamidoethyl ester, potassium salt.	WTC.
N-(Mixed alkyl sulfonyl)glycine, sodium salt-----	G.
Mixed primary amines, ethoxylated and sulfated-----	RH.
Stearic acid - ethylenediamine condensate, mono-ethoxylated, methyl sulfate.	VAC, WTC.
Tall oil acids - polyalkylenepolyamine condensate, sulfated.	VIS.
N,N,N',N'-Tetrakis(2-hydroxypropyl)ethylenediamine dioleate methyl sulfate.	DUP.
All other-----	EMR.

TABLE 20B.--Surface-active agents for which U.S. production or sales were reported, identified by manufacturer, 1962--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
NONBENZENOID SURFACE-ACTIVE AGENTS--Continued	
<i>Sulfated and Sulfonated--Continued</i>	
Carboxylic acid esters, sulfated and sulfonated:	
*Dicarboxylic acid esters, sulfated and sulfonated:	
*Sulfosuccinic acid, bis(2-ethylhexyl) ester-----	ACY, AHC, CIN, CRC, GST, DAN, EFH, EMK, GGY, HRT, MOA, MRA, PC, QCP, RCD, TXZ.
Sulfosuccinic acid, bis(2-ethylhexyl) ester, sodium salt-----	ACY.
Sulfosuccinic acid, bis(tallow monoglyceride) ester----	RH.
Sulfosuccinic acid, didecyl ester, sodium salt-----	ACY, MOA.
Sulfosuccinic acid, dihexyl ester-----	ACY.
Sulfosuccinic acid, dipentyl ester, sodium salt-----	ACY.
Sulfosuccinic acid, ditridecyl ester, sodium salt-----	G.
All other-----	
Esters of sulfated and sulfonated alcohols:	
Coconut oil isethionate-----	DRW.
Coconut oil isethionate, sodium salt-----	G, LEV.
Glycerol mono(coconut oil) ester, sulfated, ammonium salt-----	CP.
Glycerol mono(coconut oil) ester, sulfated, sodium salt-----	CP.
2-Lauryloxy-1-propanesulfonic acid-----	SDH.
Esters of sulfated and sulfonated fatty acids:	
2-Butoxyethyl sulfo-oleate-----	S.
n-Butyl sulfo-oleate-----	AHC, AML, CIN, NOP, ONX, PC.
n-Butyl sulfuricinoleate-----	NOP.
Dodecyl sulfoacetate-----	NAC.
Ethyl sulfo-oleate-----	G, KAL, NOP.
Glycerol monostearate sulfoacetate-----	WTC.
Glycerol tri(sulfo-oleate)-----	DRW, MRV, NOP, SCP.
*Isopropyl sulfo-oleate-----	AHC, BRY, DEX, EMR, HRT, LUR, QCF, SON.
Methyl sulfo-oleate-----	AHC, NOP.
*n-Propyl sulfo-oleate-----	ACY, BSC, EFH, LEA, MRV, NOP, WM.
Tallow acids, methyl ester, sulfated-----	BFR.
Ethers, sulfated and sulfonated:	
n-Dodecyl alcohol, ethoxylated and sulfated, ammonium salt-----	AAC.
n-Dodecyl alcohol, ethoxylated and sulfated, sodium salt-----	AAC, DUP, PCS.
n-Dodecyl alcohol, ethoxylated and sulfated, triethanolamine salt-----	PG.
2-Hexyloxyethyl sulfate, sodium salt-----	SEY.
Sperm oil alcohol, ethoxylated and sulfated-----	DUP.
Tridecyl alcohol, ethoxylated and sulfated, ammonium salt-----	PCS, VIS.
Tridecyl alcohol, ethoxylated and sulfated, sodium salt-----	AAC, ARL, PCS, SEY.
All other-----	PG, x.
*Fats, oils, and waxes, sulfated and sulfonated:	
*Animal fats and oils, sulfated and sulfonated:	
*Crease, other than wool, sulfonated-----	NOP, SEA, WHW.
Lard, sulfonated-----	APX, EFH, WAW.
*Neat's-foot oil, sulfonated-----	ACT, APX, BAO, KAL, LEA, LUR, MRD, NOP, OTT, PC, SEA, SEY, SWT, WHW.
*Tallow, sulfonated-----	ACT, ACY, AHC, BCC, BRY, DRW, EFH, FFR, LEA, LUR, MRA, MRD, NOP, ONX, OTT, PC, QCP, SCP, SID, SON, SOS, SNW, TXZ, WHI.
All other-----	WHI.
Fish and marine animal oils, sulfated and sulfonated:	
*Cod oil, sulfonated-----	ACT, BAO, DRW, HRT, MRD, NOP, OTT, S, SEA, WAW, WHI, WHW.
Herring oil, sulfonated-----	NOP.

TABLE 20B.--Surface-active agents for which U.S. production or sales were reported, identified by manufacturer, 1962--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
NONBENZENOID SURFACE-ACTIVE AGENTS--Continued <i>Sulfated and Sulfonated--Continued</i>	
*Fats, oils, and waxes, sulfated and sulfonated--Continued Fish and marine animal oils, sulfated and sulfonated-- Continued	
Mixed fish oils, sulfonated-----	AML, SCO.
*Sperm oil, sulfonated-----	ACT, BAO, CI, DRW, HRT, KAL, KNG, LEA, MRD, NOP, ONX, OTT, QCP, RTC, S, SEA, SON, WAW, WHI, WHW.
Whale oil, sulfonated-----	KNG.
Vegetable oils, sulfated and sulfonated:	
*Castor oil, sulfonated-----	AAE, ACT, ACY, AHC, AML, APX, BRY, BSC, CI, DEX, DRW, DUP, FBC, G, HRT, KAL, KNG, LEA, LUR, MRA, MRD, MRV, NOP, ONX, OTT, PC, S, SCO, SCP, SEA, SLC, SON, SWT, WHI, WHW.
*Coconut oil, sulfonated-----	ACY, BAO, LEA, LUR, MRD, NOP, RTC, SEA, WHW.
Cottonseed oil, sulfonated-----	NOP, RTC.
Linseed oil, sulfonated-----	LEA.
Mustard seed oil, sulfonated-----	LUR, NOP.
*Peanut oil, sulfonated-----	ACY, AHC, LEA, NOP, SCP, SEY, SLC, SOS.
*Rice-bran oil, sulfonated-----	EFH, HRT, KNG, LUR, NOP, OTT, QCP.
*Soybean oil, sulfonated-----	DRW, HRT, KAL, LEA, MRD, ONX, SWT.
All other-----	FRR.
Other fats, oils, and waxes, sulfated and sulfonated:	
Glecostearin, sulfonated-----	SEA.
*Tall oil, sulfonated-----	ACY, AHC, APX, BAO, QCP, SEA, WHW.
Other nonbenzenoid surface-active agents, sulfated and sulfonated: Mixed alkanesulfonic acids, sodium salt-----	DUP.

Pesticides and Other Organic Agricultural Chemicals

TABLE 21B. --Pesticides and other organic agricultural chemicals for which U.S. production or sales were reported, identified by manufacturer, 1962

[Pesticides and other organic agricultural chemicals for which separate statistics are given in table 21A are marked below with an asterisk (*); products not so marked do not appear in table 21A because the reported data are accepted in confidence and may not be published. Manufacturers' identification codes shown below are taken from table 23. 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 23)
PESTICIDES AND OTHER ORGANIC AGRICULTURAL CHEMICALS, CYCLIC	
*Fungicides:	
2,6-Bis(dimethylaminomethyl)cyclohexanone-----	MTL.
2,4-Dichloro-6- <i>o</i> -chloroanilino- <i>s</i> -triazine-----	CHG.
2,3-Dichloro-1,4-naphthoquinone (Dichlone)-----	USR.
Diphenylammonium propionate-----	MTL.
2-Heptadecyl-2-imidazoline acetate (Glyodin)-----	UCC.
*Mercury fungicides:	
2-Chloro-4-(hydroxymercuri)phenol-----	DUP.
Chloromethoxypropyl mercuric acetate-----	SCI.
N-(Ethylmercuri)- <i>p</i> -toluenesulfonamide-----	DUP.
1,4,5,6,7,7-Hexachloro-N-(ethylmercuri)-5-norbornene- 2,3-dicarboximide-----	RBC.
4-(Hydroxymercuri)-2-nitrophenol-----	DUP.
8-(Methylmercurioxy)quinoline-----	MTL.
2-(Phenylmercuriamino)ethyl acetate-----	CLY.
N-Phenylmercuriformamide-----	VIN.
Phenylmercuryammonium acetate-----	GUA, SCI, TRO.
Phenylmercury hydroxide-----	MTL, WRC.
Phenylmercury lactate-----	CLY, GUA, WRC.
Phenylmercury naphthenate-----	HNX.
Phenylmercury oleate-----	CLY, GUA, HNX, MTL, TRO.
Phenylmercury propionate-----	MTL, RPC.
Tris(2-hydroxyethyl)(phenylmercuri)ammonium lactate-----	CLY.
2-(1-Methylheptyl)-4,6-dinitrophenyl crotonate-----	RH.
*Naphthenic acid, copper salt-----	CCA, FER, HSH, HNX, MLD, SM, SOC, SRR, TGL, TRO, WTC.
Pentachloronitrobenzene-----	MON.
*Pentachlorophenol (PCP)-----	BXT, DOW, FRO, MON, RCI.
Pentachlorophenol, sodium salt-----	DOW, MON, RCI.
*8-Quinololinol (8-Hydroxyquinoline), copper salt-----	GAM, HNX, MTL.
2,3,4,6-Tetrachlorophenol-----	DOW.
2,3,4,6-Tetrachlorophenol, sodium salt-----	DOW.
Tetrachloro- <i>p</i> -benzoquinone (Chloranil)-----	USR.
Tetrahydro-3,5-dimethyl-2H,1,3,5-thiadiazine-2-thione-----	CLY, SF.
N-(Trichloromethylthio)-4-cyclohexene-1,2-dicarboximide (Captan).-----	CHO.
N-(Trichloromethylthio)phthalimide (Folpet)-----	CHO.
*2,4,5-Trichlorophenol-----	DA, DOW, HK.
*2,4,5-Trichlorophenol, ethanalamine salt-----	DOW, G.
*2,4,5-Trichlorophenol, sodium salt-----	DOW, MON.
2,4,6-Trichlorophenol-----	DOW.
*Herbicides and plant hormones:	
5-Bromo-3- <i>sec</i> -butyl-6-methyluracil-----	DUP.
5-Bromo-3-isopropyl-6-methyluracil-----	DUP.
1-butyl-3-(3,4-dichlorophenyl)-1-methylurea (Heburon)-----	DUP.
2- <i>sec</i> -Butyl-4,6-dinitrophenol (DNBP)-----	DOW, FMN.
2- <i>sec</i> -Butyl-4,6-dinitrophenol, ammonium salt-----	FMN.
2- <i>sec</i> -Butyl-4,6-dinitrophenol, triethanolamine salt-----	CIS, DOW, FMN.
2-Chloro-4,6-bis(ethylamino)- <i>s</i> -triazine (Simazine)-----	GGY.
4-Chloro-2-butynyl <i>m</i> -chlorocarbanilate (Barban)-----	CIS, OTC, SPN.

TABLE 21B. -- Pesticides and other organic agricultural chemicals for which U.S. production or sales were reported, identified by manufacturer, 1962--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
PESTICIDES AND OTHER ORGANIC AGRICULTURAL CHEMICALS, CYCLIC--Continued	
*Herbicides and plant hormones--Continued	
2-Chloro-4-ethylamino-6-isopropylamino-s-triazine (Atrazine).	GGY.
N-(3-Chloro-4-methylphenyl)-2-methylvaleramide-----	FMN.
3-(p-Chlorophenyl)-1,1-dimethylurea (Monuron)-----	DUF.
3-(p-Chlorophenyl)-1,1-dimethylurea trichloroacetate-----	ACG.
3,6-Dichloro-2-anisic acid-----	VEL.
2-(2,4-Dichlorophenoxy)propionic acid-----	HPC.
2-(2,4-Dichlorophenoxy)propionic acid, 2-ethylhexyl ester.	HPC.
3-(3,4-Dichlorophenyl)-1,1-dimethylurea (Diuron)-----	DUF.
1-(3,4-Dichlorophenyl)-3-isopropyl-3-(2-propynyl)urea (Proban).	AMP.
N-(3,4-Dichlorophenyl)methacrylamide-----	FMN.
3-(3,4-Dichlorophenyl)-1-methoxy-1-methylurea (Linuron)--	DUF.
3,4-Dichloropropionanilide-----	MON, X.
1,2-Dihydro-3,6-pyridazinedione (Maleic hydrazide)-----	ACV, USR.
1,1-Dimethyl-3-phenylurea (Fenuron)-----	DUF.
1,1-Dimethyl-3-phenylurea trichloroacetate-----	ACG.
Dimethyl tetrachloroterephthalate-----	DA.
4,6-Dinitro-o-cresol (DNOC)-----	FMN.
4,6-Dinitro-o-cresol, sodium salt-----	FMN.
Diphenylacetone trile-----	LIL.
Gibberellic acid-----	ABB, MRK.
Indolebutyric acid-----	ARA.
Isopropyl carbanilate (Isopropyl N-phenylcarbamate) (IPC)	FMP, PPG.
Isopropyl 3-chlorocarbanilate (Isopropyl N-(3-chloro-phenyl)carbamate) (CIPC).	PPG.
1-Naphthaleneacetic acid and derivatives:	
1-Naphthaleneacetamide-----	AMC.
1-Naphthaleneacetic acid-----	AMC, COK.
1-Naphthaleneacetic acid, methyl ester-----	AMC, COK.
1-Naphthaleneacetic acid, sodium salt-----	AMC, BKL.
2-Naphthoxyacetic acid-----	BKL.
N-1-Naphthylphthalamic acid (NPA)-----	USR.
7-Oxabicyclo[2.2.1]heptane-2,3-dicarboxylic acid, diacidium salt (Endothal).	PAS.
Phenoxyacetic acid derivatives:	
(4-Chloro-o-tolyloxy)acetic acid (MCPA)-----	CHC, DOW.
(4-Chloro-o-tolyloxy)acetic acid, potassium salt-----	GTH.
*(2,4-Dichlorophenoxy)acetic acid (2,4-D)-----	CHC, DA, DOW, HPC, MON.
*(2,4-Dichlorophenoxy)acetic acid esters and salts:	
(2,4-Dichlorophenoxy)acetic acid, butoxyethoxypropyl ester.	DA.
(2,4-Dichlorophenoxy)acetic acid, 2-butoxyethyl ester	AMC.
(2,4-Dichlorophenoxy)acetic acid, butoxypolypropylene glycol ester.	DOW.
*(2,4-Dichlorophenoxy)acetic acid, n-butyl ester-----	AMC, DA, DOW, HPC, MON, RIV.
*(2,4-Dichlorophenoxy)acetic acid, sec-butyl ester-----	CHC, MON.
*(2,4-Dichlorophenoxy)acetic acid, dimethylamine salt-----	ALC, AMC, CHC, DA, DOW, HPC, RIV, TMH.
(2,4-Dichlorophenoxy)acetic acid, ethanolamine and isopropanolamine salt.	CHC, DOW.
(2,4-Dichlorophenoxy)acetic acid, ethyl ester-----	AMC, MON.
(2,4-Dichlorophenoxy)acetic acid, 2-ethylhexyl ester-----	DA, HPC.
*(2,4-Dichlorophenoxy)acetic acid, iso-octyl ester-----	CHC, CIS, DOW, MON, RIV.
*(2,4-Dichlorophenoxy)acetic acid, isopropyl ester-----	AMC, CHC, DA, DOW, HPC, MON, RIV.
(2,4-Dichlorophenoxy)acetic acid, lithium salt-----	GTH.
(2,4-Dichlorophenoxy)acetic acid, sodium salt-----	DOW.
*(2,4,5-Trichlorophenoxy)acetic acid (2,4,5-T)-----	DA, DOW, HPC, MON, TMH.

TABLE 21B.-- Pesticides and other organic agricultural chemicals for which U.S. production or sales were reported, identified by manufacturer, 1962--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
PESTICIDES AND OTHER ORGANIC AGRICULTURAL CHEMICALS, CYCLIC--Continued	
*Herbicides and plant hormones--Continued	
Phenoxyacetic acid derivatives--Continued	
*(2,4,5-Trichlorophenoxy)acetic acid esters and salts:	
(2,4,5-Trichlorophenoxy)acetic acid, amyl ester-----	HPC.
(2,4,5-Trichlorophenoxy)acetic acid, butoxyethoxy- propyl ester.	DA.
(2,4,5-Trichlorophenoxy)acetic acid, 2-butoxyethyl ester.	AMC.
(2,4,5-Trichlorophenoxy)acetic acid, butoxypoly- propyleneglycol ester.	DOW.
*(2,4,5-Trichlorophenoxy)acetic acid, n-butyl ester--	DA, DOW, HPC, MON, RIV.
(2,4,5-Trichlorophenoxy)acetic acid, sec-butyl ester-	MON.
(2,4,5-Trichlorophenoxy)acetic acid, 2-ethylhexyl ester.	DA, HPC.
*(2,4,5-Trichlorophenoxy)acetic acid, iso-octyl ester-	CIS, DOW, MON, RIV, TMH.
(2,4,5-Trichlorophenoxy)acetic acid, isopropyl ester-	MON.
*(2,4,5-Trichlorophenoxy)acetic acid, triethylamine salt.	DOW, HPC, RIV, TMH.
*Phenylmercury acetate (PMA)----- Polychloro-tetrahydro-methanoindene (Polychlorodicyclo- pentadiene) isomera.	
Sodium 2,4-dichlorophenoxyethyl sulfate-----	UCC.
N-Tolylphthalamic acid-----	USR.
Tributyl(2,4-dichlorobenzyl)phosphonium chloride-----	VC.
2-(2,4,5-Trichlorophenoxy)propionic acid (Silvex)-----	DOW, HPC.
2-(2,4,5-Trichlorophenoxy)propionic acid, 2-ethylhexyl ester.	HPC.
Tris[2-(2,4-dichlorophenoxy)ethyl]phosphite (2,4-DEP)---	USR.
Insect attractants:	
4-(p-Acetoxyphenyl)-2-butanone-----	TBK.
tert-Butyl 4 (and 5)-chloro-2-methylcyclohexanecarboxylate	TBK.
*Insecticides:	
Allethrin (Allyl homolog of Cinerin I)-----	
Benzyl thiocyanate-----	BPC.
*Chlorinated insecticides:	
1,1-Bis(p-chlorophenyl)-2-nitrobutane-----	COM.
1,1-Bis(p-chlorophenyl)-2-nitropropane-----	COM.
2-(p-tert-Butylphenoxy)-1-methylethyl 2-chloroethyl sulfite.	USR.
p-Chlorophenyl p-chlorobenzenesulfonate (Ovex)-----	DA, DOW.
p-Chlorophenyl 2,4,5-trichlorophenyl sulfone-----	FMN.
4,4'-Dichlorobenzilic acid-----	GGY.
1,1-Dichloro-2,2-bis(p-chlorophenyl)ethane (DDD) (TDE)-	ACG, PIC, RH.
1,1-Dichloro-2,2-bis(p-ethylphenyl)ethane-----	RH.
4,4'-Dichloro- <i>d</i> -methylbenzhydrol-----	ARA.
4,4'-Dichloro- <i>d</i> -(trichloromethyl)benzhydrol-----	RH.
Heptachloro-tetrahydro-methanoindene (Heptachlor)-----	VEL.
*Hexachlorocyclohexane (Benzene hexachloride)-----	DA, FRO, HK, PPG, SF.
*Hexachlorocyclohexane, 100% γ -isomer (Lindane)-----	HK.
Hexachloro-epoxy-octahydro-endo, endo-dimethano- naphthalene (Endrin).	SHC, VEL.
Hexachloro-epoxy-octahydro-endo, exo-dimethano- naphthalene (Dieldrin).	SHC.
Hexachloro-hexahydro-endo, exo-dimethanonaphthalene (Aldrin).	SHC.

TABLE 21B.--Pesticides and other organic agricultural chemicals for which U.S. production or sales were reported, identified by manufacturer, 1962--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
PESTICIDES AND OTHER ORGANIC AGRICULTURAL CHEMICALS, CYCLIC--Continued	
*Insecticides--Continued	
*Chlorinated insecticides--Continued	
Hexachloro-hexahydro-methano-benzodioxathiepinoxide (Endosulfan).	FMN.
Octachloro-tetrahydro-methanoindan (Chlordan)-----	VEL.
Toxaphene (Chlorinated camphene)-----	HPC.
*1,1,1-Trichloro-2,2-bis(p-chlorophenyl)ethane (DDT)----	ACG, DA, GGY, LEB, MTO, OMC.
1,1,1-Trichloro-2,2-bis(p-methoxyphenyl)ethane (Methoxychlor).	DUP.
N,N-Diethyltoluamide-----	HPC.
2,4-Dimethylbenzyl chrysanthemummonocarboxylate-----	BPC.
Dipropyl 2,5-pyridinedicarboxylate (Insect repellent)-----	ASL.
Isobornyl thiocyanatoacetate-----	BKC, CIS, HPC.
1-Naphthyl methylcarbamate-----	UCC.
Organophosphorus insecticides:	
O-(3-Chloro-4-methyl-2-oxo-2H-1-benzopyran-7-yl) O,O- diethyl phosphorothioate.	CHG.
S-(p-Chlorophenylthio)methyl O,O-diethyl phosphoro- dithioate (Carbophenothion).	SF.
S-(p-Chlorophenylthio)methyl O,O-dimethyl phosphoro- dithioate.	SF.
O,O-Diethyl O-(2-isopropyl-4-methyl-6-pyrimidinyl) phosphorothioate (Diazinon).	GGY.
*O,O-Diethyl O-(p-nitrophenyl) phosphorothioate (Parathion).	ACY, AMP, MON.
O,O-Dimethyl O-[4-(methylthio)-m-tolyl]phosphoro- thioate.	CHG.
*O,O-Dimethyl O-(p-nitrophenyl) phosphorothioate (Methyl parathion).	AMP, MON, SHC, VIC.
O,O-Dimethyl S-(4-oxo-1,2,3-benzotriazin-3(4H)- ylmethyl) phosphorodithioate.	CHG.
O,O-Dimethyl O-(2,4,5-trichlorophenyl) phosphoro- thioate (Ronnel).	DOW.
p-Dioxane-2,3-diyl ethyl phosphorodithioate-----	HPC.
O-Ethyl O-(p-nitrophenyl) phenylphosphonothioate-----	VIC.
a-Methylbenzyl 3-hydroxyacetate, dimethyl phos- phate ester.	SHC.
Nematocides: O-2,4-Dichlorophenyl O,O-diethyl phosphoro- thioate.	VC.
*Rodenticides:	
3-(Acetonylbenzyl)-4-hydroxycoumarin-----	ABB, PEN.
2-Pivaloyl-1,3-indandione-----	MOT, PIC.
PESTICIDES AND OTHER ORGANIC AGRICULTURAL CHEMICALS, ACYCLIC	
*Fungicides:	
Bis-1,4-bromoacetoxy-2-butene-----	VIN.
Cadmium succinate-----	MAL.
Disodium cyanodithiolimidocarbonate-----	BKM.
Dithiocarbamic acid insecticides:	
*Dimethyldithiocarbamic acid, ferric salt (Ferbam)-----	DUP, FMN, RBC, WRC.
Dimethyldithiocarbamic acid, manganese salt-----	FMN.
Ethylene bis(dithiocarbamic acid), diammonium salt-----	CIS, RBC.
*Ethylene bis(dithiocarbamic acid), disodium salt (Nabam).	CIS, DUP, FMN, RBC, RH.

TABLE 21B.--Pesticides and other organic agricultural chemicals for which U.S. production or sales were reported, identified by manufacturer, 1962--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
PESTICIDES AND OTHER ORGANIC AGRICULTURAL CHEMICALS, ACYCLIC--Continued	
*Fungicides--Continued	
Dithiocarbamic acid insecticides--Continued	
Ethylene bis(dithiocarbamic acid), manganese salt (Maneb).	CIS, DUP, RH.
Ethylene bis(dithiocarbamic acid), zinc salt (Zineb)---	CIS, DUP, FMN, RH.
Dodecylguanidine acetate (Dodine)-----	ACY.
Mercury fungicides:	
3-Ethyl-(mercurithio)-1,2-propanediol-----	DUP.
Ethylmercury acetate-----	CLY, DUP.
Ethylmercury chloride-----	DUP.
Ethylmercury phosphate-----	DUP.
Hydroxyethylmercury acetate-----	WRC.
2-Methoxyethylmercury acetate-----	WRC.
Methylmercury hydroxide-----	MRT.
Methylmercury nitrile-----	WRC.
Propanearsinic acid, calcium salt-----	VIN.
*Herbicides and plant hormones:	
Bis(trichloromethyl)sulfone-----	SF.
Cacodylic acid-----	ASL.
2-Chloroallyl diethyldithiocarbamate (CDEC)-----	MON.
N,N-Diallyl-2-chloroacetamide (CDAA)-----	MON.
2,3-Dichloroallyl diisopropylthiocarbamate-----	MON.
2,2-Dichloropropionic acid, sodium salt-----	DOW.
Diethyl dithiobis(thionoformate)-----	RBC.
O,O-Dimethyl (2,2,2-trichloro-1-butryloxyethyl)phos- phonate.	CHG.
S-Ethyl dipropylthiocarbamate (EPTC)-----	SF.
Hexachloroacetone-----	ACG.
Methanearsinic acid, calcium salt-----	VIN.
*Methanearsinic acid, disodium salt-----	ASL, CLY, VIN.
Methanearsinic acid, dodecyl- and octylammonium salts---	CLY, VIN.
S-Propyl butylethylthiocarbamate-----	SF.
S,S,S-Tributyl phosphorotrithioate-----	CHG.
Tributyl phosphorotrithioate-----	VC.
Trichloroacetic acid, sodium salt (TCA)-----	DOW.
2,3,3-Trichloroallyl diisopropylthiocarbamate-----	MON.
*Insecticides:	
2-(2-Butoxyethoxy)ethyl thiocyanate-----	X.
Butoxypolypropylene glycol (Fly repellent)-----	UCC.
Maldehyde-----	CCM.
*Organophosphorus insecticides:	
S-[1,2-Bis(ethoxycarbonyl)ethyl] O,O-dimethyl phos- phorodithioate (Malathion).	ACY.
1,2-Dibromo-2,2-dichloroethyl dimethyl phosphate (Naled).	SHC.
2,2-Dichlorovinyl dimethyl phosphate (DDVP)-----	MTR, SHC.
O,O-Diethyl S-[2-(ethylthio)ethyl] phosphorodithioate---	CHG.
O,O-Diethyl O-2-(ethylthio)ethyl phosphorothioate---	CHG.
O,O-Diethyl S-2-(ethylthio)ethyl phosphorothioate---	CHG.
O,O-Diethyl S-(ethylthio)methyl phosphorodithioate---	ACY.
O,O-Diethyl phosphorochloridodithioate-----	MON.
Diethyl phosphorochloridodithioate-----	VIC.
O,O-Diethyl phosphorodithioate, sodium salt-----	MON.
Dimethyl 3-hydroxycrotonate, dimethyl phosphate ester---	SHC.
O,O-Dimethyl phosphorochloridodithioate-----	MON.

TABLE 21B. -- Pesticides and other organic agricultural chemicals for which U.S. production or sales were reported, identified by manufacturer, 1962--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
PESTICIDES AND OTHER ORGANIC AGRICULTURAL CHEMICALS, ACYCLIC--Continued	
*Insecticides--Continued	
*Organophosphorus insecticides--Continued	
Dimethyl phosphorochloridithionate-----	VIC.
Ethyl methylene phosphorodithioate (Ethion)-----	FMN.
Ethyl pyrophosphate (Tetraethyl pyrophosphate) (TEPP)--	ALC.
S-2-(Ethylsulfanyl)ethyl O,O-dimethyl phosphoro-	CHG.
dithioate.	
Methyl 3-hydroxycrotonate, dimethyl phosphate ester----	SHC.
2-Thiocyanatoethyl laurate-----	x.
*Rodenticides: Sodium fluoroacetate-----	RBC.
*Soil conditioners: Polyacrylonitrile, hydrolyzed, sodium	ACY, ALC.
salt.	
*Soil fumigants:	
*Bromomethane (Methyl bromide)-----	AMF, DOW, GTL, KLK, MCH.
Chloropicrin (Trichloronitromethane)-----	DOW, IMC.
*1,2-Dibromo-3-chloropropane-----	AMF, DOW, SHC.
1,3-Dichloropropane-----	DOW.
1,3-Dichloropropene, 1,2-Dichloropropane-----	DOW, SHC.
N-Methyldithiocarbamic acid, sodium salt-----	DUF, SF, x.

Miscellaneous Synthetic Organic Chemicals

TABLE 22B.-- Miscellaneous chemicals for which U.S. production or sales were reported, identified by manufacturer, 1962

[Miscellaneous chemicals for which separate statistics are given in table 22A are marked with an asterisk (*); chemicals not so marked do not appear in table 22A because the reported data are accepted in confidence and may not be published. Manufacturers' identification codes shown below are taken from table 23. 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 23)
MISCELLANEOUS CHEMICALS, CYCLIC	
6-Acetoxy-2,4-dimethyl-m-dioxane-----	GIY.
Adenine sulfate-----	KF.
Adenosine derivatives-----	PBS, SBR.
2-Aminobenzothiazole-----	FMT.
1-(2-Aminoethyl)piperazine-----	JCC.
Aryldiamines, mixed-----	DA.
6-Azauridine and other uridine derivatives-----	SBR.
Barium octylphenate-----	CCA.
Benzoic acid salts:	
Calcium benzoate-----	HN.
Sodium benzoate, tech-----	HN, TNP.
Sodium benzoate, U.S.P-----	HK, HN, MON, TNP.
Other-----	CCW.
p-Benzoquinone (p-Quinone)-----	EKT.
Benzothiazole-----	ACT.
*Benzoyl peroxide-----	CAD, NOC, OXY, RCI, SDH, UPR, WTL.
Benzylresorcinol-----	G.
p-Benzylaminophenol hydrochloride-----	EK.
Biological stains-----	HLC, NAC.
Bis(2,4-dichlorobenzoyl) peroxide-----	CAD, OXY.
1,4-Bis[2-(4-methyl-5-phenyloxazolyl)]benzene-----	ARA.
1,4-Bis[2-(5-phenyloxazolyl)]benzene-----	ARA.
Boron fluoride-phenol complex-----	ACG.
a-[2-(2-Butoxyethoxy)ethoxy]-4,5-methylenedioxy-2-propyltoluene (Piperonyl butoxide)-----	FMP.
Butyl benzoate-----	CIN, KLK.
p-tert-Butylbenzoic acid, barium bis-salt-----	CCA.
2(and 3)-tert-Butyl-4-methoxyphenol-----	EKT, UPM.
p-tert-Butyl-x-methylcinnamaldehyde-----	GIY.
tert-Butyl peroxybenzoate-----	WTL.
4-tert-Butylpyrocatechol-----	DOM.
Camphene-----	GLD, HPC.
Centralite-1 (N,N'-Diethyl-N,N'-diphenylurea)-----	PAS.
Chemical indicators-----	EK, HLC, LAM, NAC.
Chemical reagents-----	ACG, EK, GFS, HLC, LAM, NAC, PIC, RSA.
Chloramine B (Sodium derivative of N-chlorobenzenesulfonamide).-----	NES.
Chlorinated terphenyls-----	KPT.
o-Chlorobenzylidenemalononitrile-----	GAM.
1-(2-Chlorophenyl)-1-(4-chlorophenyl)-2,2-dichloroethane-----	ALH.
Chlorophyllin, sodium-potassium-copper-----	KCH.
Cumene hydroperoxide-----	HPC.
*Cyclohexanone peroxide-----	NOC, UPR, WTL.
1,4-Cyclohexylenedimethanol-----	EKT.
N-Cyclohexyltaurine, sodium salt-----	G.
*Cyclopropane-----	MAL, OH, OMS, TAE.
Cytidine and derivatives-----	PBS, SBR.
Decahydronaphthalene (Decalin)-----	DUP.
Decyl diphenyl phosphite-----	HK.
1,4-Diazabicyclo[2.2.2]octane (Triethylenediamine)-----	HOU.
Diazodinitrophenol-----	HPC.
1,3-Dibromo-5,5-dimethylhydantoin-----	ARA.
2,5-Di-tert-butyl-p-benzoquinone-----	EKT.

TABLE 22B.--Miscellaneous chemicals for which U.S. production or sales were reported, identified by manufacturer, 1962--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
MISCELLANEOUS CHEMICALS, CYCLIC--Continued	
*2,6-Di-tert-butyl-p-cresol:	
*Food grade-----	CAT, EKT, HPC, KPT, SHC.
*Tech-----	BFG, CAT, EKT, HPC, KPT, SHC.
2,5-Di-tert-butylhydroquinone-----	EKT.
1,3-Dichloro-5,5-dimethylhydantoin-----	GLY.
p-(Dichlorosulfamoyl)benzoic acid (Halazone)-----	ABB.
Dichloro-s-triazine-2,4,6(1H,3H,5H)trione (Dichloroisocyanuric acid).	MON.
Dichloro-s-triazine-2,4,6(1H,3H,5H)trione, potassium salt-----	MON.
Dichloro-s-triazine-2,4,6(1H,3H,5H)trione, sodium salt-----	MON.
Dicyclohexylammonium nitrite-----	CMC.
1,3-Dicyclohexylthiourea-----	G.
Dicyclopentadienylcobalt-----	ARA.
Dicyclopentadienyliron-----	TNA.
Dicyclopentadienyltitanium dichloride-----	ARA.
Didecyl phenyl phosphite-----	HK.
2,2'-Dihydroxy-4,4'-dimethoxybenzophenone-----	G.
2,6-Dihydroxyisonicotinic acid (2,6-Dihydroxy-4-carboxypyridine).	EK.
2,2'-Dihydroxy-4-methoxybenzophenone-----	ACY.
3,5-Diiodosalicylic acid-----	MRT.
Diisopropylbenzene hydroperoxide, mixed isomers-----	HPC.
Diisopropyl-m,p-cresols-----	GTV.
p-Dimethoxybenzene (Dimethyl ether of hydroquinone)-----	ASH, EKT.
5,6-Dimethylbenzimidazole-----	ALH.
2,2-Dimethylethylenimine-----	GEM.
2,2-Dimethylhexane-2,5-di(peroxybenzoate)-----	WTL.
4,4-Dinitrocarbanilide-4,6-dimethyl-2-pyrimidinol-----	MRK.
Dioxane (1,4-Diethylene oxide)-----	DOW, UCC.
Diphenyl hydrogen phosphite-----	HK.
Diphenyloxazole-----	ARA.
Enzymes:	
Hydrolytic:	
Amylases-----	BAX, RH.
Proteases-----	BAX, RH.
Other-----	RH.
Nonhydrolytic-----	FMO.
1,2-Epoxy-3-phenoxypropane (Glycidyl phenyl ether)-----	SHC.
6-Ethoxy-m-anol (Propenylmethylguethol)-----	ICO.
5-Ethyl-10,10-diphenylphenazasiline-----	MRK.
Ethylene diamine bis[<i>o</i> -hydroxyphenylacetic acid], monosodium ferric salt.	GGY.
2-Ethylhexyl octylphenyl phosphite-----	VC.
2-Ethylhexyl tallate-----	UCC.
Ethyl hydrocaffeate-----	ICO.
4-Ethylmorpholine-----	BC, JCC, UCC.
Fenchone-----	HNW.
*Flotation reagents:	
Benzoylthiono-l-ethylpropyl carbanate-----	DOW.
Dicrosylphosphorodithioic acid (Dicrosylthiophosphoric acid).	ACY.
Dicrosylphosphorodithioic acid, ammonium salt-----	ACY.
Dicrosylphosphorodithioic acid, sodium salt-----	KCU.
2,2'-Dimethylthiocarbanilide (Di- <i>o</i> -tolylthiourea)-----	ACY, DUP.
Rosin amines-----	HPC.
Thiocarbanilide (Diphenylthiourea)-----	ACY, MON, NAC.

TABLE 22B.--Miscellaneous chemicals for which U.S. production or sales were reported, identified by manufacturer, 1962--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
MISCELLANEOUS CHEMICALS, CYCLIC--Continued	
Furan derivatives:	
2-Furaldehyde (Furfural)-----	QKO.
Tetrahydrofurfuryl alcohol-----	QKO.
Gallic acid, tech-----	MAL.
*Gasoline additives:	
N,N'-Bis(1,4-dimethylpentyl)-p-phenylenediamine-----	EKT.
p-Butylaminophenol-----	DUP.
2,6-Di-tert-butylphenol-----	TNA.
*N,N'-Di-sec-butyl-p-phenylenediamine-----	DUP, EKT, UPM.
N,N'-Diisopropyl-p-phenylenediamine-----	DUP, EKT.
*N,N'-Disalicylidene-1,2-propanediamine-----	DUP, EKT, SOI, SPP, TNA, TX, UPM.
Methylcyclopentadienylmanganese tricarbonyl-----	TNA.
2,2'-Thiobis[6-tert-butyl-4-methylphenol]-----	CAT.
All other-----	EKT, UPM.
Glyceryl p-aminobenzoate-----	VND.
Guanosine phosphates-----	PBS, SBR.
Hesperidin-----	SKG.
Hexahydroindan (Hydrindane)-----	MEE.
Hexa(2-methylaziridinyl)-1,3,5-phosphotriazine-----	IGO.
*Hexamethylenetetramine, tech-----	BOR, DUP, HKD, HN, PLS, UCP.
o-(2-Hydroxy-p-anisoyl)benzoic acid-----	ACY.
2-Hydroxy-4-methoxybenzophenone-----	ACY, G.
2-Hydroxy-4-methoxy-2'-methylbenzophenone-----	ACY.
2-Hydroxy-4-methoxy-5-sulfobenzophenone trihydrate-----	ACY.
Hydroxymethyl-5,5-dimethylhydantoin-----	GLY.
2-Hydroxy-4-n-octoxybenzophenone-----	ACY.
2-Imidazolidinethione (1,3-Ethylene-2-thiourea)-----	PAS.
Inosine-----	SBR.
Inosine phosphates-----	PBS.
Isocyanuric acid-----	MON.
Isopropylcresols-----	CP, GIV.
p-Isopropyl- λ -methylcinnamaldehyde-----	GIV.
Isopropyl tallate-----	DEX.
Laurylmorpholine-----	BC.
Lemon biflavonoid-----	SKG.
*Lubricating oil and grease additives:	
Chlorosulfurized and sulfurized compounds:	
Alicyclic compounds, sulfurized-----	SOI.
Heterocyclic compounds, sulfurized-----	ORO.
Liquid disulfide-----	HK.
Tall oil ester, sulfurized-----	LUB.
Terpenes, sulfurized-----	LUB.
Oil-soluble petroleum sulfonates:	
Oil-soluble petroleum sulfonate, ammonium salt-----	SIN.
*Oil-soluble petroleum sulfonate, barium salt-----	ATR, CO, LUB, SIN, SON, x.
*Oil-soluble petroleum sulfonate, calcium salt-----	CO, LUB, ORO, SHO, SOI, SON, x.
*Oil-soluble petroleum sulfonate, sodium salt-----	CO, ENJ, MOR, NOP, PAR, SHO, SOC, SOI, SON, SUN, TX.
Phenol salts:	
Barium salt of dodecylphenol-----	x.
Barium salt of nonylphenol-----	CCA.
Barium salts of other alkylphenols-----	LUB, x.
Calcium salt of octylphenol-formaldehyde-----	SHC.
Calcium salt of polypropylphenol-----	ORO.
Calcium salts of other alkylphenols-----	LUB, SIN.
All other-----	ENJ, LUB, ORO, SIN, TNA.
Phosphorodithioates (Dithiophosphates)-----	ORO, x.
All other-----	ENJ, LUB, MON, ORO, SIN, SPP, VC, x.

TABLE 22B.-- *Miscellaneous chemicals for which U.S. production or sales were reported, identified by manufacturer, 1962--Continued*

Chemical	Manufacturers' identification codes (according to list in table 23)
MISCELLANEOUS CHEMICALS, CYCLIC--Continued	
p-Menthane-----	HNW, HFC.
8-p-Menthyl hydroperoxide-----	HNW, HFC.
4-Methoxyphenol-----	ASL, EKT, ICO.
N-Methylanthranilic acid-----	GIV.
2-Methylaziridine-----	ICO.
2,2'-Methylenebis[6-tert-butyl-4-methylphenol]-----	CAT.
2,2'-Methylenebis[4-chlorophenol] (Dichlorophene)-----	GIV.
4,4'-Methylenebis[2,6-di-tert-butylphenol]-----	TNA, SHC.
Methylenebis[5,5-dimethylhydantoin]-----	GLY.
2,2'-Methylenebis[3,4,6-trichlorophenol] (Hexachlorophene)-----	GIV.
2,2'-Methylenedi-p-cresol (Bis(5-methyl-2-hydroxyphenyl) methane).-----	GIV.
Methylenenorbornylene-----	RBC.
Methylglucoside-----	GRN.
4-Methylmorpholine-----	JCC, UCC.
Methylnorbornene-2,3-dicarboxylic anhydride (Methylbicyclo-(2.2.1)heptene-2,3-carboxylic anhydride).-----	ICO.
Methyl phenyl phosphates-----	TNA.
1-Methyl-2-pyrrolidone, monomer-----	G.
Methyl tallate-----	GHM.
Methyl terpinyl ether-----	HPC.
Morpholine-----	JCC, UCC.
Morpholine salt of p-toluenesulfonic acid-----	AMB.
*Naphthenic acid salts:	
Aluminum naphthenate-----	HSH.
Barium naphthenate-----	CCA, QCP.
Cadmium naphthenate-----	CCA.
*Calcium naphthenate-----	CCA, FER, HNX, HSH, MLD, MR, SHP, SOC, SPP, SRR, SW, TRO, WTC.
Cobalt lead manganese naphthenate-----	HNX, HSH, SOC.
*Cobalt naphthenate-----	CCA, CCC, CS, FER, HNX, HSH, MLD, MR, SHP, SOC, SPP, SRR, SW, TRO, WTC.
*Iron naphthenate-----	CCA, HNX, HSH, SOC, SRR, WTC.
*Lead naphthenate-----	CCA, CCC, CCW, FER, HNX, HSH, MLD, MR, QCP, SHP, SOC, SPP, SRR, SW, TRO, WTC.
Lithium naphthenate-----	CCA.
*Manganese naphthenate-----	CCA, CCC, FER, HNX, HSH, MLD, SHP, SOC, SPP, SRR, SW, TRO, WTC.
Mercury naphthenate-----	MTL, TRO.
Nickel naphthenate-----	CCA.
Rare earths naphthenate-----	CCA, HNX.
Sodium naphthenate-----	CCA.
Strontium naphthenate-----	CCA.
*Zinc naphthenate-----	CCA, CCC, FER, HNX, HSH, MLD, SHP, SOC, SRR, SW, TRO, WTC.
Other-----	HNX, SPP.
m-Nitrobenzoic acid and sodium salt-----	WAY.
o-Nitrobenzoic acid and sodium salt-----	WAY.
Octafluorocyclobutane-----	DUP.
Octylphenyl acid phosphate-----	VC.
Organic mercury compounds:	
Phenyl mercuric borate-----	WRC.
Pyridyl mercuric acetate-----	MAL.
Pentaerythrityl tetra(diphenyl phosphite)-----	HK.
Phenolthiosulfonic acid-----	G.
2-Phenoxyethanol (Ethylene glycol monophenyl ether)-----	DOW, UCC.
2-(2-Phenoxyethoxy)ethanol (Diethylene glycol phenyl ether).-----	DOW.

TABLE 22B.-- *Miscellaneous chemicals for which U.S. production or sales were reported, identified by manufacturer, 1962--Continued*

Chemical	Manufacturers' identification codes (according to list in table 23)
MISCELLANEOUS CHEMICALS, CYCLIC--Continued	
Phenyl acid phosphate-----	VC
2,2'-(p-Phenyleneoxy)diethanol (2,2-Paraphenylenedioxydiethanol).	EKT.
Phenylmagnesium bromide-----	ARA.
Phenylmercaptotetrazole-----	TNC.
4-Phenylmorpholine-----	UCC.
5-Phosphorylribose-1-pyrophosphate-----	PBS.
*Photographic chemicals:	
N-(o-Acetamidophenethyl)-1-hydroxy-2-naphthamide-----	EKT.
2-(4-Amino-N-ethyl-m-toluidino)ethyl sulfate-----	EKT.
3-Amino-6-methoxy-o-cresol hydrochloride (2-Methyl-6-methoxy-4-aminophenol hydrochloride).	x.
3-Amino-1,2,4-triazole (5-Amino-1,3,4-triazole)-----	FMT.
*Benzotriazole-----	EK, FMT, MEE, MRT.
2,2',4,4'-Biphenyltetrol-----	FMT.
Catechol (Pyrocatechin)-----	KPC.
5-Chlorobenzotriazole-----	FMT.
3-Chloro-4-diethylaminobenzenediazonium chloride (p-Diazo-2-chloro-N,N-diethylaniline) - zinc chloride.	FMT.
Chlorohydroquinone-----	EK.
2,4-Diaminophenol dihydrochloride (Amidol)-----	VPC.
2,5-Dibutoxy-4-morpholinobenzenediazonium chloride-----	FMT.
2,5-Diethoxy-4-morpholinobenzenediazonium chloride (1-N-Morpholine-4-diazo-2,5-diethoxybenzene).	FMT, IDC.
p-Diethylaminobenzenediazonium chloride (p-Diazo-N,N-diethylaniline) - zinc chloride.	FMT, G, IDC, MRT.
N,N-Diethyl-p-phenylenediamine hydrochloride-----	EKT.
N,N-Diethyltoluene-3,4-diamine, monohydrochloride-----	EKT, FMT.
2,5-Dihydroxybenzenesulfonic acid-----	EK.
p-Diethylaminobenzenediazonium chloride (p-Diazo-N,N-dimethylaniline) - zinc chloride.	FMT, IDC.
p-Diphenyldiazonium sulfate-----	FMT.
p-(N-Ethylbenzimidobenzenediazonium chloride (p-Diazo-N-benzyl-N-ethylaniline) - zinc chloride.	FMT, MRT.
p-[Ethyl(2-hydroxyethyl)amino]benzenediazonium chloride (p-Diazo-N-ethyl-N-hydroxyethylaniline) - zinc chloride.	FMT, IDC.
N-Ethyl-N-hydroxyethyl-p-phenylenediamine sulfate-----	IDC.
N-Ethyl-N-(β-methanesulfonamidoethyl)toluene-2,5-diamine sulfate.	EKT.
Hydroquinone (Hydroquinol)-----	CRS, EKT.
p-[(2-Hydroxyethyl)methylamino]benzenediazonium chloride (p-Diazo-N-hydroxyethyl-N-methylaniline) - zinc chloride.	FMT, IDC.
3-Hydroxy-N-(2-hydroxyethyl)-2-naphthamide (β-Oxynaphthoicmonoethanolamide).	FMT.
5-Hydroxy-7-methyl-1,3,4-triazolindolizine-----	FMT.
N-(p-Hydroxyphenyl)glycine-----	IDC.
1-(3-Hydroxyphenyl)urea-----	FMT.
4-Isopropoxy-1-naphthol-----	x.
4-Methoxy-1-naphthol-----	x.
p-Methylaminophenol sulfate (Metol)-----	EK.
5-Methylbenzotriazole-----	EK.
2-Methylbenzoxazole-----	FMT.
2-Methylnaphthoxazole-----	FMT.
4-Methyl-1-phenyl-3-pyrazolidinone-----	WAY.
2-Methylthiazolone-----	FMT.
6-Nitrobenzimidazole-----	EK, FMT.

TABLE 22B.--Miscellaneous chemicals for which U.S. production or sales were reported, identified by manufacturer, 1962--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
MISCELLANEOUS CHEMICALS, CYCLIC--Continued	
*Photographic chemicals--Continued	
Phenylhydroquinone-----	ACY.
Phenyl-5-mercaptotetrazole-----	FMT.
1-Phenyl-3-pyrazolidinone-----	GGY, WAY.
4-Phenylpyrocatechol-----	x.
4,4'-Thiodiresorcinol (Diresorcyyl sulfide)-----	BKC.
1-(2,4,6-Trichlorophenyl)-3-(4-nitroanilino)-2-pyraz- olin-5-one-----	EKT.
All other-----	EKT, FMT.
Phthalic acid, lead salt, dibasic-----	NTL.
Phthalocyanine disulfonic acid, cobalt salt-----	NAC.
Phthalocyanine disulfonic acid, copper salt-----	NAC.
*Pinene-----	CBY, GLD, HPC.
Polyethylene terephthalate-----	DUP, EK.
Polyvinyl phthalate-----	EK.
Propyl gallate-----	EKT, HN.
Pyridine phosphonucleotides-----	PBS.
Pyridylborane-----	CAL.
Pyrogallol (Pyrogallic acid)-----	MAL.
*Rosin acid salts:	
Aluminum resinate-----	JMS, MAL.
Calcium resinate-----	JMS, JOD, SW.
Calcium zinc resinate-----	JOD.
Copper resinate-----	JMS.
Iron resinate-----	JMS.
Lead resinate-----	HSH, JMS.
Manganese resinate-----	JMS.
Zinc resinate-----	JMS, SW.
*Salicylanilide-----	DUP, FIN, MEE, MON.
Salicylanilide, polybrominated-----	FIN.
Salicylic acid, lead salt-----	NTL.
Silicones-----	SPD.
Sodium cresoxide (Cresylic acid, sodium salt)-----	DEX, GOC.
Sucrose octabenzozate-----	TNP.
Sulfosalicylic acid-----	MON, MRK.
Tall oil fatty acid chloride-----	G.
*Tall oil salts (Linoleic-rosin acid salts):	
Barium zinc tallate-----	HSH.
*Calcium tallate-----	CCA, HNX, MLD, TRO, WTC.
*Cobalt tallate-----	CCA, CCC, FER, HNX, HSH, MLD, SHP, SRR, TRO, WTC.
*Copper tallate-----	CCA, HNX, HSH, SHP.
Iron tallate-----	CCA, HNX, MCA, SRP, WTC.
Lead manganese tallate-----	HSH.
*Lead tallate-----	CCA, CCC, FER, HNX, HSH, MLD, SHP, SPP, SRR, TRO, WTC.
*Manganese tallate-----	CCA, CCC, FER, HNX, HSH, MLD, SHP, SRR, TRO, WTC.
Zinc glyceryl tallate-----	CCA.
Zinc tallate-----	CCA, HSH.
Tannic acid-----	MAL.
*Tanning materials, synthetic:	
Hydroxytoluenesulfonic acid, formaldehyde condensate (Cresol-formaldehyde sulfonate), sodium salt.	G, GGY.
*2-Naphthalenesulfonic acid, formaldehyde condensate and salts.	GRD, NOP, NYC, RH.
1-Phenol-2-sulfonic acid, formaldehyde condensate-----	NAC, NOP, RH.
Styrene maleic anhydride interpolymers, partial sodium salt.	DUP.
Sulfonyldiphenolsulfonic acid, formaldehyde condensate--	G.

TABLE 22B.-- Miscellaneous chemicals for which U.S. production or sales were reported, identified by manufacturer, 1962--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
MISCELLANEOUS CHEMICALS, CYCLIC--Continued	
2-Terpinoxyethanol (Ethylene glycol terpinyl ether)-----	HPC.
1,2,3,4-Tetrahydronaphthalene (Tetralin)-----	DUP.
Tetrahydro-2-naphthylmethylidene-1-octadecenylpyrimidine-----	SPP.
Tetrahydrothiophene-----	ORO, PAS.
Tetranitrocarbazole-----	HML.
Tetraphenylbutadiene-----	ARA.
Tetraphenyltin-----	MET.
*Textile chemicals, other than surface-active agents:	
N-Benzyl (and N,N-dibenzyl)-p-sulfanilic acid-----	G.
1,3-Bis(hydroxymethyl)-2-imidazolidone (Dimethylol ethylene urea).	ACY, x.
1-[(Octadecyloxy)methyl]pyridinium chloride-----	DUP.
Phenol, sulfated-----	G.
Tetrahydro-3,5-bis(methoxymethyl)-4H-1,3,5-oxadiazin-4-one.	x.
2,2',4,4'-Tetrahydroxybenzophenone-----	G.
2,2'-Thiobis[4-chlorophenol]-----	GIV, OPC.
2,2'-Thiobis[4,6-dichlorophenol]-----	CAT, MON, SDH.
[2,2'-Thiobis(4-octylphenolate)]-n-butylamine nickel-----	ACF.
o-Toluidine-formaldehyde hydrochloride-----	RBC.
o-Tolylbiguanide-----	MON.
3,4,4'-Trichlorocarbanilide-----	MON.
Trichloromelamine-----	WTM.
1,3,5-Trichloro-s-triazine-2,4,6(1H,3H,5H)trione (Trichloroisocyanuric acid).	MON.
Tri-(m,p)-cresyl borate-----	USB.
Triphenyl phosphite-----	HK, MON.
Triphenylphosphorus-----	x.
Tris(1-aziridinyl)phosphine oxide-----	CEM.
Tris[1-(2-methylaziridinyl)]phosphine oxide-----	ICO.
Tris(2-methylaziridinyl)-1,3,5-triazine-----	ICO.
Uridine and derivatives-----	PBS.
Vinyl cyclohexenedioxide-----	UCC.
1-Vinyl-2-pyrrolidinone, monomer and polymer-----	G.
1-Vinyl-2-pyrrolidinone - styrene copolymer-----	G.
1-Vinyl-2-pyrrolidinone - vinyl acetate copolymer-----	G.
MISCELLANEOUS CHEMICALS, ACYCLIC	
Acetacetamidoacetamide-----	RBC.
*Acetaldehyde-----	BFG, CEL, COM, DUP, EKT, HPC, MON, PUB, SHC, UCC.
Acetamide-----	ACG.
Acetamide hydrochloride-----	BPC, MRK.
2-Acetamidoethanol (N-Acetylanthanolamine)-----	RBC.
*Acetic acid, synthetic, 100%-----	CEL, COM, EKT, HPC, PUB, UCC.
*Acetic acid salts:	
Aluminum acetate-----	ACY, UCC.
Aluminum subacetate-----	MAL.
*Ammonium acetate-----	ACG, BKC, MAL, WSN.
Barium acetate-----	ACG, BKC, MAL.
Cadmium acetate-----	ACG, BKC.
Calcium acetate-----	ACG, BKC, MAL, WSN.
Chromium acetate-----	ACY.
Cobalt acetate-----	BKC, HSH, SHP.
*Copper acetate-----	ACG, BKC, UCC.
Lead acetate-----	ACG, BKC, SRR, SW.
Lead subacetate-----	ACG, BKC, MAL.
Lead tetraacetate-----	ARA.

TABLE 22B.--Miscellaneous chemicals for which U.S. production or sales were reported, identified by manufacturer, 1962--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued	
*Acetic acid salts--Continued	
*Magnesium acetate-----	ACG, BKC, MAL.
Manganese acetate-----	HSH, SHP.
Mercuric acetate-----	ACG, BKC, MAL.
Methylmercury acetate-----	DUP.
Nickel acetate-----	BKC, HSH, SHP.
*Potassium acetate-----	ACG, BKC, CWL, MAL, UCC.
Silver acetate-----	MAL.
*Sodium acetate-----	ACG, BKC, EKT, MAL, UCC, WSN.
*Zinc acetate-----	ACG, BKC, HSH, MAL, UCC.
Zirconium acetate-----	NTL.
*Acetic anhydride, 100%:	
From acetaldehyde-----	HPC.
From acetic acid, other than recovered, by the vapor-	CEL, EKT.
phase process.	
From acetic acid, recovered, by the vapor-phase process-	CEL.
From ethylene-----	UCC.
Acetin:	
Mono-----	HAL, KES.
Tri-----	EKT, UCC.
*Acetone:	
By fermentation-----	PUB.
From cumene-----	ACP, HPC, MON, SHC, SOC.
*From isopropyl alcohol-----	EKT, EKX, ENJ, SHC, UCC.
All other-----	CEL.
Acetone semicarbazone-----	
*Acetonitrile-----	
Acetyl chloride-----	NOR.
Acetyl peroxide-----	EKX, SFA, UCC.
Acrolein (Acrylaldehyde)-----	TBK.
*Acrylic acid-----	
Acrylic monomers not specifically listed-----	WTL.
*Acrylonitrile-----	SHC, UCC.
Adipic acid-----	BFG, CEL, DBC, MPM, RH, UCC.
Adipic acid, ethylene glycol-propylene glycol ester-----	RH.
Adiponitrile-----	ACY, BFG, DUP, MON, SOH, UCC.
Adipoyl chloride-----	CS, DUP, MON, NAC.
*Alcohols, monohydric, unsubstituted:	
*Alcohols C ₉ or lower:	
*Allyl alcohol-----	
Amyl alcohols:	
Unmixed:	
2-Methyl-2-butanol (tert-Amyl alcohol)-----	PAS.
2-Pentanol-----	PAS, UCC.
3-Pentanol-----	UCC.
Mixed:	
Fusel oil, crude-----	USI.
Fusel oil, refined-----	COM, PUB, USI.
Other than fusel oil:	
Primary mixed-----	PAS, UCC.
Secondary mixed-----	PAS.
Other-----	PAS.
*Butyl alcohols:	
Primary:	
Iso (Isopropylcarbinol)-----	DBC, EKT, EKX, UCC.
*Normal (n-Propylcarbinol)-----	CEL, DBC, DUP, ENJ, EKX, PUB, UCC.
Secondary (Methylethylcarbinol)-----	CEL, ENJ, SHC.

TABLE 22B.--Miscellaneous chemicals for which U.S. production or sales were reported, identified by manufacturer, 1962--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued	
*Alcohols, monohydric, unsubstituted--Continued	
*Alcohols C ₉ or lower--Continued	
*Butyl alcohols--Continued	
Tertiary (Trimethylcarbinol)-----	SHC.
Mixed-----	CEL, EXX.
2,6-Dimethyl-4-heptanol (Diisobutylcarbinol)-----	UCC.
*Ethyl alcohol, synthetic-----	DUP, EXX, ENJ, HPC, SHC, UCC, USI.
2-Ethyl-1-butanol (sec-Hexyl alcohol)-----	UCC.
2-Ethyl-1-hexanol-----	CEL, EXX, UCC.
2-Ethyl-4-methyl-1-pentanol-----	EXX.
Hexyl alcohol-----	ENJ, EXX, PG, UCC.
1-Hexyn-3-ol-----	AIR.
*Iso-octyl alcohols-----	EXX, ENJ, GOC, SOI, UCC.
*Isopropyl alcohol-----	ENJ, SHC, UCC.
*Methanol, synthetic-----	ACN, CEL, COM, DUP, ESC, HPC, MON, RH, SPN, UCC.
2-Methyl-3-butyn-2-ol-----	AIR.
4-Methyl-2-pentanol (1-Methylisobutylcarbinol)-----	SHC, UCC.
3-Methyl-1-pentyn-3-ol (Methylparafynol)-----	AIR.
1-Octanol-----	DUP.
2-Octanol-----	RH, WTH.
Octanols, mixed-----	HOU, PG, TID.
Propyl alcohol (Propanol)-----	CEL, UCC.
2-Propyn-1-ol-----	G.
Trimethylpentanol-----	EXX.
All other-----	CEL, EXX.
*Alcohols C ₁₀ and higher:	
*Decyl alcohol-----	DUP, ENJ, GOC, HOU, PG, SOI, TID, UCC.
3,9-Diethyl-6-tridecanol-----	UCC.
*Dodecyl alcohol (Lauryl alcohol)-----	DUP, PG, RH.
7-Ethyl-2-methyl-4-hendecanol-----	UCC.
*1-Hexadecanol (Cetyl alcohol)-----	ADM, DUP, RH.
*1-Octadecanol (Stearyl alcohol)-----	ADM, SHC, PG, RH.
cis-9-Octadecen-1-ol (Oleyl alcohol)-----	ADM, DUP.
1-Tridecanol-----	ENJ.
Tridecanols, mixed-----	UCC.
2,6,8-Trimethyl-4-nonanol-----	UCC.
All other-----	ADM, GOC, PG, RH.
Aldol (Acetaldol)-----	UCC.
Alkyl and alkylene hydrocarbons-----	HMV.
Alkyl and alkylene succinic anhydrides-----	HMV.
Alkyl sulfides, mixed-----	ORO.
Allyl cyanide-----	RBC.
1-Allyl-3-(2-hydroxyethyl)-2-thiourea (N-β-Hydroxyethyl-N'-allylthiourea).	FMT, IDC.
Allyl isothiocyanate, nonflavoring grade-----	FMT, ICO.
Allyl methacrylate-----	SAR.
1-(Allyloxy)-2,3-epoxypropane (Allyl glycidyl ether)-----	SHC.
3-(Allyloxy)-1,2-propanediol (Allyl glyceryl ether)-----	SHC.
Allylpseudoionine-----	GIV.
Aluminum isopropoxide (Aluminum isopropylate)-----	SFA.
Amidinourea (Guanyluarea) phosphate-----	ACT.
Amidinourea (Guanyluarea) sulfate-----	ACT.
*Amines:	
*Butylamine-----	EKT, PAS, UCC.
tert-Butylamine-----	MON, RH.
*Coconut oil amine-----	ADM, ARC, FOR, GNM.
Cocotrimethylenediamine-----	ARC, FOR.

TABLE 22B.--Miscellaneous chemicals for which U.S. production or sales were reported, identified by manufacturer, 1962--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued	
*Amines--Continued	
Cottonseed oil amines-----	FOR, GNM.
Diallylamine-----	SHC.
Dibutylamine-----	PAS, UCC.
*Diethylamine-----	DUP, PAS, UCC.
Diethylamine hydrochloride-----	BKL.
Diethylenetriamine-----	DOW, UCC.
N,N-Diethylethylenediamine-----	ALB, COK.
N ¹ ,N ¹ -Diethyl-1,4-pentanediamine (Novoldiamine)-----	SDH.
N,N-Diethyl-1,3-propanediamine-----	UCC.
Disopropylamine-----	PAS, UCC.
*Dimethylamine-----	COM, DUP, PAS, RH.
Dimethylamine hydrochloride-----	EK, ICO, TNC.
Dimethylamine sulfate-----	RH.
N,N-Dimethylhexadecylamine-----	ONX.
Dimethylmethylamine-----	BC.
N,N-Dimethyloctadecylamine (Stearyl dimethylamine)-----	ARC.
N,N-Dimethyl-1,3-propanediamine-----	UCC.
Dipentylamine (Diamylamine)-----	PAS.
Dipropylamine-----	PAS, UCC.
Dipropylene triamine-----	UCC.
*Dodecylamine-----	ADM, ARC, FOR, GNM.
Ethylamine-----	PAS, UCC.
Ethylenediamine-----	DOW, UCC.
Ethylenediamine dihydrochloride-----	BKG, NES.
Ethylenediamine sulfate-----	EK.
Hexadecylamine-----	ADM.
1,6-Hexanediamine (Hexamethylenediamine)-----	CS, DUP.
3,3'-Iminobispropylamine-----	UCC.
Isobutylamine-----	PAS.
Isopropylamine-----	PAS, UCC.
*Methylamine, mono-----	COM, DUP, PAS, RH.
Methyl and dimethyl fatty amines-----	ARC, BC, GNM.
*Octadecylamine-----	ADM, ARC, FOR, GNM.
Octylamine-----	ARC, RH, UCC.
*Oleylamine-----	ARC, FOR, GNM.
Primary amines, mixed-----	RH.
1,2-Propanediamine (Propylenediamine)-----	UCC.
1,3-Propanediamine-----	UCC.
Propylamine-----	PAS, UCC.
Soybean oil amine-----	ARC.
*Tallow amine-----	ADM, ARC, FOR, GNM.
Tallow amine, dihydrogenated-----	FOR, GNM.
Tallow amine, hydrogenated-----	ADM, ARC, FOR, GNM.
Tallow methylamines, dihydrogenated-----	ADM, ARC.
Tetraethylenepentamine-----	DOW, UCC.
N,N,N',N'-Tetramethyl-1,3-butanediamine-----	UCC.
Triallylamine-----	SHC.
Tributylamine-----	PAS.
Tricaprylamine-----	GNM.
Tridodecylamine-----	GNM.
Triethylamine-----	PAS, UCC.
Triethylenetetramine-----	CCW, DOW, UCC.
*Trimethylamine-----	COM, DUP, PAS, RH.
Trimethylenediamine fatty derivatives-----	ARC, FOR.
Tripropylamine-----	PAS.
All other-----	ADM, ALB, ARC, DUP, GNM, HAP, ONX, PAS, RBC, RH.

TABLE 22B.--Miscellaneous chemicals for which U.S. production or sales were reported, identified by manufacturer, 1962--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued	
Aminoethoxypropylsilane-----	UCS.
2-(2-Aminoethylamino)ethanol (Aminoethylethanolamine)-----	DCW, UCC.
2-Amino-2-ethyl-1,3-propanediol-----	COM.
Aminoguanidine bicarbonate-----	FMT, TRJ.
2-Amino-2-(hydroxymethyl)-1,3-propanediol (Tris(hydroxymethyl)aminomethane).-----	COM.
2-Amino-2-methyl-1,3-propanediol-----	COM.
2-Amino-2-methyl-1-propanol-----	COM.
2-Amino-2-methyl-1-propanol hydrochloride-----	SNW.
3-Amino-1-propanol-----	UCC.
*Amyl acetates, 90%:	
Amyl acetate (n-Pentyl acetate)-----	COM, PUB, TBK.
Isopentyl acetate (Isoamyl acetate)-----	FB, NW.
Mixed-----	PAS, UCC.
Arachidamide-----	ADM.
Azelaic acid-----	DUP, EMR.
2,2'-Azobis[2-methylpropionitrile] (λ , λ' -Azodisobutyronitrile).-----	DUP, WST.
Behenamide (Docosanamide)-----	ADM, HUM.
Behenic acid-----	ADM.
Bis[2-(2-butoxyethoxy)ethyl] ether (Tetraethylene glycol dibutyl ether).-----	RBC.
Bis(2-butoxyethyl) ether (Diethylene glycol di-n-butyl ether).-----	DOW, UCC.
Bis(2-chloroethoxy)methane (Dichloroethylformal)-----	TKL.
*Bis(2-chloroethyl) ether (Dichlorodiethyl ether)-----	DOW, JCC, OMC, WYN.
Bis(2-chloro-1-methylethyl) ether (Dichloroisopropyl ether).-----	DOW, WYN.
Bis(2,6-dimethyl-4-heptyl) maleate-----	G.
Bis(dodecyltrimethylammonium) polythionate-----	PAS.
Bis(2-ethoxyethyl) ether (Diethylene glycol diethyl ether)-----	UCC.
Bis(hydroxyethyl) ether butynediol-----	G.
Bis(2-hydroxyethyl) sulfone-----	x.
*1,3-Bis(hydroxymethyl)urea (Dimethylolurea)-----	DUP, GLY, x.
Bis[2-(2-methoxyethoxy)ethyl] ether (Tetraethylene glycol dimethyl ether).-----	ASL.
Bis(2-methoxyethyl) ether (Diethylene glycol dimethyl ether).-----	ASL, OMC.
Bis(tributyltin) oxide-----	x.
Boron organic compounds:	
Alkylboranes-----	CAL.
Boron alcoholate-----	SFA.
Boron fluoride ethyl ether complex-----	ACC.
Boron trifluoride monoethylamine complex-----	ACC.
Triethyl borate-----	USB.
Triethylboron-----	TNA.
Triethylene glycol diborate-----	USE.
Trimethoxyboroxine-----	CAL.
N-Bromoacetamide-----	ARA.
2-Bromododecanoic acid (λ -Bromolauric acid)-----	DUP.
N-Bromosuccinimide (Succinibromimide)-----	ARA.
1,2(and 1,3)-Butanediol (Butylene glycol)-----	CEL.
1,4-Butanediol-----	G.
2,3-Butanediol (2,3-Butylene glycol)-----	UCC.
2,3-Butanedione 2-oxime-----	EK.
1,2,4-Butanetriol-----	G.
2-Butanone (Methyl ethyl ketone)-----	ENJ, SHC, UCC.
Butanone mixture-----	CEL.
2-Butanone oxime-----	ALB, CCA, NAC.

TABLE 22B.--Miscellaneous chemicals for which U.S. production or sales were reported, identified by manufacturer, 1962--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued	
*2-Butanone peroxide-----	CAD, NOC, HCI, UPR, WTL.
2-Butene-1,4-diol-----	G.
3-Buten-2-one (Methyl vinyl ketone)-----	PFZ.
1-Butoxy-2,3-epoxypropane (Butyl glycidyl ether)-----	SHC.
2-Butoxyethanol (Ethylene glycol monobutyl ether)-----	OMC, UCC.
2-(2-Butoxyethoxy)ethanol (Diethylene glycol monobutyl ether).-----	OMC, UCC.
2-[2-(2-Butoxyethoxy)ethoxy]ethanol (Triethylene glycol monobutyl ether).-----	DOW, OMC.
2-(2-Butoxyethoxy)ethyl acetate-----	UCC.
1-Butoxyethoxy-2-propanol-----	UCC.
2-Butoxyethyl acetate-----	UCC.
*Butyl acetates, 90%:-----	
Iso-----	CEL, EKT, PAC, UCC.
*Normal-----	CEL, COM, EKT, ENJ, PUB, UCC.
Secondary-----	ENJ, HPC, PUB, SHC.
Mixed-----	CEL.
Butyl acrylate-----	CEL, DBC, UCC.
Butylene oxide-----	DOW, UCC.
Butyl ether (Di-n-butyl ether)-----	UCC.
tert-Butyl hydroperoxide-----	CAD, WTL.
2,2'-(Butylimino)diethanol (N,N-Bis(2-hydroxyethyl)butylamine).-----	PAS.
Butyl isocyanate-----	CWN.
Butyl lactate-----	COM.
Butylmagnesium chloride-----	ARA.
tert-Butyl peroxide (Di-tert-butyl peroxide)-----	SHC, UPR, WTL.
tert-Butyl peroxyacetate-----	WTL.
tert-Butyl peroxyisobutyrate-----	WTL.
tert-Butyl peroxyisovalate-----	WTL.
1-Butyne (Ethylacetylene)-----	AIR.
2-Butyne-1,4-diol-----	G.
Butyraldehyde-----	CEL, EXX, UCC.
Butyraldehyde oxime-----	NAC.
*Butyric acid-----	CEL, EKT, UCC.
Butyric anhydride-----	EKT, UCC.
Butyrolactone-----	G.
Butyronitrile-----	EXX, UCC.
*Caprolactam (2-Oxohexamethylenimine) (Hexahydro-2H-azepin-2-one).-----	DBC, DUP, NAC.
*Carbon disulfide-----	ACC, BKT, FMW, OLH, PAS, PPG, SF.
*Cellulose esters:-----	
*Cellulose acetate-----	AV, CEL, DUP, EKT.
Cellulose acetate butyrate-----	EKT.
Cellulose acetate propionate-----	EKT.
Cellulose propionate-----	CEL.
Nitrocellulose (Cellulose nitrate)-----	DUP, HPC.
All other-----	EK.
*Cellulose ethers:-----	
Ethylcellulose-----	DOW, HPC.
Ethylhydromethylcellulose-----	HPC.
Hydroxyethylcellulose-----	HPC, UCC.
Methylcellulose-----	DOW.
*Sodium carboxymethylcellulose, 100%-----	BUK, DUP, HPC, KON, WYN.
Sodium carboxymethylhydroxyethylcellulose-----	HPC.
*Chloral (Trichloroacetaldehyde)-----	DA, FMW, GGY, MTC.
Chloroacetamide-----	BPC, DOW.

TABLE 22B.--Miscellaneous chemicals for which U.S. production or sales were reported, identified by manufacturer, 1962--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued	
*Chloroacetic acid, mono-----	BUK, DOW, HPC, MON.
Chloroacetic acid, mono, derivatives:	
Butyl chloroacetate-----	MON.
Ethyl chloroacetate-----	DOW, KF, MON.
Methyl chloroacetate-----	BPC, DOW, KF.
Sodium chloroacetate-----	DOW.
Chloroacetonitrile-----	BPC.
Chloroacetyl chloride-----	DOW.
2-Chloro-N,N-diethylamine hydrochloride-----	NES.
2-Chloro-1,1-dimethoxyethane (Dimethyl chloroacetal)-----	L.T.I.
*2-Chloro-N,N-dimethylethylamine (Dimethylaminoethyl chloride) hydrochloride.	ABB, GAM, HEX, MCH, NES, WYT.
2-Chloro-N,N-dimethylpropylamine hydrochloride-----	WYT.
3-Chloro-N,N-dimethylpropylamine hydrochloride-----	MCH.
Chlorodimethylvinylsilane-----	DCC.
2-Chloroethanol (Ethylene chlorohydrin)-----	OMC, UCC.
2-(2-Chloroethoxy)ethyl 2-chloroethyl ether (Triethylene glycol dichloride).	UCC.
2-Chloroethylamine hydrochloride-----	AHC.
2-Chloroethyl vinyl ether-----	UCC.
4-Chloro-3-hydroxybutyronitrile-----	EK.
Chloromaleic anhydride-----	RBC.
Chloromethyl methyl ether-----	EK, HK, x.
1-Chloro-1-penten-3-one (β -Chlorovinyl ethyl ketone)-----	ABB.
3-Chloro-1,2-pr. panediol (Glycerol α -chlorohydrin)-----	EVN.
Chloro-2-propanone (Chloroacetone)-----	EK, GAM.
N-Chlorosuccinimide (Succinichlorimide)-----	NAC.
2-Chlorotriethylamine hydrochloride-----	HEX, MCH.
Chlorotrimethylsilane-----	UCS.
Citric acid-----	BZ, MLS, PFZ.
Citric acid salts:	
Ammonium citrate-----	MAL, PFZ.
Barium citrate-----	SW.
Calcium citrate-----	PFZ.
Ferric ammonium citrate-----	MAL, PFZ.
Ferric citrate-----	MAL.
Ferrous calcium citrate-----	BKL.
Potassium citrate-----	PFZ.
Sodium citrate-----	MLS, PFZ.
Cocoonitrile-----	FOR.
Coconut oil amide-----	ADM, ARC, KES, PG.
Cottonseed oil nitrile-----	FOR.
Creatine and creatinine-----	PFN.
Crotonaldehyde-----	CEL, EKT, UCC.
Crotonic acid (2-Butenoic acid)-----	EKT.
2-Cyanoacetamide-----	KF.
Cyanoacethydrazide-----	KF.
Cyanoacetic acid-----	KF.
Cyanogen bromide-----	EK.
1,10-Decanediol-----	NEP.
Decanoic acid (Capric acid)-----	FOR.
Decanoyl chloride-----	TBK.
Decanoyl peroxide-----	GAD.
1-Decene-----	HMY.
Diallyl fumarate-----	SAR.
1,2-Dibutoxyethane (Ethylene glycol di-n-butyl ether)-----	DOW.
2-Dibutylaminoethanol-----	PAS.

TABLE 22B.--Miscellaneous chemicals for which U.S. production or sales were reported, identified by manufacturer, 1962--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued	
Dibutyl ammonium laurate-----	UCC.
*Dibutyl fumarate-----	MON, RCI, RUB, UCC.
2,5-Di(tert-butylperoxy)-2,5-dimethylhexane-----	WTL.
2,5-Di(tert-butylperoxy)-2,5-dimethylhexyne-3-----	WTL.
1,3-Dibutyl-2-thiourea-----	PAS, RBC.
Dibutyltin compounds:	
Dibutylmethoxytin (Dibutyl tin methoxide)-----	CCA.
Dibutyltin bis(lauryl mercaptide)-----	x.
Dibutyltin dichloride-----	x.
Dibutyltin dilaurate-----	CCA, x.
Dibutyltin maleate-----	CCA, x.
Dibutyltin mercaptopropionate-----	CCA, x.
Dibutyltin oxide-----	x.
All other-----	x.
Dichloroacetaldehyde-----	FMW.
Dichloroacetic acid-----	DOW, KF.
Dichloroacetyl chloride-----	KF.
Dichlorodimethylsilane-----	UCS.
Dichlorohydrogenmethylsilane-----	UCS.
2,3-Dichloropropanol-----	UCC.
Dicyanobutene-----	x.
Diethoxydimethylsilane-----	UCS.
N,N-Diethylacetacetamide-----	OPC.
Diethyl acetylsuccinate-----	BPC.
Diethylaluminum chloride-----	TNA, TSA.
Diethyl allylisopentylmalonate-----	BPC.
2-Diethylaminoethanol-----	PAS, UCC.
2-Diethylaminoethyl methacrylate-----	DUP.
Diethylaminopropionamide-----	x.
Diethyl sec-butylethylmalonate-----	ABB.
Diethyl butylmalonate-----	BPC.
Diethyl sec-butylmalonate-----	ABB.
Diethylcarbamoyl chloride-----	GAM.
Diethyl carbonate (Ethyl carbonate)-----	DLM, FMP.
Diethyl diethylmalonate (Diethyl malonic ester)-----	L.L.
*Diethylene glycol-----	ACN, CAU, DOW, G, HCH, JCC, OMC, UCC, WYN.
Diethylene glycol chloroformate-----	PPG.
Diethyl (ethoxymethylene)malonate-----	KF.
Diethyl ethylisopentylmalonate-----	BPC, L.L.
Diethyl ethylmalonate (Ethyl malonic ester)-----	L.L.
Diethyl ethyl(1-methylbutyl)malonate-----	ABB.
Diethyl fumarate-----	MON.
Di-2-ethyl-1-hexyl fumarate-----	RUB.
Di-2-ethyl-1-hexyl maleate-----	QCP.
N,N-Diethylhydroxylamine sulfate-----	EK.
Diethyl maleate-----	ACY, UCC.
*Diethyl malonate (Malonic ester)-----	ABB, KF, L.L.
Diethyl (1-methylbutyl)malonate-----	ABB, L.L.
Diethyl methylmalonate-----	BPC.
Diethyl oxalate (Ethyl oxalate)-----	BPC, FMP.
Diethylthiophosphoryl chloride-----	ACY.
1,3-Diethyl-2-thiourea-----	PAS, RBC.
Diethylzinc-----	TNA.
Diglycolic acid-----	DUP.
Dihydropseudoionone-----	GIV.
3,4-Dihydro-2H-pyran-2-carboxaldehyde (Acrolein dimer)-----	UCC.
1,4-Dihydroxy-2-butanone-----	G.

TABLE 22B.--Miscellaneous chemicals for which U.S. production or sales were reported, identified by manufacturer, 1962--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued	
2,4-Dihydroxy-3,3-dimethylbutyric acid, γ -lactone (Pantolactone).	ACY.
1,3-Dihydroxy-2-propanone-----	BAX, PFZ.
Disododecyl fumarate-----	RUB.
2-Diisopropylaminoethanol-----	PAS, UCC.
Diisopropylammonium nitrite-----	OMC.
0,0-Diisopropyl dithiobis(thioformate)-----	DUP.
Diisopropyl peroxydicarbonate (Isopropyl percarbonate)	PPG.
*Dilauryl 3,3'-thiodipropionate (Didodecyl thiodipropionate).	ACY, CCA, CCW, EVN, HAB.
Dimethoxyethane (Ethylene glycol dimethyl ether)-----	ARA, ASL, OMC.
N,N-Dimethylacetamide-----	DUP.
*2-Dimethylaminoethanol-----	PAS, RH, UCC.
3-Dimethylaminopropionitrile-----	ACY.
Dimethylcarbamoyl chloride-----	GAM.
Dimethyl carbonate-----	FMP.
N-(1,1-Dimethyldecyl)methylenimine-----	SPP.
N,N-Dimethylformamide-----	DUP.
Dimethylglyoxime-----	EK.
2,5-Dimethyl-2,5-hexanediol-----	AIR.
2,5-Dimethyl-3-hexyne-2,5-diol-----	AIR.
1,1-Dimethylhydrazine-----	FMP.
Dimethyl malonate-----	KF.
Di(4-methyl-2-pentyl) maleate-----	RUB.
2,2-Dimethyl-1,3-propanediol (Neopentyl glycol)-----	EKX.
1,3-Dimethylurea-----	PAS.
Dioctanoyl peroxide (Caprylyl peroxide)-----	CEM.
Diocetyl fumarate-----	MON.
*Diocetyl maleate-----	CIN, MON, RCI, RUB.
1,3-Dioctyl-2-thiourea-----	PAS.
Di-n-octyltin oxide-----	X.
*Dipropylene glycol-----	CEL, DOW, JCC, OMC, UCC.
β,β -Dipropyleneimine sulfone-----	RBC.
Dithiooxamide-----	MAL.
Ditridecyl maleate-----	RUB.
Dodecylsuccinic anhydride-----	HMY, NAC.
*Epichlorohydrin-----	DOW, SHC, UCC.
Erucamide-----	FIN, HUM.
Erucic acid-----	ADM.
Ethanedithiol-----	RBC.
*Ethanolamines:	
*2-Aminoethanol (Monoethanolamine)-----	ACN, DOW, JCC, OMC, UCC.
*2,2'-Iminodietanol (Diethanolamine)-----	ACN, DOW, JCC, OMC, UCC.
*2,2',2''-Nitrilotriethanol (Triethanolamine)-----	ACN, DOW, JCC, OMC, UCC.
Ethanolamine sulfite-----	EVN, SUM.
*2-Ethoxyethanol (Ethylene glycol monoethyl ether)-----	DOW, OMC, UCC.
2-(2-Ethoxyethoxy)ethanol (Diethylene glycol monoethyl ether).	DOW, OMC, UCC.
2-[2-(2-Ethoxyethoxy)ethoxy]ethanol (Triethylene glycol monoethyl ether).	DOW, OMC.
2-(2-Ethoxyethoxy)ethyl acetate-----	UCC.
2-Ethoxyethyl acetate-----	EKT, OMC, UCC.
3-Ethoxypropanol (Propylene glycol monoethyl ether)-----	UCC.
3-Ethoxypropionitrile-----	ACT.
1-Ethoxy-1,3,3-trimethoxypropane-----	KF.
*Ethyl acetate, 85%-----	COM, EKT, ENJ, HPC, PUB, SRC, UCC.
Ethyl acetoacetate-----	EKT, FMP, UCC.
*Ethyl acrylate-----	CEL, DBC, RH, UCC.

TABLE 22B.--Miscellaneous chemicals for which U.S. production or sales were reported, identified by manufacturer, 1962--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued	
Ethylaluminum dichloride-----	TNA.
Ethylaluminum sesquichloride-----	TNA, TSA.
2-Ethylaminoethanol (Ethylmonoethanolamine)-----	PAS.
2-Ethylbutyraldehyde-----	UCC.
2-Ethylbutyric acid (Diethylacetic acid)-----	UCC.
Ethyl carbamate-----	FMP.
Ethyl chloroformate-----	FMP.
Ethyl 3-(chloroformyl)propionate (β -Carbethoxypropionyl chloride).-----	ABB.
Ethyl cyanoacetate-----	KF.
Ethylene, from ethyl alcohol-----	OH.
Ethylene carbonate-----	DOW, JCC.
*Ethylene glycol-----	ACN, APD, CAU, CEL, DOW, DUP, ENJ, G, GOC, HCH, JCC, OMC, UCC, WYN.
Ethylene glycol bromoacetate-----	VIS.
Ethylene glycol diacetate-----	UCC.
Ethylene glycol dimethacrylate-----	SAR.
Ethylene glycol dimercaptoacetate-----	EVN.
Ethylene glycol - propylene glycol, adipic acid ester-----	PFZ.
*Ethylene oxide-----	ACN, CAU, DOW, G, HCH, JCC, OMC, SNO, UCC, WYN.
*Ethyl ether:	
Absolute-----	MAL.
Tech-----	ENJ, HPC, UCC, USI.
U.S.P.-----	MAL, OMS.
*Ethyl formate-----	COM, FB, TBK, UCC.
2-Ethylhexanal (α -Ethylcaproaldehyde)-----	EKX, UCC.
2-Ethyl-1,3-hexanediol-----	UCC.
2-Ethylhexanoic acid (α -Ethylcaproic acid)-----	EKT, UCC.
*2-Ethylhexanoic acid (α -Ethylcaproic acid) salts:	
Aluminum 2-ethylhexanoate-----	WTC.
Barium 2-ethylhexanoate-----	CCA, WTC.
Cadmium 2-ethylhexanoate-----	CCA.
*Calcium 2-ethylhexanoate-----	CCA, FER, HNX, HSH, MLD, SRR, SW, WTC.
*Cobalt 2-ethylhexanoate-----	CCA, FER, HNX, HSH, MLD, SHP, SRR, SW, WTC.
*Copper 2-ethylhexanoate-----	CCA, SHP, SRR.
Dibutyltin di-2-ethylhexanoate-----	x.
Iron 2-ethylhexanoate-----	CCA.
*Lead 2-ethylhexanoate-----	CCA, HNX, HSH, MLD, NTL, SHP, SRR, SW, WTC.
Lithium 2-ethylhexanoate-----	WTC.
*Manganese 2-ethylhexanoate-----	CCA, HNX, MLD, SRR.
Potassium 2-ethylhexanoate-----	CCA.
Rare earths 2-ethylhexanoate-----	CCA.
Stannous 2-ethylhexanoate-----	WTC, x.
Strontium 2-ethylhexanoate-----	CCA.
*Zinc 2-ethylhexanoate-----	CCA, HNX, HSH, SRR, WTC, x.
Zirconium 2-ethylhexanoate-----	CCA, HNX, WTC.
2-Ethyl-1-hexyl acetate-----	EKT, UCC.
2-Ethyl-1-hexyl acrylate-----	CEL, DBC, UCC.
2-Ethylhexyl cyanoacetate-----	KF.
2-Ethylhexyl methacrylate-----	DUP.
Ethyl 2-hydroxy-3-methylbutyrate (Ethyl α -hydroxyisovalerate).-----	RH.
2-Ethyl-2-(hydroxymethyl)-1,3-propanediol (Trimethylolpropane).-----	CEL.
2-Ethyl-2-(hydroxymethyl)-1,3-propanediol allyl ethers-----	CEL.
2,2'-(Ethylimino)diethanol (N,N-Bis-(2-hydroxyethyl)ethylamine).-----	PAS.

TABLE 22B.--Miscellaneous chemicals for which U.S. production or sales were reported, identified by manufacturer, 1962--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued	
Ethyl lactate-----	KF.
Ethylmagnesium chloride-----	ARA.
2-(Ethylmercapto)ethanol-----	PAS.
Ethyl 2-methyl lactate (Ethyl α -hydroxyisobutyrate)-----	RH.
Ethyl propionate-----	FB, NW, TBK.
*Ethyl silicate (Tetraethoxysilane)-----	MTR, SFA, UCC.
Ethyl sulfate (Diethyl sulfate)-----	UCC.
Ethyl vinyl ether-----	UCC.
Fats and oils, chemically modified:	
Castor oil, phosphated-----	VIC.
Lard oil, nitrated-----	SPP.
Vegetable oils, brominated-----	DOM, RT.
Fatty acids, chemically modified:	
α -Bromo(isuric-stearic) acids-----	DUP.
Castor oil fatty acids, dehydrated-----	BAC.
All other-----	RH, RT.
*Fatty acid esters, not included with plasticizers or surface-active agents:	
Butyl myristate-----	AHC, KES.
Butyl palmitate-----	NOP.
Ethyl stearate-----	ICO.
Hexadecyl stearate-----	KES.
*Isopropyl myristate-----	AHC, DRW, GTV, KES, PRP, WM.
Isopropyl oleate-----	AHC, EMR, KES.
*Isopropyl palmitate-----	AHC, DRW, GTV, KES, PRP, WM.
Isopropyl stearate-----	KES.
Methyl decanoate-----	FOR.
Methyl esters of tallow-----	BFR.
Methyl 12-hydroxystearate-----	ADM, BAC.
Methyl myristate-----	FOR.
Methyl octanoate-----	FOR.
Pentaerythritol monostearate-----	x.
1,2-Propylene glycol dioleate-----	DRW.
Vinyl stearate, monomer-----	AIR.
All other-----	RT.
Flotation reagents:	
Phosphorodithioates (Dithiophosphates):	
Potassium dihexyl phosphorodithioate-----	ACY.
Sodium di-sec-butyl diethyl phosphorodithioate-----	ACY.
Sodium di-sec-butyl phosphorodithioate-----	ACY.
Sodium diethyl phosphorodithioate-----	ACY.
Sodium dihexyl phosphorodithioate-----	ACY.
Sodium diisopropyl phosphorodithioate-----	ACY.
Other-----	ACY.
Xanthates:	
Potassium n-butylxanthate-----	USR.
Potassium sec-butylxanthate-----	DOW.
Potassium ethylxanthate-----	ACY, DOW.
Potassium hexylxanthate-----	DOW.
Potassium isopropylxanthate-----	DOW.
Potassium pentylxanthates-----	ACY, DOW.
Potassium sec-pentylxanthate-----	DOW.
Sodium n-butylxanthate-----	KCG, USR.
Sodium sec-butylxanthate-----	ACY, DOW.
Sodium ethylxanthate-----	ACY, DOW.
Sodium isopropylxanthate-----	ACY, DOW.
All other-----	ACY, DOW.

TABLE 22B.--Miscellaneous chemicals for which U.S. production or sales were reported, identified by manufacturer, 1962--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued	
*Formaldehyde, 37% by weight-----	ACN, BOR, CEL, COM, DUP, HKD, HN, HPC, KF, MON, RCI, RH, SPN, TRJ, UCP.
Formamide-----	DUP.
*Formic acid, 90%-----	DUP, HN, MAL, VIC.
*Formic acid salts:	
Aluminum formate-----	SNW, UCC, VIC.
Ammonium formate-----	ACG, WSN.
Calcium formate-----	TRJ.
Chromic formate-----	G.
Lead formate-----	NTL.
Nickel formate-----	HSH.
Potassium formate-----	TNC.
Sodium formate, refined-----	ACG, BKC, RPC.
Sodium formate, tech-----	HN, HPC.
*Fumaric acid-----	BZ, HN, MON, NAC, NTL, PCC, PTT, SOC.
*Gluconic acid, sodium salt, tech-----	CWL, DLI, IBI, PFZ.
*Gluconic acid, tech-----	CWL, DLI, IBI, PFZ.
*Glucono-delta-lactone-----	PFZ.
*Glucose pentaacetate-----	BKL.
*Glutaraldehyde bis[sodium bisulfite]-----	RZL.
*Glutaric acid-----	CS, EK.
*Glycerol, synthetic-----	APD, DOW, OMC, SHC.
Glycine (Aminoacetic acid), tech-----	BPC.
Glycine ethyl ester hydrochloride-----	BPC.
*Glycolic acid (Hydroxyacetic acid)-----	DUP.
Glycolic acid salts:	
Aluminum glycolate-----	TRC.
Sodium glycolate-----	MED.
*Glycolonitrile-----	ACY.
*Glyoxal-----	UCC.
Guanidine carbonate-----	MEE.
Guanidine hydrochloride-----	ACY, MEE.
4-Guanyl-1-isonitrosoguanyl-1-tetrazene-----	REM.
*Halogenated hydrocarbons:	
*1-Bromobutane (n-Butyl bromide)-----	BPC, DOW, MCH.
2-Bromobutane (sec-Butyl bromide)-----	ABB, BPC.
Bromochloromethane-----	DOW.
1-Bromo-3-chloro-2-methylpropane-----	BPC.
1-Bromo-3-chloropropane (Trimethylenechlorobromide)-----	DOW, MCH.
*Bromoethane (Ethyl bromide)-----	DOW, GTL, MCH.
1-Bromohexane (n-Hexyl bromide)-----	BPC.
Bromomethane (Methyl bromide)-----	AMP.
1-Bromo-3-methylbutane-----	LIL.
1-Bromo-octadecane-----	DUP, G.
1-Bromopentane (n-Amyl bromide)-----	DOW, EK.
2-Bromopentane (1-Methylbutyl bromide)-----	ABB, LIL.
1-Bromopropane (n-Propyl bromide)-----	BPC, CLB, DOW, EK.
3-Bromopropene (Allyl bromide)-----	CLB, DOW.
3-Bromopropyne-----	G.
Bromotrichloromethane-----	DOW.
Bromotrifluoromethane-----	DOW, DUP.
*Carbon tetrachloride-----	ACG, ACS, DA, DOW, FMW, FRO, PPG, SF.
*Chlorinated paraffins:	
Less than 3% chlorine-----	ENJ, HK.
*3%-6% chlorine-----	CCH, DA, DVC, HK, HPC, KPT, WOI.
6% or more chlorine-----	DA, DVC, KPT, WOI.
1-Chlorobutane (n-Butyl chloride)-----	PUB, UCC.

TABLE 22B.--Miscellaneous chemicals for which U.S. production or sales were reported, identified by manufacturer, 1962--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued	
*Halogenated hydrocarbons--Continued	
2-Chlorobutane-----	EK.
1-Chloro-1,1-difluoroethane-----	ACC.
*Chlorodifluoromethane-----	ACC, PAS, UCC, x.
*Chloroethane (Ethyl chloride):	
Tech-----	AME, DOW, DUP, HPC, TNA, USI.
U.S.P.-----	DOW, SHC.
*Chloroform:	
Tech-----	ACS, DA, DOW, DUP, FRO, SF.
U.S.P.-----	ACS, DA, DOW.
2-Chloro-3-hexyne-----	LIL.
*Chloromethane (Methyl chloride):	
Crude-----	ASL, DCC, DOW, SPD, TNA.
Refined (refrigerant grade)-----	ACS, ASL, DA, DOW, DUP, KLK.
1-Chloro-3-methylbutane (Isoamyl chloride)-----	LIL.
2-Chloro-2-methylpropane (tert-Butyl chloride)-----	EK.
3-Chloro-2-methylpropene (Methallyl chloride)-----	FMP.
Chloropentanes, mixed isomers-----	PAS.
2-Chloropropane (Isopropyl chloride)-----	DOW.
3-Chloropropene (Allyl chloride)-----	DOW, SHC.
3-Chloropropyne-----	G.
Chlorotrifluoroethylene (Trifluorovinyl chloride)-----	ACC, MMM.
Chlorotrifluoroethylene, polymerized-----	ACC, HK, MMM.
Chlorotrifluoromethane-----	ACC, DUP, PAS.
Dibromodifluoromethane-----	DOW.
1,2-Dibromoethane (Ethylene dibromide)-----	AMP, DOW, ETD, FMW, GTL, MCH.
Dibromomethane (Methylene bromide)-----	DOW.
1,2-Dibromo-1,1,2,2-tetrafluoroethane-----	DUP.
1,4-Dichlorobutane-----	DUP.
*Dichlorodifluoromethane-----	ACC, DUP, PAS, UCC.
*1,2-Dichloroethane (Ethylene dichloride)-----	AME, DA, DOW, JCC, MON, OMC, PPG, TNA, UCC, WYN.
Dichlorofluoromethane-----	ACC.
*Dichloromethane (Methylene chloride)-----	ACS, DA, DOW, DUP, FRO, SF.
Dichloropentanes, mixed isomers-----	PAS.
*1,2-Dichloropropane (Propylene dichloride)-----	DOW, UCC, OMC, UCC, WYN.
2,3-Dichloropropene-----	UCC.
*Dichlorotetrafluoroethane-----	ACC, DUP, PAS.
1,1-Difluoroethane-----	ACC, DUP.
1,1-Difluoroethylene-----	ACC.
Difluorotetrachloroethane-----	DUP.
Diiodomethane (Methylene iodide)-----	NTB, SDW, x.
Hexafluoropropylene, monomer-----	DUP.
Iodoethane (Ethyl iodide), tech-----	CLB, EK.
Iodoform (Triiodomethane)-----	NTB.
Iodomethane (Methyl iodide), tech-----	CLB, EK, RSA.
Poly-2,3-dichlorobutadiene-1,3-brominated-----	CWN.
Polyethylene chlorides-----	UCC.
1,1,2,2-Tetrabromoethane (Acetylene tetrabromide)-----	DOW.
1,1,2,2-Tetrachloroethane (Acetylene tetrachloride)-----	DUP, PPG.
*Tetrachloroethylene (Perchloroethylene)-----	DA, DOW, DUP, FRO, HK, PPG, SF, TTX.
Tetrafluoroethylene, monomer-----	DUP.
Tetrafluoromethane-----	DUP.
1,1,1-Trichloroethane (Methyl chloroform)-----	DOW, PPG.
*1,1,2-Trichloroethane (Vinyl trichloride)-----	DOW, UCC, TNA.
*Trichloroethylene-----	DOW, DUP, HK, PPG, TTX.
*Trichlorofluoromethane-----	ACC, DUP, PAS, UCC.
1,2,3-Trichloropropane-----	DOW, UCC.

TABLE 22B.--Miscellaneous chemicals for which U.S. production or sales were reported, identified by manufacturer, 1962--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued	
*Halogenated hydrocarbons--Continued	
1,2,3-Trichloropropene-----	DOW.
Trichlorotrifluoroethane-----	ACG, PAS, x.
*Vinyl chloride, monomer (Chloroethylene)-----	ACS, AME, BFG, CUC, DA, DOW, GNT, GYR, MNO, MON, TNA, UCC.
Vinyl fluoride-----	DUP.
Vinylidene chloride, monomer (1,1-Dichloroethylene)----	DCW, TNA.
Vinylidene fluoride-----	DUP.
All other-----	CLB, EK, SDH, x.
2-Heptanone (Methyl amyl ketone)-----	UCC.
3-Heptanone (Ethyl butyl ketone)-----	UCC.
Hexadecane-----	HMJ.
1-Hexadecene-----	HMJ.
Hexa(2-ethylbutoxy)disiloxane-----	UCC.
Hexamethylenediamine dicarbamate-----	BKL.
Hexamethylenediammonium adipate-----	CS.
2,5-Hexanedione (Acetylacetone)-----	RBC.
1,2,6-Hexanetriol-----	UCC.
1,2,6-Hexanetriol octoate-----	x.
Hexanitroethane-----	HUM.
*Hexanoic acid (Caproic acid)-----	FB, TBK, UCC.
5-Hexen-2-one (Allylacetone)-----	FMP.
n-Hexyl ether-----	UCC.
2-(Hexyloxy)ethanol (Ethylene glycol hexyl ether)-----	UCC.
2-[2-(Hexyloxy)ethoxy]ethanol-----	UCC.
Hydracrylic acid, β -lactone (β -Propiolactone)-----	CEL.
Hydracrylonitrile (Ethylene cyanohydrin)-----	UCC.
Hydrazine and salts-----	FMT, OMC.
2-Hydrazinoethanol-----	NOR.
3-Hydroxy-2,2-dimethylpropyl 3-hydroxy-2,2-dimethylpropionate.	RBC.
2-(Hydroxymethyl)-2-methyl-1,3-propanediol (Trimethylol ethane).	TRJ.
2-(Hydroxymethyl)-2-nitro-1,3-propanediol (Tris(hydroxymethyl)nitromethane).	COM.
N-(Hydroxymethyl)octadecanamide (N-Hydroxymethylstearamide).	DUP.
4-Hydroxy-4-methyl-2-pentanone (Diacetone alcohol)-----	SHC, UCC.
(Hydroxymethyl)urea (Methylol-urea)-----	DUP.
3,3'-Iminodipropionitrile-----	AGY.
Iodomethylmercury iodide-----	NTB.
Isethionic acid (2-Hydroxyethanesulfonic acid)-----	G.
Isoascorbic acid-----	MLS, MRK, PFZ.
*Isoascorbic acid, sodium salt-----	BAX, MLS, MRK, PFZ.
Isobutoxyethanol-----	UCC.
Isobutyl acrylate-----	DBC.
Isobutyl undecylenate-----	GTV.
Isobutyl isobutyrate-----	EXX.
Isobutyl vinyl ether-----	UCC.
Isobutyraldehyde-----	EXX, UCC.
Isobutyraldehyde oxime-----	ALB.
Isobutyric acid and anhydride-----	EKT.
Isobutyronitrile-----	EXX.
Isodecaldehyde, mixed isomers-----	UCC.
Isodecanic acid, mixed isomers-----	UCC.
Isodecyl acrylate-----	UCC.
Isopentyl ether (Isoamyl ether)-----	GIV.

TABLE 22B.--Miscellaneous chemicals for which U.S. production or sales were reported, identified by manufacturer, 1962--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued	
Isopropanolamines:	
1-Amino-2-propanol (Monoisopropanolamine)-----	DOW, UCC.
1,1'-Iminodi-2-propanol (Diisopropanolamine)-----	DOW, UCC.
1,1',1''-Nitrilotri-2-propanol (Triisopropanolamine)----	DOW, UCC.
Isopropenyl acetate (Methyl vinyl acetate)-----	UCC.
Isopropoxypropionitrile-----	ACY.
3-Isopropoxypropylamine-----	DUP.
*Isopropyl acetate-----	EXT, ENJ, HPC, PUB, UCC.
2-Isopropylaminoethanol-----	PAS.
Isopropyl chloroformate-----	FMP, PPG.
*Isopropyl ether-----	ENJ, SHC, UCC.
Isovalerone (Diisobutyl ketone)-----	UCC.
Itaconic acid (Methylenesuccinic acid)-----	PFZ.
*Lactic acid, 100%:	
*Edible-----	AMZ, CLN, DUP.
*Medicinal-----	DUP.
*Technical-----	AMZ, CLN, DUP.
Lactic acid salts:	
Aluminum lactate-----	REH, TNC.
Aluminum sodium chlorohydroxylactate-----	REH.
Aluminum sodium lactate-----	REH.
Calcium lactate-----	AMZ, SHF.
Lactic anhydride-----	
Lactide (3,6-Dimethyl-2,5-p-dioxanedione)-----	FB.
Lactonitrile-----	CLN.
Lauroic acid salts-----	ACY.
Lauronitrite-----	CCW.
Lauroyl bromide-----	FOR.
Lauroyl chloride-----	DOW.
Lauroyl chloride-----	G, HK, MON, TBK, WTC.
Lauroyl peroxide-----	CAD, WTL.
Levulinic acid-----	QKO.
*Linoleic acid salts:	
*Calcium linoleate-----	CCA, LEF, SHP, SRR.
*Cobalt linoleate-----	HSB, SHP, SRR.
Copper linoleate-----	WTC.
Iron linoleate-----	HSB.
Lead linoleate-----	SHP, SRR.
Lead manganese linoleate-----	SDH, SRR.
Manganese linoleate-----	SHP.
*Lubricating oil additives:	
Chlorosulphata xanthate-----	MON.
Chlorosulfurized hydrocarbon-----	ENJ.
Chlorosulfurized lard oil-----	CCW.
Chlorosulfurized sperm oil-----	CCW.
High-molecular-weight hydrocarbons and their phosphorus derivatives.	SOI.
Lauryl and diethylaminoethyl polymethacrylates-----	DUP.
Oxidized hydrocarbons-----	ALX.
*Phosphorodithioates (Dithiophosphates):	
Barium alkyl phosphorodithioates-----	LUB, x.
Barium dioctyl phosphorodithioate-----	ACY.
Barium polyisobutylene phosphorodithioate-----	x.
Nickel zinc alkyl phosphorodithioates-----	SIN.
Zinc alkyl phosphorodithioates-----	ENJ, LUB.
Zinc di(butylhexyl) phosphorodithioate-----	ORO.
Zinc dihexyl phosphorodithioate-----	MON, SIN.
Zinc hexyl isopropyl phosphorodithioate-----	ACY, x.
All other-----	ENJ, LUB, x.

TABLE 22B.--Miscellaneous chemicals for which U.S. production or sales were reported, identified by manufacturer, 1962--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued	
*Lubricating oil additives--Continued	
Phosphorusulfurized compounds-----	ENJ, SIN.
Sulfurized butenes-----	LUB.
*Sulfurized lard oil-----	CCW, GOC, SIN, SOI.
Sulfurized methyl oleate-----	SIN.
*Sulfurized sperm oil-----	CCW, LUB, QCP, SIN, SOI, WBG.
Tetradecyl selenide-----	ORO.
All other-----	CCW, ENJ, HK, LUB, MON, ORO, SIN, x.
Magnesium methylate-----	MRT.
Maleic acid-----	NAC, PFN.
Maleic acid, tribasic lead salt-----	NTL.
*Maleic anhydride-----	ACY, BZ, HN, MON, NAC, PCC, PTT, RCI, SOC.
Malic acid-----	EK, NAC, PFN.
Malonic acid-----	KF.
Malonic acid, calcium salt-----	GIV, KF.
Malononitrile-----	KF.
Mannitol-----	APD.
Mannitol hexanitrate-----	APD.
Mercaptoacetic acid (Thioglycolic acid)-----	EVN.
*Mercaptoacetic acid (Thioglycolic acid) derivatives:	
*2-Aminoethyl mercaptoacetate (Monoethanolamine thio-	EVN, HAB, RET.
glycolate).	
Ammonium mercaptoacetate (Ammonium thioglycolate)-----	EVN, HAB, RET.
Antimony mercaptoacetate-----	CCA.
Calcium mercaptoacetate-----	EVN.
Dibutyltin bis(iso-octylmercaptoacetate)-----	x.
Dibutyltin mercaptoacetate-----	CCA.
Iso-octyl mercaptoacetate-----	EVN.
Potassium mercaptoacetate-----	EVN.
Sodium mercaptoacetate-----	EVN.
3-Mercapto-1,2-propanediol (Thioglycerol)-----	EVN.
β-Mercaptopropionic acid-----	EVN.
Mercaptosuccinic acid (Thiomalic acid)-----	EVN.
Metal soaps of oxidized hydrocarbons-----	ALX.
Methacrylamide-----	RH, x.
Methacrylate monomers, above methyl-----	DUP.
Methacrylateochromic chloride-----	DUP.
Methacrylic acid-----	DUP, RH.
Methanesulfonic acid-----	PAS.
2-Methoxyethanol (Ethylene glycol monomethyl ether)-----	DOW, JCC, OMC, UCC.
2-(2-Methoxyethoxy)ethanol (Diethylene glycol monomethyl	DOW, JCC, OMC, UCC.
ether).	
2-[2-(2-Methoxyethoxy)ethoxy]ethanol (Triethylene glycol	DOW, OMC, UCC.
monomethyl ether).	
2-Methoxyethyl acetate-----	UCC.
4-Methoxy-4-methyl-2-pentanol-----	SHC.
4-Methoxy-4-methyl-2-pentanone-----	SHC.
Methoxypolyethylene glycol-----	JCC, UCC.
1-Methoxy-2-propanol-----	DOW, SHC.
3-Methoxypropionitrile-----	ACY.
3-(3-Methoxypropoxy)propanol (Dipropylene glycol methyl	DOW.
ether).	
3-[3-(3-Methoxypropoxy)propoxy]propanol (Tripropylene	DOW.
glycol methyl ether).	
3-Methoxypropylamine-----	DUP.
Methoxytriethyleneglycol acetate-----	RBC.
*Methyl acetate-----	BOR, EK, SRC, UCC.
Methyl acetoacetate-----	EKT, UCC.

TABLE 22B.--Miscellaneous chemicals for which U.S. production or sales were reported, identified by manufacturer, 1962--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued	
Methyl acrylate, monomer-----	CEL, DBC, RH.
Methylal (Dimethoxymethane)-----	CEL.
Methylaluminum sesquichloride-----	TNA.
2-Methylaminoethanol (N-Methylethanolamine)-----	UCC.
Methyl borate-----	CAL, MHI, SFA.
2-Methyl-1-buten-3-yne (Isopropenylacetylene)-----	AIR.
Methyl butyloxyethanol-----	AIR.
Methyl carbamate-----	FMP.
Methyl chloroformate-----	DLM, FMP.
Methyl cyanoacetate-----	KF.
Methyl 2-cyanoacrylate-----	EKT.
Methyl dichloroacetate-----	KF, PD.
Methyl disulfide (Dimethyl disulfide)-----	CRZ.
N,N'-Methylenebisacrylamide-----	ACT.
N,N'-Methylenebisoctadecanamide-----	ARC.
Methyl ether (Dimethyl ether)-----	COM, DUP.
Methyl ethyl carbamate (Methyl urethane)-----	EKL.
Methyl formate-----	DUP.
N-Methylglucamine-----	DUP.
Methyl glycolate (Methyl hydroxyacetate)-----	DUP.
Methyl hexanoate (Methyl caproate)-----	FOR.
5-Methyl-2-hexanone (Methyl isoamyl ketone)-----	EKT, UCC.
2,2'-(Methylimino)diethanol (Methyl diethanolamine)-----	DOM, UCC.
2-Methylactonitrile (Acetone cyanohydrin)-----	RH, x.
Methylmagnesium bromide-----	ARA.
Methyl methacrylate, monomer-----	DUP, RH, USP.
2-Methyl-2-nitro-1,3-propanediol-----	COM.
2-Methyl-2-nitro-1-propanol-----	COM.
2-Methyl-2,4-pentanediol (Hexylene glycol)-----	SHC, UCC.
2-Methyl-2,4-pentanediol 2-dodecyl-1,4-butanedioate, mono-	SPP.
4-Methyl-2-pentanone (Methyl isobutyl ketone)-----	ENJ, SHC, UCC.
4-Methyl-2-pentanone oxime (Methylisobutyl ketoxime)-----	ALB.
4-Methyl-3-penten-2-one (Mesityl oxide)-----	SHC, UCC.
4-Methyl-2-pentyl acetate-----	PUB, SHC, UCC.
Methylpolyethanolamine-----	G.
2-Methyl-2-propyl-1,3-propanediol-----	ICO.
Methylpseudoionone-----	GIV.
Methyl sulfate (Dimethyl sulfate)-----	DUP, ICO.
Methyl sulfide (Dimethyl sulfide)-----	CRZ.
Methyl sulfoxide (Dimethyl sulfoxide)-----	CRZ.
N-Methyltaurine-----	G.
2-Methylvaleraldehyde (2-Methylpentaldehyde)-----	UCC.
2-Methylvaleric acid-----	UCC.
Methyl vinyl ether-----	G.
Mucochloric acid (2,3-Dichloro-3-formylacrylic acid)-----	EK.
Naringin-----	SKG.
Nitriminobispropionic acid-----	ACT.
Nitroethane-----	COM.
Nitromethane-----	COM.
1-Nitropropane-----	COM.
2-Nitropropane-----	COM.
Nonanoic acid (Pelargonic acid)-----	EMR.
Nylon-----	CS, DUP.
1-Octadecene-----	ADM, HMY.
Octadecyl isocyanate-----	OWN, MOB.
1-Octanethiol (n-Octyl mercaptan)-----	PAS.
Octanoic acid (Caprylic acid)-----	FOR.

TABLE 22B.--Miscellaneous chemicals for which U.S. production or sales were reported, identified by manufacturer, 1962--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued	
Octanoic acid (Caprylic acid) salts:	
Aluminum octanoate-----	LEF, NOP.
Zinc octanoate-----	BKC.
Other-----	CCW.
*2-Octanone (Hexyl methyl ketone)-----	ACP, EKT, RH, TBK, WTH.
Octanoyl chloride-----	HK, TBK.
1-Octene-----	ADM, HMY.
1-(and 2-)Octene-----	WTH.
2-Octene-----	HMY.
Octenylsuccinic anhydride-----	HMY.
Oleamide (Octadecene amide)-----	ADM, ARC, FIN, HUM.
*Oleic acid salts:	
Aluminum oleate-----	MAL, WTC.
Barium zinc oleate-----	HSH.
Copper oleate-----	SHP, SRR, WTC.
Lead oleate-----	SHP, WTC.
Stannous oleate-----	x.
Other-----	CCW.
Oleotrile-----	ARC, FOR.
Oleoyl chloride-----	DEP, G.
*Oxalic acid-----	ACG, HK, MAL, PFZ, VIC.
*Oxalic acid salts:	
Ammonium oxalate-----	ACG, BKC, PFZ.
Calcium oxalate-----	VIC.
Ferric ammonium oxalate-----	PFZ.
Ferric oxalate-----	PFZ.
Ferric sodium oxalate-----	PFZ.
Potassium binoxalate-----	BKC.
Potassium oxalate-----	ACG, BKC, PFZ.
Sodium binoxalate-----	VIC.
Sodium oxalate-----	ACG, BKC, MAL, VIC.
Stannous oxalate-----	x.
Oxalyl chloride-----	EK.
Oxidized hydrocarbon mixtures, other than lubricating oil additives.	ALX.
*Palmitic acid salts:	
Aluminum palmitate-----	LEF, NOP, WTC.
Zinc palmitate-----	ACY, LEF, NOP, WTC.
*Palmitoyl chloride-----	G, HAL, TBK.
Paraformaldehyde-----	CEL, HN.
Paraldehyde (Paracetaldehyde)-----	UCC.
*Pentaerythritol-----	COM, DCI, NH, HPC, RCI, TRJ.
Pentaerythritol, di- and tri-----	HPC.
*Pentaerythritol tetranitrate-----	APD, DUP, HPC, TRJ.
2,4-Pentanedione (Acetylacetone)-----	UCC.
2,4-Pentanedione, metallic complexes:	
Ferric-----	MAK, NOC.
Other-----	MAK.
Pentanone (Methyl propyl ketone)-----	UCC.
3-Pentanone (Diethyl ketone)-----	UCC.
Pentyl nitrate (Amyl nitrate)-----	TNA.
Perchloromethanethiol (Perchloromethyl mercaptan)-----	CHO.
Peroxyacetic acid-----	FMB.
*Phosgene (Carbonyl chloride)-----	DLM, DUP, NAC, PPG, SWC, UCC.

TABLE 22B.--Miscellaneous chemicals for which U.S. production or sales were reported, identified by manufacturer, 1962--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued	
*Phosphorus acid esters, not elsewhere specified (See also Plasticizers, Surface-Active Agents, Pesticides, Flo-tation reagents, and Lubricating oil additives):	
Bis(2-chloroethyl) vinylphosphonate-----	VIC.
Bis(2-ethylhexyl) hydrogen phosphate-----	UCC.
Bis(2-ethylhexyl) hydrogen phosphite-----	VC.
Butyl phosphates (mono and di)-----	VC, VIC.
Chloropropyl thiophosphate-----	TNA.
Dibutyl butylphosphonate-----	VC.
Dodecyl hydrogen phosphate-----	DUP.
Diethyl hydrogen phosphite-----	VC.
Dimethyl hydrogen phosphite-----	VC.
Dimethyl methylphosphonate-----	VC.
Dioctyl hydrogen phosphite-----	HK.
Dodecyl phosphates (mono)-----	VIC.
2-Ethylhexyl phosphates (mono and di)-----	VIC.
Ethyl phosphates (mono and di)-----	VIC.
Isopentyl octyl hydrogen phosphate-----	VC.
Methyl phosphates (mono and di)-----	HK, VIC.
Octyl phosphates (mono and di)-----	DUP.
Pentyl phosphates (Mono and diamyl phosphates)-----	VIC.
*Tributyl phosphate-----	CEL., COM, FMP.
Tributyl phosphite-----	VC.
Tridecyl phosphite-----	HK.
Triethyl phosphite-----	VC.
Triisobutyl phosphate-----	EKT.
Triiso-octyl phosphite-----	VC.
Trimethyl phosphite-----	TNA, VC.
Trioctadecyl phosphate-----	IOC.
Tris(2-chloroethyl) phosphate-----	CEL., ENJ.
Tris(2-chloroethyl) phosphite-----	VC.
Tris(2,3-dibromopropyl) phosphate-----	DUP., MCH.
Tris(2-ethylhexyl) phosphite-----	HK.
All other-----	ENJ., MON, VC, VIC, WTC.
Pine oil, synthetic-----	CBY.
Polyacrylamide-----	ACY.
Polyacrylic acid-----	BFG, NOP.
*Polyacrylic acid salts:	
Ammonium polyacrylate-----	BFG.
Sodium polyacrylate-----	BFG, JOR, RH.
All other-----	BFG.
Polyacrylonitrile-----	DUP.
Polyethoxyethylsorbitol-----	APD, GLY, TCH.
*Polyethylene glycol-----	ACN, DOW, G, JCC, OMC, UCC, WYN.
Polyethylene glycol dimethacrylate-----	SAR.
Polyethylene oxide-----	UCC.
Polyethylene polysulfide-----	BFG.
Polygalacturonic acid-----	SKG.
Polyglycerol-----	CP, DRW, WTC.
Polyglycols, ethylene glycol and glycol ethers, mixtures-----	DOW.
Polymethacrylic acid, sodium salt-----	GRD.
*Polypropoxy ethers:	
Glycerol tri(polyoxypropylene) ether-----	JCC, OMC, UCC, WYN.
Polypropoxyglucose-----	APD.
Polypropoxysorbitol-----	APD.
1,2,3-Tri(polypropoxypropyl)hexane-----	UCC.

TABLE 22B.--Miscellaneous chemicals for which U.S. production or sales were reported, identified by manufacturer, 1962--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued	
*Polypropoxy ethers--Continued	
Tri(polypropoxy)sorbitol-----	UCC.
Other-----	DOW, WYN.
*Polypropylene glycol-----	AGS, DOW, JCC, OMC, UCC, VIS, WYN.
Polytetramethylene glycol ether-----	x.
Potassium methylate-----	RRC.
Propionaldehyde-----	EXX, UCC.
*Propionic acid-----	CEL, COM, DUP, EKT, UCC.
Propionic acid salts:	
*Calcium propionate-----	CEL, OPR, DUP, ISC, UCC, WSN.
*Sodium propionate-----	CEL, OPR, DUP, ISC, UCC, WSN.
Zinc propionate-----	BKC.
*Propionic anhydride-----	CEL, EKT, UCC.
Propionitrile-----	RBC.
Propionyl chloride-----	ABB, EK, NES, TBK.
Propionyl peroxide-----	WTL.
Propyl acetate-----	CEL, PUB, UCC.
Propylene carbonate-----	DCW, JCC, UCC.
*Propylene glycol (1,2-Propanediol)-----	APD, CEL, DOW, DUP, JCC, OMC, UCC.
*Propylene oxide-----	CEL, DCW, JCC, OMC, UCC, WYN.
n-Propyl isocyanate-----	DWN.
Propyl 4-methylvalerate (Propyl isocaproate)-----	COM.
Propyne (Methylacetylene)-----	AIR.
Pseudoionone-----	GTV.
Pyruvaldehyde-----	UCC.
Quaternary ammonium compounds (butyl and lower)-----	EK, RSA.
Rare sugars-----	PFN.
Ricinoleamide-----	TKL.
Ricinoleic acid salts:	
Calcium ricinoleate-----	BAC.
Lithium ricinoleate-----	BAC.
*Sarcosine (N-Methylaminoacetic acid)-----	ATL, DUP, G, HMP, VPC.
*Sarcosine, sodium salt-----	GGY.
Sebacic acid-----	WTH, x.
Sebacoyl chloride-----	TBK.
Semicarbazide base and hydrochloride-----	FMT.
Semioxamzide-----	NOR.
*Sequestering agents:	
N,N-Bis(2-hydroxyethyl)glycine, sodium salt-----	RKD.
(Diethylenetrinitrilo)pentaaacetic acid-----	RPC.
(Diethylenetrinitrilo)pentaaacetic acid, monosodium	GGY.
hydrogen ferric salt.	
*(Diethylenetrinitrilo)pentaaacetic acid, sodium salt-----	DOW, GGY, HMP, MOA, RPC, TCC.
N,N-Dihydroxyethylglycine, sodium salt-----	DOW, HMP, MOA.
*(Ethylenedinitrilo)tetraacetic acid (Ethylenediamine-	DOW, GGY, HMP, MOA, RPC, VIC.
tetraacetic acid).	
*(Ethylenedinitrilo)tetraacetic acid, dihydrogen,	DOW, EK, GGY, HMP, RPC.
disodium salt.	
(Ethylenedinitrilo)tetraacetic acid, lipotassium salt---	EK.
(Ethylenedinitrilo)tetraacetic acid, disodium calcium	DOW.
salt.	
(Ethylenedinitrilo)tetraacetic acid, disodium copper	GGY.
salt.	
(Ethylenedinitrilo)tetraacetic acid, disodium zinc salt,	GGY.
dihydrate.	
(Ethylenedinitrilo)tetraacetic acid, manganese salt-----	GGY, RPC.

TABLE 22B.--Miscellaneous chemicals for which U.S. production or sales were reported, identified by manufacturer, 1962--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued	
*Sequestering agents--Continued	
*(Ethylenedinitrilo)tetraacetic acid, monohydrogen trisodium salt.	GGY, HMP, RPC.
*(Ethylenedinitrilo)tetraacetic acid, monosodium iron salt.	GGY, HMP, RPC.
(Ethylenedinitrilo)tetraacetic acid, tetrapotassium salt.	GGY.
*(Ethylenedinitrilo)tetraacetic acid, tetrasodium salt.	ACY, DOW, GGY, HMP, HRT, MOA, NOP, RKD, RPC, TCC.
Glucoheptonic acid, sodium salt.	WIC.
Hexahydroxyheptanoic acid, sodium salt.	PCW.
(N-Hydroxyethylethylenedinitrilo)triacetic acid.	GGY.
*(N-Hydroxyethylethylenedinitrilo)triacetic acid, trisodium salt.	DOW, GGY, HMP, MOA, RPC, TCC.
Nitritotriacetic acid, tripotassium salt.	GGY.
Sodium salts of sugar acids.	FFN.
Silicones.	DCC, ORO, SPD.
Sodium ethoxide.	FMP.
Sodium ethyl oxalacetate.	FMP.
Sodium formaldehydebisulfite.	EK.
*Sodium formaldehydesulfoxylate.	NOP, RH, ROY.
*Sodium methoxide (Sodium methylate).	BFR, HSH, KF, OMC, RBC, SFA, X.
Sodium polypectate.	SKG.
Sodium sorbitol borate.	APD.
Sorbaldehyde (Hexadienal).	UCC.
Sorbic acid (2,4-Hexadienoic acid), and potassium and sodium salts.	UCC.
Sorbitol.	APD, MRK.
Soybean oil acyl chloride salt of sodium lysalbinat.	LMI.
Stearamide (Octadecane amide).	DUP, FIN, HUM.
Stearatochromic chloride.	DUP.
*Stearic acid salts:	
*Aluminum stearates:	
Aluminum monostearate.	LEF, JTC, MAL, MCO, NOP, SYP.
*Aluminum distearate.	ACY, LEF, MAL, MCO, NOP, PRP, SYP, WTC.
Aluminum tristearate.	ACY, LEF, MAL, MCO, NOP, PRP, SYP, WTC.
Ammonium stearate.	DEX, FRR, LEF, NOP, WTC.
Barium stearate.	LEF, MCO, NOP, PRP, SYP, WTC.
Cadmium stearate.	NOP, PRP, SYP, WTC.
*Calcium stearate.	ACY, HNX, JTC, LEF, MAL, MCO, NOP, PRP, SYP, WTC.
Cobalt stearate.	WTC.
Copper stearate.	MCO.
Ferric stearate.	WTC.
*Lead stearate.	HSH, LEF, NOP, NTL, WTC.
Lead stearate, dibasic.	MCO, NTL, WTC.
*Lithium stearate.	FTE, LEF, NOP, PRP, SYP, WTC.
*Magnesium stearate.	ACY, LEF, MAL, MCO, NOP, PRP, SYP, WTC.
Manganese stearate.	MCO.
*Zinc stearate.	ACY, COA, HNX, JTC, LEF, MAL, MCO, NOP, PRP, SYP, WTC.
All other.	APD.
Stearonitrile (Octadecanenitrile).	GNM.
Stearoyl chloride.	G, TBK, WTC.
Succinic acid.	BKC, CS, NAC.
Succinic acid, sodium salt.	MAL.
Succinic anhydride.	NAC.
Succinimide.	ARA, NAC.
Succinonitrile.	ACY.
Succinyl peroxide.	ICO, WTL.
Sucrose octa-acetate.	UCC.

TABLE 22B.--Miscellaneous chemicals for which U.S. production or sales were reported, identified by manufacturer, 1962--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued	
*Tallow amide, hydrogenated-----	ADM, ARC, HUM.
Tallow fatty acyl chloride-----	G.
Tallow nitrile-----	FOR, GNM.
Tallow nitrile, hydrogenated-----	FOR.
Tartaric acid salts, nonmedicinal-----	BKC, PFZ.
1,1,3,3-Tetraethoxypropane-----	KF.
Tetra(2-ethylbutyl)ortho-silicate-----	UCC.
*Tetraethylene glycol-----	DOW, JCC, HCH, UCC.
Tetraethylene glycol dimethacrylate-----	SAR.
*Tetraethyllead-----	DUP, HCH, TNA.
Tetrafattytetramide of triethylenetetramine-----	DCH.
Tetrahydroxysuccinic acid (Dioxytartaric acid)-----	ACY.
Tetrakis(hydroxymethyl)phosphonium chloride-----	HK.
N,N,N',N'-Tetrakis(2-hydroxypropyl)ethylenediamine-----	MON, WYN.
Tetramethyl (and ethyl) lead-----	DUP.
Tetramethylguanidine-----	ACY.
*Tetramethyllead-----	DUP, HCH, TNA.
Tetranitromethane-----	HML.
Tetraoctyl orthosilicate-----	MON.
Thioacetamide-----	BKC, EK.
2,2'-Thiodiethanol (Thiodiethylene glycol)-----	G, UCC.
Thiodipropionic acid-----	ACY, CCW, EVN.
3,3'-Thiodipropionitrile-----	ACY, HAB.
Titanic acid esters-----	DUP.
Triacetoxylvinylsilane-----	DCC.
Triallyl cyanurate-----	ACY.
Trichloroacetic acid-----	DOW.
Trichloroacetyl chloride-----	EK.
Trichloroethylsilane (Ethyl silicone trichloride)-----	UCS.
Trichloromethylsilane-----	DCC.
Trichloro-octadecylsilane-----	DCC.
Trichloropentylsilane-----	UCS.
Trichlorovinylsilane-----	DCC, UCS.
Triethoxyethylsilane-----	UCS.
Triethoxyvinylsilane-----	UCS.
Triethyl acetylacrylate-----	PFZ.
Triethylaluminum-----	TNA, TSA.
*Triethylene glycol-----	ACN, CAU, DOW, G, JCC, OMC, UCC.
Triethylene glycol dimethacrylate-----	SAR.
Triethyl orthoacetate-----	EK, KF.
Triethyl orthoformate-----	KF.
Triethyl orthopropionate-----	KF.
Trifluoroacetic anhydride-----	CLB.
Trisobutylaluminum-----	TNA, TSA.
2,6,8-Trimethyl-4-nonanone-----	UCC.
Trimethyl orthoformate-----	KF.
2,2,4-Trimethyl-1,3-pentanediol-----	EKX.
2,2,4-Trimethyl-1,3-pentanediol monoisobutyrate-----	EKX.
Trimethylpentenyl isobutyrate-----	EKX.
Tripropylaluminum-----	TNA, TSA.
Tripropylene glycol-----	DOW, UCC.
2-Undecanone-----	TBK.
Undecenoic acid (Undecylenic acid)-----	BAC.
Undecenoic acid, zinc salt-----	TNC.

TABLE 22B.--Miscellaneous chemicals for which U.S. production or sales were reported, identified by manufacturer, 1962--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
MISCELLANEOUS CHEMICALS. ACYCLIC--Continued	
*Urea in compounds or mixtures, 100%:	
*In feed compounds-----	ACN, DUP, GCG, JDC, MON, MSC, SHC, SOH.
*In liquid fertilizer-----	ACN, ARC, GFA, DUP, ESC, GCG, HFC, JDC, MON, MSC, SHC, SNI, SOH, SPN.
*In solid fertilizer-----	ACN, DUP, GCG, HFC, JDC, MON, MSC, SHC, SHO, SOH, SPN.
In plastics-----	DUP, MON.
All other-----	ACN, DUP, HPC, MON, SHC, SOH.
Urea peroxide-----	FMR.
Urea urethane copolymer-----	DUP.
Valeraldehyde-----	UCC.
Valeric acid-----	UCC.
*Vinyl acetate, monomer-----	AIR, CEL, PCA, UCC.
*Zinc formaldehydesulfoxylate-----	NOP, RH, ROY.

Directory of Manufacturers

The Directory of Manufacturers lists the companies that report their production of synthetic organic chemicals to the U.S. Tariff Commission. The name of each manufacturer is preceded by an alphabetical identification symbol. These identification symbols consist of not more than three capital letters, and usually bear a relation to the company name. In most instances the assigned symbols were approved by the companies they identify.

For 1962, the Directory of Manufacturers lists 776 primary manufacturers (see table 23). Some of the companies that report production of synthetic organic chemicals do not sell the materials, but consume their entire output in further manufacturing.

The Directory of Manufacturers lists the reporting companies in two ways: Section 1 lists them in alphabetical order by identification symbols; section 2 lists the reporting companies in alphabetical order by company name, and gives the corresponding identification symbol and the company address.

TABLE 23. --Synthetic organic chemicals: Directory of manufacturers, 1962

SECTION 1. ALPHABETICAL DIRECTORY BY CODE

[Names of synthetic organic chemical manufacturers that reported production or sales to the U.S. Tariff Commission for 1962 are listed below in the order of their identification codes as used in tables in pt. III. Sec. 2 of this table lists these manufacturers alphabetically and gives their office address.]

Code	Name of company	Code	Name of company
AAC	Alcolac Chemical Corp.	ARD	Ardmore Chemical Co.
AAE	American Aniline & Extract Co., Inc.	ARG	Argus Chemical Corp.
ABB	Abbott Laboratories	ARK	Armstrong Cork Co.
ABR	Andrew Brown Co.	ARL	Arol Chemical Products Co.
ABS	American Brake Shoe Co., American Brakeblok Div.	ARO	Martin-Marietta Corp., Aero Div.
ACB	Allied Chemical Corp., Barrett Div.	ARP	Armour Pharmaceutical Co.
ACC	Amoco Chemicals Corp.	ASH	Ashland Oil & Refining Co.
ACG	Allied Chemical Corp., General Chemical Div.	ASL	Ansul Chemical Co.
ACN	Allied Chemical Corp., Nitrogen Div.	AST	Astra Pharmaceutical Products, Inc.
ACD	Acralite Co., Inc.	ASY	American Synthetic Rubber Corp.
ACP	Allied Chemical Corp., Plastics Div.	ATL	Atlantic Chemical Corp.
ACR	Acme Resin Corp.	ATR	Atlantic Refining Co.
ACS	Allied Chemical Corp., Solvay Process Div.	ATU	Atlantic Tubing & Rubber Co.
ACT	Arthur C. Trask Co.	AUG	Augusta Chemical Co.
ACY	American Cyanamid Co.	AV	American Viscose Corp.
ADC	Ad-Co Color Corp.	AVS	AviSun Corp.
ADM	Archer-Daniels-Midland Co.	BAC	Baker Caster Oil Co.
AHC	Arnold, Hoffman & Co., Inc.	BAL	Baltimore Paint & Chemical Corp.
AIR	Air Reduction Co., Inc., Air Reduction Chemical & Carbide Co. Div.	EAO	Bayoil Co., Inc.
ALB	Ames Laboratories, Inc.	EAT	Bates Chemical Co.
ALC	Aleo Chemical Corp.	EAX	Baxter Laboratories, Inc.
ALH	Aldrich Chemical Co., Inc.	EC	Barlow Chemical Corp.
ALL	Alliance Color & Chemical Co.	ECC	Bercon Chemical Co., Inc.
ALT	Prompton & Knowles Corp., Althouse Chemical Co. Div.	ECM	Belding Chemical Industries
ALX	Alox Corp.	ECN	Beacon Chemical Industries, Inc.
AMB	American Bio-Synthetics Corp.	BEN	Bennett's
AMC	Amchem Products, Inc.	BFG	B. F. Goodrich Co., B. F. Goodrich Chemical Co. Div.
AME	American Chemical Corp.	BFR	Branchflower Co.
AMF	Martin-Marietta Corp., Ferbert-Schorndorfer Co. Div.	BGC	Balfour, Guthrie & Co., Ltd.
AML	Amalgamated Chemical Corp.	BKC	J. T. Baker Chemical Co.
AMO	American Oil Co. (Texas)	BKL	Berkeley Chemical Corp.
AMP	American Potash & Chemical Corp.	BKM	Buckman Laboratories, Inc.
AMR	Pacific Resins & Chemical Co.	BKS	Berkshire Color & Chemical Co.
AMS	Martin-Marietta Corp., Ridgway Color & Chemical Co. Div.	BKT	J. T. Baker Chemical Co., Taylor Div.
AMZ	American Maize Products Co.	BL	Bellie Chemical Co., Inc.
ANC	Antro Chemical Co.	BLA	Blue Arrow, Inc.
APC	Appleton Coated Paper Co.	BLN	Brooklyn Color Works, Inc.
APD	Atlas Chemical Industries, Inc., Chemicals Div.	ELS	Beech-Nut Life Savers, Inc.
APR	Atlas Processing Co.	EME	Bendix Corp., Marshall-Eclipse Div.
APT	American Petrochemical Corp.	BOR	Borden Chemical Co.
APV	Armstrong Paint & Varnish Works, Inc.	BOY	Walter N. Boyesen Co.
AFX	Apex Chemical Co., Inc.	BPC	Benzol Products Co.
ARA	Arapahoe Chemicals, Inc.	BPL	Brand Plastics Co.
ARC	Armour & Co., Armour Industrial Chemical Co. Div.	BRB	Brown Co., Resi-Chem Div.
		BRS	Bristol-Meyers Co., Bristol Laboratories Div.
		BRU	M. A. Bruder & Sons, Inc.
		BRY	Bryant Chemical Corp.
		BSC	Burkart-Schier Chemical Co.

TABLE 23.--Synthetic organic chemicals: Directory of manufacturers, 1962 --Continued

Code	Name of company	Code	Name of company
BUC	Blackman-Uhler Chemical Co.	CRZ	Crown Zellerbach Corp., Chemical Products Div.
BUK	Buckeye Cellulose Corp.	CS	Chemstrand Corp.
BUR	Burroughs-Wellcome & Co. (U.S.A.), Inc.	CSD	Cosden Petroleum Corp.
BXT	J. H. Baxter & Co.	CSO	Cities Service Oil Co.
BZ	Bzura Chemical Co., Inc.	CST	Charles S. Tanner Co.
CAD	Cadet Chemical Corp.	CTA	Conestoga Chemical Corp.
CAL	Callery Chemical Co.	CTL	Continental Chemical Co.
CAP	Capital Plastics, Inc.	CUC	Cumberland Chemical Corp.
CAT	Catalin Corp. of America	CUT	Cutter Laboratories, Inc.
CAU	Calcasieu Chemical Corp.	CW	Collett-Week Corp.
CBA	Ciba Corp., Ciba Products Co. Div.	CWL	Cowles Chemical Co.
CBC	Georgia-Pacific Corp., Coos Bay Div.	CWN	Upjohn Co., Garwin Co. Div.
CBP	Ciba Corp., Ciba Pharmaceutical Co. Div.	CWP	Consolidated Papers, Inc.
CBT	Samuel Cabot, Inc.	DA	Diamond Alkali Co., and Western Div.
CBY	Crosby Chemicals, Inc.	DAN	Dan River Mills, Inc.
CCA	Carlisle Chemical Works, Inc., Advance Solvents & Chemical Div.	DAV	Conchemco, Inc., H. B. Davis Co. Div.
CCC	Chase Chemical Corp.	DBC	Dow Badische Chemical Co.
CCH	Pearsall Chemical Co.	DCC	Dow Corning Corp.
CCL	Charlotte Chemical Laboratories	DCH	Dearborn Chemical Co.
CCO	Chemico, Inc.	DCI	Delaware Chemicals, Inc.
CCP	Crown Central Petroleum Corp.	DEG	Degen Oil & Chemical Co.
CCW	Carlisle Chemical Works, Inc.	DEP	DePaul Chemical Co., Inc.
CD	Eudd Co., Polychem Div.	DEX	Dexter Chemical Corp.
CEL	Celanese Corp. of America: Celanese Chemical Co. Div. Celanese Polymer Co. Div.	DGS	Douglas Laboratories, Inc.
CEM	Chemirad Corp.	DLH	Delhi-Taylor Oil Corp.
CFA	Cooperative Farm Chemicals Association	DLI	Dawe's Laboratories, Inc.
CFC	Rexall Chemical Co. - Kearny	DLM	Delmar Chemical Co., Inc.
CFX	Chemfax, Inc.	DOD	Donald A. Dodd
CHC	Chipman Chemical Co., Inc.	DCM	Dominion Products, Inc.
CHG	Chemagro Corp.	DCW	Dow Chemical Co.
CHL	Chemol, Inc.	DFP	Dixie Pine Products Co., Inc.
CHM	Chapman Chemical Co.	DRW	Drew Chemical Corp.
CHO	Stauffer Chemical Co., Calhio Chemicals Div.	DSC	Dye Specialties, Inc.
CIK	California Ink Co., Inc.	DSO	DeSoto Chemical Coatings, Inc.
CIN	Cindet Chemicals, Inc.	DUN	Frank W. Dunne Co.
CIS	Chemical Insecticide Corp.	DUP	E. I. duPont de Nemours & Co., Inc.
CKL	Chemlek Laboratories, Inc.	DUR	Duraphene Corp.
CLB	Columbia Organic Chemicals Co., Inc.	DVC	Dover Chemical Co.
CLD	Colloids, Inc.	DYS	Sunray DX Oil Co.
CLI	Clinton Chemical Co.	EAK	J. S. & W. R. Eakins, Inc.
CLN	Standard Brands, Inc., Clinton Corn Processing Co. Div.	EDC	Edcan Laboratories
CLR	Colab Resin Corp.	EDY	Eddystone Manufacturing Co.
CLV	Clover Chemical Co.	EFH	E. F. Houghton & Co.
CLY	W. A. Cleary Corp.	EK	Eastman Kodak Co.
CM	Carpenter-Morton Co.	EKT	Eastman Kodak Co., Tennessee Eastman Co. Div.
CMG	Chemical Manufacturing Co., Inc.	EKX	Eastman Kodak Co., Texas Eastman Co. Div.
CO	Continental Oil Co.	ELP	El Paso Natural Gas Products Co.
COK	Cockeille Chemicals, Inc.	EKX	Emkay Chemical Co.
COL	Collier Carbon & Chemical Corp.	EMR	Emeroy Industries, Inc.
COM	Commercial Solvents Corp.	EN	Endo Laboratories, Inc.
CON	Concord Chemical Co., Inc.	ENJ	Enjay Chemical Co., Div. of Humble Oil & Refining Co.
COP	Coopers Creek Chemical Corp.	EPC	Epoxylyte Corp.
COR	Commonwealth Oil Refining Co., Inc.	ERD	Erdmann Chemical Co., Inc.
CGS	Coastwise Petroleum Co.	ESC	Escambia Chemical Corp.
CP	Colgate-Palmolive Co.	ETD	Ethyl-Dow Chemical Co.
CPC	Childs Pulp Colors, Inc.	EVM	Everledge Manufacturing, Inc.
CPD	Chemical Products Corp. (Georgia)	EVN	Evans Chemetics, Inc.
CPL	Reliance Varnish Co., Coast Paint & Lacquer Co. Div.	EW	Westinghouse Electric Corp., Miarta Div.
CPR	Certified Proteins	FAB	Fabricolor Chemical Corp.
CPT	Consolidated Paint Co.	FAR	Farnow, Inc.
CPV	Cook Paint & Varnish Co.	FB	Fritzsche Bros., Inc.
CPY	Copolymer Rubber & Chemical Corp.	FBC	Diamond Alkali Co., Fiber Chemical Dept.
CRC	Crown Chemical Corp.	FBR	Fibreboard Paper Products Corp.
CRN	Corn Products Co.	FC	Franklin Chemical Co.
CRS	Carus Chemical Co., Inc.	FCD	France, Campbell & Darling, Inc.
CRT	Crown Tar & Chemical Works, Inc.	FCL	Federal Color Laboratories, Inc.
CRY	Cary Chemicals, Inc.	FCP	J. P. Frank Chemical & Plastic Corp.
		FEL	Felton Chemical Co., Inc.
		FER	Ferro Corp., Ferro Chemical Div.

TABLE 23.-- Synthetic organic chemicals: Directory of manufacturers, 1962--Continued

Code	Name of company	Code	Name of company
FD	Feeder-Grant Co., Inc.	HAR	Allied Chemical Corp., National Aniline Div., Harmon Color Works
FH	Feeder-Heaton Co.	HCC	Holland Color & Chemical Co.
FIN	Fine Organics, Inc.	HCH	Houston Chemical Corp.
FIR	Firestone Tire & Rubber Co., Firestone Elastics Co. Div.	HDC	Hodag Chemical Corp.
FLA	Florida Chemical Co., Inc.	HER	Heresite & Chemical Co.
FLH	F. B. Fuller Co.	HET	Heterochemical Corp.
FLD	Fluoracynth Laboratories, Inc.	HEX	Hexagon Laboratories, Inc.
FLW	W. P. Fuller & Co.	HFT	Hoffman-Tait, Inc.
FMP	FMC Corp., Inorganic Chemicals Div.	HK	Hooker Chemical Corp.
FMN	FMC Corp., Niagara Chemical Div.	HKD	Hooker Chemical Corp., Durez Plastics Div.
FMD	Ferroc Laboratories, Inc.	HLC	Hartman-Leddon Co.
FMP	FMC Corp., Organic Chemicals Div.	HLL	Haag Laboratories, Inc.
FMT	Fairmount Chemical Co., Inc.	HML	Hummel Chemical Co., Inc.
FMW	FMC Corp., Chemical Div.	HMN	Hamilton Chemical Corp.
FGT	Faraco Oil & Chemical Co.	HMP	Hampshire Chemical Corp.
FCM	Formica Corp.	HMY	Humphrey-Wilkinson, Inc.
FOR	Foremost Food & Chemical Co.	HN	Heyden Newport Chemical Corp.
FRE	Freeman Chemical Corp.	HNC	H & N Chemical Co.
FRM	Farmers' Chemical Co.	HNW	Heyden Newport Chemical Corp., Newport Industries Div.
FRO	Vulcan Materials Co., Frontier Chemical Co. Div.	HNX	Heyden Newport Chemical Corp., Nuodex Products Div.
FRP	Filtered Rosin Products Co.	HOF	Hoffmann-LaRoche, Inc.
FRR	Estate of W. U. Farrington	HOU	Air Products & Chemicals, Inc., Houdry Process & Chemical Co. Div.
FRS	Firestone Tire & Rubber Co., Firestone Syn- thetic Rubber & Latex Co. Div.	HFC	Heroules Powder Co.
FSH	Frisch & Co., Inc.	HRS	Rapid American Corp., Harris Standard Paint Co. Div.
FTE	Footc Mineral Co.	HRT	Hart Products Corp.
G	General Aniline & Film Corp.	HSB	Harshaw Chemical Co.
GAM	Gamma Chemical Corp.	HST	Hoechst Chemical Corp.
GAN	Game's Chemical Works, Inc.	HLM	National Dairy Products Corp., Humko Products Chemical Div.
GCC	W. R. Grace & Co., Nitrogen Products Div.	HUS	Husky Briquetting
GDL	Gordon-Lacey Chemical Products & Co., Inc.	HVG	Haveg Industries, Inc., Resin & Compound Div.
GDH	Gordon Chemicals, Inc.	HYC	Hysol Corp.
GE	General Electric Co., Chemical Materials Dept.	HYN	Hynson, Westcott & Dunning, Inc.
GEI	General Electric Co., Insulating Materials Dept.	IBI	Industrial Biochemicals
GFS	G. Frederick Smith Chemical Co.	ICC	Interchemical Corp., Color & Chemicals Div.
GGC	Goodrich-Gulf Chemicals, Inc.	ICF	Interchemical Corp., Finishes Div.
GGY	Geigy Chemical Corp.	ICO	Interchemical Corp., Organic Chemicals Dept.
GIL	Gilman Paint & Varnish Co.	IDC	Industrial Dyestuff Co.
GIV	Givaudan Corp.	IFF	International Flavors & Fragrances, Inc.
GLC	General Latex & Chemical Corp.	ILC	International Latex Corp.
GLD	Glidden Co.	IMC	International Minerals & Chemical Corp.
GLX	Glasflex, Inc.	IMP	Heroules Powder Co., Imperial Color & Chemical Dept.
GLY	Glyco Chemicals, Inc.	INI	Intermediates, Inc.
GWF	General Foods Corp., Maxwell House Div.	INL	Inland Steel Container Co.
GWM	General Mills, Inc.	INM	Industrial Marine Chemical Co.
GWT	General Tire & Rubber Co., Chemical Div.	INP	International Paper Co.
GOC	Gulf Oil Corp.	IOC	Pfaudler Permutit, Inc., Ionac Chemical Co. Div.
GOR	Gordon Chemical Co., Inc.	IPC	Interplastic Corp., Commercial Resins Div.
GPM	General Plastics Manufacturing Co.	IPI	Isocyanate Products, Inc.
GPR	Grain Processing Corp.	IPR	Inter-Pacific Resins, Inc.
GRA	Great American Chemical Corp.	IRC	International Resistance Co.
GRD	W. R. Grace & Co., Dewey & Almy Chemical Div.	IRI	Ironsides Co.
GRG	P. D. George Co.	ISC	Importers Service Corp.
GRH	W. R. Grace & Co., Hateso Chemical Div.	ISO	Isochem Resins Co.
GRP	W. R. Grace & Co., Polymer Chemicals Div.	JAM	Jamestown Paint & Varnish Co.
GRS	Pontiac Refining Corp.	JCC	Jefferson Chemical Co., Inc.
GRV	Guardsman Chemical Coatings, Inc.	JDC	John Deere Chemical Co.
GRW	Great Western Sugar Co.	JEN	Jennison-Wright Corp.
GTH	Guth Chemical Co.	JMS	J. Meyer & Sons, Inc.
GTL	Great Lakes Chemical Corp.	JNS	S. C. Johnson & Son, Inc.
GUA	Guard Chemical Co., Inc.	JOB	Jones-Blair Paint Co.
GYR	Goodyear Tire & Rubber Co.	JOC	Joelin Manufacturing Co.
HAB	Halby Products Co., Inc.	JOD	Jones-Dabney Co.
HAL	C. P. Hall Co. of Illinois	JOR	W. H. & F. Jordan, Jr. Manufacturing Co., Inc.
HAM	Hamden Color & Chemical Co.	JRG	Andrew Jergens Co.
HAN	Hanna Paint Manufacturing Co., Inc.	JSC	Jersey State Chemical Co.
HAP	Applied Plastics Co., Inc.	JTC	Joseph Turner & Co.
		JUL	Julian Laboratories, Inc.
		JWL	Jewel Paint & Varnish Co.

TABLE 23.--Synthetic organic chemicals: Directory of manufacturers, 1962--Continued

Code	Name of company	Code	Name of company
KAL	Kali Manufacturing Co.	MMM	Minnesota Mining & Manufacturing Co.
KCC	Kennecott Copper Corp., Chino Mines Div.	MNO	Monochem, Inc.
KCH	Keystone Chemurgic Corp.	MNP	Minnesota Paints, Inc.
KCU	Kennecott Copper Corp., Utah Copper Div.	MCA	Mons Industries, Inc.
KCW	Keystone Color Works, Inc.	MCB	Mobay Chemical Co.
KEL	Kelly-Pickering Chemical Corp.	MCC	Marathon Oil Co., Texas Refining Div.
KEN	Kendall Refining Co.	MCN	Monsanto Chemical Co.
KES	Armour & Co., Armour Industrial Chemical Co. Div., Kessler Chemical Div.	MOR	Mineral Oil Refining Co.
KF	Kay-Fries Chemicals, Inc.	MOT	Motomeo, Inc.
KK	K & K Laboratories, Inc.	MPL	Massachusetts Plastic Corp.
KLK	Kolker Chemical Corp., DBA Frontier Chemical Co.	MR	Benjamin Moore & Co.
KLS	Kilsdonk Chemical Corp.	MRA	Metro-Atlantic, Inc.
KND	Knoedler Chemical Co.	MRE	Marlette Corp.
KNG	Far-Best Corp., O. L. King Div.	MRD	Marden-Wild Corp.
KNP	Knapp Products, Inc.	MRK	Merck & Co., Inc.
KON	H. Kohnstamm & Co., Inc.	MRN	Morningstar Paisley, Inc.
KPC	Koppers Co., Inc., Chemicals & Dyestuffs Div.	MRO	Marco Chemical Corp.
KPI	Kenrich Petrochemicals, Inc.	MRT	Morton Chemical Co.
KPP	Koppers Co., Inc., Plastics Div.	MRV	Marlowe-Van Loan Corp.
KPT	Koppers Co., Inc., Tar Products Div.	MRW	Morwear Paint Co.
KPV	Keystone Paint & Varnish Corp.	MRX	Max Marx Color & Chemical Co.
KRM	Lawter Chemicals, Inc., Krumbhaar Resin Div.	MSC	Mississippi Chemical Corp.
KYN	Kyanize Paints, Inc.	MTL	Metal salts Corp.
KYS	Keycor Chemical Co.	MTO	Montrose Chemical Corp. of California
LAM	LaMotte Chemical Products Co.	MTR	Baldwin-Montrose Chemical Co., Inc., Montrose Chemical Div.
LAS	Lasco Industries, Inc.	MYW	Stepan Chemical Co., Maywood Chemical Works Div.
LEA	Leatex Chemical Co.	NAC	Allied Chemical Corp., National Aniline Div.
LEB	Lebanon Chemical Corp.	NCI	Nelco Chemicals, Inc.
LEF	Leffingwell Chemical Co.	NCW	Nostrup Chemical Works, Inc.
LEH	Lehigh Chemical Co.	NEO	Norid Essential Oil & Chemical Co., Inc.
LEM	B. L. Lemke & Co., Inc.	NEP	Nepera Chemical Co., Inc.
LEN	Leonard Refineries, Inc.	NES	Nesca Chemical Co., Inc.
LEV	Lever Brothers Co.	NEV	Neville Chemical Co.
LIL	Eli Lilly & Co.	NIL	Nilok Chemicals, Inc.
LKL	Lakeside Laboratories, Inc.	NOC	Norac Co., Inc.
LKY	St. Regis Paper Co., Lake States Yeast & Chemical Div.	NON	A. F. Nonweiler Co.
LMI	Lawrence Mills, Inc.	NOF	Nopco Chemical Co., Inc.
LON	Martin-Marietta Corp., American-Marietta Paint Div.	NGR	Norwich Pharmaceutical Co.
LPC	Lignin Products Co.	NFI	National Polychemicals, Inc.
LUB	Lubrizol Corp.	NFP	National Plastic Products Co., Inc.
LUE	George Lueders & Co.	NPV	Norris Paint & Varnish Co.
LUR	Laurel Soap Manufacturing Co.	NRS	Norse Chemical Corp.
LVR	C. Lever Co., Inc.	NSC	National Starch & Chemical Corp.
LVY	Fred'k H. Levey Co., Inc.	NSP	Alabama Binder & Chemical Corp.
MAH	Maher Color & Chemical Co.	NTB	National Biochemical Co.
MAK	MacKenzie Chemical Works, Inc.	NTC	National Casein Co.
MAL	Mallinckrodt Chemical Works	NTL	National Lead Co.
MAR	American Can Co., Marathon Div.	NVF	National Vulcanized Fibre Co.
MAY	Otto B. May, Inc.	NVT	Novamont Corp.
MCA	Masonite Corp., Alpine Chemical Div.	NW	Northwestern Chemical Co.
MCB	Borg-Warner Corp., Marbon Chemical Div.	NYC	American Dyewood Co., Inc., New York Color & Chemical Co. Div.
MCC	McCloskey Varnish Co.	OCF	Owens-Corning Fiberglass Corp.
MCH	Michigan Chemical Corp.	OH	Ohio Chemical & Surgical Equipment Co.
MCO	Mathe Chemical Co.	OLH	Old Hickory Chemical Co.
MCW	McWhorter Chemicals, Inc.	OMB	Olin Mathieson Chemical Corp., Blockson Works
MDP	Maryland Plastics, Inc.	OMC	Olin Mathieson Chemical Corp.
MED	Medical Chemicals Corp.	OMS	Olin Mathieson Chemical Corp., E. R. Squibb & Sons Div.
MEE	Maumee Chemical Co.	ONX	Onyx Chemical Corp.
MER	Jefferson Lake Sulphur Co., Chemical Div.	OPC	Orbis Products Corp.
MET	M & T Chemicals, Inc.	ORG	Organics, Inc.
MFG	Molded Fiber Glass Body Co., Resin Div.	ORO	California Chemical Co., Oronite Div.
MGR	Magruder Color Co., Inc.	ORT	Roehr Chemicals, Inc.
MHI	Metal Hydrides, Inc.	OSB	C. J. Osborn Co.
MID	Midland Industrial Finishes Co.	OTA	Ottawa Chemical Co.
MIR	Miranol Chemical Co., Inc.	OTC	Ott Chemical Co.
MLD	Metaload Products Corp.	OTH	California Chemical Co., Ortho Div.
MLS	Miles Laboratories, Inc.	OTT	Ottol Oil Co.
		OXY	Oxy Chemical Co.

TABLE 23.--Synthetic organic chemicals: Directory of manufacturers, 1962 --Continued

Code	Name of company	Code	Name of company
PAI	Pennsylvania Industrial Chemical Corp.	RIC	Richfield Oil Corp.
PAN	Pan American Petroleum Corp.	RIK	Riker Laboratories, Inc.
PAR	Pennsylvania Refining Co.	RIL	Reilly Tar & Chemical Corp.
PAS	Pennsalt Chemicals Corp.	RIV	Riverdale Chemical Co.
PAT	Patent Chemicals, Inc.	RKD	Rockland Industries
PRS	Patst Brewing Co.	RMC	Rinshed-Mason Co.
PBY	Pillsbury Co.	ROC	Rock Hill Printing & Finishing Co.
PC	Proctor Chemical Co., Inc.	ROM	Roma Chemical Corp.
PCA	Pacific Carbide & Alloys Co.	ROP	Robeson Process Co.
PCC	Pittsburgh Chemical Co.	ROS	Rosett Chemicals, Inc.
PCH	Peerless Chemical Co.	ROY	Royce Chemical Co.
PCI	Polyvinyl Chemicals, Inc.	RPC	Refined Products Co.
PCS	Process Chemicals Co.	RSA	R. S. A. Corp.
PCW	Pfister Chemical Works	RT	F. Ritter & Co.
PD	Parke, Davis & Co.	RTC	Ritter Chemical Co., Inc.
PDC	Poughkeepsie Dyestuff Corp.	RTF	Retzlloff Chemical Co.
PEK	Peek's Products Co.	RUB	Rubber Corp. of America
PEL	Peiron Corp.	RUR	Ruberoid Co.
PEN	S. B. Penick & Co.	RZL	Rozilda Laboratories, Inc.
PER	Perry & Derrick Co.		
PET	Petroleum Chemicals, Inc.	S	Sandoz, Inc.
PFN	Pfanstiehl Laboratories, Inc.	SAL	Dr. Salsbury's Laboratories
PPF	Phelan-Faust Paint Manufacturing Co.	SAR	Sartomer Resins, Inc.
PFZ	Chas. Pfizer & Co., Inc.	SBC	Scher Bros.
PG	Procter & Gamble Co., Procter & Gamble Manufacturing Co., Div.	SBR	Schwartz Bioresearch, Inc.
PGU	Perkins Glue Co.	SCC	Standard Chlorine Chemical Co., Inc.
PHR	Pharmachen Corp.	SCF	Schaefer Varnish Co., Inc.
PIC	Pierce Chemical Co.	SCH	Schering Corp.
PII	Polymer Industries, Inc.	SCI	Stecker Chemicals, Inc.
PIL	Pilot Chemical Co.	SCL	Schuykill Chemical Co.
PIT	Pitt-Consol Chemical Co.	SCN	Schenectady Chemicals, Inc.
PLA	Richardson Polymers, Inc.	SCO	Scholler Bros., Inc.
PLC	Phillips Chemical Co.	SCF	Standard Chemical Products, Inc.
PLP	Phillips Petroleum Co.	SCR	R. F. Scherer Corp.
PLS	Plastics Engineering Co.	SDC	Martin-Marietta Corp., Southern Dyestuff Co. Div.
PLU	Plumb Chemical Corp.	SDG	Sterling Drug, Inc., Glenbrook Laboratories Div.
PNT	Pantasote Co.	SDH	Sterling Drug, Inc., Hilton-Davis Chemical Co. Div.
PNX	Phoenix Oil Co.	SDW	Sterling Drug, Inc., Winthrop Laboratories Div.
POL	Polymer Corp.	SEA	Seaboard Chemicals, Inc.
PPG	Pittsburgh Plate Glass Co.	SED	Seidnitz Paint & Varnish Co.
PRC	Paragon Chemicals	SEY	Seydel-Woolley & Co.
PRD	Productol Co.	SF	Stauffer Chemical Co.
FRO	Pure Oil Co.	SFA	Stauffer Chemical Co., Anderson Chemical Co. Div.
PRP	M. W. Parsons-Plymouth, Inc.	SFC	Stahl Finish Co.
PRR	L. Ferrigo Co.	SH	Stein, Hall & Co., Inc.
PRT	Pratt & Lambert, Inc.	SHA	Shanco Plastics & Chemicals, Inc.
PRX	Purex Corp., Ltd.	SHC	Shell Oil Co., Shell Chemical Co. Div.
PSF	Puget Sound Pulp & Timber Co.	SHF	National Dairy Products Corp., Sheffield Chemical Co. Div.
PTT	Petro-Tex Chemical Corp.	SHL	Shulton, Inc.
PUB	Publicker Industries, Inc.	SHM	Shamrock Oil & Gas Corp.
PYL	Polychemical Laboratories, Inc.	SHO	Shell Oil Co.
FYR	Poly Resins	SHF	Shepherd Chemical Co.
FYZ	Polyrez Co., Inc.	SIC	Silmar Chemical Corp.
QQP	Quaker Chemical Products Corp.	SID	George F. Siddall Co., Inc.
QKO	Quaker Oats Co.	SIM	Simpson Timber Co.
QUN	K. J. Quinn & Co., Inc.	SIN	Sinclair Refining Co.
		SIO	Standard Oil Co. of Ohio
		SIP	James B. Sipe & Co.
RAB	Raybestos-Manhattan, Inc., Raybestos Div.	SK	Smith, Kline & French Laboratories
RBC	Roberts Chemicals, Inc.	SKC	Sinclair Koppers Chemical Co.
RCC	Rexall Chemical Co.	SKG	Sunkist Growers, Inc.
RCI	Richardson Co., Krystall Chemical Corp. Div.	SLC	Soluol Chemical Co., Inc.
RCJ	Reichhold Chemicals, Inc.	SLV	Sterling Drug, Inc., Salvo Chemical Div.
RDA	Rhodia, Inc.	SM	Socony Mobile Oil Co., Inc.: Mobil Chemical Co. Div. Mobil Oil Co. Div.
RED	Red Spot Paint & Varnish Co., Inc.	SMC	Stamford Chemical Co.
REH	Reheis Co., Inc.	SNA	Ansbacher-Siegle Corp. Div. of Sun Chemical Corp.
REL	Reliance Varnish Co.	SNC	Sonoco Products Co.
REM	Remington Arms Co., Inc.	SNI	Southern Nitrogen Co., Inc.
RET	Rayette, Inc.	SNM	Mansun Paint Manufacturing Co., Inc.
REZ	Rezolin, Inc.		
RGC	Rogers Corp.		
RH	Rohm & Haas Co.		

TABLE 23.--Synthetic organic chemicals: Directory of manufacturers, 1962--Continued

Code	Name of company	Code	Name of company
SNO	SunOlin Chemical Co.	TXB	Texas Butadiene & Chemical Corp.
SNT	Suntide Refining Co.	TXC	Tex Chemical Co.
SNW	Sun Chemical Corp., Warwick Chemical Co. Div.	TXZ	Texize Chemicals, Inc.
SOC	Standard Oil Co. of California, Western Operations, Inc.	UBS	A. E. Staley Manufacturing Co., U B S Chemical Co. Div.
SOG	Signal Oil & Gas Co., Houston Div.	UCC	Union Carbide Corp., Union Carbide Chemicals Co. Div.
SOH	Sohio Chemical Co., Agent: Sohio Petroleum Co.	UCP	Union Carbide Corp., Union Carbide Plastics Co. Div.
SOI	Solar Nitrogen Chemicals, Inc.	UCS	Union Carbide Corp., Silicones Div.
SOL	Solar Chemical Corp.	UDI	Universal Detergents, Inc. & Petrochemicals Co.
SOM	Sonneborn Chemical & Refining Corp.	UHL	Paul Uhlich & Co., Inc.
SOR	Southern Resin Glue Co.	UNC	United Cork Companies
SOS	Southern Sizing Co.	UNG	Ungerer & Co.
SPC	Chemetron Corp., Specific Pharmaceuticals, Chemical Products Div.	UNN	United Chemical Corp. of Norwood
SPD	General Electric Co., Silicone Products Dept.	UNP	United Chemical Products Corp.
SPI	Sinclair Petrochemicals, Inc.	UOC	Union Oil Co. of California
SPL	Spaulding Fibre Co., Inc.	UFF	United States Pipe & Foundry Co.
SPN	Spencer Chemical Co.	UPJ	Upjohn Co.
SPP	Society Paint Products Co.	UPL	United States Plywood Corp.
SRC	Shawinigan Resins Corp.	UPM	Universal Oil Products Co.
SRL	G. D. Searle & Co.	UPR	U.S. Peroxygen Corp.
SRR	Fred'k A. Stresen-Reuter, Inc.	URC	United Rubber & Chemical Co.
STA	A. E. Staley Manufacturing Co.	USB	U.S. Borax Research Corp.
STC	Sou-Tex Chemical Co., Inc.	USC	U.S. Coatings Co.
STD	Standard Dyestuff Corp.	USI	National Distillers & Chemical Corp., U.S. Industrial Chemicals Co. Div.
STG	Wm. J. Stange Co.	USO	U.S. Oil Co.
STH	South Hampton Co.	USP	U.S. Plastic & Chemical Corp.
STN	Standard Naphthalene Products Co., Inc.	USR	Naugatuck Chemical, Div. of U.S. Rubber Co.
STP	Stepan Chemical Co.	UTR	Utah Resin Co., Inc.
SUC	Standard Ultramarine & Color Co.	UVC	Universal Chemicals Corp.
SUM	Summit Chemical Products Corp.	VAC	Varney Chemical Co.
SUN	Sun Oil Co.	VAL	Valchem
SVT	Solvent Chemical Co., Inc.	VAR	Reichhold Chemicals, Inc., Varcum Chemical Div.
SW	Sherwin-Williams Co.	VB	Vermilye-Bell
SWC	S & W Chemical Co., Inc.	VC	Virginia-Carolina Chemical Corp.
SWR	Switzer Bros., Inc.	VEL	Velsicol Chemical Corp.
SWT	Swift & Co.	VIC	Stauffer Chemical Co., Victor Chemical Works Div.
SYC	Synthetic Chemicals, Inc.	VIN	Vineland Chemical Co.
SYP	Synthetic Products Co.	VIS	Malco Chemical Co., Visco Products Co. Div.
SXR	Synco Resins, Inc.	VLY	Chem-Fleur, Inc.
SXT	Synthron, Inc.	VNC	Vanderbilt Chemical Corp.
SYV	Synvar Corp.	VND	Van Dyk & Co., Inc.
TAE	Thomas A. Edison Industries, McGraw-Edison Co. Div.	VPC	Verona-Pharma Chemical Corp.
TAY	Taylor Corp.	VPT	Vickers Petroleum Co., Inc.
TEK	Trubek Laboratories, Inc.	VSV	Valentine Sugars, Inc., Valite Div.
TCC	Tanatex Chemical Corp.	VTM	Vitamins, Inc.
TCH	Trylon Chemical Corp.	VTV	Vita-Var Corp., Div. of Textron Industries, Inc.
TDC	Diversey Corp.	WAS	T. F. Washburn Co.
TGL	Triangle Chemical Co.	WAW	W. A. Wood Co.
THC	Thompson Chemical Co.	WAY	Wayland Chemical Co.
TIC	Ticonderoga Chemical Corp.	WBG	White & Bagley Co.
TID	Tidewater Oil Co.	WCA	West Coast Adhesives Co.
TKL	Thiokol Chemical Corp.	WDC	Western Dry Color Co.
TMH	Thompson-Hayward Chemical Co.	WHI	White & Hodges, Inc.
TMS	Sterling Drug, Inc., Thomasset Colors Div.	WHL	Whitmoyer Laboratories, Inc.
TN	Tennessee Corp.	WHW	Whittemore-Wright Co., Inc.
TNA	Ethyl Corp.	WIC	Wica Co., Inc.
TNC	Tennant Development Corp., Chemical Div.	WIL	Wilson & Co., Inc., Wilson Laboratories Div.
TNP	Tennessee Products & Chemical Corp.	WJ	Warner-Jenkinson Manufacturing Co.
TOC	Tenneco Oil Co.	WLI	White Laboratories, Inc.
TRC	Toms River Chemical Corp.	WLM	Wilmot & Cassidy, Inc.
TRJ	Trojan Powder Co.	WM	Wilson & Co., Inc., Wilson-Martin Div.
TRO	Troy Chemical Co.	WOI	Western Organics, Inc.
TTA	Texas Alkyls, Inc.	WON	Woodssocket Color & Chemical Co.
TTX	Detrex Chemical Industries, Inc.	WPC	Warren Paint & Color Co.
TUS	Texas-U.S. Chemical Co.	WRC	Wood Ridge Chemical Corp.
TV	Tousey Varnish Co.		
TX	Texaco, Inc.		

TABLE 23.--Synthetic organic chemicals: Directory of manufacturers, 1962--Continued

Code	Name of company	Code	Name of company
WRD	Weyerhaeuser Co., Wood Products Div.	WVA	West Virginia Pulp & Paper Co., Polychemicals Div.
WSN	Washine Chemical Corp.	WYN	Wyandotte Chemicals Corp.
WST	Westville Chemical Corp.	WYT	American Home Products Corp., Wyeth Laboratories, Inc. Div.
WTC	Witeco Chemical Co., Inc.	YAW	Young Aniline Works, Inc.
WTH	Wallace & Tiernan, Inc., Harchem Div.		
WTL	Wallace & Tiernan, Inc., Lucidol Div.		
WTM	Wallace & Tiernan, Inc.		

TABLE 23.--Synthetic organic chemicals: Directory of manufacturers, 1962--Continued

SECTION 2. ALPHABETICAL DIRECTORY BY COMPANY

[Names of synthetic organic chemical manufacturers that reported production or sales to the U.S. Tariff Commission for 1962 are listed below alphabetically, together with their identification codes as used in tables in pt. III. Sec. 1 of this table lists these manufacturers in the order of their identification codes]

Code	Name of company	Office address
ABB	Abbott Laboratories-----	14th St. and Sheridan Rd., N. Chicago, Ill.
ACR	Acme Resin Corp-----	1401 Circle Ave., Forest Park, Ill.
ACO	Acralite Co., Inc-----	59 Kent St., Brooklyn 22, N.Y.
ADC	Ad-Co Color Corp-----	66 Lister Ave., Newark 5, N.J.
HOU	Air Products & Chemicals, Inc., Houdry Process & Chemical Co. Div.	1528 Walnut St., Philadelphia 2, Pa.
AIR	Air Reduction Co., Inc., Air Reduction Chemical & Carbide Co. Div.	150 E. 42d St., New York 17, N.Y.
NSP	Alabama Blinder & Chemical Corp-----	P.O. Box 3179, Tuscaloosa, Ala.
ALC	Alco Chemical Corp-----	Trenton Ave. and William St., Philadelphia 34, Pa.
AAC	Alcolac Chemical Corp-----	3440 Fairfield Rd., Baltimore 26, Md.
ALH	Aldrich Chemical Co., Inc-----	2371 N. 30th St., Milwaukee 10, Wis.
ALL	Alliance Color & Chemical Co----- Allied Chemical Corp:	33 Avenue P, Newark 5, N.J.
ACB	Barrett Div-----	40 Rector St., New York 6, N.Y.
ACG	General Chemical Div-----	P.O. Box 70, Morristown, N.J.
NAC	National Aniline Div-----	40 Rector St., New York 6, N.Y.
HAR	Harmon Color Works-----	40 Rector St., New York 6, N.Y.
ACN	Nitrogen Div-----	Drawer 61, Hopewell, Va.
ACP	Plastics Div-----	40 Rector St., New York 6, N.Y.
ACS	Solvay Process Div-----	P.O. Box 271, Syracuse 1, N.Y.
ALX	Alox Corp-----	3943 Buffalo Ave., Niagara Falls, N.Y.
AML	Amalgamated Chemical Corp-----	Ontario and Rorer Sts., Philadelphia 34, Pa.
AMC	Amchem Products, Inc-----	Brookside Ave., Ambler, Pa.
AAE	American Aniline & Extract Co., Inc-----	Venango and F Sts., Philadelphia 34, Pa.
AMB	American Bio-Synthetics Corp-----	710 W. National Ave., Milwaukee 4, Wis.
ABS	American Brake Shoe Co., American Brakeblok Div.	P.O. Box 21, Birmingham, Mich.
MAR	American Can Co., Marathon Div-----	Menasha, Wis.
AME	American Chemical Corp-----	2112 E. 223d St., Long Beach 10, Calif.
ACY	American Cyanamid Co-----	Berdan Ave., Wayne, N.J.
NYC	American Dyewood Co., Inc., New York Color & Chemical Co. Div.	374 Main St., Belleville 9, N.J.
WYT	American Home Products Corp., Wyeth Laboratories, Inc. Div.	P.O. Box 8299, Philadelphia 1, Pa.
AMZ	American Maize Products Co-----	250 Park Ave., New York 17, N.Y.
SOI	American Oil Co. (Maryland)-----	910 S. Michigan Ave., Chicago 80, Ill.
AMO	American Oil Co. (Texas)-----	910 S. Michigan Ave., Chicago 80, Ill.
APT	American Petrochemical Corp-----	3134 California St., N.E., Minneapolis, Minn.
AMP	American Potash & Chemical Corp-----	3000 W. 6th St., Los Angeles 5, Calif.
ASY	American Synthetic Rubber Corp-----	P.O. Box 360, Louisville 1, Ky.
AV	American Viscose Corp-----	1617 Pennsylvania Blvd., Philadelphia 3, Pa.
ALB	Ames Laboratories, Inc-----	200 Rock Lane, Milford, Conn.
ACC	Amoco Chemicals Corp-----	130 E. Randolph Dr., Chicago 1, Ill.
SNA	Ansbacher-Siegle Corp. Div. of Sun Chemical Corp.	92 Chestnut Ave., Staten Island 5, N.Y.
ASL	Ansul Chemical Co-----	1 Stanton St., Marinette, Wis.
ANC	Antro Chemical Co-----	109 5th Ave., Paterson 4, N.J.
APX	Apex Chemical Co., Inc-----	200 S. 1st St., Elizabethport 1, N.J.
AFC	Appleton Coated Paper Co-----	825 E. Wisconsin Ave., Appleton, Wis.
HAP	Applied Plastics Co., Inc-----	130 Penn St., El Segundo, Calif.
ARA	Arapahoe Chemicals, Inc-----	2855 Walnut St., Boulder, Colo.
ADM	Archer-Daniels-Midland Co-----	500 Investors Bldg., Minneapolis 40, Minn.
ARD	Ardmore Chemical Co-----	840 Valley Brook Ave., Lyndhurst, N.J.
ARG	Argus Chemical Corp----- Armour & Co.:	633 Court St., Brooklyn 31, N.Y.
ARC	Armour Industrial Chemical Co. Div-----	110 N. Wacker Dr., Chicago 6, Ill.
KES	Kessler Chemical Div-----	State Rd. and Cottman Ave., Philadelphia 35, Pa.
ARP	Armour Pharmaceutical Co-----	P.O. Box 511, Kankakee, Ill.
ARK	Armstrong Cork Co-----	W. Liberty St., Lancaster, Pa.
APV	Armstrong Paint & Varnish Works, Inc-----	1330 S. Kilbourn Ave., Chicago 23, Ill.
AHC	Arnold, Hoffman & Co., Inc-----	55 Canal St., Providence 1, R.I.
ARL	Arol Chemical Products Co-----	371 Wayne St., Jersey City 2, N.J.
ASH	Ashland Oil & Refining Co-----	1401 Winchester Ave., Ashland, Ky.
AST	Astra Pharmaceutical Products, Inc-----	7 Neponset St., Worcester 6, Mass.
ATL	Atlantic Chemical Corp-----	P.O. Box 216, Nutley, N.J.

TABLE 23.--Synthetic organic chemicals: Directory of manufacturers, 1962--Continued

Code	Name of company	Office address
ATR	Atlantic Refining Co-----	260 S. Broad St., Philadelphia 1, Pa.
ATU	Atlantic Tubing & Rubber Co-----	Mill St., Cranston 5, R.I.
AFD	Atlas Chemical Industries, Inc., Chemicals Div-----	New Marphy Rd. and Concord Pike, Wilmington 99, Del.
AFR	Atlas Processing Co-----	P.O. Box 1786, Shreveport, La.
AUG	Augusta Chemical Co-----	P.O. Box 660, Augusta, Ga.
AVS	Avisun Corp-----	1345 Chestnut St., Philadelphia 7, Pa.
BAC	Baker Castor Oil Co-----	40 Avenue A, Bayonne, N.J.
BKC	J. T. Baker Chemical Co-----	600 N. Broad St., Phillipsburg, N.J.
BKT	Taylor Div-----	600 N. Broad St., Phillipsburg, N.J.
MTR	Baldwin-Montrose Chemical Co., Inc., Montrose Chemical Div-----	100 Lister Ave., Newark 5, N.J.
BGC	Balfour, Guthrie & Co., Ltd-----	P.O. Box 1627, Tacoma 1, Wash.
BAL	Baltimore Paint & Chemical Corp-----	2325 Annapolis Ave., Baltimore 30, Md.
BC	Barlow Chemical Corp-----	Barlow Lane, Ossining, N.Y.
BAT	Bates Chemical Co-----	Scottdale Rd., Lansdowne, Pa.
BAX	Baxter Laboratories, Inc-----	6301 N. Lincoln Ave., Morton Grove, Ill.
BXT	J. H. Baxter & Co-----	120 Montgomery St., San Francisco 4, Calif.
BAO	Bayoil Co., Inc-----	4 Union St., Peabody, Mass.
BCN	Beacon Chemical Industries, Inc-----	33 Richdale Ave., Cambridge 40, Mass.
BLS	Beech-Nut Life Savers, Inc-----	CanaJoharie, N.Y.
BCM	Belding Chemical Industries-----	1407 Broadway, New York 18, N.Y.
BL	Belle Chemical Co., Inc-----	P.O. Box 41c, Lowell, N.C.
BME	Bendix Corp., Marshall-Eclipse Div-----	P.O. Box 538, Troy, N.Y.
BEN	Bennett's-----	65 W. 1st S., Salt Lake City 1, Utah.
BPC	Benzol Products Co-----	237 South St., Newark 14, N.J.
BCC	Bercon Chemical Co., Inc-----	P.O. Box 2981, Providence 8, R.I.
BKL	Berkeley Chemical Corp-----	11 Summit Ave., Berkeley Heights, N.J.
BKS	Berkshire Color & Chemical Co-----	12th and Bern St., Reading, Pa.
BUC	Blackman-Uhler Chemical Co-----	P.O. Box 1869, Spartanburg, S.C.
BLA	Blue Arrow, Inc-----	5244 Edgewood Ct., Jacksonville 3, Fla.
BOR	Borden Chemical Co-----	350 Madison Ave., New York 17, N.Y.
MCB	Borg-Warner Corp., Marbon Chemical Div-----	P.O. Box 68, Washington, W. Va.
BOY	Walter N. Boyesen Co-----	1001 42d St., Oakland 8, Calif.
BFR	Branchflower Co-----	4501 Shilshole St. NW., Seattle 7, Wash.
BPL	Brand Plastics Co-----	8400 Willow Springs Rd., Willow Springs, Ill.
BRE	Bristol-Meyers Co., Bristol Laboratories Div-----	P.O. Box 657, Syracuse 1, N.Y.
BLN	Brooklyn Color Works, Inc-----	681 Morgan Ave., Brooklyn 22, N.Y.
BRN	Brown Co., Resi-Chem Div-----	100 E. Broadway, Swanton, Ohio.
ABR	Andrew Brown Co-----	5631 District Blvd., Los Angeles 22, Calif.
BRU	M. A. Bruder & Sons, Inc-----	52d St. and Grays Ave., Philadelphia 43, Pa.
BRV	Bryant Chemical Corp-----	6 North St., N. Quincy 71, Mass.
BUX	Buckeye Cellulose Corp-----	2899 Jackson Ave., Memphis 8, Tenn.
BKM	Buckman Laboratories, Inc-----	1256 N. McLean, Memphis 8, Tenn.
CD	Budd Co., Polychem Div-----	70 S. Chapel St., Newark, Del.
BSC	Burkart-Schier Chemical Co-----	1228 Chestnut St., Chattanooga 2, Tenn.
BUR	Burroughs Wellcome & Co. (U.S.A.), Inc-----	1 Seardsdale Rd., Puckahoe 7, N.Y.
BZ	Bzura Chemical Co., Inc-----	Clark St. and Broadway, Keyport, N.J.
CBT	Samuel Cabot, Inc-----	246 Summer St., Boston 10, Mass.
CAD	Cadet Chemical Corp-----	2153 Lockport-Olcott Rd., Bart, N.Y.
CAU	Calcasieu Chemical Corp-----	P.O. Box 1522, Lake Charles, La.
ORO	California Chemical Co.: Oronite Div-----	200 Bush St., San Francisco 20, Calif.
OTH	Ortho Div-----	Lucas and Ortho Way, Richmond, Calif.
CIK	California Ink Co., Inc-----	711 Camelia St., Berkeley, Calif.
CAL	Callery Chemical Co-----	Callery, Pa.
CAP	Capital Plastics, Inc-----	250 Mill St., Rochester 14, N.Y.
CCW	Carlisle Chemical Works, Inc-----	West St., Reading 15, Ohio.
CCA	Advance Solvents & Chemical Div-----	500 Jersey Ave., New Brunswick, N.J.
CM	Carpenter-Morton Co-----	376 3d St., Everett 49, Mass.
CBS	Carus Chemical Co., Inc-----	1375 8th St., LaSalle, Ill.
CRY	Cary Chemicals, Inc-----	P.O. Box 38, E. Brunswick, N.J.
CAT	Catalin Corp. of America-----	1 Park Ave., New York 16, N.Y.
CEL	Celanese Corp. of America: Celanese Chemical Co. Div-----	522 5th Ave., New York 36, N.Y.
	Celanese Polymer Co. Div-----	744 Broad St., Newark 2, N.J.
CPR	Certified Proteins-----	320 W. Ohio St., Chicago 10, Ill.
CHM	Chapman Chemical Co-----	P.O. Box 3158, Memphis 9, Tenn.
CCL	Charlotte Chemical Laboratories-----	5046 Old Pineville Rd., Charlotte 1, N.C.
CCC	Chase Chemical Corp-----	3527 Smallman St., Pittsburgh 1, Pa.
CHG	Chemagro Corp-----	P.O. Box 4913, Station "F", Kansas City 20, Mo.
SFC	Chemetron Corp., Specific Pharmaceuticals, Chemical Products Div-----	386 Park Ave. S., New York 16, N.Y.

TABLE 23.-- Synthetic organic chemicals: Directory of manufacturers, 1962--Continued

Code	Name of company	Office address
CFX	Chemfax, Inc-----	P.O. Box 763, Gulfport, Miss.
CLY	Chem-Fleur, Inc-----	200 Pulaski St., Newark, N.J.
VIS	Chemical Insecticide Corp-----	30 Whitman Ave., Metuchen, N.J.
CMF	Chemical Manufacturing Co., Inc-----	Magnunco Rd., Ashland, Mass.
CFD	Chemical Products Corp-----	P.O. Box 815, Cartersville, Ga.
CCO	Chemico, Inc-----	2508 E. Bailey Rd., Cuyahoga Falls, Ohio.
CEM	Chemirad Corp-----	P.O. Box 187 (Ryders Lane), E. Brunswick, N.J.
CKL	Chemlek Laboratories, Inc-----	40-0 W. 123d St., Aisp 58, Ill.
CHL	Chemol, Inc-----	P.O. Box 3227, Greensboro, N.C.
CS	Chemstrand Corp-----	350 5th Ave., New York 1, N.Y.
CFC	Childs Pulp Colors, Inc-----	42 Summit St., Brooklyn 31, N.Y.
CHC	Chipman Chemical Co., Inc-----	P.O. Box 309, Bound Brook, N.J.
	Ciba Corp.:	
CBP	Ciba Pharmaceutical Co. Div-----	556 Morris Ave., Summit, N.J.
CBA	Ciba Products Co. Div-----	Route 208, Fair Lawn, N.J.
CIN	Cindet Chemicals, Inc-----	P.O. Box 907, Greensboro 2, N.C.
CSO	Cities Service Oil Co-----	70 Pine St., New York 5, N.Y.
CLY	W. A. Cleary Corp-----	P.O. Box 749, New Brunswick, N.J.
CLI	Clintwood Chemical Co-----	33 N. LaSalle St., Chicago 2, Ill.
CLV	Clover Chemical Co-----	360 Regis Rd., Pittsburgh 36, Pa.
COS	Coastwise Petroleum Co-----	1127 Mansey Bldg., Baltimore 2, Md.
COK	Cockerville Chemicals, Inc-----	Greenwood, Va.
CLR	Colab Resin Corp-----	Main St., Tewksbury, Mass.
CF	Colgate-Falmolive Co-----	300 Park Ave., New York 22, N.Y.
CW	Collett-Week Corp-----	Quincy St., Ossining 12, N.Y.
COL	Collier Carbon & Chemical Corp-----	714 W. Olympic Blvd., Los Angeles 15, Calif.
CLD	Colloids, Inc-----	394 Frelighuysen Ave., Newark 14, N.J.
CLB	Columbia Organic Chemicals Co., Inc-----	1012 Drake St., Columbia 9, S.C.
COM	Commercial Solvents Corp-----	260 Madison Ave., New York 16, N.Y.
COR	Commonwealth Oil Refining Co., Inc-----	P.O. Box 4423, San Juan, Puerto Rico.
DAV	Conchemco, Inc., H. B. Davis Co. Div-----	Bush and Severn Sts., Baltimore 30, Md.
CON	Concord Chemical Co., Inc-----	205 S. 2d St., Camden 1, N.J.
CFA	Conestoga Chemical Corp-----	Wilmington Industrial Park, Wilmington 1, Del.
CFT	Consolidated Paint Co-----	3101 E. 11th St., Los Angeles 23, Calif.
CWP	Consolidated Papers, Inc-----	Wisconsin Rapids, Wis.
CTL	Continental Chemical Co-----	270 Clifton Blvd., Clifton, N.J.
CO	Continental Oil Co-----	1300 Main, Houston 1, Tex.
CFV	Cock Paint & Varnish Co-----	1412 Knox, N. Kansas City 16, Mo.
CFA	Cooperative Farm Chemicals Association-----	P.O. Box 80, Lawrence, Kans.
COP	Coopers Creek Chemical Corp-----	River Rd., W. Conshohocken, Pa.
CFY	Copolymer Rubber & Chemical Corp-----	P.O. Box 2591, Baton Rouge 1, La.
CRN	Corn Products Co-----	717 5th Ave., New York 22, N.Y.
CSD	Cosden Petroleum Corp-----	P.O. Box 1311, Big Spring, Tex.
CWL	Cowles Chemical Co-----	12000 Shaker Blvd., Cleveland 20, Ohio.
ALT	Crompton & Knowles Corp., Althouse Chemical Co. Div.	500 Fear St., Reading, Pa.
CBY	Crosby Chemicals, Inc-----	Drawer 111, Piquette, Miss.
CCP	Crown Central Petroleum Corp-----	American Bldg., Baltimore 2, Md.
CRC	Crown Chemical Corp-----	240 India St., Providence 3, R.I.
CRT	Crown Tar & Chemical Works, Inc-----	900 Wewatta St., Denver 4, Colo.
CRZ	Crown Zellerbach Corp., Chemical Products Div-----	Camas, Wash.
CUC	Cumberland Chemical Corp-----	150 E. 42d St., New York 17, N.Y.
CUT	Cutter Laboratories, Inc-----	4th and Parker Sts., Berkeley 10, Calif.
DAN	Dan River Mills, Inc-----	Danville, Va.
DLI	Dawe's Laboratories, Inc-----	4800 S. Richmond St., Chicago 32, Ill.
DCH	Dearborn Chemical Co-----	Rm. 375, Merchandise Mart Plaza, Chicago 54, Ill.
JDC	John Deere Chemical Co-----	Fryor, Okla.
DEG	Degen Oil & Chemical Co-----	200 Kellogg St., Jersey City 5, N.J.
DCI	Delaware Chemicals, Inc-----	726 King St., Wilmington, Del.
DLH	Delhi-Taylor Oil Corp-----	P.O. Box 4067, Corpus Christi, Tex.
DLM	Delmar Chemical Co., Inc-----	P.O. Box 275, Elkton, Md.
DEP	DePaul Chemical Co., Inc-----	44-27 Purvis St., Long Island 1, N.Y.
DSO	Desoto Chemical Coatings, Inc-----	1350 S. Kostner Ave., Chicago 23, Ill.
DTX	Detrex Chemical Industries, Inc-----	P.O. Box 501, Detroit 32, Mich.
DEX	Dexter Chemical Corp-----	845 Edgewater Rd., New York 59, N.Y.
DA	Diamond Alkali Co-----	300 Union Commerce Bldg., Cleveland 14, Ohio.
	Western Div-----	300 Union Commerce Bldg., Cleveland 14, Ohio.
FBE	Fiber Chemical Dept-----	P.O. Box 218, Mattawan, N.J.
TDC	Diversey Corp-----	212 W. Monroe St., Chicago 6, Ill.
DFP	Dixie Fine Products Co., Inc-----	P.O. Box 470, Hattiesburg, Miss.
DOD	Donald A. Dodd-----	Route 3, Box 621, Everett, Wash.
DOM	Dominion Products, Inc-----	10-40 44th Dr., Long Island 1, N.Y.

TABLE 23. -- Synthetic organic chemicals: Directory of manufacturers, 1962--Continued

Code	Name of company	Office address
DCG	Douglas Laboratories, Inc-----	1624 Darrow Ave., Evanston, Ill.
DVC	Dover Chemical Co-----	15th and Davis Sts., Dover, Chic.
DBC	Dow Badische Chemical Co-----	P.O. Box 875, Freeport, Tex.
DOW	Dow Chemical Co-----	Main St., Midland, Mich.
DCC	Dow Corning Corp-----	P.O. Box 592, Midland, Mich.
DRW	Drew Chemical Corp-----	522 5th Ave., New York 36, N.Y.
DUN	Frank W. Dunne Co-----	1007 41st St., Oakland 8, Calif.
DUP	E. I. duPont de Nemours & Co., Inc-----	10th and Market Sts., Wilmington 98, Del.
DUR	Duraphene Corp-----	Route 1-, Sterling, Conn.
DSC	Dye Specialties, Inc-----	26 Journal Sq., Jersey City 6, N.J.
EAK	J. S. & W. R. Eakins, Inc-----	55 Berry St., Brooklyn 11, N.Y.
EK	Eastman Kodak Co-----	343 State St., Rochester 4, N.Y.
EKT	Tennessee Eastman Co. Div-----	P.O. Box 511, Kingsport, Tenn.
EKX	Texas Eastman Co. Div-----	P.O. Box 2008, Longview, Tex.
EDC	Edcan Laboratories-----	10 Pine St., S. Newark, Conn.
EDY	Eddystone Manufacturing Co-----	P.O. Box 471, Wilmington 99, Del.
TAE	Thomas A. Edison Industries, McGraw-Edison Co. Div.	1200 St. Charles Rd., Elgin, Ill.
ELP	El Paso Natural Gas Products Co-----	P.O. Box 1161, El Paso, Tex.
EMR	Emery Industries, Inc-----	4300 Carew Tower, Cincinnati 2, Ohio.
EMK	Emkey Chemical Co-----	319 2d St., Elizabethport, N.J.
EN	Endo Laboratories, Inc-----	84-40 101st St., Richmond Hill 18, N.Y.
ENJ	Enjay Chemical Co., Div. of Humble Oil & Refining Co.	60 W. 49th St., New York 20, N.Y.
EPC	EpoxyLite Corp-----	1428 N. Tyler Ave., S. El Monte, Calif.
ERD	Erdmann Chemical Co., Inc-----	66 Lister Ave., Newark 5, N.J.
ESC	Escombia Chemical Corp-----	P.O. Box 467, Pensacola, Fla.
TNA	Ethyl Corp-----	100 Park Ave., New York 17, N.Y.
ETD	Ethyl-Dow Chemical Co-----	Midland, Mich.
EVN	Evans Chemetics, Inc-----	250 E. 43d St., New York 17, N.Y.
EVM	Everledge Manufacturing, Inc-----	P.O. Box 178, Harrison City, Pa.
FAB	Fabricolor Chemical Corp-----	24-1/2 Van Houten St., Paterson 1, N.J.
FMT	Fairmount Chemical Co., Inc-----	117 Blanchard St., Newark 5, N.J.
FOC	Farsil & Chemical Co-----	147th and Indiana Ave., Chicago 27, Ill.
KNG	Far-Best Corp., O. L. King Div-----	640 Gilman St., Berkeley 10, Calif.
FRM	Farmers' Chemical Co-----	P.O. Box 591, Kalamazoo, Mich.
FAR	Farnow, Inc-----	77 Jacobus Ave., S. Kearny, N.J.
FRR	Estate of W. U. Farrington-----	P.O. Box 389, E. Greenwich, R.I.
FCL	Federal Color Laboratories, Inc-----	4526 Chickering Ave., Cincinnati 32, Ohio.
FEL	Felton Chemical Co., Inc-----	599 Johnson Ave., Brooklyn 37, N.Y.
FEM	Fermco Laboratories, Inc-----	4941 S. Racine Ave., Chicago 9, Ill.
FER	Ferro Corp., Ferro Chemical Div-----	P.O. Box 349, Bedford, Ohio.
FBR	Fibreboard Paper Products Corp-----	1550 Powell St., Emeryville, Calif.
FRJ	Filtered Rosin Products Co-----	P.O. Box 179, Baxley, Ga.
FIN	Fine Organics, Inc-----	205 Main St., Lodi, N.J.
FIR	Firestone Tire & Rubber Co.: Firestone Plastics Co. Div-----	P.O. Box 690, Pottstown, Pa.
FRS	Firestone Synthetic Rubber & Latex Co. Div-----	381 W. Wilbeth Rd., Akron 1, Ohio.
FLO	Florasynth Laboratories, Inc-----	900 Van Nest Ave., New York 62, N.Y.
FLA	Florida Chemical Co., Inc----- FMC Corp.:	P.O. Box 997, Lake Alfred, Fla.
FMW	Chemical Div-----	633 3d Ave., New York 17, N.Y.
FME	Inorganic Chemicals Div-----	Sawyer Ave. and River Rd., Tonawanda, N.Y.
FMP	Organic Chemicals Div-----	1701 Patapsco Ave., Baltimore 26, Md., and P.O. Box 547, Nitro, W. Va.
FMN	Niagara Chemical Div-----	100 Niagara St., Middleport, N.Y.
FTE	Foots Mineral Co-----	Route 100, Exton, Pa.
FOR	Foremost Food & Chemical Co-----	P.O. Box 599, Oakland 4, Calif.
FORM	Formica Corp-----	4614 Spring Grove Ave., Cincinnati 32, Ohio.
FG	Foster-Grant Co., Inc-----	289 N. Main St., Leominster, Mass.
FH	Foster-Heaton Co-----	16 E. 5th St., Paterson 4, N.J.
FCD	France, Campbell & Darling, Inc-----	N. Michigan Ave., Kenilworth, N.J.
FCP	J. P. Frank Chemical & Plastic Corp-----	5410 Avenue U, Brooklyn 34, N.Y.
FC	Franklin Chemical Co-----	2020 Bruck St., Columbus 7, Ohio.
FRE	Freeman Chemical Corp-----	222 E. Main St., Port Washington, Wis.
FSH	Frisch & Co., Inc-----	88 E. 11th St., Paterson 4, N.J.
FB	Fritzsche Bros., Inc-----	76 9th Ave., New York 11, N.Y.
FLH	H. B. Fuller Co-----	4819 Industrial Ct., Cincinnati 17, Ohio.
FLW	W. P. Fuller & Co-----	450 E. Grand Ave., S. San Francisco, Calif.

TABLE 23.-- Synthetic organic chemicals: Directory of manufacturers, 1962--Continued

Code	Name of company	Office address
GAM	Gamma Chemical Corp-----	355 Lexington Ave., New York 17, N.Y.
GAN	Gane's Chemical Works, Inc-----	535 5th Ave., New York 17, N.Y.
GGY	Gelgy Chemical Corp-----	P.O. Box 430, Yonkers, N.Y.
G	General Aniline & Film Corp-----	435 Hudson St., New York 14, N.Y.
	General Electric Co.:	
GE	Chemical Materials Dept-----	1 Plastics Ave., Pittsfield, Mass.
GEI	Insulating Materials Dept-----	1 Campbell Rd., Chenectady 6, N.Y.
SPD	Silicone Products Dept-----	Waterford, N.Y.
GNF	General Foods Corp., Maxwell House Div-----	1125 Hudson St., Hoboken, N.J.
GLC	General Latex & Chemical Corp-----	606 Main St., Cambridge 39, Mass.
GNM	General Mills, Inc-----	9200 Wayzata Blvd., Minneapolis 26, Minn.
GPM	General Plastics Manufacturing Co-----	3421 S. 35th St., Tacoma 9, Wash.
GNT	General Tire & Rubber Co., Chemical Div-----	1708 Englewood Ave., Akron 9, Ohio.
GRG	F. D. George Co-----	5200 N. 2d St., St. Louis 7, Mo.
CBC	Georgia-Pacific Corp., Coos Bay Div-----	P.O. Box 869, Coos Bay, Oreg.
GIL	Gilman Paint & Varnish Co-----	W. 8th and Pine Sts., Chattanooga 1, Tenn.
GIV	Givaudan Corp-----	109-201 Delawanna Ave., Delawanna, N.J.
GLX	Glasflex, Inc-----	Sterling, N.J.
GLD	Glidden Co-----	900 Union Commerce Bldg., Cleveland 14, Ohio.
GLY	Glyco Chemicals, Inc-----	417 5th Ave., New York 17, N.Y.
BFG	B. F. Goodrich Co., B. F. Goodrich Chemical Co. Div.	3135 Euclid Ave., Cleveland 15, Ohio.
GGC	Goodrich-Gulf Chemicals, Inc-----	1717 E. 9th St., Cleveland 14, Ohio.
GYR	Goodyear Tire & Rubber Co-----	1144 E. Market St., Akron 16, Ohio.
GOR	Gordon Chemical Co., Inc-----	88 Webster St., Worcester 3, Mass.
GDN	Gordon Chemicals, Inc-----	P.O. Box 52, Carlstadt, N.J.
GDL	Gordon-Lacey Chemical Products Co., Inc-----	57-02 48th St., Maspeth 78, N.Y.
	W. R. Grace & Co.:	
GRD	Dowey & Almy Chemical Div-----	62 Whittiermore Ave., Cambridge 40, Mass.
GRH	Hatco Chemical Div-----	King George Post Rd., P.O. Box 27, Fordis, N.J.
GOC	Nitrogen Products Div-----	P.O. Box 277, Memphis 1, Tenn.
GRP	Polymer Chemicals Div-----	225 Allwood Rd., Clifton, N.J.
GPR	Grain Processing Corp-----	1000 Oregon St., Muscatine, Iowa.
GRA	Great American Chemical Corp-----	650 Water St., Fitchburg, Mass.
GTL	Great Lakes Chemical Corp-----	2024 Filer City Rd., Filer City, Mich.
GRW	Great Western Sugar Co-----	P.O. Box 5308, Terminal Annex, Denver 17, Colo.
GUA	Guard Chemical Co., Inc-----	N. Water St., Ossining, N.Y.
GRV	Guardsman Chemical Coatings, Inc-----	1350 Steele Ave. SW, Grand Rapids 3, Mich.
GOC	Gulf Oil Corp-----	P.O. Drawer 2100, Houston 1, Tex.
GTH	Guth Chemical Co-----	850 Weed St., Chicago 22, Ill.
HNC	H & N Chemical Co-----	Maltese Dr., Totowa, N.J.
HLI	Haag Laboratories, Inc-----	14010 S. Seelye, Blue Island, Ill.
HAB	Halby Products Co., Inc-----	P.O. Box 364, Wilmington 99, Del.
HAL	C. P. Hall Co. of Illinois-----	5245 W. 73d St., Chicago 39, Ill.
HWN	Hamilton Chemical Corp-----	45 Andrews St., Lowell, Mass.
HAM	Hampden Color & Chemical Co-----	5 Albany St., Springfield 1, Mass.
HMP	Hampshire Chemical Corp-----	Poison Ave., Nashua, N.H.
HAN	Hanna Paint Manufacturing Co., Inc-----	1313 Windsor Ave., Columbus 16, Ohio.
HSH	Harshaw Chemical Co-----	1445 E. 97th St., Cleveland 8, Ohio.
HLC	Hartman-Ieddon Co-----	60th and Woodland Ave., Philadelphia 43, Pa.
HRT	Hart Products Corp-----	1440 Broadway, New York 18, N.Y.
HVG	Haveg Industries, Inc., Resin & Compound Div-----	Plastics Park, Wilmington 2, Del.
HPC	Hercules Powder Co-----	Hercules Tower, 918 Market St., Wilmington 99, Del.
IMP	Imperial Color & Chemical Dept-----	P.O. Box 231, Glens Falls, N.Y.
HER	Her-site & Chemical Co-----	822 S. 14th St., Manitowish, Wis.
HET	Heterochemical Corp-----	111 E. Hawthorne Ave., Valley Stream, N.Y.
HEX	Hexagon Laboratories, Inc-----	3536 Peartree Ave., New York 69, N.Y.
HN	Heyden Newport Chemical Corp-----	342 Madison Ave., New York 17, N.Y.
HNW	Newport Industries Div-----	P.O. Box 911, Pensacola, Fla.
HDX	Hudox Products Div-----	830 Magnolia Ave., Elizabeth, N.J.
HDC	Hodag Chemical Corp-----	7247 N. Central Park Ave., Skokie, Ill.
HST	Hoechst Chemical Corp-----	129 Quindick St., W. Warwick, R.I.
HOF	Hoffmann-LaRoche, Inc-----	324 Kingsland Rd., Nutley 10, N.J.
HFT	Hoffman-Tarr, Inc-----	P.O. Box 1240, Springfield, Mo.
HCC	Holland Clark & Chemical Co-----	492 Douglas Ave., Holland, Mich.
HK	Hooker Chemical Corp-----	Buffalo Ave. and 47th St., Niagara Falls, N.Y.
HKD	Durez Plastics Div-----	Walck Rd., N. Tonawanda, N.Y.
EPH	E. F. Houghton & Co-----	303 W. Lehigh Ave., Philadelphia 33, Pa.
HCH	Houston Chemical Corp-----	200 Madison Ave., New York 16, N.Y.
HML	Hummel Chemical Co., Inc-----	90 West St., New York 6, N.Y.
HMY	Humphrey-Wilkinson, Inc-----	Devine St., North Haven, Conn.
HUS	Husky Briquetting-----	P.O. Box 380, Cody, Wyo.

TABLE 23.--Synthetic organic chemicals: Directory of manufacturers, 1962--Continued

Code	Name of company	Office address
HYN	Hynson, Westcott & Dunning, Inc-----	Charles and Chase Sts., Baltimore 1, Md.
HYS	Hysol Corp-----	1100 Geneva Ave., Olean, N.Y.
ISC	Importers Service Corp-----	233 Suydam Ave., Jersey City 4, N.J.
IEI	Industrial Biochemicals-----	Edison Industrial Center, Edison, N.J.
IDC	Industrial Dyestuff Co-----	Dexter Rd., E. Providence 14, R.I.
ISM	Industrial Marine Chemical Co-----	P.O. Box 6201, Fort Worth, Tex.
INL	Inland Steel Container Co----- Interchemical Corp.:	6932 S. Menard Ave., Chicago 38, Ill.
ICC	Color & Chemicals Div-----	150 Wagaraw Rd., Hawthorne, N.J.
ICF	Finishes Div-----	224 McWhorter St., Newark 1, N.J.
ICO	Organic Chemicals Dept-----	P.O. Box 8, Route 17, Carlstadt, N.J.
IMI	Intermediates, Inc-----	P.O. Box 1503, Joliet, Ill.
IFF	International Flavors & Fragrances, Inc-----	521 W. 57th St., New York 19, N.Y.
ILC	International Latex Corp-----	Flaytex Park, Dover, Del.
IMC	International Minerals & Chemical Corp-----	5401 Old Orchard Rd., Skokie, Ill.
INF	International Paper Co-----	220 E. 42d St., New York 17, N.Y.
IRC	International Resistance Co-----	401 N. Broad St., Philadelphia 8, Pa.
IFR	Inter-Pacific Resins, Inc-----	P.O. Box 445, Sweet Home, Oreg.
IPC	Interplastic Corp., Commercial Resins Div-----	102 W. Fairfield Ave., St. Paul 7, Minn.
IRI	Ironides Co-----	270 W. Mount St., Columbus 15, Ohio.
ISO	Isochem Resins Co-----	221 Oak St., Providence 9, R.I.
IPI	Isoocyanate Products, Inc-----	400 Wilmington Rd., New Castle, Del.
JAM	Jamestown Paint & Varnish Co-----	108 Main St., Jamestown, Pa.
JCC	Jefferson Chemical Co., Inc-----	P.O. Box 303, Houston 11, Tex.
MER	Jefferson Lake Sulphur Co., Chemical Div-----	1914 Haden Rd., Houston 15, Tex.
JEN	Jennison-Wright Corp-----	P.O. Box 4187, Station E, Toledo 9, Ohio.
JRG	Andrew Jergens Co-----	2535 Spring Grove Ave., Cincinnati 14, Ohio.
JEC	Jersey State Chemical Co-----	59 Lee Ave., Haledon, N.J.
JWL	Jewel Paint & Varnish Co-----	345 N. Western Ave., Chicago 12, Ill.
JOC	Joelin Manufacturing Co-----	Lufbery Ave., Wallingford, Conn.
JNS	S. C. Johnson & Son, Inc-----	1525 Howe St., Racine, Wis.
JOB	Jones-Blair Paint Co-----	6969 Denton Dr., Dallas 35, Tex.
JOD	Jones-Dabney Co-----	1481 S. 11th St., Louisville 8, Ky.
JOR	W. H. & F. Jordan, Jr. Manufacturing Co., Inc-----	2126 E. Somerset St., Philadelphia 34, Pa.
JUL	Julian Laboratories, Inc-----	9352-58 W. Grand Ave., Franklin Park, Ill.
KK	K & K Laboratories, Inc-----	177-10 93d Ave., Jamaica 33, N.Y.
KAL	Kali Manufacturing Co-----	427 E. Meyer St., Philadelphia 25, Pa.
KF	Kay-Fries Chemicals, Inc-----	360 Lexington Ave., New York 17, N.Y.
KEL	Kelly-Pickering Chemical Corp-----	956 Bransten Rd., San Carlos, Calif.
KEN	Kendall Refining Co----- Kennebec Copper Corp.:	1177 Kendall Ave., Bradford, Pa.
KCC	Chino Mines Div-----	Hurley, N. Mex.
KOU	Utah Copper Div-----	P.O. Box 1650, Salt Lake City 10, Utah.
KPI	Kenrich Petrochemicals, Inc-----	Foot of E. 22d St., Bayonne, N.J.
KYC	Keycor Chemical Co-----	26000 Bouquet Canyon Rd., Saugus, Calif.
KCH	Keystone Chemurgic Corp-----	R.D. #2, Bethlehem, Pa.
KCW	Keystone Color Works, Inc-----	151 W. Gay Ave., York, Pa.
KWV	Keystone Paint & Varnish Corp-----	71 Utsego St., Brooklyn 31, N.Y.
KLC	Kilsdonk Chemical Corp-----	101 Canal St., Lock Haven, Pa.
KNF	Knapp Products, Inc-----	180 Hamilton Ave., Lodi, N.J.
KND	Knoedler Chemical Co-----	651 High St., Lancaster, Pa.
KON	H. Kohnstamm & Co., Inc-----	161 Avenue of the Americas, New York 13, N.Y.
KLK	Kolker Chemical Corp., DEA Frontier Chemical Co Koppers Co., Inc.:	600 Doremus Ave., Newark 5, N.J.
KPC	Chemicals & Dyestuffs Div-----	Koppers Bldg., 430 7th Ave., Pittsburgh 19, Pa.
KPF	Plastics Div-----	Koppers Bldg., 430 7th Ave., Pittsburgh 19, Pa.
KPT	Tar Products Div-----	Koppers Bldg., 430 7th Ave., Pittsburgh 19, Pa.
KYN	Kyanize Paints, Inc-----	2d and Boston Sts., Everett 49, Mass.
LKL	Lakeside Laboratories, Inc-----	1707 E. North Ave., Milwaukee 1, Wis.
LAM	LaMotte Chemical Products Co-----	Chestertown, Md.
LAS	Lasco Industries, Inc-----	1561 Chapin Rd., Montebello, Calif.
LMR	Laurel Soap Manufacturing Co-----	Thompson and Tioga Sts., Philadelphia 34, Pa.
LMI	Lawrence Mills, Inc-----	19 S. Canal St., Lawrence, Mass.
KRM	Lawter Chemicals, Inc., Krumhaar Resin Div-----	3550 Touhy Ave., Chicago 45, Ill.
LEA	Leatex Chemical Co-----	2722 N. Hancock St., Philadelphia 33, Pa.
LEB	Lebanon Chemical Corp-----	P.O. Box 532, Lebanon, Pa.
LEF	Leffingwell Chemical Co-----	P.O. Box 1187, Perry Annex, Whittier, Calif.
LEH	Lehigh Chemical Co-----	P.O. Box 120, Chestertown, Md.
LEM	B. L. Lemke & Co., Inc-----	199 Main St., Lodi, N.J.
LEN	Leonard Refineries, Inc-----	E. Superior St., Alma, Mich.

TABLE 23.--Synthetic organic chemicals: Directory of manufacturers, 1962--Continued

Code	Name of company	Office address
LEV	Lever Brothers Co-----	390 Park Ave., New York 22, N.Y.
LVR	C. Lever Co., Inc-----	Howard and Huntington Sts., Philadelphia 33, Pa.
LVY	Fred'k H. Levey Co., Inc-----	380 Madison Ave., New York 17, N.Y.
LPC	Lignin Products Co-----	P.O. Box 960, Erie, Pa.
LIL	Eli Lilly & Co-----	740 S. Alabama St., Indianapolis 6, Ind.
LUB	Lubrizol Corp-----	Cleveland 17, Ohio.
LUE	George Lueders & Co-----	427 Washington St., New York 13, N.Y.
MET	M & T Chemicals, Inc-----	Woodbridge Rd. and Randolph Ave., Rahway, N.J.
MAK	MacKenzie Chemical Works, Inc-----	1 Cordello Ave., Central Islip, L.I., N.Y.
MGR	Magruder Color Co., Inc-----	2385 Richmond Terrace, Staten Island 2, N.Y.
MAH	Maier Color & Chemical Co-----	1700 N. Elston Ave., Chicago 22, Ill.
MAL	Mallinckrodt Chemical Works-----	3600 N. 2d St., St. Louis 7, Mo.
SNM	Mansun Paint Manufacturing Co., Inc-----	40 Industrial Rd., Lodi, N.J.
MOC	Marathon Oil Co., Texas Refining Div-----	F.O. Box 1191, Texas City, Tex.
MRB	Marblette Corp-----	37-31 30th St., Long Island City 1, N.Y.
MRO	Mareco Chemical Corp-----	1711 W. Elizabeth Ave., Linden, N.J.
MED	Marden-Wild Corp-----	500 Columbia St., Somerville 43, Mass.
MRV	Marlowe-Van Loan Corp-----	1511 Joshua Circle, High Point, N.C.
	Martin-Marietta Corp.:	
LON	American-Marietta Paint Div-----	1630 W. Hill St., Louisville 10, Ky.
ARO	Arco Div-----	7301 Bessemer Ave., Cleveland 27, Ohio.
AMF	Ferbert-Schorndorfer Co. Div-----	12815 Elmwood Ave., Cleveland 11, Ohio.
AMS	Ridgway Color & Chemical Co. Div-----	75 Front St., Ridgway, Pa.
SDC	Southern Dyestuff Co. Div-----	P.O. Box 10098, Charlotte 1, N.C.
MRX	Max Marx Color & Chemical Co-----	192 Coit St., Irvington 11, N.J.
MDP	Maryland Plastics, Inc-----	251 E. Central Ave., Federalburg, Md.
MCA	Masonite Corp., Alpine Chemical Div-----	P.O. Box 101, Gulfport, Miss.
MPL	Massachusetts Plastic Corp-----	Ludlow, Mass.
MCO	Mathe Chemical Co-----	169 Millbank St., Lodi, N.J.
MEE	Maumee Chemical Co-----	1310 Expressway Dr., Toledo 8, Ohio.
MAY	Otto B. May, Inc-----	52 Amsterdam St., Newark 5, N.J.
MCC	McCloskey Varnish Co-----	7600 State Rd., Philadelphia 30, Pa.
MCW	McWhorter Chemicals, Inc-----	1645 S. Kilbourn Ave., Chicago 23, Ill.
MED	Medical Chemicals Corp-----	4122 W. Grand Ave., Chicago 51, Ill.
MRK	Merck & Co., Inc-----	Lincoln Ave., Rahway, N.J.
MED	Metalead Products Corp-----	2901 Park Blvd., Palo Alto, Calif.
MHI	Metal Hydrides, Inc-----	12-24 Congress St., Beverly, Mass.
MTL	Metalsalts Corp-----	200 Agarawar Rd., Hawthorne, N.J.
MRA	Metro-Atlantic, Inc-----	2072 Smith St., Centerdale 11, R.I.
JMS	J. Meyer & Sons, Inc-----	4321 N. 4th St., Philadelphia 40, Pa.
MCH	Michigan Chemical Corp-----	500 N. Bankson St., St. Louis, Mich.
MTD	Midland Industrial Finishes Co-----	E. Water St., Waukegan, Ill.
MLS	Miles Laboratories, Inc-----	1127 Myrtle St., Elkhart, Ind.
MOR	Mineral Oil Refining Co-----	P.O. Drawer C, Dickinson 1, Tex.
MMM	Minnesota Mining & Manufacturing Co-----	2501 Hudson Rd., St. Paul 19, Minn.
MNP	Minnesota Paints, Inc-----	1101 S. 3d St., Minneapolis 15, Minn.
MIR	Miranol Chemical Co., Inc-----	277 Coit St., Irvington 11, N.J.
MSC	Mississippi Chemical Corp-----	P.O. Box 388, Yazoo City, Miss.
MOB	Mobay Chemical Co-----	Fern Lincoln Parkway, W. Pittsburg 5, Pa.
MFC	Molded Fiber Glass Body Co., Resin Div-----	4601 Benefit Ave., Ashtabula, Ohio.
MCA	Mons Industries, Inc-----	65 E. 23d St., Paterson 17, N.J.
MNO	Monochem, Inc-----	F.O. Box 488, Geismar, La.
MON	Monsanto Chemical Co.:	
	Organic Chemical Div-----	800 N. Lindbergh Blvd., St. Louis 66, Mo.
	Plastics Div-----	812 Monsanto Ave., Springfield 2, Mass., and P.O. Box 1311, Texas City, Tex.
	Western Div-----	P.O. Box 120, Santa Clara, Calif.
MTO	Montrose Chemical Corp. of California-----	500 S. Virgil Ave., Los Angeles 5, Calif.
MR	Benjamin Moore & Co-----	548 5th Ave., New York 36, N.Y.
MRN	Morningstar Paisley, Inc-----	1770 Canalport Ave., Chicago 16, Ill.
MRT	Morton Chemical Co-----	110 N. Wacker Dr., Chicago 6, Ill.
MRW	Morwear Paint Co-----	568 14th St., Oakland 12, Calif.
MOT	Motomco, Inc-----	89 Terminal Ave., Clark, N.J.
VIS	Nalco Chemical Co., Visco Products Co. Div-----	P.O. Box 87, Sugar Land, Tex.
NTB	National Biochemical Co-----	3127 W. Lake St., Chicago 12, Ill.
NTC	National Casein Co-----	601 W. 80th St., Chicago 20, Ill.
	National Dairy Products Corp.:	
HUM	Hunko Products Chemical Div-----	P.O. Box 398, Memphis, Tenn.
SHF	Sheffield Chemical Co. Div-----	P.O. Box 630, Norwich, N.Y.
USI	National Distillers & Chemical Corp., U.S. Industrial Chemicals Co. Div-----	99 Park Ave., New York 16, N.Y.
NTL	National Lead Co-----	111 Broadway, New York 6, N.Y.

TABLE 23.--Synthetic organic chemicals: Directory of manufacturers, 1962--Continued

Code	Name of company	Office address
NFP	National Plastic Products Co., Inc-----	Odenton, Md.
NPI	National Polychemicals, Inc-----	Eames St., Wilmington, Mass.
NSC	National Starch & Chemical Corp-----	750 3d Ave., New York 17, N.Y.
MVF	National Vulcanized Fibre Co-----	1000 Beach St., Wilmington, Del.
USR	Naugatuck Chemical, Div. of U.S. Rubber Co-----	Naugatuck, Conn.
HES	Neac Chemical Co., Inc-----	P.O. Box 221, State College, Pa.
HCI	Nelco Chemicals, Inc-----	2051 Lane Ave., Jacksonville 5, Fla.
NEP	Nepera Chemical Co., Inc-----	Route 17 and Averill Ave., Harriman, N.Y.
NEV	Neville Chemical Co-----	Neville Island, Pittsburgh 25, Pa.
NIL	Nilok Chemicals, Inc-----	Mill St. and N. Transit, Lockport, N.Y.
NON	A. F. Nowweiler Co-----	P.O. Box 1007, Oshkosh, Wis.
NOF	Nopco Chemical Co., Inc-----	60 Park Pl., Newark 1, N.J.
NOC	Norac Co., Inc-----	405 S. Motor Ave., Azusa, Calif.
NED	Norda Essential Oil & Chemical Co., Inc-----	600 W. 26th St., New York 1, N.Y.
NFV	Norris Paint & Varnish Co-----	1710 Front St. NE., Salem, Oreg.
NRC	Norse Chemical Corp-----	2121 Norse Ave., Cudahy, Wis.
NW	Northwestern Chemical Co-----	120 N. Aurora St., W. Chicago, Ill.
NOR	Norwich Pharmacal Co-----	17 Eaton Ave., Norwich, N.Y.
NCW	Nostrip Chemical Works, Inc-----	182 Liberty Ave., Jamaica 33, N.Y.
NVT	Novamont Corp-----	100 E. 42d St., New York 17, N.Y.
OH	Ohio Chemical & Surgical Equipment Co-----	1400 E. Washington Ave., Madison 10, Wis.
OLH	Old Hickory Chemical Co-----	P.O. Box 148, Old Hickory, Tenn.
OMC	Olin Mathieson Chemical Corp-----	460 Park Ave., New York 22, N.Y., and 445 W. 59th St., New York 19, N.Y.
OMB	Blockson Works-----	445 W. 59th St., New York 19, N.Y.
OMS	E. R. Squibb & Sons Div-----	745 5th Ave., New York 22, N.Y.
ONX	Oryx Chemical Corp-----	190 Warren St., Jersey City 2, N.J.
OPC	Orbis Products Corp-----	601 W. 20th St., New York 1, N.Y.
ORG	Organics, Inc-----	1724 Greenleaf Ave., Chicago 26, Ill.
OSB	C. J. Osborn Co-----	1301 W. Blancke St., Linden, N.J.
OTA	Ottawa Chemical Co-----	700 N. Wheeling St., Toledo 5, Ohio.
OTC	Ott Chemical Co-----	500 Agard Rd., Muskegon, Mich.
OTT	Ottol Oil Co-----	455 Cortlandt St., Belleville 9, N.J.
OCF	Owens-Corning Fiberglass Corp-----	National Bank Bldg., Toledo 1, Ohio.
OXY	Oxy Chemical Co-----	P.O. Box 28, Hackettstown, N.J.
FRS	Fabst Brewing Co-----	917 W. Juneau Ave., Milwaukee 1, Wis.
PCA	Pacific Carbide & Alloys Co-----	P.O. Box 5607, Portland 17, Oreg.
AMR	Pacific Resins & Chemical Co-----	3400 13th Ave. SW., Seattle 4, Wash.
FAN	Fan American Petroleum Corp-----	P.O. Box 591, Tulsa 2, Okla.
FNT	Fantastote Co-----	26 Jefferson St., Passaic, N.J.
PRC	Paragon Chemicals-----	221 Oak St., Providence 9, R.I.
FD	Parke, Davis & Co-----	Foot of Jos. Campau, Detroit 32, Mich.
PRP	M. W. Parsons-Plymouth, Inc-----	100 Church St., New York 8, N.Y.
FAT	Patent Chemicals, Inc-----	335 McLean Blvd., Paterson 4, N.J.
CCH	Pearsall Chemical Co-----	P.O. Box 108, Phillipsburg, N.J.
PEK	Peck's Products Co-----	610 E. Clarence Ave., St. Louis 15, Mo.
FGH	Peerless Chemical Co-----	3850 Oakman Blvd., Detroit 4, Mich.
FEL	Felron Corp-----	7847 W. 47th St., Lyons, Ill.
PEH	S. B. Penick & Co-----	100 Church St., New York, N.Y.
FAS	Pennsalt Chemicals Corp-----	3 Penn. Center, Philadelphia 2, Pa.
PAI	Pennsylvania Industrial Chemical Corp-----	120 State St., Box 240, Clariton, Pa.
FAR	Pennsylvania Refining Co-----	Commonwealth Bank & Trust Co. Bldg., Butler, Pa.
PGU	Perkins Glue Co-----	632 Cannon Ave., Lansdale, Pa.
PRR	L. Ferrigo Co-----	Alleghen, Mich.
PER	Perry & Derrick Co-----	2510 Highland Ave., Cincinnati 12, Ohio.
PET	Petroleum Chemicals, Inc-----	P.O. Box 1522, Lake Charles, La.
PTT	Petro-Tex Chemical Corp-----	P.O. Box 2584, Houston 1, Tex.
PFN	Pfanstiehl Laboratories, Inc-----	1219 Glen Rock Ave., Waukegan, Ill.
IOC	Pfaudler Permutit, Inc., Ionac Chemical Co. Div-----	Birmingham, N.J.
PCW	Pfister Chemical Works-----	Linden Ave., Ridgefield, N.J.
PFZ	Chas. Pfizer & Co., Inc-----	235 E. 42d St., New York 17, N.Y.
PHR	Pharmaschem Corp-----	Broad and Wood Sts., Bethlehem, Pa.
PPP	Phelan-Faust Paint Manufacturing Co-----	932 Loughborough Ave., St. Louis 11, Mo.
PLC	Phelan's Resins & Plastics Div-----	P.O. Box 189, Burlington, Iowa.
PLF	Phillips Chemical Co-----	Adams Bldg., Bartlesville, Okla.
PLP	Phillips Petroleum Co-----	Adams Bldg., Bartlesville, Okla.
PNX	Phoenix Oil Co-----	9505 Cassius Ave., Cleveland 5, Ohio.
PIC	Pierce Chemical Co-----	P.O. Box 117, Rockford, Ill.
PBY	Pillsbury Co-----	608 2d Ave. S., Minneapolis 2, Minn.
PIL	Pilot Chemical Co-----	11756 Burke St., Santa Fe Springs, Calif.
PIT	Pitt-Consol Chemical Co-----	191 Doramus Ave., Newark 5, N.J.

TABLE 23.--Synthetic organic chemicals: Directory of manufacturers, 1962--Continued

Code	Name of company	Office address
PCC	Pittsburgh Chemical Co-----	200 Grant Bldg., Pittsburgh 30, Pa.
PFQ	Pittsburgh Plate Glass Co-----	1 Gateway Center, Pittsburgh 22, Pa.
PLS	Plastics Engineering Co-----	1c07 Geele Ave., Sheboygan, Wis.
PLU	Plumb Chemical Corp-----	4837 James St., Philadelphia 37, Pa.
PYL	Polychemical Laboratories, Inc-----	490 Hunts Point Ave., New York 59, N.Y.
POL	Polymer Corp-----	2120 Fairmont Ave., Reading, Pa.
PII	Polymer Industries, Inc-----	Viaduct Rd., Springdale, Conn.
FYR	Poly Resins-----	11655 Wicks St.; Sun Valley, Calif.
PYZ	Polyrez Co., Inc-----	S. Columbia St., Woodbury, N.J.
PCI	Polyvinyl Chemicals, Inc-----	26 Howley St., Peabody, Mass.
GRS	Pontiac Refining Corp-----	P.O. Box 1531, Corpus Christi, Tex.
PDC	Poughkeepsie Dyestuff Corp-----	77 N. Water St., Poughkeepsie, N.Y.
FRT	Pratt & Lambert, Inc-----	75 Tonawanda St., Buffalo 7, N.Y.
PCS	Process Chemicals Co-----	8733 S. Dice Rd., Sante Fe Springs, Calif.
PG	Procter & Gamble Co., Procter & Gamble Manufacturing Co. Div-----	Ivorydale Technical Center, Cincinnati 31, Ohio.
PC	Proctor Chemical Co., Inc-----	P.O. Box 399, Salisbury, N.C.
PRD	Productol Co-----	417 S. Hill St., Los Angeles 13, Calif.
PUB	Publicker Industries, Inc-----	1429 Walnut St., Philadelphia 2, Pa.
PSP	Puget Sound Pulp & Timber Co-----	300 Laurel St., Bellingham, Wash.
PRO	Pure Oil Co-----	200 E. Gulf Rd., Palatine, Ill.
FRX	Purex Corp., Ltd-----	5101 Clark Ave., Lakewood, Calif.
QCP	Quaker Chemical Products Corp-----	Elm, Lime, and Sandy Sts., Conshohocken, Pa.
QKO	Quaker Oats Co-----	Merchandise Mart Plaza, Chicago 54, Ill.
QUN	K. J. Quinn & Co., Inc-----	195 Canal St., Malden 48, Mass.
RSA	R. S. A. Corp-----	o90 Saw Mill River Rd., Ardsley, N.Y.
HRS	Rapid American Corp., Harris Standard Paint Co. Div-----	1026 N. 19th St., Tampa, Fla.
RAB	Raybestos-Manhattan, Inc., Raybestos Div-----	P.O. Box 1021, Bridgeport 2, Conn.
RET	Rayette, Inc-----	261 E. 5th St., St. Paul 1, Minn.
RED	Red Spot Paint & Varnish Co., Inc-----	110 Main St., Evansville 3, Ind.
RFC	Refined Products Co-----	624 Schuyler Ave., Lyndhurst, N.J.
REH	Reheis Co., Inc-----	235 Snyder Ave., Berkeley Heights, N.J.
RCI	Reichhold Chemicals, Inc-----	525 N. Broadway, White Plains, N.Y.
VAR	Varecum Chemical Div-----	Niagara Falls, N.Y.
RIL	Reilly Tar & Chemical Corp-----	1415 Merchants Bank Bldg., Indianapolis 4, Ind.
REL	Reliance Varnish Co-----	4730 Crittenden Dr., Louisville 9, Ky.
CFL	Coast Paint & Lacquer Co. Div-----	6901 Cavalcade, Houston, Tex.
REM	Remington Arms Co., Inc-----	939 Barnum Ave., Bridgeport 2, Conn.
RTF	Retzlaff Chemical Co-----	P.O. Box 45296, Houston 45, Tex.
RCC	Rexall Chemical Co-----	8480 Beverly Blvd., Los Angeles 54, Calif.
CFC	Rexall Chemical Co. - Kearny-----	1106 Harrison Ave., Kearny, N.J.
REZ	Rezolin, Inc-----	1651 18th St., Santa Monica, Calif.
RDA	Rhodia, Inc-----	60 E. 56th St., New York 22, N.Y.
RCD	Richardson Co-----	27th Ave. and Lake St., Melrose Park, Ill.
	Krystall Chemical Corp. Div-----	1301 W. Belden Ave., Chicago 14, Ill.
PLA	Richardson Polymers, Inc-----	700 Canal St., Stamford, Conn.
RIC	Richfield Oil Corp-----	555 S. Flower St., Los Angeles 17, Calif.
RIK	Riker Laboratories, Inc-----	19901 Nordhoff St., Northridge, Calif.
RMC	Rinshed-Mason Co-----	5935 Milford Ave., Detroit 10, Mich.
RT	F. Ritter & Co-----	4001 Goodwin Ave., Los Angeles 39, Calif.
RTC	Ritter Chemical Co., Inc-----	403 W. Main St., Amsterdam, N.Y.
RIV	Riverdale Chemical Co-----	220 E. 17th St., Chicago Heights, Ill.
RBC	Roberts Chemicals, Inc-----	P.O. Box 546, Nitro, W. Va.
ROP	Robeson Process Co-----	P.O. Box 960, Erie, Pa.
ROC	Rock Hill Printing & Finishing Co-----	Rock Hill, S.C.
RKD	Rockland Industries-----	Mayflower Dr., W. Hanover, Mass.
ORT	Roehr Chemicals, Inc-----	52-20 37th St., Long Island City 1, N.Y.
RGC	Rogers Corp-----	Mill St., Rogers, Conn.
RH	Rohm & Haas Co-----	222 W. Washington Sq., Philadelphia 5, Pa.
RCM	Roma Chemical Corp-----	900 Passaic Ave., E. Newark, N.J.
ROS	Rosett Chemicals, Inc-----	649 Ferry St., Newark 5, N.J.
ROY	Royce Chemical Co-----	Carlton Ave., E. Rutherford, N.J.
RZL	Rozilda Laboratories, Inc-----	314 Madison St., Hoboken, N.J.
RUB	Rubber Corp. of America-----	New South Rd., Hicksville, N.Y.
RUR	Ruberoid Co-----	S. Bound Brook, N.J.
SWC	S & W Chemical Co., Inc-----	P.O. Box 275, Elkton, Md.
LKY	St. Regis Paper Co., Lake States Yeast & Chemical Div-----	603 W. Davenport St., Rhinelander, Wis.

TABLE 23. --Synthetic organic chemicals: Directory of manufacturers, 1962--Continued

Code	Name of company	Office address
SAL	Dr. Salsbury's Laboratories-----	500 Gilbert St., Charles City, Iowa.
S	Sandoz, Inc-----	P.O. Box 357, Fair Lawn, N.J.
	Fine Colors Div-----	61-63 Van Dam St., New York 13, N.Y.
SAR	Sartomer Resins, Inc-----	32d and Spring Garden Sts., Philadelphia 4, Pa.
SCF	Schaefer Varnish Co., Inc-----	15th and Magnolia Sts., Louisville 10, Ky.
SCN	Schenectady Chemicals, Inc-----	Congress St. and 10th Ave., Schenectady 1, N.Y.
SBC	Scher Bros-----	P.O. Box 538, Allwood Station, Clifton, N.J.
SCR	R. P. Scherer Corp-----	9425 Grinnell Ave., Detroit 13, Mich.
SCS	Schering Corp-----	1011 Morris Ave., Union, N.J.
SCD	Scholler Bros., Inc-----	Collins and Westmoreland Sts., Philadelphia 34, Pa.
SCL	Schuykill Chemical Co-----	2346 W. Sedgley Ave., Philadelphia 32, Pa.
SBR	Schwarz Bioresearch, Inc-----	Mountain View Ave., Orangeburg, N.Y.
SEA	Seaboard Chemicals, Inc-----	30 Foster St., Salem, Mass.
SRL	G. D. Searle & Co-----	P.O. Box 5110, Chicago 80, Ill.
SED	Seidlitz Paint & Varnish Co-----	18th and Garfield, Kansas City 10, Mo.
SEY	Seydel-Woolley & Co-----	748 Rice St., Atlanta 18, Ga.
SHM	Shamrock Oil & Gas Corp-----	P.O. Box 631, Amarillo, Tex.
SHA	Shanco Plastics & Chemicals, Inc-----	2716 Kenmore Ave., Tonawanda, N.Y.
SRC	Shawinigan Resins Corp-----	644 Monsanto Ave., Springfield 1, Mass.
SHO	Shell Oil Co-----	50 W. 50th St., New York 20, N.Y.
SHC	Shell Chemical Co. Div-----	50 W. 50th St., New York 20, N.Y.
SHP	Shepherd Chemical Co-----	2803 Highland Ave., Cincinnati 12, Ohio.
SW	Sherwin-Williams Co-----	101 Prospect Ave., N.W., Cleveland 1, Ohio.
SHL	Shulton, Inc-----	697 Route 46, Clifton, N.J.
STD	George F. Siddall Co., Inc-----	P.O. Box 925, Spartanburg, S.C.
SOG	Signal Oil & Gas Co., Inc-----	P.O. Box 5008, Harrisburg Station, Houston 12, Tex.
SIC	Silmar Chemical Corp-----	335 N. Van Ness Ave., Hawthorne, Calif.
SIM	Simpson Timber Co-----	2301 N. Columbia Blvd., Portland 17, Oreg.
SKC	Sinclair Koppers Chemical Co-----	P.O. Box 5536, Houston 12, Tex.
SPI	Sinclair Petrochemicals, Inc-----	600 5th Ave., New York 20, N.Y.
SIN	Sinclair Refining Co-----	600 5th Ave., New York 20, N.Y.
SIF	James B. Sipe & Co-----	P.O. Box 8010, Pittsburgh 16, Pa.
GFS	G. Frederick Smith Chemical Co-----	867 McKinley Ave., Columbus 22, Ohio.
SK	Smith, Kline & French Laboratories-----	1500 Spring Garden St., Philadelphia 1, Pa.
SM	Socony Mobil Oil Co., Inc.: Mobil Chemical Co. Div----- Mobil Oil Co. Div-----	150 E. 42d St., New York 17, N.Y. 612 S. Flower St., Los Angeles 54, Calif., and P.O. Box 3311, Beaumont, Tex. Metuchen, N.J.
SPP	Socony Paint Products Co-----	
SOH	Sohio Chemical Co., Agent: Sohio Petroleum Co----- Solar Nitrogen Chemicals, Inc-----	621 Republic Bldg., Cleveland 15, Ohio. 621 Republic Bldg., Cleveland 15, Ohio. Solar Park, Leominster, Mass.
SOL	Solar Chemical Corp-----	341 Commercial St., Malden 48, Mass.
SLC	Soluol Chemical Co., Inc-----	300 Park Ave. S., New York 10, N.Y.
SVT	Solvent Chemical Co., Inc-----	Hartsville, S.C.
SON	Sonneborn Chemical & Refining Corp-----	E. Catawba Ave., Mount Holly, N.C.
SNC	Sonoco Products Co-----	P.O. Box 246, Savannah, Ga.
STC	Sou-Tex Chemical Co., Inc-----	P.O. Box 352, Fayetteville, N.C.
SNI	Southern Nitrogen Co., Inc-----	P.O. Box 391, East Point, Ga.
SOR	Southern Resin Glue Co-----	P.O. Box 6966, Houston 5, Tex.
SOS	Southern Sizing Co-----	310 Wheeler St., Tonawanda, N.Y.
STH	South Hampton Co-----	610 Dwight Bldg., Kansas City 5, Mo.
SPL	Spaulding Fibre Co., Inc-----	26 Howley St., Peabody, Mass.
SPN	Spencer Chemical Co-----	N. 22d and Eldorado Sts., Decatur, Ill.
SFC	Stahl Finish Co-----	491 Main St., Cambridge 42, Mass.
STA	A. E. Staley Manufacturing Co-----	45 Jefferson St., Stamford, Conn.
UBS	U B S Chemical Co. Div-----	Clinton, Iowa.
SMC	Stamford Chemical Co-----	
CLN	Standard Brands, Inc., Clinton Corn Processing Co. Div-----	
SCP	Standard Chemical Products, Inc-----	1301 Jefferson St., Hoboken, N.J.
SCC	Standard Chlorine Chemical Co., Inc-----	115 Jacobus Ave., S. Kearny, N.J.
STD	Standard Dyestuff Corp-----	19 E. 5th St., Paterson 4, N.J.
STN	Standard Naphthalene Products Co., Inc-----	115 Jacobus Ave., S. Kearny, N.J.
SOC	Standard Oil Co. of California, Western Operations, Inc-----	225 Bush St., San Francisco 20, Calif.
SIO	Standard Oil Co. of Ohio-----	Midland Bldg., Cleveland 15, Ohio.
SUC	Standard Ultramarine & Color Co-----	P.O. Box 2166, Huntington 18, W. Va.
STG	Wm. J. Stange Co-----	342 N. Western Ave., Chicago 12, Ill.
SF	Stauffer Chemical Co-----	380 Madison Ave., New York 17, N.Y.
SFA	Anderson Chemical Co. Div-----	380 Madison Ave., New York 17, N.Y.
CHO	Calhio Chemicals Div-----	380 Madison Ave., New York 17, N.Y.
VIC	Victor Chemical Works Div-----	155 N. Wacker Dr., Chicago 34, Ill.
SCI	Stecker Chemicals, Inc-----	50 North Franklin Turnpike, Ho-Ho-Kus, N.J.

TABLE 23. --Synthetic organic chemicals: Directory of manufacturers, 1962.- Continued

Code	Name of company	Office address
SH	Stein, Hall & Co., Inc-----	285 Madison Ave., New York 17, N.Y.
STP	Stepan Chemical Co-----	R.R. No. 1, Elwood, Ill.
MYW	Maywood Chemical Works Div----- Sterling Drug, Inc.:	100 W. Hunter Ave., Maywood, N.J.
SDG	Glenbrook Laboratories Div-----	1450 Broadway, New York 18, N.Y.
SDH	Hilton-Davis Chemical Co. Div-----	2235 Langdon Farm Rd., Cincinnati 37, Ohio.
SLV	Salvo Chemical Div-----	Military Rd., Rothschild, Wis.
TMS	Thomasset Colors Div-----	120 Lister Ave., Newark 7, N.J.
SDW	Winthrop Laboratories Div-----	1450 Broadway, New York 18, N.Y.
SRR	Fred'k A. Stresen-Reuter, Inc-----	400 W. Roosevelt Ave., Bensenville, Ill.
SUM	Summit Chemical Products Corp-----	11 William St., Belleville 9, N.J.
SNW	Sun Chemical Corp., Warwick Chemical Co. Div--	Wood River Junction, R.I.
SKG	Sunkist Growers, Inc-----	707 W. 5th St., Los Angeles 17, Calif.
SUN	Sun Oil Co-----	1608 Walnut St., Philadelphia 3, Pa.
SNO	Sunolin Chemical Co-----	1608 Walnut St., Philadelphia 3, Pa.
DXS	Sunray DX Oil Co-----	P.O. Box 2039, Tulsa, Okla.
SNT	Suntide Refining Co-----	P.O. Box 658, Corpus Christi, Tex.
SWT	Swift & Co-----	115 W. Jackson Blvd., Chicago 4, Ill.
SWR	Switzer Bros., Inc-----	4732 St. Clair Ave., Cleveland 3, Ohio.
SYR	Synco Resins, Inc-----	32 Henry St., Bethel, Conn.
SYC	Synthetic Chemicals, Inc-----	335 Melean Blvd., Paterson 4, N.J.
SYF	Synthetic Products Co-----	1636 Wayside Rd., Cleveland 20, Ohio.
SYT	Synthron, Inc-----	Ryan Ave., Ashton, R.I.
SYV	Synvar Corp-----	72c King St., Wilmington 99, Del.
TCC	Tanatex Chemical Corp-----	Belleville Turnpike, Kearny, N.J.
CST	Charles S. Tanner Co-----	250 S. Water St., Providence, R.I.
TAY	Taylor Corp-----	Valley Forge, Pa.
TNC	Tennant Development Corp., Chemical Div-----	100 Park Ave., New York 17, N.Y.
TOC	Tenneco Oil Co-----	P.O. Box 18, Houston, Tex.
TN	Tennessee Corp-----	el Broadway, New York 6, N.Y.
TNP	Tennessee Products & Chemical Corp-----	2611 West End Ave., Nashville 5, Tenn.
TX	Texas, Inc-----	135 E. 43d St., New York 17, N.Y.
TSa	Texas Alkyls, Inc-----	P.O. Box 938, Pasadena, Tex.
TXB	Texas Butadiene & Chemical Corp-----	529 5th Ave., New York 17, N.Y.
TUS	Texas-U.S. Chemical Co-----	P.O. Box 667, Fort Neches, Tex.
TXC	Tex Chemical Co-----	20-21 Wagaraw Rd., Fair Lawn, N.J.
TXZ	Texize Chemicals, Inc-----	P.O. Box 368, Greenville, S.C.
TKL	Thickol Chemical Corp-----	P.O. Box 27, Bristol, Pa.
THC	Thompson Chemical Co-----	90 Manor Ave., Pawtucket, R.I.
TMH	Thompson-Hayward Chemical Co-----	P.O. Box 708, Kansas City 41, Mo.
TIC	Ticonderoga Chemical Corp-----	P.O. Box 11, Leominster, Mass.
TID	Tidewater Oil Co-----	Delaware City, Del.
TRC	Toms River Chemical Corp-----	P.O. Box 71, Toms River, N.J.
TV	Tousey Varnish Co-----	135 W. Lake St., North Lake, Ill.
ACT	Arthur C. Trask Co-----	327 S. LaSalle St., Chicago 4, Ill.
TGL	Triangle Chemical Co-----	206 Lower Elm St., Macon, Ga.
TRJ	Trojan Powder Co-----	17 N. 7th St., Allentown, Pa.
TRO	Troy Chemical Co-----	338 Wilson Ave., Newark 5, N.J.
TEK	Trubek Laboratories, Inc-----	State Highway 17, E. Rutherford, N.J.
TCH	Trylon Chemical Corp-----	P.O. Box 5101, Greenville, S.C.
JTC	Joseph Turner & Co-----	P.O. Box 88, Ridgefield, N.J.
UHL	Paul Uhlich & Co., Inc-----	90 West St., New York 6, N.Y.
UNG	Ungerer & Co-----	161 Avenue of the Americas, New York 13, N.Y.
UCC	Union Carbide Corp.:	
UCP	Union Carbide Chemicals Co. Div-----	270 Park Ave., New York 17, N.Y.
UCS	Union Carbide Plastics Co. Div-----	270 Park Ave., New York 17, N.Y.
UCO	Silicones Div-----	270 Park Ave., New York 17, N.Y.
UNN	Union Oil Co. of California-----	461 S. Boylston St., Los Angeles 17, Calif.
UNP	United Chemical Corp. of Norwood-----	Endicott St., Norwood, Mass.
UNC	United Chemical Products Corp-----	York and Colgate Sts., Jersey City 2, N.J.
URC	United Cork Companies-----	Central Ave., Kearny, N.J.
USB	United Rubber & Chemical Co-----	P.O. Box 149, Baytown, Tex.
UES	U.S. Borax Research Corp-----	630 Shatto Pl., Los Angeles 5, Calif.
USO	U.S. Coatings Co-----	225 Manida St., Bronx 59, N.Y.
UPR	U.S. Oil Co-----	P.O. Box 307, Providence, R.I.
UPF	U.S. Peroxygen Corp-----	850 Morton Ave., Richmond 5, Calif.
USP	United States Pipe & Foundry Co-----	3300 1st Ave. N., Birmingham 2, Ala.
UPL	U.S. Plastic & Chemical Corp-----	P.O. Box 49, Metuchen, N.J.
UVC	United States Plywood Corp-----	P.O. Box 1688, Redding, Calif.
UDI	Universal Chemicals Corp-----	48 Hunt St., Central Falls, R.I.
	Universal Detergents, Inc. & Petro- chemicals Co.	1825 E. Spring St., Long Beach 6, Calif.

TABLE 23. --Synthetic organic chemicals: Directory of manufacturers, 1962--Continued

Code	Name of company	Office address
UFM	Universal Oil Products Co-----	30 Algonquin Rd., Des Plaines, Ill.
UFJ	Upjohn Co-----	301 Henrietta St., Kalamazoo 99, Mich.
CWN	Carwin Co. Div-----	Stiles Lane, North Haven, Conn.
UTR	Utah Resin Co., Inc-----	418 Kearns Bldg., Salt Lake City 1, Utah.
VAL	Valchem-----	1407 Broadway, New York 18, N.Y.
VSV	Valentine Sugars, Inc., Valite Div-----	726 Whitney Bldg., New Orleans 2, La.
VNC	Vanderbilt Chemical Corp-----	230 Park Ave., New York 17, N.Y.
VND	Van Dyk & Co., Inc-----	11 William St., Belleville 9, N.J.
VAC	Varney Chemical Co-----	2001 A'lon Rd., Janesville, Wis.
VEL	Velsicol Chemical Corp-----	330 E. Grand Ave., Chicago 11, Ill.
VB	Vermilye-Bell-----	21707 Bothell Way, Bothell, Wash.
VFC	Verona-Pharma Chemical Corp-----	P.O. Box 385, Union, N.J.
VPT	Vickers Petroleum Co., Inc-----	P.O. Box 2240, Wichita 1, Kans.
VIN	Vineland Chemical Co-----	W. Wheat Rd., Vineland, N.J.
VC	Virginia-Carolina Chemical Corp-----	401 E. Main St., Richmond 6, Va.
VTM	Vitamins, Inc-----	809 W. 53th St., Chicago 21, Ill.
VTV	Vita-Var Corp., Div. of Textron Industries, Inc.	177 Uskwood Ave., Orange, N.J.
FR0	Vulcan Materials Co., Frontier Chemical Co. Div.	P.O. Box 545, Wichita 1, Kans.
WTM	Wallace & Tiernan, Inc-----	25 Main St., Belleville 9, N.J.
WTH	Harchem Div-----	25 Main St., Belleville 9, N.J.
WTL	Lucidol Div-----	1740 Military Rd., Buffalo 5, N.Y.
WJ	Warner-Jenkinson Manufacturing Co-----	252c Baldwin St., St. Louis 6, Mo.
WPC	Warren Paint & Color Co-----	700 Wedgewood Ave., Nashville 2, Tenn.
WAS	T. F. Washburn Co-----	2244 Elston Ave., Chicago 14, Ill.
WNS	Washine Chemical Corp-----	165 Main St., Lodi, N.J.
WAY	Wayland Chemical Co-----	Industrial Circle, Lincoln, R.I.
WCA	West Coast Adhesives Co-----	11104 NW. Front Ave., Portland 10, Oreg.
WDC	Western Dry Color Co-----	600 W. 52d St., Chicago 9, Ill.
W01	Western Organics, Inc-----	12800 E. Imperial Hwy., Santa Fe Springs, Calif.
EW	Westinghouse Electric Corp., Mearns Div-----	Trafford, Pa.
WST	Westville Chemical Corp-----	P.O. Box 262, Monroe, Conn.
WVA	West Virginia Pulp & Paper Co., Polychemicals Div.	P.O. Box 5207, N. Charleston, S.C.
WRD	Weyerhaeuser Co., Wood Products Div-----	115 S. Palmetto St., Marshfield, Wis.
WBG	White & Bagley Co-----	P.O. Box 1171, Worcester, Mass.
WHI	White & Hodges, Inc-----	576 Lawrence St., Lowell, Mass.
WLI	White Laboratories, Inc-----	Galloping Hill Rd., Kenilworth, N.J.
WHL	Whitmoyer Laboratories, Inc-----	19 N. Railroad St., Myerstown, Pa.
WHW	Whittmore-Wright Co., Inc-----	62 Alford St., Boston 29, Mass.
WIC	Wica Co., Inc-----	P.O. Box 506, Charlotte, N.C.
WLM	Wilnot & Cassidy, Inc-----	108 Provost St., Brooklyn 22, N.Y.
	Wilson & Co., Inc.:	
WIL	Wilson Laboratories Div-----	4221 S. Western Blvd., Chicago 9, Ill.
WM	Wilson-Martin Div-----	Snyder Ave. and Swanson St., Philadelphia 48, Pa.
WTC	Witco Chemical Co., Inc-----	P.O. Box 305, Paramus, N.J.
WAW	W. A. Wood Co-----	108 Spring St., Everett 49, Mass.
WRC	Wood Ridge Chemical Corp-----	Park Pl. E., Wood Ridge, N.J.
WON	Woonsocket Color & Chemical Co-----	176 Sunnyside Ave., Woonsocket, R.I.
WYN	Wyandotte Chemicals Corp-----	1609 Biddle Ave., Wyandotte, Mich.
YAW	Young Aniline Works, Inc-----	2731 Boston St., Baltimore 24, Md.

APPENDIXES

A. U.S. Imports of Coal-Tar Intermediates and Finished Coal-Tar Products

Table 24 summarizes, for the period 1960-62, U.S. imports of coal-tar products dutiable under paragraphs 27 and 28 of the Tariff Act of 1930. The data, which were obtained by analyzing invoices covering imports through all U.S. customs districts, are given in detail in a separate report of the Tariff Commission.¹

In 1962, general imports of coal-tar chemicals entered under paragraph 27 comprised 806 items with a total weight of 21.3 million pounds, and a foreign invoice value of \$14.2 million. In 1961, imports consisted of 831 items with a total weight of 19.0 million pounds, valued at \$12.3 million. Most of the coal-tar chemicals imported in 1962 were declared to be competitive (duty based on "American selling price"). In terms of quantity, about 54 percent of the total imports of these products in 1962 came from West Germany; imports from that country amounted to 11.5 million pounds, compared with 8.5 million pounds in 1961. Imports from the United Kingdom totaled 3.0 million pounds in 1962, compared with 2.1 million pounds in 1961. Imports from Switzerland in 1962 amounted to 1.9 million pounds, about the same as in 1961. In 1962 sizable quantities of products that are dutiable under paragraph 27 were also imported from Japan (1,555,000 pounds), Italy (1,173,000 pounds), France (784,000 pounds), Canada (432,000 pounds), and the Netherlands

TABLE 24. -- Coal-tar intermediates and finished coal-tar products: U.S. general imports, classified by use, 1960-62

Product	1960		1961		1962	
	Quantity	Foreign invoice value	Quantity	Foreign invoice value	Quantity	Foreign invoice value
	1,000 pounds	1,000 dollars	1,000 pounds	1,000 dollars	1,000 pounds	1,000 dollars
Intermediates ¹ -----	19,806	11,491	19,729	12,330	21,300	14,193
Finished coal-tar products, total-----	12,299	22,209	12,393	25,950	12,823	24,908
Dyes, total-----	4,053	7,814	5,152	11,060	5,416	10,977
Acid-----	1,135	2,471	1,313	2,938	1,545	3,227
Azoic compositions-----	11	20	5	12	5	9
Basic-----	379	599	439	812	403	331
Direct-----	769	1,692	771	1,640	1,034	2,254
Disperse-----	124	312	177	403	183	426
Fiber-reactive-----	265	735	1,003	2,711	373	1,004
Fluorescent brightening agents-----	296	454	424	930	438	1,182
Ingrain-----	6	20	20	125	5	26
Mordant-----	194	335	112	238	341	489
Solvent-----	28	82	55	172	85	253
Sulfur-----	11	8	4	3	310	296
Vat-----	809	874	702	845	769	970
All other-----	26	17	127	220	36	30
Synthetic organic pigments (toners and lakes)-----	203	562	278	803	402	1,058
Medicinals and pharmaceuticals-----	2,106	10,350	2,579	10,885	2,988	8,839
Flavor and perfume materials-----	749	1,226	779	1,339	1,368	2,206
All other-----	5,188	2,452	3,105	1,863	2,649	1,808

¹ Includes small quantities of organic pesticides and agricultural chemicals, rubber-processing chemicals, and surface-active agents.

Source: Compiled from the records of the U.S. Bureau of Customs.

(367,000 pounds). Smaller quantities came from Denmark (208,000 pounds), Belgium (191,000 pounds), and Sweden (165,000 pounds).

The most important intermediates imported in 1962 were caprolactam, phthalic anhydride, refined anthracene, adipic acid, acetoacetanilide, 2,4-toluylenediamine, H-acid, and gamma acid. In 1962, imports of caprolactam, which totaled 1.4 million pounds, all came from West Germany; imports of phthalic anhydride, which amounted to 1.1 million pounds, came from Japan, Italy, West Germany, and France. Imports of refined anthracene, which came from West Germany and Switzerland, totaled 1.0 million pounds in 1962; imports of adipic acid, which came from West Germany, totaled 985,000 pounds; and imports of acetoacetanilide, which came from the United Kingdom, Switzerland, and West Germany, amounted to 718,000 pounds. Imports of 2,4-toluylenediamine, all of which came from West Germany, totaled 661,000 pounds; imports of H-acid, which came from West Germany, the Netherlands, and Italy, amounted to 496,000 pounds; and imports of gamma acid, which totaled 442,000 pounds, came from Italy, West Germany, and the Netherlands. Among the other important individual chemicals imported, anthraquinone came from the United Kingdom, Switzerland, and France; adiponitrile, from Canada; and 2-naphthol, from the United Kingdom, Japan, and West Germany. Imports of benzidine hydrochloride all came from West Germany. Lindane came from France, West Germany, and Japan.

Imports in 1962 of all finished coal-tar products that are dutiable under paragraph 28 comprised 1,903 items, with a total weight of 12.8 million pounds and a foreign invoice value of \$24.9 million. In 1961, imports consisted of 2,027 items, with a total weight of 12.4 million pounds and a foreign invoice value of \$26.0 million. In 1962, coal-tar dyes were the most important group of finished coal-tar products imported. Imports of dyes amounted to \$11.0 million (foreign invoice value), or 44.2 percent of the value of all imports under paragraph 28. In 1961, imports of dyes (excluding synthetic organic pigments) amounted to \$11.1 million (foreign invoice value), or 42.6 percent of the value of all imports under paragraph 28.

Imports of medicinals and pharmaceuticals, the next most important group of products entered under paragraph 28 in 1962, were, in terms of quantity, 16 percent larger in that year than in 1961 and 42 percent larger than in 1960. In 1962, imports of medicinals and pharmaceuticals were valued at \$8.8 million (foreign invoice value), or 35 percent of total imports under paragraph 28. In 1961, imports of medicinals and pharmaceuticals were valued at \$10.9 million, or 42 percent of total imports under paragraph 28. In 1962, imports of synthetic organic pigments (toners and lakes) were valued at \$1,058,000, compared with \$803,000 in 1961. Imports of flavor and perfume materials in 1962 (\$2.21 million) were 65 percent greater than in 1961 (\$1.34 million). In 1962, imports of other coal-tar products entered under paragraph 28 (chiefly synthetic resins) were about the same as in 1961; imports of such products were valued at \$1.8 million in 1962, compared with \$1.9 million in 1961.

B. Glossary of Synonymous Names of Cyclic Intermediates

Many cyclic intermediates are known in the chemical industry and trade by a variety of names. Individuals in the industry and trade frequently are not acquainted with all the synonymous names for a given product. To bring together the synonymous names for each product, the tables on intermediates in this report (table 7A in pt. II and table 7B in pt. III) show the standard name, in accordance with the system used by *Chemical Abstracts*; the standard name is frequently followed by the most common synonymous name in parentheses.

In this report, as in previous reports in this series, the Tariff Commission has included a glossary of synonymous names of cyclic intermediates. This glossary, which was originally compiled at the suggestion of the Industry Advisory Committee on Government Reports, is intended to serve principally as an index to the standard names used in the statistical tables on intermediates. The first column of the glossary lists alphabetically the common, or trivial, names usually encountered in the trade. The second column gives the corresponding standard (*Chemical Abstracts*) names, under which the data are presented in tables 7A and 7B.

Cyclic intermediates: Glossary of synonymous names

Common name	Standard (Chemical Abstracts) name
Acedianthrone-----	Acceanthra [2,1-a]aceanthrylene-5,13-dione.
1,2-Acenaphthenedione-----	Acenaphthenequinone.
4-Acetamido-2-aminophenol hydrochloride-----	3'-Amino-4'-hydroxyacetanilide hydrochloride.
p-Acetamidobenzenesulfonyl chloride-----	N-Acetylsulfanilyl chloride.
5-Acetamido-2-hydroxybenzoic acid-----	5-Acetamidosalicylic acid.
1-Acetamido-2-methoxynaphthalene-----	N-(2-Methoxy-1-naphthyl)acetamide.
1-Acetamido-2-naphthol-----	N-(2-Hydroxy-1-naphthyl)acetamide.
1-Acetamido-7-naphthol-----	N-(7-Hydroxy-1-naphthyl)acetamide.
2-Acetamido-4-nitrophenol-----	2'-Hydroxy-5'-nitroacetanilide.
5-Acetamido-orthanilic acid-----	5-Acetamido-2-aminobenzenesulfonic acid.
Acetanilide-p-sulfonic acid-----	N-Acetylsulfanilic acid.
Acetanilid sulfon chloride-----	N-Acetylsulfanilyl chloride.
Acetate leuco violet-----	1,4-Diamino-2,3-dihydroanthraquinone.
p-Acetoacetchloranilide-----	4'-Chloroacetoacetanilide.
Acetoacet-o-chloroanilide-----	2'-Chloroacetoacetanilide.
o-Acetoacetochloroanilide-----	2'-Chloroacetoacetanilide.
Acetoacet-o-1-naphthylamide-----	N-1-Naphthylacetoacetamide.
N-Acetoacet-o-1-naphthylamine-----	N-1-Naphthylacetoacetamide.
m-Acetoacetoxyllide-----	2',4'-Acetoacetoxyllide.
Acetoacet-o-toluidide-----	o-Acetoacetotoluidide.
Acetoacet-o-toluidine-----	o-Acetoacetotoluidide.
Acetoacetyl-o-anisidine-----	o-Acetoacetanisidide.
Acetoacetyl benzidine-----	4',4''-Biacetoacetanilide.
Acetyl-p-amino-o-aminophenol hydrochloride-----	3'-Amino-4'-hydroxyacetanilide hydrochloride.
1-Acetyl-3-(4-amino-m-anisyl)urea-----	1-Acetyl-3-(4-amino-3-methoxyphenyl)urea.
Acetyl amino Cleve's acid-----	8-Acetamido-5-amino-2-(and 3)-naphthalenesulfonic acid.
N-Acetyl-1-amino-8-naphthol-3,6-disulfonic acid-----	8-Acetamido-1-naphthol-3,6-disulfonic acid.
Acetyl-o-anisidine-----	o-Acetanisidide.
Acetyl-p-anisidine-----	p-Acetanisidide.
Acetyldiaminoanthraquinone-----	1,5(or 1,8)-Diacetamidooanthraquinone.
Acetyl-2,4-diaminophenol hydrochloride-----	3'-Amino-4'-hydroxyacetanilide hydrochloride.
Acetyl H acid-----	8-Acetamido-1-naphthol-3,6-disulfonic acid.
Acetyl-1,4-naphthalenediamine-6-(and 7)-sulfonic acids-----	8-Acetamido-5-amino-2-(and 3)-naphthalenesulfonic acid.
Acetyl-p-nitro-o-aminophenol-----	2'-Hydroxy-5'-nitroacetanilide.
Acetyl-m-phenylenediamine-----	3'-Aminoacetanilide.
Acetyl-p-phenylenediamine-----	4'-Aminoacetanilide.
Acetyl-p-phenylenediamine sulfate-----	p-Aminoacetanilide sulfate.
N ⁶ -Acetyl-N ¹ -2-pyrimidinylsulfanilamide-----	4'-(2-Pyrimidinylsulfamoyl)acetanilide.
Acetylsulfadiazine-----	4'-(2-Pyrimidinylsulfamoyl)acetanilide.
Acetylsulfamerazine-----	4'-(4-Methyl-2-pyrimidinylsulfamoyl)acetanilide.
Acetylsulfamethazine-----	4'-(4,6-Dimethyl-2-pyrimidinylsulfamoyl)acetanilide.
N ¹ -Acetylsulfanilamide-----	N-Sulfanilylacetamide.
N ⁶ -Acetylsulfanilamide-----	4'-Sulfamoylacetanilide.
2-(N ⁶ -Acetylsulfanilamido)thiazole-----	4'-(2-Thiazolylsulfamoyl)acetanilide.
Acetylsulfathiazole-----	4'-(2-Thiazolylsulfamoyl)acetanilide.
N ⁶ -Acetyl-2-sulfo-p-phenylenediamine-----	5-Acetamido-2-aminobenzenesulfonic acid.
N-Acetyl-o-toluidine-----	o-Aceto-toluidide.
1,2,4-Acid-----	1-Amino-2-naphthol-4-sulfonic acid.
Amichin-----	8-Amino-6-methoxyquinoline.
m-Aminoacetanilide-----	3'-Aminoacetanilide.
p-Aminoacetanilide-----	4'-Aminoacetanilide.
p-Aminoacetanilide sulfate-----	4'-Aminoacetanilide sulfate.
m-Aminoacetophenone-----	3'-Aminoacetophenone.
6-(p-Aminoanilino)metanilic acid-----	5-Amino-2-(p-aminoanilino)benzenesulfonic acid.
p-Aminoazobenzene-----	p-Phenylazoaniline.
Aminoazobenzene disulfo acid-----	6-Amino-3,4'-azodi[benzenesulfonic acid].
Aminoazobenzene-3,4-disulfonic acid-----	6-Amino-3,4'-azodi[benzenesulfonic acid].
p-Aminoazobenzene hydrochloride-----	p-Phenylazoaniline hydrochloride.
Aminoazobenzene-m-sulfonic acid-----	m-(p-Aminophenylazo)benzenesulfonic acid.
Aminoazobenzene-p-sulfonic acid-----	p-(p-Aminophenylazo)benzenesulfonic acid.
o-Aminoazotoluene-----	4-(o-Tolylazo)-o-toluidine [NH ₂ -1].
o-Aminoazotoluene sulfate-----	4-(o-Tolylazo)-o-toluidine sulfate.
4-Aminoazotoluene-4-sulfonic acid and salt-----	4-(4-Amino-m-tolylazo)-m-toluenesulfonic acid and salt.
o-Aminoazotoluenesulfonic acid and salt-----	4-(4-Amino-m-tolylazo)-m-toluenesulfonic acid and salt.

Cyclic intermediates: Glossary of synonymous names--Continued

Common name	Standard (Chemical Abstracts) name
Aminosoxylenetoluidine-----	4-(2,4-Xylylazo)-o-toluidine [NH ₂ =1].
p-Aminobenzenearsenic acid-----	Arsanic acid [AsO ₃ H=1].
3-Aminobenzeneulfonanilide-----	Metanilanilide.
4-Aminobenzeneulfonanilide-----	Sulfanilanilide.
m-Aminobenzeneulfonic acid-----	Metanilic acid [SO ₃ H=1].
p-Aminobenzeneulfonic acid-----	Sulfanilic acid [SO ₃ H=1].
o-Aminobenzoic acid-----	Anthranilic acid [COOH=1].
m-Aminobenzoyl I (or J) acid-----	6-(m-Aminobenzamido)-1-naphthol-3-sulfonic acid.
p-Aminobenzoyl I (or J) acid-----	6-(p-Aminobenzamido)-1-naphthol-3-sulfonic acid.
p-Aminobenzoyl-m-phenylenediamine-----	2,4,4'-Triaminobenzophenone.
o-Aminobiphenyl-----	2-Biphenylamine.
2-Aminobiphenyl-----	2-Biphenylamine.
4-Aminobiphenyl-----	4-Biphenylamine.
1-Amino-4-bromanthraquinone-2,5-disulfonic acid-----	5-Amino-8-bromo-1,6-anthraquinonedisulfonic acid.
1-Amino-2-bromo-4-(p-toluidine)anthraquinone-----	1-Amino-2-bromo-4-(p-toluidino)anthraquinone.
3-Amino-N-butyl-p-anisolesulfonamide-----	N ¹ -Butyl-4-methoxymetanilamide [SO ₂ NH ₂ =1].
p-Amino-N-(n-butyl)phenol-----	p-Butylaminophenol.
2-Amino-4'-chloroacetanilide-----	4-Chloroglycinanilide.
5-Amino-2-chlorobenzeneulfonic acid-----	6-Chlorometanilic acid [SO ₃ H=1].
5-Amino-3-chlorobenzeneulfonic acid-----	5-Chlorometanilic acid [SO ₃ H=1].
5-Amino-4-chlorobenzeneulfonic acid-----	4-Chlorometanilic acid [SO ₃ H=1].
2-Amino-4-chlorobenzoic acid-----	4-Chloroanthranilic acid [COOH=1].
3-Amino-6-chlorobenzoic acid-----	5-Amino-2-chlorobenzoic acid.
Aminochlorodiphenyl-----	Chloro-2-(or 3, or 4)-biphenylamine.
Aminochlorodiphenyl ether-----	5-Chloro-2-phenoxyaniline.
Aminochlorodiphenyl ether-----	p-(p-Chlorophenoxy)aniline
2-Amino-3-chlorotoluene [CH ₃ =1]-----	6-Chloro-o-toluidine [NH ₂ =1].
2-Amino-4-chlorotoluene [CH ₃ =1]-----	5-Chloro-o-toluidine [NH ₂ =1].
2-Amino-5-chlorotoluene [CH ₃ =1]-----	4-Chloro-o-toluidine [NH ₂ =1].
2-Amino-6-chlorotoluene [CH ₃ =1]-----	3-Chloro-o-toluidine [NH ₂ =1].
2-Amino-5-chlorotoluene hydrochloride-----	4-Chloro-o-toluidine hydrochloride.
m-Amino-p-cresol [CH ₃ =1]-----	2-Amino-p-cresol [OH=1].
3-Amino-p-cresol methyl ether [CH ₃ =1]-----	5-Methyl-o-anisidine [NH ₂ =1].
3-Amino-p-cresyl methyl ether-----	5-Methyl-o-anisidine [NH ₂ =1].
omega-Amino-psi-cumene-----	2,4-Dimethylbenzylamine.
omega-Amino-psi-cumene-----	2,4-Dimethylbenzylamine.
Aminodichlorobenzeneulfonic acid-----	2,5-Dichlorosulfanilic acid.
2-Amino-1,4-diethoxybenzene-----	2,5-Diethoxyaniline.
2-Amino-5-diethylaminotoluene hydrochloride-----	N ² ,N ⁵ -Diethyltoluene-2,5-diamine hydrochloride.
p-Aminoethylaniline-----	N,N-Diethyl-p-phenylenediamine.
4-Amino-1,3-dihydroxyanthraquinone-----	4-Aminoxanthopurpurin.
2-Amino-1,4-dimethoxybenzene-----	2,5-Dimethoxyaniline.
p-Aminodimethylaniline-----	N,N-Dimethyl-p-phenylenediamine.
p-Aminodimethylaniline sulfate-----	N,N-Dimethyl-p-phenylenediamine sulfate.
2-Amino-4,6-dinitrophenol and salt-----	Picramic acid and salt.
o-Aminodiphenyl-----	2-Biphenylamine.
p-Aminodiphenyl-----	4-Biphenylamine.
p-Aminodiphenylamine-----	N-Phenyl-p-phenylenediamine.
4-Aminodiphenylamine-2-sulfonic acid-----	5-Amino-2-anilinobenzeneulfonic acid.
Aminodiphenyl ether-----	p-Phenoxyaniline.
4-Aminoethoxyethylamine-----	2-(p-Amino-N-ethylanilino)ethanol.
Amino G acid-----	7-Amino-1,3-naphthalenedisulfonic acid.
2-Amino-4-hydroxybenzenearsenic acid-----	4-Hydroxy-o-arsanilic acid [AsO ₃ H=1].
Amino I (or J) acid-----	6-Amino-1,3-naphthalenedisulfonic acid.
p-Amino-N-isobutylphenol-----	(p-Isobutylamino)phenol.
4-Amino-2-methylanisole [CH ₃ O=1]-----	3-Methyl-p-anisidine [NH ₂ =1].
4-Amino-4'-(3-methyl-5-pyrazolone)-2,2'-stilbene-disulfonic acid-----	4'-Amino-4'-(3-methyl-5-oxo-2-pyrazolin-1-yl)-2,2'-stilbenedisulfonic acid.
4-Amino-1-naphthaleneulfonic acid-----	Naphthionic acid.
2-Aminonaphthalene-3,6,8-trisulfonic acid-----	7-Amino-1,3,6-naphthalenetrisulfonic acid.
8-Amino-1-naphthoic lactam-----	Naphthosyril.
1-Amino-7-naphthol-----	8-Amino-2-naphthol.
1-Amino-8-naphthol-2,4-disulfonic acid-----	8-Amino-1-naphthol-5,7-disulfonic acid.
1-Amino-8-naphthol-3,6-disulfonic acid-----	8-Amino-1-naphthol-3,6-disulfonic acid.
1-Amino-8-naphthol-4,6-disulfonic acid-----	8-Amino-1-naphthol-3,5-disulfonic acid.
2-Amino-8-naphthol-3,6-disulfonic acid-----	7-Amino-1-naphthol-3,6-disulfonic acid.
4-Amino-5-naphthol-1,3-disulfonic acid-----	8-Amino-1-naphthol-5,7-disulfonic acid.

Cyclic intermediates: Glossary of synonymous names--Continued

Common name	Standard (Chemical Abstracts) name
4-Amino-5-naphthol-1,7-disulfonic acid-----	8-Amino-1-naphthol-3,5-disulfonic acid.
5-Amino-4-naphthol-2,7-disulfonic acid-----	8-Amino-1-naphthol-3,6-disulfonic acid.
6-Amino-4-naphthol-2,7-disulfonic acid-----	7-Amino-1-naphthol-3,6-disulfonic acid.
1-Amino-8-naphthol-4-sulfonic acid-----	8-Amino-1-naphthol-5-sulfonic acid.
2-Amino-5-naphthol-7-sulfonic acid-----	6-Amino-1-naphthol-3-sulfonic acid.
2-Amino-6-naphthol-8-sulfonic acid-----	6-Amino-2-naphthol-4-sulfonic acid.
2-Amino-8-naphthol-6-sulfonic acid-----	7-Amino-1-naphthol-3-sulfonic acid.
4-Amino-3-naphthol-1-sulfonic acid-----	1-Amino-2-naphthol-4-sulfonic acid.
4-Amino-5-naphthol-1-sulfonic acid-----	8-Amino-1-naphthol-5-sulfonic acid.
6-Amino-4-naphthol-2-sulfonic acid-----	7-Amino-1-naphthol-3-sulfonic acid.
7-Amino-3-naphthol-1-sulfonic acid-----	6-Amino-2-naphthol-4-sulfonic acid.
7-Amino-4-naphthol-2-sulfonic acid-----	6-Amino-1-naphthol-3-sulfonic acid.
2-Amino-4-nitroanisole [CH ₃ O=1]-----	5-Nitro-o-anisidine [NH ₂ =1].
2-Amino-5-nitroanisole-----	4-Nitro-o-anisidine [NH ₂ =1].
2-Amino-6-nitroanisole-----	3-Nitro-o-anisidine [NH ₂ =1].
4-Amino-3-nitroanisole-----	2-Nitro-p-anisidine [NH ₂ =1].
4-Amino-4-nitrodiphenylamine-2-sulfonic acid-----	2-(p-Aminoanilino)-5-nitrobenzenesulfonic acid.
2-Amino-4-nitro-1-phenol-6-sulfonic acid-----	6-Amino-4-nitro-1-phenol-2-sulfonic acid.
2-Aminophenetole [C ₂ H ₅ O=1]-----	o-Phenetidine [NH ₂ =1].
Aminophenol sulfamide-----	2-Amino-1-phenol-4-sulfonamide.
o-Aminophenol-p-sulfonamide-----	2-Amino-1-phenol-4-sulfonamide.
o-Aminophenol-p-sulfonic acid-----	2-Amino-1-phenol-4-sulfonic acid.
m-Aminophenylcarboxypyrazolone-----	1-(m-Aminophenyl)-5-oxo-2-pyrazoline-3-carboxylic acid.
1-(m-Aminophenyl)-3-methyl-5-pyrazolone-----	1-(m-Aminophenyl)-3-methyl-2-pyrazolin-5-one.
Aminophenyl ether-----	p-Phenoxyaniline.
m-Aminophenylpyrazolonecarboxylic acid-----	1-(m-Aminophenyl)-5-oxo-2-pyrazoline-3-carboxylic acid.
1-(m-Aminophenyl)-5-pyrazolone-3-carboxylic acid-----	1-(m-Aminophenyl)-5-oxo-2-pyrazoline-3-carboxylic acid.
p-Aminophenyl-p-tolylaminesulfonic acid-----	5-Amino-2-(p-toluidino)benzenesulfonic acid.
2-Amino-4(3H)-pyrimidone-----	Isocytosine.
Amino R acid-----	3-Amino-2,7-naphthalenedisulfonic acid.
5-Aminosaligenin-2-methyl ether-----	5-Amino-2-methoxybenzyl alcohol.
6-Amino-3-(p-toluenesulfone)amino-4-methoxytoluene-----	4'-Amino-5'-methyl-p-toluenesulfon-o-anisidide.
3'-Amino-(p-toluenesulfone)ethoxytoluene-----	3-Methyl-N-(p-toluenesulfono)-p-phenetidine.
2-Aminotoluene-5-sulfonic acid-----	4-Amino-m-toluenesulfonic acid [SO ₃ H=1].
N-(4-Amino-m-tolyl)-p-quinone imine-----	N-(4-Amino-m-tolyl)-p-benzoquinone imine.
ω-Amino-1,2,4-trimethylbenzene-----	2,4-Dimethylbenzylamine.
Aminoviolanthrene-----	16-Aminoviolanthrone.
Amylnaphthalenes-----	Pentyl-naphthalenes.
o-Amylphenol-----	o-Pentylphenol.
p-sec-Amylphenol-----	p-(1-Methylbutyl)phenol.
p-tert-Amylphenol-----	p-(1,1-Dimethylpropyl)phenol.
Aniline-2,4-disulfonic acid-----	4-Amino-m-benzenedisulfonic acid.
Aniline-2,5-disulfonic acid-----	2-Amino-p-benzenedisulfonic acid.
Aniline oil-----	Aniline.
Aniline salt-----	Aniline hydrochloride.
Aniline-m-sulfonic acid-----	Metanilic acid [SO ₃ H=1].
Aniline-p-sulfonic acid-----	Sulfanilic acid [SO ₃ H=1].
Aniline-omega-sulfonic acid-----	Anilinomethanesulfonic acid.
4-Anilino-4'-hydroxydiphenylamine-----	p-(p-Anilinoanilino)phenol.
6-Anilinometanilic acid-----	5-Amino-2-anilinobenzenesulfonic acid.
2-Aniside-4-acetylurea-----	1-Acetyl-3-(4-amino-3-methoxyphenyl)urea.
o-Anisidine nitrate-----	4-(or 5)-Nitro-o-anisidine [NH ₂ =1].
2-Anisidine-4-sulfo-butylamide-----	N ⁴ -Butyl-4-methoxymetanilamide.
o-Anisidine-p-sulfonic acid-----	4-Methoxymetanilic acid [SO ₃ H=1].
2-(m-Anisyl)-4-chloroanthranilic acid-----	4-Chloro-N-(m-methoxyphenyl)anthranilic acid [COOH=1].
N-(p-Anisyl)-4-chloroanthranilic acid-----	4-Chloro-N-(p-methoxyphenyl)anthranilic acid [COOH=1].
N-(m-Anisyl)-4-chloroanthranilic acid-----	4-Chloro-N-(m-methoxyphenyl)anthranilic acid [COOH=1].
α-(p-Anisyl)-α-ethyl-p-methoxyacetophenone-----	2-Ethyl-4'-methoxy-2-(p-methoxyphenyl)acetophenone.
α-(p-Anisyl)-p-methoxyacetophenone-----	4'-Methoxy-2-(p-methoxyphenyl)acetophenone.
N-(p-Anisyl)-4-nitroanthranilic acid-----	N-(p-Methoxyphenyl)-4-nitroanthranilic acid.
N-(p-Anisyl)-p-phenylenediamine-----	N-(p-Methoxyphenyl)-p-phenylenediamine.
1,2-Anthrapyridine-----	Napthto[2,3-h]quinoline.
Anthraquinonylaminoanthraquinone-----	1,1'-Imidiodianthraquinone.
1,4,9,10-Anthratetrol-----	Leucoquinizarin.

Cyclic intermediates: Glossary of synonymous names--Continued

Common name	Standard (Chemical Abstracts) name
4-Antipyrinecarboxylic acid-----	Antipyrinic acid.
p,p'-Azobis(N,N-dimethylaniline hydrochloride)-----	p-Dimethylaninobenzenediazonium chloride.
4,4'-Azobisdiphenylamine-----	p-Anilinobenzenediazonium chloride.
Azohydroxyaniline-----	p-(p-Aminophenylazo)phenol.
Azoxyaniline-----	3,3'-Azoxydianiline.
m,m'-Azoxybis(aniline)-----	3,3'-Azoxydianiline.
Benzal chloride-----	α,α -Dichlorotoluene.
Benzaldehydedisulfonic acid-----	4-Formyl-m-benzenedisulfonic acid.
Benzaldehydemonosulfonic acid-----	o-Formylbenzenesulfonic acid.
1-(4-Benzamido-1-antraquinonylimino)-5-benzamido-anthraquinone.	4,5'-Dibenzamido-1,1'-lminodianthraquinone.
2-[3-(4-Benzamido-2,5-diethoxyphenyl)-1-methyldiazo-amino]ethanesulfonic acid.	2-[3-(4-Benzamido-2,5-diethoxyphenyl)-1-methyl-triazen-3-yl]ethanesulfonic acid.
N-(4-Benzamido-2,5-diethoxyphenyl)-N-methyldiazo-taurine.	2-[3-(4-Benzamido-2,5-diethoxyphenyl)-1-methyl-triazen-3-yl]ethanesulfonic acid.
3-(4-Benzamido-2,5-diethoxyphenyl)-3-sulfoethyl-1-methyltriazene.	2-[3-(4-Benzamido-2,5-diethoxyphenyl)-1-methyl-triazen-3-yl]ethanesulfonic acid.
[3-(4-Benzamido-6-methoxy-m-tolyl)-1-methyldiazo-amino]acetic acid.	[3-(4-Benzamido-6-methoxy-m-tolyl)-1-methyltriazen-3-yl]acetic acid.
[3-(4-Benzamido-6-methoxy-m-tolyl)-N-methyldiazo]-glycine.	[3-(4-Benzamido-6-methoxy-m-tolyl)-1-methyltriazen-3-yl]acetic acid.
Benzanthrone-----	7H-Benz[de]anthracen-7-one.
Benzanthronedianthraquinonyldiimide-----	3,9-Bis[1-anthraquinonylamino]-7H-benz[de]anthracen-7-one.
Benzeneazobenzene-----	Azobenzene.
Benzene-1,3-dicarboxylic acid-----	Isophthalic acid.
p-Benzenedicarboxylic acid-----	Terephthalic acid.
1,3,5-Benzenetriol-----	Phloroglucinol.
Benzidine disulfonic acid-----	4,4'-Diamino-2,2'-biphenyldisulfonic acid.
2,2'-Benzidinedisulfonic acid-----	4,4'-Diamino-2,2'-biphenyldisulfonic acid.
Benzidine sulfonic acid-----	4,4'-Diamino-3-biphenyldisulfonic acid.
Benz[cd]indol-2(1H)-one-----	Naphthostyryl.
Benzocaine (nonmedicinal grade)-----	p-Aminobenzoic acid, ethyl ester.
2-Benzofurylcyanomethyl ketone-----	2-Benzofuranacetoneitrile.
2H-1-Benzopyran-2-one-----	Coumarin.
1,2-Benzopyrone-----	Coumarin.
Benzotrichloride-----	α,α,α -Trichlorotoluene.
Benzoylacetanilide-----	2-Benzoylacetanilide.
α -Benzoylacetanilide-----	2-Benzoylacetanilide.
1-Benzoylamino-4-aminoanthraquinone-----	1-Amino-4-benzamidoanthraquinone.
2-Benzoylamino-1,4-diethoxybenzene-----	2',5'-Diethoxybenzanilide.
2-Benzoylamino-1,4-dimethoxybenzene-----	2',5'-Dimethoxybenzanilide.
5-Benzoylamino-2-nitrodimeoxybenzene-----	2',5'-Dimethoxy-4'-nitrobenzanilide.
5-Benzoylamino-2-nitrohydroquinone, diethyl ester-----	2',5'-Diethoxy-4'-nitrobenzanilide.
Benzoyl J acid-----	6-Benzamido-1-naphthol-3-sulfonic acid.
2-Benzoylthiophene-----	Phenyl-2-thienyl ketone.
α -Benzoylacetamide-----	Hydrocinnamamide.
m-Benzyl-p-aminophenol hydrochloride-----	4-Amino- α -phenyl-m-cresol hydrochloride.
Benzoyl chloride-----	α -Chlorotoluene.
o-Benzyl-p-chlorophenol-----	4-Chloro- α -phenyl-o-cresol [OH=1].
Benzyl cyanide-----	Phenylacetoneitrile.
N-Benzyl-ethylaniline-----	N-Ethyl-N-phenylbenzylamine.
N-Benzyl-N-ethyl-p-nitrosylaniline-----	N-Ethyl-N-(p-nitrosophenyl)benzylamine.
3-Benzyl-7-hydroxy-4-methylcoumarin-----	3-Benzyl-4-methylumbelliferone.
Benzylideneacetophenone-----	Chalcone.
4-Benzylideneaminoantipyrine-----	4-Benzylideneiminoantipyrine.
Benzyl mercaptan-----	α -Toluenethiol.
p-Benzylphenylcarbamate-----	α -Phenyl-p-cresol carbamate.
p,p'-Biacetoacetanilide-----	4',4'''-Biacetoacetanilide.
Bibenzal-----	Stilbene.
Bibenzoyl-----	Benzil.
Bibenzylidene-----	Stilbene.
o-Biphenylamine-----	2-Biphenylamine.
Biphenylene oxide-----	Dibenzofuran.
p,p'-Bis(acetoacetanilide)-----	4',4'''-Biacetoacetanilide.

Cyclic intermediates: Glossary of synonymous names--Continued

Common name	Standard (Chemical Abstracts) name
N,N'-Bis(acetoacetyl)benzidine-----	4',4'''-Biacetoacetanilide.
1,3-Bis(4-biphenyl)-2-thiourea-----	4,4'-Diphenylthiocarbonylanilide.
N,N-Bis(2-hydroxyethyl)aniline-----	2,2'-(Phenylamino)diethanol.
N,N-Bis(2-hydroxyethyl-m-toluidine)-	2,2'-(m-Tolylimino)diethanol.
2,2'-Bis(4-hydroxyphenyl)propane-----	4,4'-Isopropylidinediphenol.
N,N'-Bis-6-(1-naphthol-3-sulfonic acid)urea-	6,6'-Ureylenebis[1-naphthol-3-sulfonic acid].
Bisphenol A-----	4,4'-Isopropylidinediphenol.
Bisphenol B-----	2,2'-Bis(4-hydroxyphenyl)butane.
Bisphenol C-----	4,4'-Isopropylideneis-o-cresol.
Bisphenol G-----	4,4'-Isopropylidenebis[2-isopropylphenol].
3,3'-Bitolylene-4,4'-diisocyanate-----	Isocyanic acid, (3,3'-dimethyl-4,4'-biphenylene ester.
B.O.N-----	3-Hydroxy-2-naphthoic acid.
Broenner's acid-----	6-Amino-2-naphthalenesulfonic acid.
Bromamic acid-----	1-Amino-4-bromo-2-anthraquinonesulfonic acid.
p-Bromoacetamidanthraquinone-----	1-Acetamido-4-bromoanthraquinone.
Bromobenzanthrone-----	3-Bromo-7H-benz[de]anthracen-7-one.
2-Bromobiphenylene oxide-----	2-Bromodibenzofuran.
p-Bromomethylaminanthraquinone-----	6-Bromo-1-methylaminanthraquinone.
4-Bromo-N-methyl-1,9-anthrapyridone-----	6-Bromo-3-methyl-7H-dibenz[f,i]isoquinoline-2,7(3H)-dione.
x-Bromo-p-nitroacetophenone-----	2-Bromo-4'-nitroacetophenone.
Bromoquinizarin-----	2-Bromoquinizarin.
o-(3-Bromo-p-tolyl)benzoic acid-----	3'-Bromo-4'-methyl-2-biphenylcarboxylic acid.
6-tert-Butyl-2,4-dimethylacetophenone-----	2'-tert-Butyl-4',6'-dimethylacetophenone.
n-Butyl-p-nitrobenzoate-----	p-Nitrobenzoic acid, n-butyl ester.
p-Carboxybenzenesulfonamide-----	p-Sulfamoylbenzoic acid.
3-Carboxy-4-hydroxyacetanilide-----	5-Acetamidosalicylic acid.
3-(Carboxymethyl)-1-(5-chloro-2-methoxyphenyl)-3-methyltriazene.	N-(5-Chloro-2-methoxyphenylazo)-N-methylglycine.
(o-Carboxyphenyl)acetic acid-----	x-Carboxy-o-toluic acid.
Cassella acid-----	3-Amino-1,5-naphthalenedisulfonic acid.
Chicago acid-----	8-Amino-1-naphthol-5,7-disulfonic acid.
Chlorinated cresols-----	Cresols, chlorinated.
2-Chloro-3-acetamino-9,10-anthrahydroquinone acid ester.	2-Acetamido-3-chloro-9,10-dihydro-9,10-anthradiol-9,10-disulfonic acid, diethyl ester.
2-Chloro-3-acetaminanthraquinone-----	2-Acetamido-3-chloroanthraquinone.
2-Chloro-3-acetamino-9,10-dihydroxyanthracene-9,10-disulfonic acid ester.	2-Acetamido-3-chloro-9,10-dihydro-9,10-anthradiol-10-disulfonic acid, diethyl ester.
o-Chloroacetoacetanilide-----	2'-Chloroacetoacetanilide.
Chloroacetylarsanilic acid-----	N-Acetyl-2-chloroarsanilic acid [AsO ₃ H ₂ =1].
5-Chloro-2-aminoanisole [CH ₃ O=1]-----	4-Chloro-o-anisidine [NH ₂ =1].
4-Chloro-2-amino-6-benzenesulfonic acid-----	5-Chlorometanilic acid [SO ₃ H=1].
6-Chloro-3-aminobenzotrifluoride-----	6-Chloro- α,α,α -trifluoro-m-toluidine [NH ₂ =1].
Chloroaminophenol-----	2-Amino-4-chlorophenol.
2-Chloro-4-aminotoluene [CH ₃ =1]-----	3-Chloro-p-toluidine [NH ₂ =1].
3-Chloro-2-aminotoluene [CH ₃ =1]-----	6-Chloro-o-toluidine [NH ₂ =1].
5-Chloro-2-aminotoluene [CH ₃ =1]-----	4-Chloro-o-toluidine [NH ₂ =1].
m-Chloroaniline-o-sulfonic acid-----	2-Amino-6-chlorobenzenesulfonic acid.
p-Chloroaniline-m-sulfonic acid-----	6-Chlorometanilic acid.
p-Chloroaniline-o-sulfonic acid-----	2-Amino-5-chlorobenzenesulfonic acid.
4-Chloro-o-anisidine [CH ₃ O=1]-----	5-Chloro-o-anisidine [NH ₂ =1].
5-Chloro-o-anisidine [CH ₃ O=1]-----	4-Chloro-o-anisidine [NH ₂ =1].
3-Chloro-2-anthracenecarboxylic acid-----	3-Chloro-2-anthraic acid.
2-Chloroanthraquinone-3-carboxylic acid-----	3-Chloro-2-anthraquinonecarboxylic acid.
Chloroarsacetin-----	N-Acetyl-2-chloroarsanilic acid [AsO ₃ H ₂ =1].
2-Chlorobenzaldehyde-5-sulfonic acid-----	4-Chloro-3-formylbenzenesulfonic acid.
4-Chlorobenzaldehyde-2-sulfonic acid-----	5-Chloro-2-formylbenzenesulfonic acid.
1-Chloro-5-benzamideanthraquinone-----	1-Benzamido-5-chloroanthraquinone.
Chlorobenzanthrone-----	Chloro-7H-benz[de]anthracen-7-one.
4-Chlorobenzotrifluoride-----	4-Chloro- α,α,α -trifluorotoluene.
Chlorobenzyl cyanide-----	(p-Chlorophenyl)acetone trile.
1-Chloro-2-carboxyanthraquinone-----	1-Chloro-2-anthraquinonecarboxylic acid.
p-Chloro-m-cresol [CH ₃ =1]-----	6-Chloro-m-cresol [OH=1].
2-Chloro-1,4-dihydroxyanthraquinone-----	2-Chloroquinizarin.
Chloro H acid-----	8-Chloro-1-naphthol-3,6-disulfonic acid.
5-Chloro-8-hydroxyquinoline-----	5-Chloro-8-quinolinc.
3-Chloro-3'-methoxy-6-diphenylaminocarboxylic acid--	4-Chloro-N-(m-methoxyphenyl)anthranilic acid [COOH=1].

Cyclic intermediates: Glossary of synonymous names--Continued

Common name	Standard (Chemical Abstracts) name
3-Chloro-4'-methoxy-6-diphenylaminocarboxylic acid--	4-Chloro-N-(p-methoxyphenyl)anthranilic acid.
α -Chloro-2-methoxy-5-nitrotoluene-----	2-(Chloromethyl)-4-nitroanisole [CH ₃ O=1].
[3-(5-Chloro-2-methoxyphenyl)-1-methyldiazoamino]-	N-(5-Chloro-2-methoxyphenylazo)-N-methylglycine.
acetic acid.	
Chloromethylanthraquinone-----	1-Chloro-2-methylantraquinone.
o-Chloro-p-nitroaniline-----	2-Chloro-4-nitroaniline.
p-Chloro-c-nitroaniline-----	4-Chloro-2-nitroaniline.
Chloro-o-nitrobenzene-----	1-Chloro-2-nitrobenzene.
4-Chloro-3-nitrobenzotrifluoride-----	4-Chloro- α, α -trifluoro-3-nitrotoluene.
4-Chloro-2-nitro-1-phenol-6-sulfonic acid-----	4-Chloro-6-nitro-1-phenol-2-sulfonic acid.
4-Chloro-2-nitrophenyl ether-----	1-(4-Chloro-2-nitrophenoxy)benzene.
2-Chlorophenol-----	o-Chlorophenol.
4-Chlorophenol-----	p-Chlorophenol.
Chlorophenylhydrazine-p-sulfonic acid-----	4-Chloro-3-hydrazinobenzenesulfonic acid.
1-(m-Chlorophenyl)-3-methyl-5-pyrazolone-----	1-(m-Chlorophenyl)-3-methyl-2-pyrazolin-5-one.
2-Chloro-o-phenyl phenol-----	2-Chloro-6-phenylphenol.
1-(6-Chloro-4-sulfophenyl)-3-methyl-2-pyrazolin-5-one	5-Chloro-4-(3-methyl-5-oxo-2-pyrazolin-1-yl)benzene-
	sulfonic acid.
1-(2-Chloro-4-sulfophenyl)-3-methyl-5-pyrazolone-----	5-Chloro-4-(3-methyl-5-oxo-2-pyrazolin-1-yl)benzene-
	sulfonic acid.
1-(6-Chloro-3-sulfophenyl)-3-methyl-5-pyrazolone-----	4-Chloro-3-(3-methyl-5-oxo-2-pyrazolin-1-yl)benzene-
	sulfonic acid.
o-Chloro-p-toluene sodium sulfonate-----	3-Chloro-p-toluenesulfonic acid, sodium salt [SO ₃ H=1].
4-Chlorotoluene-2-sulfonic acid-----	5-Chloro-o-toluenesulfonic acid [SO ₃ H=1].
m-Chlorotolueneethioglycolic acid-----	(4-Chloro-o-tolylthio)acetic acid.
4-Chloro-o-toluidine [CH ₃ =1]-----	5-Chloro-o-toluidine [NH ₂ =1].
5-Chloro-2-toluidine [CH ₃ =1]-----	4-Chloro-o-toluidine [NH ₂ =1].
5-Chloro-o-toluidine [CH ₃ =1]-----	4-Chloro-o-toluidine [NH ₂ =1].
o-Chloro-m-toluidine-p-sulfonic acid-----	2-Amino-5-chloro-p-toluenesulfonic acid [SO ₃ H=1].
2-Chloro-p-toluidine-5-sulfonic acid-----	6-Amino-4-chloro-m-toluenesulfonic acid [SO ₃ H=1].
2-Chloro-5-toluidine-4-sulfonic acid-----	2-Amino-5-chloro-p-toluenesulfonic acid [SO ₃ H=1].
4-Chloro-o-tolylmercaptoacetic acid-----	(4-Chloro-o-tolylthio)acetic acid.
1-(5-Chloro-o-tolyl)-3-methyl-3-triazeneacetic acid-	N-(5-Chloro-o-tolyl)-N-methylglycine.
Chlorotolylthioglycolic acid-----	(4-Chloro-o-tolylthio)acetic acid.
Chloro-sym-xylene-----	4-Chloro-3,5-xyleneol.
Chloroxyldenesulfonic acid-----	6-Amino-3-chloro-2,5-xylenesulfonic acid [SO ₃ H=1].
4-Chloro-2,5-xylylmercaptoacetic acid-----	(4-Chloro-2,5-xylylthio)acetic acid.
Chromotropic acid-----	4,5-Dihydroxy-2,7-naphthalenedisulfonic acid.
Cinnamene-----	Styrene.
1,6-Cleve's acid-----	5-Amino-2-naphthalenesulfonic acid.
1,7-Cleve's acid-----	8-Amino-2-naphthalenesulfonic acid.
Cleve's acid, mixed-----	5 (and 8)-Amino-2-naphthalenesulfonic acid
m-Cresidine-----	2-Methyl-p-anisidine [NH ₂ =1].
Cresidine or p-Cresidine-----	5-Methyl-o-anisidine [NH ₂ =1].
m-Cresol methyl ether-----	m-Methylanisole [CH ₃ O=1].
m-Cresolsulfonic acid-----	5-Hydroxy-m-toluenesulfonic acid [SO ₃ H=1].
o-Cresotic acid-----	2,3-Cresotic acid.
Y-Cresotic acid-----	2,4-Cresotic acid.
o-Cresotinic acid-----	2,3-Cresotic acid.
Cresyldisulfide-----	p-Tolyl disulfide.
m-Cresyl methyl ether-----	m-Methylanisole [CH ₃ O=1].
Cumaldehyde-----	p-Isopropylbenzaldehyde.
psi-Cumene-----	1,2,4-Trimethylbenzene.
psi-Cumidine-----	2,4,5-Trimethylaniline.
Cuminaldehyde-----	p-Isopropylbenzaldehyde.
2-Cyanopyridine-----	Picolinonitrile.
3-Cyanopyridine-----	Nicotinonitrile.
4-Cyanopyridine-----	Isonicotinonitrile.
Dahl's acid-----	6-Amino-1-naphthalenesulfonic acid.
Dehydrothio-p-toluidine-----	2-(p-Aminophenyl)-6-methylbenzothiazole.
Desoxyanisole-----	4'-Methoxy-2-(p-methoxyphenyl)acetophenone.
Developer Z-----	3-Methyl-1-phenyl-2-pyrazolin-5-one.
3,6-Diaminocresidine-----	Proflavine base.

Cyclic intermediates: Glossary of synonymous names--Continued

Common name	Standard (Chemical Abstracts) name
m-Diaminoanisole-----	5-Methoxy-m-phenylenediamine.
3,3'-Diaminoazoxybenzene-----	3,3'-Azoxydianiline.
2,2'-Diamino-5,5'-bi-m-toluenesulfonic acid-----	2,2'-Diamino-5,5'-dimethyl-3,3'-biphenyldisulfonic acid.
4,4'-Diamino-1,1'-dianthraquinonylamine-----	1,1'-Iminobis[4-aminoanthraquinone].
4,4'-Diamino-1,1'-dianthrimide-----	1,1'-Iminobis[4-aminoanthraquinone].
Diamino-4,4'-dibenzoyl-1,1'-dianthraquinoneimine-----	1,1'-Iminobis[4-benzamidoanthraquinone].
Diamino-4,5'-dibenzoyl-1,1'-dianthraquinonylamine-----	1,4,5'-Dibenzamido-1,1'-iminodianthraquinone.
1,4-Diamino-2,3-dihydroxyanthraquinone-----	1,4-Diaminohyastazarin.
3,6-Diamino-2,7-dimethylacridine hydrochloride-----	Acridine yellow.
4,4'-Diamino-2,2'-dimethylbiphenyl-----	m-Tolidine.
4,4'-Diamino-2,2'-dimethyldiphenylmethane-----	4,4'-Methylenedi(m-tolidine).
4,4'-Diaminodiphenyl-----	Benzidine.
4,4'-Diaminodiphenylamine-2-sulfonic acid-----	5-Amino-2-(p-aminoanilino)benzenesulfonic acid.
p,p'-Diaminodiphenylmethane-----	4,4'-Methylenedianiline.
p,p'-Diaminodiphenylsulfide-----	4,4'-Thiodianiline.
3,3'-Diaminodiphenyl urea-----	3,3'-Diaminocarbaniilide.
Di(p-aminophenyl)sulfide-----	4,4'-Thiodianiline.
1,3-Di(m-aminophenyl)urea-----	3,3'-Diaminocarbaniilide.
2,6-Diaminotoluene-4-sulfonic acid-----	3,5-Diamino-p-toluenesulfonic acid.
Diamylphenol-----	2,4-Dipentylphenol.
1,5-Dianilinoanthraquinone-o,o'-dicarboxylic acid-----	1,5-Dianilino-2,6-anthraquinonedicarboxylic acid.
o-Dianisidic acid-----	3,3'-Dimethoxybenzidine.
1,2-Di-p-anisyl-1,2-ethanediol-----	1,2-Di(p-methoxyphenyl)-1,2-ethanediol.
2,4-Di(p-anisyl)-3-ethylhexane-----	2,4-Di(p-methoxyphenyl)-3-ethylhexane.
2,4-Di(p-anisyl)-3-ethylhexene-----	2,4-Di(p-methoxyphenyl)-3-ethylhexene.
α,β-Dianisylglycol-----	1,2-Di(p-methoxyphenyl)-1,2-ethanediol.
3,4-Di(p-anisyl)hexane-----	3,4-Di(p-methoxyphenyl)hexane.
1,1'-Dianthraquinoneimine-----	1,1'-Iminodianthraquinone.
1,1'-Dianthraquinonylamine-----	1,1'-Iminodianthraquinone.
Dianthrimide-----	1,1'-Iminodianthraquinone.
Diazoaminobenzene-----	1,3-Diphenyltriazene.
Diazobenzene chloride-----	Benzene diazonium chloride.
4,5'-Dibenzamido-1,1'-aminodianthraquinone-----	4,5'-Dibenzamido-1,1'-iminodianthraquinone.
5,5'-Dibenzamido-1,1'-iminodianthraquinone-----	1,1'-Iminobis[5-benzamidoanthraquinone].
Dibenzanthrone-----	Violanthrone.
2,2'-Dibenzanthronyl-----	(4,4'-Bi-7H-benz[de]anthracen-7,7'-dione.
13,13-Dibenzanthronyl-----	(3,3'-Bi-7H-benz[de]anthracen-7,7'-dione.
Dibenzopyran-----	Xanthene.
Dibenzopyrrole-----	Carbazole.
Dibenzoyl-----	Benzil.
4,5-Dibenzoylamidodianthraquinonylamine-----	4,5'-Dibenzamido-1,1'-iminodianthraquinone.
4,4'-Dibenzoyldiamino-1,1'-dianthrimide-----	1,1'-Iminobis[4-benzamidoanthraquinone].
Dibenzyl-----	Bibenzyl.
Dibenzylaniline-----	N-Phenylbibenzylamine.
Dibenzyl disulphide-----	Benzyl disulfide.
Dibenzyl ether-----	Benzyl ether.
Dibenzyl sodium sulfanilate-----	N,N-Dibenzylsulfanilic acid, sodium salt.
Dibromoaminoanthraquinone-----	1-Amino-2,4-dibromoanthraquinone.
7,16-Dibromo-6,15-dihydro-5,9,14,18-anthrazinetetrone-----	7,16-Dibromodanthrene.
p-Dibromodihydroxynaphthalene-----	4,5-Dibromo-1,8-naphthalenediol.
2,6-Dibromo-1,5-dihydroxynaphthalene-----	2,6-Dibromo-1,5-naphthalenediol.
4,5-Dibromo-1,8-dihydroxynaphthalene-----	4,5-Dibromo-1,8-naphthalenediol.
1,4-Dichloroaniline-----	2,5-Dichloroaniline.
2,5-Dichloroaniline-4-sulfonic acid-----	2,5-Dichlorosulfanilic acid [SO ₃]=1.
1,5-Dichloro-4,8-anthraquinonedisulfonic acid-----	4,8-Dichloro-1,5-anthraquinonedisulfonic acid.
1,8-Dichloro-4,5-anthraquinonedisulfonic acid-----	4,5-Dichloro-1,8-anthraquinonedisulfonic acid.
2,6-Dichlorobenzaldehyde-----	α,α,2,6-Tetrachlorotoluene.
o,o'-Dichlorobenzidine-----	3,3'-Dichlorobenzidine.
3,3'-Dichlorobenzidine base-----	3,3'-Dichlorobenzidine.
m,m'-Dichlorobenzidine hydrochloride-----	2,2'-Dichlorobenzidine hydrochloride.
2,4-Dichlorobenzyl chloride-----	α,2,4-Trichlorotoluene.
2,4-Dichlorobenzylidene chloride-----	α,α,2,4-Tetrachlorotoluene.
2,6-Dichlorobenzylidene chloride-----	α,α,2,6-Tetrachlorotoluene.
2,5-Dichlorophenylhydrazinesulfonic acid-----	2,5-Dichloro-4-hydrazinobenzenesulfonic acid.
1-(2,5-Dichlorophenyl)-5-pyrazolone-3-carboxylic acid-----	1-(2,5-Dichlorophenyl)-5-oxo-2-pyrazoline-3-carboxylic acid.

Cyclic intermediates: Glossary of synonymous names--Continued

Common name	Standard (Chemical Abstracts) name
2,5-Dichloro-4-sulfobenzenediazohydroxide-----	2,6-Dichloro-4-hydroxydiazobenzenesulfonic acid.
1-(2,5-Dichloro-4-sulfophenyl)-3-methyl-5-pyrazolone-	2,5-Dichloro-4-(3-methyl-5-oxo-2-pyrazolin-1-yl)benzenesulfonic acid.
2,4-Dichloro-5-(p-toluenesulfonamido)-1-naphthol----	N-(6,8-Dichloro-5-hydroxy-1-naphthyl)-p-toluenesulfonamide [SO ₂ NH ₂ =1].
Dioresyldisulfide-----	p-Tolyl disulfide.
Dicyclohexyl-----	Bicyclohexyl.
Diethanolaniline-----	2,2'-(Phenylimino)diethanol.
Diethanol-m-toluidine-----	2,2'-(m-Tolylimino)diethanol.
1,4-Diethoxybenzene-----	p-Diethoxybenzene.
N-(2,5-Diethoxy-4-nitrophenyl)benzamide-----	2',5'-Diethoxy-4'-nitrobenzanilide.
N-(2,5-Diethoxyphenyl)benzamide-----	2',5'-Diethoxybenzanilide.
Diethylaniline-m-sulfonic acid-----	N,N-Diethylmetanilic acid [SO ₃ H=1].
Diformyl-m-tolylenediamine-----	N ² ,N ⁵ -Diformyltoluene-2,5-diamine [CH ₃ =1].
1,2-Dihydroacenaaphthylene-----	Acenaaphthene.
9,10-Dihydroacridine-----	Acridan.
1,4-Dihydro-4-oxo-2,6-pyridinedicarboxylic acid-----	Chelidamic acid.
1,3-Dihydroxyanthraquinone-----	Xanthopurpurin.
1,4-Dihydroxyanthraquinone-----	Quinizarin.
1,5-Dihydroxyanthraquinone-----	Anthrarufin.
1,8-Dihydroxyanthraquinone-----	Chrysazin.
2,6-Dihydroxyanthraquinone-----	Anthraflavic acid.
2,4-Dihydroxybenzoic acid-----	β-Resorcylic acid.
Dihydroxybiphenyl-----	Biphenol.
2,3-Dihydroxy-1,4-diaminoanthraquinone-----	1,4-Diaminohystazarin.
Dihydroxydibenzanthrone-----	16,17-Dihydroxyviolanthrone.
5,5'-Dihydroxydi-2-naphthylamine-7,7'-disulfonic acid	6,6'-Iminobis[1-naphthol-3-sulfonic acid].
1,5-Dihydroxy-4,8-dinitroanthraquinone-----	4,8-Dinitroanthrarufin.
p,p'-Dihydroxydiphenyldimethylmethane-----	4,4'-Isopropylidenediphenol.
4,4'-Dihydroxydiphenylsulfone-----	4,4'-Sulfonyldiphenol.
5,5'-Dihydroxy-7,7'-disulfonic-2,2'-dinaphthylamine--	6,6'-Iminobis[1-naphthol-3-sulfonic acid].
Dihydroxyethylaniline-----	2,2'-(Phenylimino)diethanol.
N,N-Di(β-hydroxyethyl)aniline-----	2,2'-(Phenylimino)diethanol.
Dihydroxyethyl-3-toluidine-----	2,2'-(m-Tolylimino)diethanol.
N,N-Di(β-hydroxyethyl)-m-toluidine-----	2,2'-(m-Tolylimino)diethanol.
3',4'-Dihydroxy-2-methylaminoacetophenone-----	Adrenalone.
1,5-Dihydroxynaphthalene-----	1,5-Naphthalenediol.
2,3-Dihydroxynaphthalene-----	2,3-Naphthalenediol.
1,8-Dihydroxynaphthalene-3,6-disulfonic acid-----	4,5-Dihydroxy-2,7-naphthalenedisulfonic acid.
1,8-Dihydroxynaphthalene-4-sulfonic acid-----	4,5-Dihydroxy-1-naphthalenesulfonic acid.
2,3-Dihydroxynaphthalene-6-sulfonic acid-----	6,7-Dihydroxy-2-naphthalenesulfonic acid.
β-Di-p-hydroxyphenylpropane-----	4,4'-Isopropylidenediphenol.
7,8-Diketoacenaaphthene-----	Acenaphthenequinone.
2,3-Dimethoxybenzaldehyde-----	o-Veratraldehyde.
3,4-Dimethoxybenzaldehyde-----	Veratraldehyde.
o-Dimethoxybenzene-----	Veratrole.
1,2-Dimethoxybenzene-----	Veratrole.
3,3'-Dimethoxybenzidine-4,4'-diisocyanate-----	Isocyanic acid, 3,3'-dimethoxy-4,4'-biphenylene ester.
4,4'-Dimethoxybenzoin-----	p-Anisoin.
p,p'-Dimethoxybenzoylphenylcarbinol-----	p-Anisoin.
3,4-Dimethoxybenzyl alcohol-----	Veratryl alcohol.
3,3'-Dimethoxy-4,4'-biphenylbis[3-methyl-3-triazeneethanesulfonic acid].	3,3'-Dimethoxy-4,4'-bis[3-methyl-3-sulfoethyltriazen-1-yl]biphenyl.
N,N'-(3,3'-Dimethoxy-4,4'-biphenylenebisazo)bis(N-methylaurine).	3,3'-Dimethoxy-4,4'-bis[3-methyl-3-sulfoethyltriazen-1-yl]biphenyl.
2,2'-(3,3'-(3,3'-Dimethoxy-4,4'-biphenylene)bis(1-methylazoamino))di(ethanesulfonic acid).	3,3'-Dimethoxy-4,4'-bis[3-methyl-3-sulfoethyltriazen-1-yl]biphenyl.
1,1'-(3,3'-Dimethoxy-4,4'-biphenylene)bis(3-methyl-3-sulfoethyl)triazene).	3,3'-Dimethoxy-4,4'-bis[3-methyl-3-sulfoethyltriazen-1-yl]biphenyl.
Di-p-methoxyethylchalcone-----	α-Ethyl-4,4'-dimethoxychalcone.
4,4'-Dimethoxy-α-hydroxy-α-phenylacetone-----	p-Anisoin.
N-(2,5-Dimethoxy-4-nitrophenyl)benzamide-----	2',5'-Dimethoxy-4'-nitrobenzanilide.
N-(2,5-Dimethoxyphenyl)benzamide-----	2',5'-Dimethoxybenzanilide.
Dimethylacetanilide-----	Acetoylhydride.
Dimethylaminoacetylcatechol-----	3,4'-Dihydroxy-2-dimethylaminoacetophenone.
4-Dimethylamino-2,3-dimethyl-1-phenyl-3-pyrazolin-5-one.	Aminopyrine.

Cyclic intermediates: Glossary of synonymous names--Continued

Common name	Standard (Chemical Abstracts) name
N,N-Dimethyl-3-aminophenol-----	m-(Dimethylamino)phenol.
Dimethylaniline-----	Xylidine.
Dimethylbenzene-----	Xylene.
2,4-Dimethylbenzenesulfonanilide-----	p-Toluenesulfono-o-toluidine.
2,2'-Dimethylbenzidine-----	m-Tolidine.
3,3'-Dimethylbenzidine-----	o-Tolidine.
2,4-Dimethyl-6-tert-butylacetophenone-----	2'-tert-Butyl-4',6'-dimethylacetophenone.
1,3-Dimethyl-5-tert-butylbenzene-----	5-tert-Butyl-m-xylene.
2,7-Dimethylceroxanol-----	2,8-Dimethyl-1,3b-hydroxy-9(13b)-ceroxenone.
Dimethyldianthraquinonyl-----	2,2'-Dimethyl-1,1'-bianthraquinone.
2,2'-Dimethyl-1,1'-dianthraquinonylamine-----	1,1'-Iminobis[2-methylanthraquinone].
Dimethylhydroresorcinol-----	Dimethyl-1,3-cyclohexanedione.
3,3'-Dimethyl-4,4'-methylenediphenyl isocyanate-----	Isocyanic acid, 2,2'-dimethyl-4,4'-methylenediphenylene ester.
Dimethyl- α -naphthylamine-----	N,N-Dimethyl-1-naphthylamine.
2,3-Dimethyl-5-oxo-1-phenyl-3-pyrazoline-4-carboxylic acid.	Antipyrine.
2,3-Dimethyl-1-phenyl-3-pyrazolin-5-one-----	m-Toluquinaldine.
2,7-Dimethylquinoline-----	Isotolanthrone.
Dinaphtho[1,2,3-cd,1',2',3'-lm]perylene-9,18-dione-----	Violanthrone.
Dinaphtho[1,2,3-cd,3',2',1'-lm]perylene-5,10-dione-----	p-Dinitrobenzene.
1,4-Dinitrobenzene-----	m-Dinitrobenzene.
2,4-Dinitrobenzene-----	1-Chloro-2,4-dinitrobenzene.
Dinitrochlorobenzene-----	4-Chloro-3,5-dinitrobenzenesulfonic acid [SO ₃ H=1].
Dinitrochlorobenzenesulfonic acid-----	4-Chloro-3,5-dinitrobenzoic acid [COOH=1].
3,5-Dinitro-4-chlorobenzoic acid-----	4-Chloro-2,6-dinitrophenol [OH=1].
2,6-Dinitro-4-chlorophenol-----	2-Cyclohexyl-4,6-dinitrophenol [OH=1].
Dinitro-o-cyclohexylphenol-----	1,1-Iminobis[4-nitroanthraquinone].
4,4'-Dinitro-1,1'-dianthraquinonylamine-----	Dinitro(3,3'-bi-7H-benz[de]anthracene)-7,7'-dione.
Dinitrodibenzanthryl-----	p-(2,4-Dinitroanilino)phenol.
Dinitrohydroxydiphenylamine-----	4,4'-Methylenebis[N,N-dimethyl-2-nitroaniline].
Dinitrotetramethyldiaminodiphenylmethane-----	3,5-Dinitro-o-toluenesulfonic acid [SO ₃ H=1].
2,4-Dinitrotoluenesulfonic acid-----	Acenaphthequinone.
1,2-Dioxacenaphthene-----	4,5-Dihydroxy-1-naphthalenesulfonic acid.
Di oxy S acid-----	Biphenol.
Diphenol-----	Biphenyl.
Diphenyl-----	2,4-Dianilino-1-hydroxyanthraquinone.
2,4-Diphenylamine-1-hydroxyanthraquinone-----	2,4-Dianilino-1-hydroxyanthraquinone.
2,4-Diphenylamino-1-oxyanthraquinone-----	1,5-Diphenylcarbohydrazide.
Diphenylcarbazide-----	Carbazole.
Diphenyleneimine-----	Dibenzofuran.
Diphenylene oxide-----	8-Diphenylamino-1,6-naphthalenedisulfonic acid.
Diphenyl epsilon acid-----	Phenyl ether.
Diphenyl ether-----	Benzophenone.
Diphenyl ketone-----	Benzhydrol.
Diphenylmethanol-----	Phenyl ether.
Diphenyl oxide-----	Chalcone.
1,3-Diphenyl-2-propen-1-one-----	Dichlorophenylsilane.
Diphenyl silicon dichloride-----	Carbanilide.
1,3-Diphenylurea-----	Carbanilide.
N,N-Diphenylurea-----	Carbanilide.
sym-Diphenylurea-----	Carbanilide.
Dipyrzole dianthrone-----	[3,3'-Bianthra[1,9]pyrazole]-6,6'(2H,2'H)-dione.
1,3-Di-p-toluidineanthraquinone-----	1,3-Di(p-toluidino)anthraquinone.
1,4-Di-p-toluidineanthraquinone-----	1,4-Di(p-toluidino)anthraquinone.
1,3-Di(p-tolylamino)anthraquinone-----	1,3-Di(p-toluidino)anthraquinone.
1,4-Di-p-tolylaminoanthraquinone-----	1,4-Di(p-toluidino)anthraquinone.
S-Dixenylthiourea-----	4,4'-Diphenylthiocarbaniol.
Durene-----	1,2,4,5-Tetramethylbenzene.
N-Ethanol-N-ethyl-4-nitrosoaniline-----	2-(N-Ethyl-4-nitrosoanilino)ethanol.
2-Ethanolpyridine-----	2-Pyridineethanol.
2-Ethoxyaniline-----	o-Phenetidine [NH ₂ =1].
4-Ethoxyaniline-----	p-Phenetidine [NH ₂ =1].
2-Ethoxy-6-sulfonaphthalene-----	6-Ethoxy-2-naphthalenesulfonic acid.
Ethyl-p-aminobenzoate-----	p-Aminobenzoic acid, ethyl ester.

Cyclic intermediates: Glossary of synonymous names--Continued

Common name	Standard (Chemical Abstracts) name
Ethyl-o-amino-p-cresol-----	3-Ethylamino-p-cresol [OH=1].
Ethylaniline (mono)-----	N-Ethylaniline.
N,N-Ethylbenzylaniline-----	N-Ethyl-N-phenylbenzylamine.
Ethylbenzylanilinesulfonic acid-----	α -(N-Ethylanilino)-p-toluenesulfonic acid [SO ₃ H=1].
Ethylbenzyl-m-toluidine-----	N-Benzyl-N-ethyl-m-toluidine [NH ₂ =1].
Ethylbenzyl-m-toluidino-o-sulfonic acid-----	4-(N-Benzyl-N-ethylamino)-o-toluenesulfonic acid [SO ₃ H=1].
Ethylene glycol monophenylether-----	2-Phenoxyethanol.
Ethyl hydrol-----	4,4'-Bis[diethylamino]benzhydrol.
N-Ethyl-N-(β -hydroxyethyl)aniline-----	2-(N-Ethylanilino)ethanol.
Ethyl ketone base-----	4,4'-Bis[diethylamino]benzophenone.
2-[1-Ethyl-3-(2-methoxy-5-nitrophenyl)diazoamino]-5-sulfobenzoic acid-----	2-[1-Ethyl-3-(2-methoxy-5-nitrophenyl)triazen-3-yl]-5-sulfobenzoic acid.
5-Ethyl-2-methylpyridine-----	5-Ethyl-2-picoline.
p-Ethylnitrobenzene-----	1-Ethyl-4-nitrobenzene.
Ethyl-p-nitrobenzoate-----	p-Nitrobenzoic acid, ethyl ester.
Ethyl-p-nitrobenzoylacetate-----	p-Nitrobenzoyl acetic acid, ethyl ester.
Ethyl phenyl ether-----	Phenetole.
Ethylsulfobenzylaniline-----	α -(N-Ethylanilino)-p-toluenesulfonic acid [SO ₃ H=1].
N-Ethyl-o-toluidine-p-sulfonic acid-----	3-Ethylamino-p-toluenesulfonic acid [SO ₃ H=1].
Fast red TR base-----	4-Chloro-o-toluidine [NH ₂ =1].
p-Formylaniline-----	p-Aminobenzaldehyde.
p-Formyl-N,N-diethylaniline-----	p-(Diethylamino)benzaldehyde.
4-Formyl-3-pyrazolin-5-one-----	5-Oxo-3-pyrazoline-4-carboxaldehyde.
G acid-----	2-Naphthol-6,8-disulfonic acid.
Gamma acid-----	7-Amino-1-naphthol-3-sulfonic acid.
Gamma disulfonic acid-----	7-Amino-1-naphthol-3,6-disulfonic acid.
Glycerolmonoethylaniline-----	3-(N-Ethylanilino)-1,2-propanediol.
H acid-----	8-Amino-1-naphthol-3,6-disulfonic acid.
Halocerin-----	6,9-Dichloro-2-methoxyacridine.
Hexahydrobenzoic acid-----	Cyclohexanecarboxylic acid.
Hexahydropyridine-----	Piperidine.
Homophthalic acid-----	α -Carboxy-o-toluic acid.
α -m-Homosalicyclic acid-----	2,4-Cresotic acid [COOH=1].
p-Homosalicyclic acid-----	2,5-Cresotic acid [COOH=1].
Homoveratric acid-----	(3,4-Dimethoxyphenyl)acetic acid.
o-Homoveratric acid-----	(2,3-Dimethoxyphenyl)acetic acid.
Homoveratronic acid-----	(3,4-Dimethoxyphenyl)acetonitrile.
Homoveratrylamine-----	3,4-Dimethoxyphenethylamine.
1,2,1,2-Hydrazinedibromoanthraquinone-----	7,16-Dibromoindanthrene.
Hydrol-----	4,4'-Bis(dimethylamino)benzhydrol.
Hydroquinone dimethyl ether-----	p-Dimethoxybenzene.
1-Hydroxy-4-aminoanthraquinone-----	1-Amino-4-hydroxyanthraquinone.
7-Hydroxyocumarin-----	Umbelliferone.
4-Hydroxydiphenol-----	p-Phenylphenol.
β -Hydroxyethyl-o-chloroaniline-----	2-(o-Chloroanilino)ethanol.
Hydroxyethylethylaniline-----	2-(N-Ethylanilino)ethanol.
Hydroxyethylmethylaniline-----	2-(N-Methylanilino)ethanol.
N-(β -Hydroxyethyl)-N-methylaniline-----	2-(N-Methylanilino)ethanol.
Hydroxyethyl-3-toluidine-----	2-(m-Toluidino)ethanol.
2-Hydroxymetanic acid-----	6-Amino-1-phenol-2-sulfonic acid.
4-Hydroxymetanic acid-----	2-Amino-1-phenol-4-sulfonic acid.
2-Hydroxy-3-methoxybenzaldehyde-----	o-Vanillin.
2-Hydroxy-3-methylbenzoic acid-----	2,3-Cresotic acid [COOH=1].
2-Hydroxy-4-methylbenzoic acid-----	2,4-Cresotic acid [COOH=1].
2-Hydroxy-5-methylbenzoic acid-----	2,5-Cresotic acid [COOH=1].
7-Hydroxy-4-methylcoumarin-----	4-Methylumbelliferone.
2-Hydroxy-5-nitrometanic acid-----	6-Amino-4-nitro-1-phenol-2-sulfonic acid.
4-Hydroxy-5-nitrometanic acid-----	2-Amino-6-nitro-1-phenol-4-sulfonic acid.
2-Hydroxyphenetole-----	o-Ethoxyphenol.
p-Hydroxyphenylarsonic acid-----	p-Hydroxybenzeneearsonic acid [AsO ₃ H ₂ =1].

Cyclic intermediates: Glossary of synonymous names--Continued

Common name	Standard (Chemical Abstracts) name
p-Hydroxyphenyl-n-butylamine-----	p-Butylaminophenol.
3-(p-Hydroxyphenyl)hydratropic acid-----	α -Phenylphloretic acid.
N-(p-Hydroxyphenyl)-2-naphthylamine-----	p-2-Naphthylaminophenol.
β -(p-Hydroxyphenyl)-2-phenylpropionic acid-----	α -Phenylphloretic acid.
3-(p-Hydroxyphenyl)-2-phenylpropionic acid-----	α -Phenylphloretic acid.
4-Hydroxypyridine-2,6-dicarboxylic acid-----	Chelidamic acid.
8-Hydroxyquinoline-----	8-Quinolol.
m-Hydroxytoluene-----	m-Cresol [OH=1].
o-Hydroxytoluene-----	o-Cresol [OH=1].
p-Hydroxytoluene-----	p-Cresol [OH=1].
6-Hydroxy-m-toluidine [NH ₂ =1]-----	2-Amino-p-cresol [OH=1].
2-Hydroxy-p-toluic acid-----	2,4-Cresotic acid [COOH=1].
I acid-----	6-Amino-1-naphthol-3-sulfonic acid.
I acid imide-----	6,6'-Iminobis[1-naphthol-3-sulfonic acid].
2,2'-(1,3-Indandione)quinoline-----	Quinophthalone.
Isobutyl p-nitrobenzoate-----	p-Nitrobenzoic acid, isobutyl ester.
Isodibenzanthrone-----	Isosylantirone.
p-Isopropylaniline-----	Cumidine.
Isopropylbenzene-----	Cumene.
Isopropyl p-toluenesulfonate-----	p-Toluenesulfonic acid, isopropyl ester [SO ₃ H=1].
J acid-----	o-Amino-1-naphthol-3-sulfonic acid.
J acid imide-----	6,6'-Iminobis[1-naphthol-3-sulfonic acid].
J acid urea-----	6,6'-Ureylenebis[1-naphthol-3-sulfonic acid].
K acid-----	8-Amino-1-naphthol-3,5-disulfonic acid.
Koch's acid-----	8-Amino-1,3,6-naphthalenetrisulfonic acid.
Lake red C amine-----	2-Amino-5-chloro-p-toluenesulfonic acid [SO ₃ H=1].
Laurent's acid-----	5-Amino-1-naphthalenesulfonic acid.
Lead styphnate-----	Styphnic acid, lead salt.
Lead trinitroresorcinat-----	Styphnic acid, lead salt.
Leuco-1,4-di(methylamino)anthraquinone-----	1,4-Dimethylamino-9,10-anthradial.
Methandrone-----	3',4'-Dihydroxy-2-(dimethylamino)acetophenone.
Methane base-----	4,4'-Methylenebis[N,N-dimethylaniline].
Methane salt-----	4,4'-Methylenebis[3-hydroxy-2-naphthoic acid].
o-Methoxyacetanilide-----	o-Acetanisidide.
p-Methoxyacetanilide-----	p-Acetanisidide.
4-Methoxy-4'-aminodiphenylamine-----	N-(p-Methoxyphenyl)-p-phenylenediamine.
2-Methoxy-4'-aminodiphenylamine-2'-sulfonic acid-----	o-(4-Amino-2-anisidino)benzenesulfonic acid [SO ₃ H=1].
Methoxyaniline-----	Anisidine [NH ₂ =1].
o-Methoxyanilinemethanesulfonic acid-----	o-Anisidinemethanesulfonic acid.
2-(o-Methoxyanilino)-5-nitrobenzenesulfonic acid-----	2-(o-Anisidino)-5-nitrobenzenesulfonic acid.
o-Methoxyanilino-p-sulfonic acid-----	4-Methoxymetanilic acid [SO ₃ H=1].
Methoxybenzene-----	Anisole.
p-Methoxybenzoic acid-----	Anisic acid [COOH=1].
4-Methoxy-3'-chloro-6'-carboxydiphenylamine-----	4-Chloro-N-(p-methoxyphenyl)anthranilic acid [COOH=1].
2-Methoxy-6,9-dichloroacridine-----	6,9-Dichloro-2-methoxyacridine.
4'-Methoxy-4-nitrodiphenylamine-2'-sulfonic acid-----	2-(p-Anisidino)-5-nitrobenzenesulfonic acid [SO ₃ H=1].
2-[3-(2-Methoxy-4-nitrophenyl)-1-methyltriazeno]-5-sulfobenzoic acid-----	2-[3-(2-Methoxy-4-nitrophenyl)-1-methyltriazen-3-yl]-5-sulfobenzoic acid.
4-Methoxy-m-toluidine [CH ₃ =1]-----	5-Methyl-o-anisidine [NH ₂ =1].
6-Methoxy-m-toluidine [NH ₂ =1]-----	5-Methyl-o-anisidine [NH ₂ =1].
[3-(6-Methoxy-m-tolyl)-1-methyltriazeno]acetic acid-----	[3-(6-Methoxy-m-tolyl)-1-methyltriazen-3-yl]acetic acid.
4-Methyl-4'-aminodiphenylamine-2-sulfonic acid-----	5-Amino-2-(p-toluidino)benzenesulfonic acid.
Methylaminosulfobenzoic acid-----	N-Methyl-5-sulfanthranilic acid.
o-Methylaniline-----	o-Toluidine [NH ₂ =1].
Methylaniline (mono)-----	N-Methylaniline.

Cyclic intermediates: Glossary of synonymous names--Continued

Common name	Standard (Chemical Abstracts) name
2-Methylbenzanthrone-----	2-Methyl-7H-benz[de]anthracen-7-one.
Methylbenzoic acid-----	p-Toluic acid [COOH=1].
Methylenebis(toulenediamine)-----	5,5'-Methylenebis[toluene-2,4-diamine].
4,4'-Methylenebis[o-tolylisocyanate]-----	Isocyanic acid, 3,3'-dimethyl-4,4'-methylenedi-phenylene ester.
Methylenedi-p-phenyleneisocyanate-----	Isocyanic acid, methylenedi-p-phenylene ester.
4,4'-Methylenedi-phenylisocyanate-----	Isocyanic acid, methylenedi-p-phenylene ester.
Methylenedi-o-tolylene isocyanate-----	Isocyanic acid, 3,3'-dimethyl-4,4'-methylenedi-phenylene ester.
2-Methyl-5-ethylpyridine (MEP)-----	5-Ethyl-2-picoline.
4-Methyl-7-hydroxycoumarin-----	4-Methylumbelliferone.
Methyl-p-hydroxy-m-nitrobenzoate-----	p-Hydroxy-m-nitrobenzoic acid, methyl ester.
1-Methyl-4-hydroxyquinolone-----	1-Methyl-4(1H)-quinolone.
3-Methyl-4-(3-methyl-5-oxo-2-pyrazolin-1-yl)benzene-sulfonic acid.	4-(3-Methyl-5-oxo-2-pyrazolin-1-yl)-m-toluenesulfonic acid [SO ₃ H=1].
3-Methyl-1-(2-methyl-4-sulfohenyl)-5-pyrazolone-----	4-(3-Methyl-5-oxo-2-pyrazolin-1-yl)-m-toluenesulfonic acid.
N-(5-Methyl-4-nitro-o-anisyl)-p-toluenesulfonamide-----	N-(5-Methyl-4-nitro-o-methoxyphenyl)-p-toluenesulfonamide.
2-Methyl-5-nitrodiphenylamine-----	5-Nitro-N-phenyl-o-toluidine [NH ₂ =1].
3-Methyl-1-(m-nitrophenyl)-5-pyrazolone-----	3-Methyl-1-(m-nitrophenyl)-2-pyrazolin-5-one.
m-Methylphenol-----	m-Cresol [OH=1].
o-Methylphenol-----	o-Cresol [OH=1].
p-Methylphenol-----	p-Cresol [OH=1].
4-Methyl-m-phenylenediisocyanate-----	Isocyanic acid, 4-methyl-m-phenylene ester.
3-Methyl-1-phenyl-5-pyrazolone-----	3-Methyl-1-phenyl-2-pyrazolin-5-one.
Methylphenylpyrazolone-3-sulfonic acid-----	m-(3-Methyl-5-oxo-2-pyrazolin-1-yl)benzenesulfonic acid.
Methylphenylpyrazolone-4-sulfonic acid-----	p-(3-Methyl-5-oxo-2-pyrazolin-1-yl)benzenesulfonic acid.
2-Methylpiperidine-----	2-Pipecoline.
4-(3-Methyl-5-pyrazolone)-m-toluenesulfonic acid-----	4-(3-Methyl-5-oxo-2-pyrazolin-1-yl)-m-toluenesulfonic acid.
Methylpyridine-----	Picoline.
2-Methylquinoline-----	Quinaldine.
3-Methyl-1-(m-sulfohenyl)-2-pyrazolin-5-one-----	m-(3-Methyl-5-oxo-2-pyrazolin-1-yl)benzenesulfonic acid.
3-Methyl-1-(p-sulfohenyl)-2-pyrazolin-5-one-----	p-(3-Methyl-5-oxo-2-pyrazolin-1-yl)benzenesulfonic acid.
Methylsulfophenylpyrazolone, mixed-----	m(and p)-(3-Methyl-5-oxo-2-pyrazolin-1-yl)benzenesulfonic acid.
3-Methyl-1-(p-sulfohenyl)-5-pyrazolone-----	p-(3-Methyl-5-oxo-2-pyrazolin-1-yl)benzenesulfonic acid.
Methyl-p-toluenesulfonate-----	p-Toluenesulfonic acid, methyl ester [SO ₃ H=1].
β-Methylumbelliferone-----	4-Methylumbelliferone.
2-Methyl-5-vinylpyridine (MVP)-----	5-Vinyl-2-picoline.
Michler's hydrol-----	4,4'-Bis[dimethylamino]benzhydrol.
Michler's ketone-----	4,4'-Bis[dimethylamino]benzophenone.
Monobromobenzene-----	Bromobenzene.
Monochlorobenzene-----	Chlorobenzene (mono).
Naphthalene sodium sulfonates-----	Naphthalenesulfonic acids, sodium salt (mixed).
Naphthalene-β-thioglycolic acid-----	(2-Naphthylthio)acetic acid.
2(1H)-peri-Naphthazolone-----	Naphthostyryl.
o-Naphthionic acid-----	1-Amino-2-naphthalenesulfonic acid.
α-Naphthol-----	1-Naphthol.
β-Naphthol-----	2-Naphthol.
1-Naphthol-8-chloro-3,6-disulfonic acid-----	8-Chloro-1-naphthol-3,6-disulfonic acid.
1-Naphthol ethyl ether-----	2-Ethoxynaphthalene.
Naphthosulfochloride-----	1-Naphthalenesulfonyl chloride.
1,8-Naphthosultone-----	1-Naphthol-8-sulfonic acid sultone.
Naphthylacetoneitrile-----	Naphthaleneacetoneitrile.
α-Naphthylamine-----	1-Naphthylamine.
β-Naphthylamine-----	2-Naphthylamine.
1-Naphthylamine-3,6-disulfonic acid-----	5-Amino-2,7-naphthalenedisulfonic acid.

Cyclic intermediates: Glossary of synonymous names--Continued

Common name	Standard (Chemical Abstracts) name
1-Naphthylamine-3,8-disulfonic acid	8-Amino-1,6-naphthalenedisulfonic acid.
1-Naphthylamine-4,7-disulfonic acid	4-Amino-1,6-naphthalenedisulfonic acid.
1-Naphthylamine-4,8-disulfonic acid	4-Amino-1,5-naphthalenedisulfonic acid.
2-Naphthylamine-1,5-disulfonic acid	2-Amino-1,5-naphthalenedisulfonic acid.
2-Naphthylamine-3,6-disulfonic acid	3-Amino-2,7-naphthalenedisulfonic acid.
2-Naphthylamine-4,8-disulfonic acid	3-Amino-1,5-naphthalenedisulfonic acid.
2-Naphthylamine-5,7-disulfonic acid	6-Amino-1,3-naphthalenedisulfonic acid.
2-Naphthylamine-6,8-disulfonic acid	7-Amino-1,3-naphthalenedisulfonic acid.
1-Naphthylamine-2-sulfonic acid	1-Amino-2-naphthalenesulfonic acid.
1-Naphthylamine-3-sulfonic acid	4-Amino-2-naphthalenesulfonic acid.
1-Naphthylamine-4-sulfonic acid	Naphthalenic acid.
1-Naphthylamine-5-sulfonic acid	5-Amino-1-naphthalenesulfonic acid.
1-Naphthylamine-6-sulfonic acid	5-Amino-2-naphthalenesulfonic acid.
1-Naphthylamine-6 (and 7)-sulfonic acid	5 (and 8)-Amino-2-naphthalenesulfonic acid.
1-Naphthylamine-7-sulfonic acid	8-Amino-2-naphthalenesulfonic acid.
1-Naphthylamine-8-sulfonic acid	8-Amino-1-naphthalenesulfonic acid.
2-Naphthylamine-1-sulfonic acid	2-Amino-1-naphthalenesulfonic acid.
2-Naphthylamine-5-sulfonic acid	6-Amino-1-naphthalenesulfonic acid.
2-Naphthylamine-6-sulfonic acid	6-Amino-2-naphthalenesulfonic acid.
2-Naphthylamine-8-sulfonic acid	7-Amino-1-naphthalenesulfonic acid.
1-Naphthylamine-3,6,8-trisulfonic acid	8-Amino-1,3,6-naphthalenetrisulfonic acid.
2-Naphthylamine-3,6,8-trisulfonic acid	7-Amino-1,3,6-naphthalenetrisulfonic acid.
1-Naphthylamino-2-carboxylic acid anthraquinone	1-(1-Naphthylamino)-2-anthraquinonecarboxylic acid.
1-Naphthylisocyanate	Isocyanic acid, 1-naphthyl ester.
α -Naphthyl isocyanate	Isocyanic acid, 1-naphthyl ester.
2-Naphthylmercaptoacetic acid	(2-Naphthylthio)acetic acid.
Naphthylmethanesulfonic acid	1-Naphthalenemethanesulfonic acid.
β -Naphthylthioglycolic acid	(2-Naphthylthio)acetic acid.
Neville & Winther's acid	1-Naphthol-4-sulfonic acid.
3-Nitro-4-aminoanisole [CH ₃ O=1]	2-Nitro-p-aminisidine [NH ₂ =1].
4-Nitro-2-aminoanisole [CH ₃ O=1]	5-Nitro-o-aminisidine [NH ₂ =1].
5-Nitro-2-aminoanisole [CH ₃ O=1]	4-Nitro-o-aminisidine [NH ₂ =1].
6-Nitro-2-aminoanisole [CH ₃ O=1]	3-Nitro-o-aminisidine [NH ₂ =1].
o-Nitro-p-aminophenol	4-Amino-2-nitrophenol.
p-Nitro-o-aminophenol	2-Amino-4-nitrophenol.
5-Nitro-o-aminophenol	2-Amino-5-nitrophenol.
4-Nitro-2-aminophenol-6-sulfonic acid	6-Amino-4-nitro-1-phenol-2-sulfonic acid.
6-Nitro-2-aminophenol-4-sulfonic acid	2-Amino-6-nitro-1-phenol-4-sulfonic acid.
4-Nitro-4'-amino-2-sulfodiphenylamine	2-(p-Aminoanilino)-5-nitrobenzenesulfonic acid.
5-Nitro-2-aminotoluene [CH ₃ =1]	4-Nitro-o-toluidine [NH ₂ =1].
p-Nitroaniline-o-sulfonic acid	2-Amino-5-nitrobenzenesulfonic acid.
m-Nitro-p-ansidine [CH ₃ O=1]	2-Nitro-p-ansidine [NH ₂ =1].
3-Nitro-p-ansidine [CH ₃ O=1]	2-Nitro-p-ansidine [NH ₂ =1].
4-Nitro-2-ansidine [CH ₃ O=1]	5-Nitro-o-ansidine [NH ₂ =1].
5-Nitro-2-ansidine [CH ₃ O=1]	4-Nitro-o-ansidine [NH ₂ =1].
2-Nitroanisole-4-sulfodiethylamide	N,N-Diethyl-3-nitro-p-methoxybenzenesulfonamide.
1-Nitroanthraquinone-2-carboxylic acid	1-Nitro-2-anthraquinonecarboxylic acid.
Nitrobenzene-2,5-disulfonic acid	2-Nitro-p-benzenedisulfonic acid.
1-Nitrobenzene-4-sulfonic acid	p-Nitrobenzenesulfonic acid [SO ₃ H=1].
2-Nitrobenzenesulfonic acid	o-Nitrobenzenesulfonic acid [SO ₃ H=1].
3-Nitrobenzenesulfonic acid	m-Nitrobenzenesulfonic acid [SO ₃ H=1].
3-Nitrobenzenesulfonyl chloride	m-Nitrobenzenesulfonyl chloride [SO ₂ Cl=1].
m-Nitrobenzoyl J acid	6-(m-Nitrobenzamido)-1-naphthol-3-sulfonic acid.
p-Nitrobenzoyl J acid	6-(p-Nitrobenzamido)-1-naphthol-3-sulfonic acid.
m-Nitrochlorobenzene	1-Chloro-3-nitrobenzene.
o-Nitrochlorobenzene	1-Chloro-2-nitrobenzene.
p-Nitrochlorobenzene	1-Chloro-4-nitrobenzene.
2-Nitro-1-chlorobenzene-4-sulfobutylamide	N-Butyl-4-chloro-3-nitrobenzenesulfonamide.
2-Nitro-1-chlorobenzene-4-sulfodiethylamide	4-Chloro-N,N-diethyl-3-nitrobenzenesulfonamide.
o-Nitrochlorobenzene-p-sulfonic acid	4-Chloro-3-nitrobenzenesulfonic acid.
p-Nitrochlorobenzene-o-sulfonic acid	2-Chloro-5-nitrobenzenesulfonic acid.
3-Nitro-4-chlorobenzoylbenzoic acid	o-(4-Chloro-3-nitrobenzoyl)benzoic acid.
4-Nitro-6-chloro-1,3-dimethoxybenzene	t-Chloro-1,3-dimethoxy-4-nitrobenzene.
2-Nitro-4-chlorophenol	4-Chloro-2-nitrophenol.
2-Nitro-4-chlorophenol-6-sulfonic acid	4-Chloro-6-nitro-1-phenol-2-sulfonic acid.
m-Nitro-p-chlorotoluene	4-Chloro-3-nitrotoluene.
o-Nitro-p-chlorotoluene	4-Chloro-2-nitrotoluene.

Cyclic intermediates: Glossary of synonymous names--Continued

Common name	Standard (Chemical Abstracts) name
p-Nitro-o-chlorotoluene-----	2-Chloro-4-nitrotoluene.
2-Nitro-4-chlorotoluene-----	4-Chloro-2-nitrotoluene.
m-Nitro-p-cresol [CH ₃ =1]-----	2-Nitro-p-cresol [OH=1].
Nitrocresyl methyl ether-----	4-Methyl-2-nitroanisole [CH ₃ O=1].
Nitro-p-dichlorobenzene-----	1,4-Dichloro-2-nitrobenzene.
o-Nitrodiphenyl-----	2-Nitrobiphenyl.
p-Nitrodiphenyl-----	4-Nitrobiphenyl.
4-Nitro-2-diphenylaminesulfonic acid-----	2-Anilino-5-nitrobenzenesulfonic acid [SO ₃ H=1].
4-Nitrodiphenylamino-2-sulfonic acid-----	2-Anilino-5-nitrobenzenesulfonic acid [SO ₃ H=1].
2-Nitrohydroquinone, diethyl ether-----	1,4-Diethoxy-2-nitrobenzene.
2-Nitrohydroquinone, dimethyl ether-----	1,4-Dimethoxy-2-nitrobenzene.
3-Nitro-4-hydroxy-1-phenylarsonic acid-----	4-Hydroxy-3-nitrobenzenearsonic acid.
6-Nitro-4-methoxy-3-aminotoluene [CH ₃ =1]-----	5-Methyl-4-nitro-o-anisidine [NH ₂ =1].
2-Nitro-4-methoxy-5-(p-toluenesulfonamido)toluene-----	N-(5-Methyl-4-nitro-o-methoxyphenyl)-p-toluenesulfonamide.
4-Nitro-1-methylaniline-----	5-Nitro-o-toluidine [NH ₂ =1].
1-Nitro-2-methylanthraquinone-----	2-Methyl-1-nitroanthraquinone.
2-Nitronaphthalene-4,3-disulfonic acid-----	3-Nitro-1,5-naphthalenedisulfonic acid.
7-Nitro-1,5-naphthalenedisulfonic acid-----	3-Nitro-1,5-naphthalenedisulfonic acid.
4-Nitronaphthalic acid tolylimide-----	4-Nitro-N-(p-tolyl)naphthalimide.
2-Nitro-1-phenol-4,6-disulfonic acid-----	6-Nitro-1-phenol-2,4-disulfonic acid.
3-Nitrophenylhydrazine-----	m-Nitrophenylhydrazine.
p-(p-Nitrophenylmercapto)aniline-----	p-(p-Nitrophenylthio)aniline.
1-(m-Nitrophenyl)-5-pyrazolone-3-carboxylic acid-----	1-(m-Nitrophenyl)-5-oxo-2-pyrazoline-3-carboxylic acid.
Nitropyrazolonecarboxylic acid-----	1-(m-Nitrophenyl)-5-oxo-2-pyrazoline-3-carboxylic acid.
p-Nitrosodiethylaniline-----	N,N-Diethyl-p-nitrosoaniline.
p-Nitrosodimethylaniline-----	N,N-Dimethyl-p-nitrosoaniline.
Nitroso-β-naphthol-----	1-Nitroso-2-naphthol.
3-Nitro-5-stearoylamino-p-toluenesulfonic acid-----	3-Nitro-5-stearoylamido-p-toluenesulfonic acid [SO ₃ H=1].
4-Nitrotolueneanilide-----	5-Nitro-n-phenyl-o-toluidine [NH ₂ =1].
6-Nitro-3-(p-toluenesulfone)amino-4-methoxytoluene-----	N-(5-Methyl-4-nitro-o-methoxyphenyl)-p-toluenesulfonamide.
4'-Nitro-p-toluenesulfone-o-toluide-----	4'-Nitro-p-toluenesulfono-o-toluide.
o-Nitrotoluenesulfonic acid-----	3-Nitro-p-toluenesulfonic acid [SO ₃ H=1].
p-Nitrotoluene-o-sulfonic acid-----	5-Nitro-o-toluenesulfonic acid [SO ₃ H=1].
m-Nitro-o-toluidine [CH ₃ =1]-----	4-Nitro-o-toluidine [NH ₂ =1].
m-Nitro-p-toluidine [CH ₃ =1]-----	2-Nitro-p-toluidine [NH ₂ =1].
p-Nitro-o-toluidine [CH ₃ =1]-----	5-Nitro-o-toluidine [NH ₂ =1].
3-Nitro-4-toluidine [CH ₃ =1]-----	2-Nitro-p-toluidine [NH ₂ =1].
4-Nitro-2-toluidine [CH ₃ =1]-----	5-Nitro-o-toluidine [NH ₂ =1].
5-Nitro-2-toluidine [CH ₃ =1]-----	4-Nitro-o-toluidine [NH ₂ =1].
Nitrotoluidine sulfone-----	4'-Nitro-p-toluenesulfono-o-toluide.
6-Nitro-o-toluidine-4-sulfonic acid-----	4-Amino-5-nitro-m-toluenesulfonic acid [SO ₃ H=1].
N-(4-Nitro-o-tolyl)-p-toluenesulfonamide-----	4'-Nitro-p-toluenesulfono-o-toluide.
5-Nitro-1,2,4-trichlorobenzene-----	1,2,4-Trichloro-5-nitrobenzene.
Nitroviolanthrone-----	16-Nitroviolanthrone.
p-Nitro-o-xylene-----	4-Nitro-o-xylene.
4-Nitro-1,3-xylene-----	4-Nitro-m-xylene.
2-Nitro-1,4-xylol-----	2-Nitro-p-xylene.
4-Nitro-1,3-xylol-----	4-Nitro-m-xylene.
Orthanilic acid-----	o-Aminobenzenesulfonic acid [SO ₃ H=1].
Oxalyl-p-nitroaniline-----	4-Nitrooxanilic acid.
Oxalyl-p-nitrophenylamine-----	4'-Nitrooxanilic acid.
Oxalyl-m-phenyldiamine-----	3'-Aminooxanilide.
Oxalyl-p-phenyldiamine-----	4'-Aminooxanilide.
4-Oxo-4H-pyran-2,6-dicarboxylic acid-----	Chelidonic acid.
2-Oxycarbazole-----	2-Hydroxycarbazole.
α-Oxynaphthoic acid-----	1-Hydroxy-2-naphthoic acid.
β-Oxynaphthoic acid-----	3-Hydroxy-2-naphthoic acid.
Pentaanthramide-----	1,4,5,8-Tetrakis[1',1'',1''',1''''-anthraquinonylamino]anthraquinone.

Cyclic intermediates: Glossary of synonymous names-- Continued

Common name	Standard (Chemical Abstracts) name
Peri acid-----	8-Amino-1-naphthalenesulfonic acid.
Phenethylene-----	Styrene.
Phenol, sodium salt-----	Sodium phenoxide.
1-Phenylacetylcarbinol-----	1-Hydroxy-1-phenyl-2-propanone.
3-Phenylacrylophenone-----	Chalcone.
2-Phenylamine-5-naphthol-7-sulfonic acid-----	6-Anilino-1-naphthol-3-sulfonic acid.
2-Phenylamine-8-naphthol-6-sulfonic acid-----	7-Anilino-1-naphthol-3-sulfonic acid.
N-Phenylaniline-----	Diphenylamine.
Phenylarsonic acid-----	Benzenearsenic acid.
N-Phenylazoaniline-----	1,3-Diphenyltriazene.
Phenylbiphenyl-----	Terphenyl.
Phenyl bromide-----	Bromobenzene.
1-Phenyl-3-carboxy-5-pyrazolone-4-sulfonic acid-----	5-Oxo-1-(p-sulfophenyl)-2-pyrazoline-3-carboxylic acid.
Phenyldiethanolamine-----	2,2'-(Phenylimino)diethanol.
N,N'-p-Phenylenebis[acetamide]-----	N,N'-(p-Phenylene)bis[acetamide].
m-Phenylenediaminedisulfonic acid-----	4,6-Diamino-m-benzenedisulfonic acid.
m-Phenylenediaminesulfonic acid-----	2,4-Diaminobenzenesulfonic acid.
p-Phenylenediaminesulfonic acid-----	2,5-Diaminobenzenesulfonic acid.
Phenylene nerol acid-----	5-Amino-2-(p-aminonilino)benzenesulfonic acid.
Phenylethanolamine-----	2-Anilinoethanol.
Phenyl gamma acid-----	7-Anilino-1-naphthol-3-sulfonic acid.
Phenylhydrazine-p-sulfonic acid-----	p-Hydrazinobenzenesulfonic acid [SO ₂ H=1].
Phenylhydrazine-2-sulfonic acid-----	o-Hydrazinobenzenesulfonic acid [SO ₂ H=1].
Phenylhydrazine-3-sulfonic acid-----	m-Hydrazinobenzenesulfonic acid [SO ₂ H=1].
N-Phenyl-N'-(β-hydroxyethyl)thiourea-----	1-(2-Hydroxyethyl)-3-phenyl-2-thiourea.
Phenyl isocyanate-----	Isocyanic acid, phenyl ester.
Phenyl J acid-----	o-Anilino-1-naphthol-3-sulfonic acid.
Phenylmalonic ester-----	Phenylmalonic acid, diethyl ester.
Phenylmethanesulfonic acid-----	α-Toluenesulfonic acid.
Phenyl-β-naphthylamine-----	N-Phenyl-2-naphthylamine.
N-Phenyl-1-naphthylamine-8-sulfonic acid-----	8-Anilino-1-naphthalenesulfonic acid.
α-Phenyl-β-(4-oxophenyl)propionic acid-----	α-Phenylphoretic acid.
Phenyl peri acid-----	8-Anilino-1-naphthalenesulfonic acid.
N-Phenyl-p-phenylenediaminesulfonic acid-----	5-Amino-2-anilinobenzenesulfonic acid [SO ₂ H=1].
1-Phenyl-5-pyrazolone-3-carboxylic acid, ethyl ester-----	5-Oxo-1-phenyl-2-pyrazoline-3-carboxylic acid, ethyl ester.
Phenyl silicon chloride-----	Trichlorophenylsilane.
Phenylstyryl ketone-----	Chalone.
1-Phenyl-4'-sulfo-5-pyrazolone-3-carboxylic acid-----	5-Oxo-1-(p-sulfophenyl)-2-pyrazoline-3-carboxylic acid.
Phthalyl chloride-----	Phthaloyl chloride.
3-Piperidino-1-propanol-----	1-Piperidinepropanol.
Piperidinopropyl alcohol-----	1-Piperidinepropanol.
Potassium-3-chloro-6-carboxy-3'-methoxydiphenylamine-----	4-Chloro-N-(m-methoxyphenyl)anthranilic acid, potassium salt [COOH=1].
n-Propyl-p-nitrobenzoate-----	p-Nitrobenzoic acid, n-propyl ester.
Pseudocumene-----	1,2,4-Trimethylbenzene.
Pseudocumidine-----	2,4,5-Trimethylaniline.
Purpuroxanthin-----	Xanthopurpurin.
Pyrazoleanthrone-----	Anthra[1,9]pyrazol-6(2H)-one.
Pyrazoleanthrone yellow-----	[3,3'-Bianthra[1,9]pyrazole]-6,6'(2H,2'H)-dione.
3-Pyrazolin-4-ylacetic acid-----	3-Pyrazoline-4-acetic acid.
3-Pyrazolone-----	3-Pyrazolin-5-one.
5-Pyrazolone-----	2-Pyrazolin-5-one.
Pyrazolone G-----	p-(3-Methyl-5-oxo-2-pyrazolin-1-yl)benzenesulfonic acid.
Pyrazolone T-----	5-Oxo-1-(p-sulfophenyl)-2-pyrazoline-3-carboxylic acid.
2-Pyridylethanol-----	2-Pyridineethanol.
R acid-----	2-Naphthol-3,6-disulfonic acid.
2R acid-----	7-Amino-1-naphthol-3,6-disulfonic acid.
Red XB base-----	5-Chloro-o-toluidine [NH ₂ =1].
Rhoduline acid-----	6,6'-Iminobis[1-naphthol-3-sulfonic acid].

Cyclic intermediates: Glossary of synonymous names--Continued

Common name	Standard (Chemical Abstracts) name
S Acid-----	8-Amino-1-naphthol-5-sulfonic acid.
2S (SS) acid-----	8-Amino-1-naphthol-5,7-disulfonic acid.
Schaeffer's acid-----	2-Naphthol-6-sulfonic acid.
Silver salt-----	2-Antraquinonesulfonic acid, sodium salt.
Sodium carbolate-----	Sodium phenoxide.
Sodium naphthionate-----	Naphthionic acid, sodium salt.
Sodium phenate-----	Sodium phenoxide.
Sodium phenolate-----	Sodium phenoxide.
Sodium-o-phenylphenolate-----	o-Phenylphenol, sodium salt.
Sodium tetrachlorophenolate-----	2,3,4,6-Tetrachlorophenol, sodium salt.
Sodium trichlorophenolate-----	2,4,5-Trichlorophenol, sodium salt.
Styrol-----	Styrene.
Sulfo BB acid-----	2-Benzoyl-4-sulfobenzoic acid [COOH=1].
o-Sulfobenzaldehyde-----	o-Formylbenzenesulfonic acid [SO ₃ H=1].
4-Sulfo-o-benzoylbenzoic acid-----	2-Benzoyl-4-sulfobenzoic acid [COOH=1].
1-Sulfo-5-nitroanthraquinone-----	5-Nitro-1-antraquinonesulfonic acid.
Sulfophenylmethylpyrazolone-----	p-(3-Methyl-5-oxo-2-pyrazolin-1-yl)benzenesulfonic acid.
1-Sulfophenyl-5-pyrazolone-3-carboxylic acid-----	5-Oxo-1-(p-sulfophenyl)-2-pyrazoline-3-carboxylic acid.
Tetraaminoditolylmethane-----	5,5'-Methylenebis[toluene-2,4-diamine].
Tetrachloro-p-benzoquinone-----	Chloranil.
Tetrachloroquinone-----	Chloranil.
Tetraethyldiaminobenzhydrol-----	4,4'-Bis[diethylamino]benzhydrol.
Tetraethyldiaminobenzophenone-----	4,4'-Bis[diethylamino]benzophenone.
Tetraethyldiaminodiphenylmethane-----	4,4'-Methylenebis[N,N-diethylaniline].
Tetraethylaminotriphenylmethane-----	4,4'-Benzylidenebis[N,N-diethylaniline].
Tetrahydrophthalimide-----	4-Cyclohexene-1,2-dicarboximide.
Tetramethylaminoscridine hydrochloride-----	2,7-Bis[diethylamino]acridine hydrochloride.
Tetramethylaminobenzophenone-----	4,4'-Bis[diethylamino]benzophenone.
Tetramethylaminobenzoylhydrol-----	4,4'-Bis[diethylamino]benzhydrol.
Tetramethylaminodiphenylmethane-----	4,4'-Methylenebis[N,N-diethylaniline].
Tetramethylaminotriphenylmethane-----	4,4'-Benzylidenebis[N,N-diethylaniline].
Thioaniline-----	4,4'-Thiodianiline.
Thioanilinedisulfonic acid-----	6,6'-Thiodimethanilic acid [SO ₃ H=1].
p,p'-Thiobis(4-amino-o-benzenesulfonic acid)-----	6,6'-Thiodimethanilic acid [SO ₃ H=1].
Thiosalicylic acid-----	o-Mercaptobenzoic acid [COOH=1].
Tobias acid-----	2-Amino-1-naphthalenesulfonic acid.
α-Toluamide-----	2-Phenylacetamide.
Toluene-2,4-diisocyanate-----	Isocyanic acid, 4 (and 2)-methyl-m-phenylene ester.
p-Toluenesulfochloride-----	p-Toluenesulfonyl chloride [SO ₂ Cl=1].
4-Toluenesulfonamido-1-aminoanthraquinonesulfonic acid-----	1-Amino-4-(p-toluenesulfonamido)-2-antraquinonesulfonic acid.
β-Toluenesulfonic acid-----	p-Toluenesulfonic acid, methyl ester [SO ₃ H=1].
Toluene-2,4,6-triol-----	2-Methylphloroglucinol.
4-Toluic acid-----	p-Toluic acid [COOH=1].
α-Toluic acid-----	Phenylacetic acid.
m-Toluidine-o-sulfonic acid-----	4-Amino-o-toluenesulfonic acid [SO ₃ H=1].
m-Toluidine-p-sulfonic acid-----	2-Amino-p-toluenesulfonic acid [SO ₃ H=1].
o-Toluidine-m-sulfonic acid-----	4-Amino-m-toluenesulfonic acid [SO ₃ H=1].
o-Toluidine-omega-sulfonic acid-----	(o-Toluidino)methanesulfonic acid [SO ₃ H=1].
p-Toluidine-m-sulfonic acid-----	6-Amino-m-toluenesulfonic acid [SO ₃ H=1].
p-Toluidine-o-sulfonic acid-----	5-Amino-o-toluenesulfonic acid [SO ₃ H=1].
p-Toluidine-o-sulfonic acid, isopropyl ester-----	5-Amino-o-toluenesulfonic acid, isopropyl ester [SO ₃ H=1].
3-Toluidine-6-sulfonic acid-----	4-Amino-o-toluenesulfonic acid [SO ₃ H=1].
6-(p-Toluidino)metanilic acid-----	5-Amino-2-(p-toluidino)benzenesulfonic acid.
α-Tolunitrile-----	Phenylacetoneitrile.
4-Tolunitrile-----	p-Tolunitrile.
1,3-(p-Tolylamino)anthraquinone-----	1,3-Di(p-toluidino)anthraquinone.
p-Tolyl-o-benzoic acid-----	o-(p-Tolyl)benzoic acid [COOH=1].
o-Tolylcarbinol-----	o-Methylbenzyl alcohol.
Tolenediamine-----	Tolenediamine.
p-m-Tolenediamine-----	Toluene-2,5-diamine.
4-m-Tolenediamine-----	Toluene-2,4-diamine.

Cyclic intermediates: Glossary of synonymous names-- Continued

Common name	Standard (Chemical Abstracts) name
5-m-Tolylenediamine-----	Toluene-3,5-diamine.
m-Tolylenediaminesulfonic acid-----	4,6-Diamino-m-toluenesulfonic acid [SO ₃ H=1].
m-Tolylene diisocyanates-----	Isocyanic acid, 4(and2)-methyl-m-phenylene ester.
[3-(p-Tolyl)-1-methyltriazeno]acetic acid-----	[3-(p-Tolyl)-1-methyltriazene-3-yl]acetic acid.
Tolyl peri acid-----	8-(p-Toluidino)-1-naphthalenesulfonic acid.
2,4,6-Triaminobenzene trihydrochloride-----	1,3,5-Benzenetriamine trihydrochloride.
2,4,6-Triaminotoluene trihydrochloride-----	Toluene-2,4,6-triamine trihydrochloride.
Trianthraquinonyldi-imide-----	1,4-Bis [1-anthraquinonylamino]anthraquinone.
1,4-Trianthrimide-----	1,4-Bis [1-anthraquinonylamino]anthraquinone.
Trichlorophenylsilicane-----	Trichlorophenylsilane.
1,2,4-Trihydroxyanthraquinone-----	Purpurin.
1,2,6-Trihydroxyanthraquinone-----	Flavopurpurin.
2,4,6-Trihydroxytoluene-----	2-Methylphloroglucinol.
1,3,5-Trimethylbenzene-----	Mesitylene.
2,4,6-Trimethylpyridine-----	s-Collidine.
Trinitrophenol-----	Picric acid.
2,4,6-Trinitroresorcin-----	Styphnic acid.
1,2,4-Trioxanthraquinone-----	Purpurin.
1,3,5-Triphenylhexahydro-s-triazine-----	Hexahydro-1,3,5-triphenyl-s-triazine.
Triphenyl silicon chloride-----	Chlorotriphenylsilane.
3,3'-Ureyleneaniline-----	3,3'-Diaminocarbanilide.
Vinylbenzene-----	Styrene.
Vinyltoluene-----	Methylstyrene.
Violanthrene-----	Dinaphtho [1,2,3-cd,3',2',1'-lm]perylene.
Xenylamine-----	4-Biphenylamine.
m-Xylidine acetate-----	2,4-Xylidine acetate.
m-Xylidinesulfonic acid-----	2-Amino-3,5-xylenesulfonic acid [SO ₃ H=1].
Xylol chloride-----	4-Chloro-m-xylene.

C. List of Colour Index and Common Names for Synthetic Organic Pigments (Toners and Lakes)

In the Commission's reports for 1957 and earlier years, individual toners and lakes were identified by the names by which they were most commonly known in the literature and in the trade. Since 1958 they have been identified by the names used in the second edition of the *Colour Index*.

The following list of all *Colour Index* names which appear in tables 11A and 12 of this report is appended for quick reference. The list gives the common names (and coupling components, in the case of azo pigments) for each *Colour Index* pigment listed.

Synthetic organic pigments: List of Colour Index and common names

Colour Index name	Common name
Pigment Yellow 1-----	Hansa Yellow G (2-nitro-p-toluidine and acetoacetanilide).
Pigment Yellow 3-----	Hansa Yellow 10G (4-chloro-2-nitroaniline and o-chloroacetoacetanilide).
Pigment Yellow 12-----	Benzidine Yellow (3,3'-dichlorobenzidine and acetoacetanilide).
Pigment Yellow 13-----	Benzidine Yellow (3,3'-dichlorobenzidine and 2,4-acetoacetoxylidide).
Pigment Yellow 14-----	Benzidine Yellow (3,3'-dichlorobenzidine and o-acetoacetotoluidide).
Pigment Yellow 17-----	Benzidine Yellow (3,3'-dichlorobenzidine and o-acetoacetanilide).
Pigment Orange 5-----	Dinitroaniline Orange (2,4-dinitroaniline and 2-naphthol).
Pigment Orange 13-----	Benzidine Orange (3,3'-dichlorobenzidine and 3-methyl-1-phenyl-2-pyrazolin-5-one).
Pigment Orange 16-----	Dianisidine Orange (o-dianisidine and acetoacetanilide).
Pigment Red 1-----	Para Red (p-nitroaniline and 2-naphthol).
Pigment Red 2-----	Naphthol Red (2,5-dichloroaniline and Naphthol AS).
Pigment Red 3-----	Toluidine Red (2-nitro-p-toluidine and 2-naphthol).
Pigment Red 4-----	Chlorinated Para Red (2-chloro-4-nitroaniline and 2-naphthol).
Pigment Red 5-----	Naphthol Red (N ¹ ,N ¹ -diethyl-4-methoxymetanilemide and Naphthol AS-1TR).
Pigment Red 13-----	Naphthol Red (2-nitro-p-toluidine and Naphthol AS-D).
Pigment Red 17-----	Naphthol Red (5-nitro-o-toluidine and Naphthol AS-D).
Pigment Red 18-----	Toluidine Maroon (2-nitro-p-toluidine and Naphthol AS-BS).
Pigment Red 22-----	Naphthol Red (5-nitro-o-toluidine and Naphthol AS).
Pigment Red 23-----	Naphthol Red (5-nitro-o-anisidine and Naphthol AS-BS).
Pigment Red 38-----	Pyrazolone Red (3,3'-dichlorobenzidine and 5-oxo-1-phenyl-2-pyrazoline-3-carboxylic acid, ethyl ester).
Pigment Red 48-----	Ferment Red 2B (6-amino-4-chloro-m-toluenesulfonic acid and 3-hydroxy-2-naphthoic acid).
Pigment Red 49-----	Lithol Red R (2-amino-1-naphthalenesulfonic acid and 2-naphthol).
Pigment Red 52-----	Lithol Red 2G ¹ (2-amino-5-chloro-p-toluenesulfonic acid and 3-hydroxy-2-naphthoic acid).
Pigment Red 53-----	Red Lake C (2-amino-5-chloro-p-toluenesulfonic acid and 2-naphthol).
Pigment Red 54-----	Helio Bordeaux BL (1-naphthylamine and 1-naphthol-5-sulfonic acid).
Pigment Red 57-----	Lithol Rubine B (6-amino-m-toluenesulfonic acid and 3-hydroxy-2-naphthoic acid).
Pigment Red 60-----	Pigment Scarlet 3B (anthranilic acid and 2-naphthol-3,6-disulfonic acid).
Pigment Red 63-----	BON Maroon (2-amino-1-naphthalenesulfonic acid and 3-hydroxy-2-naphthoic acid).
Pigment Red 81-----	Rhodamine 6G.
Pigment Red 83-----	Alizarin Red B.
Pigment Red 90-----	Bromo Acid; Eosin.
(Acid Red 26)-----	Scarlet 2R (2,4-xylidine and 2-naphthol-3,6-disulfonic acid).
Pigment Violet 1-----	Rhodamine B.
Pigment Violet 3-----	Methyl Violet B.
Pigment Violet 5-----	Helio Fast Rubine 4BL.
Pigment Blue 1-----	Victoria Pure Blue BO.
Pigment Blue 2-----	Victoria Blue B.
Pigment Blue 9-----	Cetoglaucine.
Pigment Blue 14-----	Ethyl Violet.
Pigment Blue 15-----	Phthalocyanine Blue.
Pigment Blue 19-----	Alkali Blue.
Pigment Blue 24-----	Peacock Blue Lake.
Pigment Blue 25-----	Dianisidine Blue (o-dianisidine and Naphthol AS).
Pigment Green 1-----	Brilliant Green.
Pigment Green 2-----	Brilliant Green and Thioflavine.
Pigment Green 4-----	Malachite Green.
Pigment Green 7-----	Phthalocyanine Green.
Pigment Green 8-----	Pigment Green B.
Pigment Brown 3-----	Bismarck Brown R (toluene-2,4-diamine).
(Natural Black 3)-----	Logwood Black.

¹ Lithol Red 2G has become generally accepted as the name for Pigment Red 52, although the 2d edition of the *Colour Index* lists this name for Pigment Red 69.

Note.--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*.

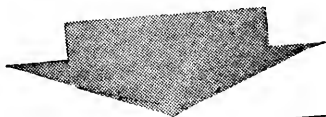
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