UNITED STATES TARIFF COMMISSION

SYNTHETIC ORGANIC CHEMICALS

United States Production and Sales, 1962

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

Synthetic Organic Chemicals, United States Production and Sales, 1961 (TC Publication 72, 1962), $1.25

NOTE.—The reports preceded by an asterisk (*) are out of print. The other reports listed may be purchased from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C., 20402. See inside back cover for additional reports. All U.S. Tariff Commission reports reproduced by the Government Printing Office may be consulted in the official depository libraries throughout the United States.

UNITED STATES TARIFF COMMISSION

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

TC Publication 114

Address all communications

UNITED STATES TARIFF COMMISSION

Washington, D.C. 20436

For sale by the Superintendent of Documents, U.S. Government Printing Office
Washington, D.C., 20402 - Price $1.50

CONTENTS

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 agreements[1]); 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 naphthalene[2] 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
					Percent	*Percent*
Tar[1]	1,000 gal--	876,070	649,878	669,398	-23.6	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]
				1,000 dollars	
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:					
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	.19
Xylene, total[4]	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 5A[3]). 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]
	1,000 pounds	*1,000 pounds*	*1,000 dollars*	*Per pound*
Grand total	32,960,132	20,352,220	655,574	$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	*1,000 pounds*	*1,000 pounds*	*1,000 dollars*	*Per pound*
Total	22,807,816	14,040,007	489,715	$0.035
C_2 hydrocarbons, total	7,570,744	...	...	...
Acetylene[5]	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	3,757	.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 C_5 hydrocarbon mixtures.
[9] Includes compounds having a molecular weight of 3,000 or less.
[10] Includes data for di-tert-butyldisulfide, miscellaneous mercaptans, and aliphatic acids.
[11] Includes data for methane, octanes, eicosane, 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° and 2° 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
				Percent	*Percent*
Organic chemicals, cyclic and acyclic, grand total:					
Production	26,708,705	56,183,265	64,169,916	140.3	14.2
Sales	14,490,020	31,012,471	34,628,386	139.0	11.7
Sales value	3,692,368	7,147,440	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	19,829,344	22,375,344	150.4	12.8
Sales value	1,778,093	3,843,273	4,017,860	126.0	4.5
1. Intermediates, Cyclic					
Production	4,281,640	10,275,933	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
4. Medicinal Chemicals					
				Percent	*Percent*
Cyclic:					
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	35,399	243.9	13.6
Sales value	26,091	36,169	33,383	27.9	-7.7
5. Flavor and Perfume Materials					
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
6. Plastics and Resin Materials					
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
7. Rubber-Processing Chemicals					
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
8. Elastomers (Synthetic Rubbers)					
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	-.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
9. Plasticizers					
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
10. Surface-Active Agents					
Cyclic:				*Percent*	*Percent*
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	262,223	497,868	537,099	104.8	7.9
Sales value	65,955	142,290	154,618	134.4	8.7
11. Pesticides and Other Organic Agricultural Chemicals					
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
12. Miscellaneous					
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	158,806	126.2	8.7
Acyclic:					
Production	15,994,766	31,975,481	36,719,407	129.6	14.8
Sales	7,113,476	14,701,842	16,176,707	127.4	10.0
Sales value	1,019,035	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

710-934 O-63—2

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 7A[1] 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_3H=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_3H=1]	1,034	...	...	...
6-Amino-4-chloro-m-toluenesulfonic acid [SO_3H=1]	...	198	255	1.29

See footnotes at end of table.

[1]See 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_3H=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_3H=1]	218	...	...	...
6-Amino-m-toluenesulfonic acid [SO_3H=1]	264	...	...	...
16-Aminoviolanthrone	20	...	...	...
2-Amino-3,5-xylenesulfonic acid [SO_3H=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-Chlorobenzoyl)benzoic acid	1,134	...	...	...
1-Chloro-2,4-dinitrobenzene (Dinitrochlorobenzene)	7,217	1,208	202	.17
6-Chlorometanilic acid	30	...	...	...
1-Chloro-2-methylanthraquinone	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_3H=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'-iminodianthraquinone	148	...	...	...
1,5-Dibenzoylnaphthalene	215	...	...	...
3,9-Dibromo-7H-benz[de]anthracen-7-one	291	...	...	...
2,5-Dichloroaniline and hydrochloride [NH_2=1]	226	203	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_3H=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-Dinitrochrysazin	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-aminoanthraquinone]	123	...	...	...
1,1′-Iminobis[4-nitroanthraquinone]	120	...	...	...
1,1′-Iminodianthraquinone (Dianthrimide)	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-diaminoanthraquinone	297	...	...	...
Leuco quinizarin (1,4,9,10-Anthratetrol)	81	...	...	...
Leuco tetrahydroxyanthraquinone	65	...	...	...
Metanilic acid (m-Aminobenzenesulfonic acid)	1,019	...	...	...
1-Methylaminoanthraquinone	98	...	...	...
4,4′-Methylenebis[N,N-dimethylaniline] (Methane base)	945	...	...	...
2-Methyl-1-nitroanthraquinone	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	399	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_3H=1]	4,870	...	...	...
3-Nitro-p-toluenesulfonic acid [SO_3H=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-ylenediimino)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]
	1,000 pounds	*1,000 pounds*	*1,000 dollars*	*Per pound*
1-Phenol-4-sulfonic acid	5,395	5,344	756	$0.14
Phenylacetonitrile (α-Tolunitrile)	...	793	480	.61
p-Phenylazoaniline (p-Aminoazobenzene) and hydrochloride	128	...	...	...
m-Phenylenediamine	1,420	...	...	...
o-Phenylenediamine	540	...	...	...
2,2'-(Phenylimino)diethanol (Phenyldiethanolamine)	446	51	18	.35
Phthalic anhydride	427,419	215,167	30,000	.14
2-Picoline (α-Picoline)[6]	3,201	605	268	.44
Piperidine	358	...	...	...
Propiophenone	413	...	...	...
2° Pyridine[6]	3,183	2,730	2,049	.75
Quinizarin	1,429	...	...	...
Salicyclic acid, tech	34,338	3,142	1,170	.37
Styrene, all grades	1,942,227	1,018,420	102,101	.10
Terephthalic acid, dimethyl ester	...	65,256	20,585	.32
1,4,5,8-Tetrachloroanthraquinone	25	...	...	...
o-Tolidine	243	...	...	...
o-(p-Toluoyl)benzoic acid	541	...	...	...
4-(o-Tolylazo)-o-toluidine	363	...	...	...
6,6'-Ureylenebis[1-naphthol-3-sulfonic acid] (J acid urea)	208	...	...	...
Violanthrone (Dibenzanthrone)	582	...	...	...
o-Xylene	271,577	154,602	9,375	.06
p-Xylene	256,487	272,090	31,457	.12
All other cyclic intermediates	2,224,431	641,015	181,404	.28

[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 8A[2] 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	188,904	178,031	227,231	$1.28
ACID DYES				
Total	15,970	15,106	29,431	1.95
Acid yellow dyes, total	2,200	1,823	3,956	2.17
Acid Yellow 3	...	34	120	3.53
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				
	1,000 pounds	*1,000 pounds*	*1,000 dollars*	*Per pound*
Acid red dyes--Continued				
Acid Red 14	96	73	99	$1.36
Acid Red 18	152	124	141	1.14
Acid Red 26	71	56	64	1.14
Acid Red 37	38	39	92	2.36
Acid Red 73	204	189	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	19	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	46	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	228	349	1.53
Acid Blue 158 and 158A	271	221	487	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	1.36
All other	323	343	1,024	2.99
Acid black dyes, total	4,266	[illegible]78	6,997	1.50
Acid Black 1	1,660	1,[illegible]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				
Azoic Compositions	*1,000 pounds*	*1,000 pounds*	*1,000 dollars*	*Per pound*
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
Azoic Diazo Components, Bases (Fast Color Bases)				
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
Azoic Diazo Components, Salts (Fast Color Salts)				
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
Azoic Coupling Components (Naphthol AS and Derivatives)				
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				
Azoic Coupling Components (Naphthol AS and Derivatives)--Continued	*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	*1,000 pounds*	*1,000 pounds*	*1,000 dollars*	*Per pound*
Direct yellow dyes--Continued				
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
Food, Drug, and Cosmetic Dyes				
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
Drug and Cosmetic and External Drug and Cosmetic Dyes				
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	*1,000 pounds*	*1,000 pounds*	*1,000 dollars*	*Per pound*
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]
	1,000 pounds	*1,000 pounds*	*1,000 dollars*	*Per pound*
SULFUR DYES				
Total	38,927	38,859	9,882	$0.25
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	566	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				
	1,000 pounds	*1,000 pounds*	*1,000 dollars*	*Per pound*
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--	6,088	5,957	8,165	1.37
Vat Brown 1, 11%--	1,115	1,088	2,050	1.88
Vat Brown 3, 11%--	1,142	1,012	1,707	1.69
Vat Brown 5, 13%--	246	255	359	1.41
All other--	3,585	3,602	4,049	1.12
Vat black dyes, total--	8,129	7,870	8,160	1.04
Vat Black 9, 16%--	267	242	693	2.86
Vat Black 25, 12-1/2%--	3,877	3,608	2,693	.75
Vat Black 27, 12-1/2%--	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	1,886	1,930	3,571	1.85
Azoic diazo components, bases (Fast color bases)	1,205	1,019	1,587	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	546	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	162	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.

710-934 O-63—3

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	31,602	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. 21 120	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	*1,000 pounds*	*1,000 pounds*	*1,000 dollars*	*Per pound*
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	.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	108	.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 uncompounded 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, B_{12}, 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 B_{12} 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	*1,000 pounds*	*1,000 pounds*	*1,000 dollars*	*Per pound*
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	...	...	...
Phenylsulfonylurea derivatives	895	...	...	...
8-Quinolinol and derivatives, total	325	145	496	3.42
5,7-Diiodo-8-quinolinol	52	...	...	...
8-Quinolinol	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)protocatechuyl 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	*1,000 pounds*	*1,000 pounds*	*1,000 dollars*	*Per pound*
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 uncompounded form, including that sold in bulk and that sold in packages (tablets, ampoules, etc.). Sales of antibiotics include all forms (both undiluted or uncompounded 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; aterrimin and bacitracin, 22.7 million units=1 pound; polymyxin B sulfate, 2,812.3 million units=1 pound; all other

Footnotes continued on p.

Footnotes for table 13A--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	7,683	34.14
Neomycin base, for human or veterinary use (Kg.)	22,248	22,035	4,707	213.61
Penicillin salts (BU), total	964,023	715,260	66,504	92.98
dl-α-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	13,824	37.76
For human or veterinary use	415,725	258,136	11,991	46.45
For other uses	109,274	107,994	1,833	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 6-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, B_{12}, D_2, and D_3 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 B_{12}, 453.6 grams=1 pound; vitamins D_2 and D_3, 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 14B 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]
	1,000 pounds	*1,000 pounds*	*1,000 dollars*	*Per pound*
Grand total	76,267	63,448	75,962	$1.20
FLAVOR AND PERFUME MATERIALS, CYCLIC				
Total	42,771	32,049	47,260	1.47
Benzenoid and Naphthalenoid				
Total	21,672	18,190	22,036	1.21
4-Allylveratrole (Eugenyl methyl ether)	13	14	43	3.14
Anethole (p-Propenylanisole)	1,269	1,462	1,024	.70
p-Anisaldehyde (p-Methoxybenzaldehyde)	546	574	876	1.53
Benzophenone[2]	280	291	273	.94
Benzyl acetate	1,180	1,076	470	.44
Benzyl alcohol[2]	2,051	1,915	834	.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.

[6] See 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				
Benzenoid and Naphthalenoid--Continued	*1,000 pounds*	*1,000 pounds*	*1,000 dollars*	*Per pound*
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
Terpenoid, Heterocyclic, and Alicyclic				
Total	21,099	13,859	25,224	1.82
Caryophyllene	...	9	10	1.17
Cedryl acetate	120	105	252	2.40
Citral (Geranial)	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-Methylnonylacetaldehyde)	...	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 15A [7] 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 derivatives 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.

[7] See 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	*1,000 pounds, dry basis*[2]	*1,000 pounds, dry basis*[2]	*1,000 dollars*	*Per pound*
Rosin modifications, total	151,735	148,251	28,927	$0.20
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[5]	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 cellulosics) 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 basis[1]]

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 basis[1]]

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 basis[1]]

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 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-Nitrosodiphenylamine	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]
RUBBER-PROCESSING CHEMICALS, ACYCLIC	*1,000 pounds*	*1,000 pounds*	*1,000 dollars*	*Per pound*
Total	32,521	23,985	17,055	$0.71
Accelerators, total	19,291	12,111	10,300	.85
Dithiocarbamic acid derivatives, total[5]	11,440	7,124	5,867	.82
Dibutyldithiocarbamic acid, sodium salt	764	272	195	.72
Dibutyldithiocarbamic acid, zinc salt	1,148	985	1,170	1.19
Diethyldithiocarbamic acid, zinc salt	1,292	959	838	.87
Dimethyldithiocarbamic acid, potassium salt	254	...	...	...
Dimethyldithiocarbamic acid, sodium salt	3,730	1,985	752	.38
Dimethyldithiocarbamic 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	.82
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). Dimethyldithiocarbamic 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]
	1,000 pounds[3]	*1,000 pounds*[3]	*1,000 dollars*	*Per pound*
Grand total	3,134,395	2,730,387	774,326	$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 polyalkalene 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

[10] See 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 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
Dihexyl 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	.19
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	*1,000 pounds*	*1,000 pounds*	*1,000 dollars*	*Per pound*
Phosphoric acid esters	16,889	12,710	5,131	$0.40
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[4]	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
Not Sulfated or Sulfonated				
Total	231,575	181,273	37,546	.21
Amides, amines, and quaternary ammonium salts, total	5,845	5,817	5,630	.97
Benzyldimethyloctadecylammonium chloride	216	190	189	.99
Benzyldodecyldimethylammonium 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
Sulfated and Sulfonated				
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
Benzene-, toluene-, and xylenesulfonates:				
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				
Sulfoted and Sulfonated--Continued	*1,000 pounds*	*1,000 pounds*	*1,000 dollars*	*Per pound*
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	8,140	.40
NONBENZENOID SURFACE-ACTIVE AGENTS				
Total	646,689	537,099	154,618	.29
Not Sulfated or Sulfonated				
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
Coconut oil acids (amine/acid ratio=2/1)	12,116	9,126	5,004	.55
Coconut 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	8,165	.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-Heptadecenyl)-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(coconut 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	939	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* $0.57
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
Coconut 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
Coconut oil acids - ethanolamine condensate, sulfated, potassium salt	47	46	40	.87
n-Dodecyl sulfate, ammonium salt	923	919	484	.53
n-Dodecyl sulfate, diethanolamine salt	341	319	231	.72
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	*1,000 pounds*	*1,000 pounds*	*1,000 dollars*	*Per pound*
Herbicides and plant hormones, total	131,690	78,229	78,490	$1.00
Phenoxyacetic acid derivatives:				
(2,4-Dichlorophenoxy)acetic acid (2,4-D)	42,997	17,010	4,941	.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
Methanearsonic 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	1,404	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	*1,000 pounds*	*1,000 pounds*	*1,000 dollars*	*Per pound*
Textile chemicals, other than surface-active agents	2,474	1,242	1,519	$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%	968,604	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_9 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[5]	1,679,548	989,337	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
Amyl 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	*1,000 pounds*	*1,000 pounds*	*1,000 dollars*	*Per pound*
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	394	...	...	...
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''-Nitrilotriethanol (Triethanolamine)	37,355	35,988	7,177	.20
2-Ethoxyethanol (Ethylene glycol monoethyl ether)	...	29,071	5,214	.18
Ethyl acetate, 85%	101,879	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	2,550	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
Isoascorbic 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	19,845	.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)pentaacetic acid, sodium salt	977	894	262	.29
(Ethylenedinitrilo)tetraacetic acid (Ethylenediamine-tetraacetic acid).	3,941	2,134	822	.39
(Ethylenedinitrilo)tetraacetic acid, dihydrogen, disodium salt.	522	488	286	.59
(Ethylenedinitrilo)tetraacetic acid, monohydrogen, trisodium salt.	294	277	140	.51
(Ethylenedinitrilo)tetraacetic acid, monosodium iron salt.	452	427	302	.71
(Ethylenedinitrilo)tetraacetic 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	774,060	.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, resinate, tallate, 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, ACY, COS, KPP.
*Toluene, specification and other grades	ACP, ACY, COS, KPP.
*Xylene, all grades	ACP, ACY, KPP.
*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	COP, CRT.
*74° C. to less than 76° C	KPT, NEV, PAI.
*76° C. to less than 79° C	ACP, ACY, KPT, PRD, RIL, RUR, WTC.
Crude tar-acid oils having a tar-acid content of--	
5% to less than 24%	ACP, ACY, COP, RIL.
24% to 51%	ACP, KPT, NEV, RIL, WTC.
Cresylic acid, crude	ACP, KPT, PRD.
*Creosote oil (Dead oil):	
*Distillate as such	ACP, ACY, CBT, COP, CRT, KPT, RIL, RUR, WTC.
*Creosote in coal-tar solution	ACP, HUS, 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, COP, 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 4A.

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	ACC, AMO, 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°	AMO, 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 carbolate 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	AMO, 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, PPG, 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	AMO, 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	PLC, PTT, SPI, TXB.
*1-Butene and 2-butene mixture	AMO, CCP, ENJ, GOC, MOC, PLC, SHO, SOC, SOI, TX.
*Isobutane	CCP, DXS, ELP, MOC, OMC, PAN, PLC, SHM, SHO, SOI, UCC, USI.
*Isobutylene	CCP, ENJ, PTT, SIN.
All other	APR, JCC, PLC, SM, SOI, UCC, USI.
*C_5 hydrocarbons:	
Isopentane (2-Methylbutane)	APR, CCP, CSD, ENJ, PLC, SHM, SOI, UCC.
Isoprene (2-Methyl-1,3-butadiene)	ENJ, GYR, PLC, SHC.
n-Pentane	APR, PLC.
All other	ENJ, MOC, PAS, PLC, USI.
C_6 hydrocarbons:	
Diisopropyl (2,3-Dimethylbutane)	PLC.
*Hexane	DLH, ENJ, PLC, PRO, SOG.
Ischexane	ENJ.
Neohexane (2,2-Dimethylbutane)	PLC.
All other	APR, PLC.
C_7 hydrocarbons:	
*n-Heptane	CSD, EKX, ENJ, PLC, PRO, SOG.
*Heptenes, mixed	ENJ, GOC, HOU, SIN, TID.
All other	PLC.
C_8 hydrocarbons:	
*Diisobutylene (Diisobutene)	ATR, PTT, SHC, TX.
n-Octane	ENJ, PLC.
2,2,4-Trimethylpentane (Iso-octane)	ENJ.
All other	PLC.
Hydrocarbons, C_9 and above:	
*1-Dodecene (Tetrapropylene)	ACC, AMO, CO, DXS, ENJ, GOC, MOC, PRO, RIC, SNT, SOC, SUN, TX.
Eicosane	ATR.
*Nonene (Tripropylene)	AMO, ENJ, GOC, PRO, SUN.
Pentadecene	CO.
*Polybutene	CSD, SOC, SOI, TX.
Tridecene concentrate	ENJ.
Triisobutylene	ATR, PTT.
All other	ACC, CO, EKX, ENJ, GOC, HOU, KEN, PLC, RIC, SOC, SOI, TID.
*Hydrocarbon derivatives:	
1-Butanethiol	PAS.
tert-Butyl mercaptan (2-Methyl-2-propanethiol)	PAS, PLC.
Di-tert-butyl disulfide	PLC.
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, PLC, 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	DUP.
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-Acetoacetanisidide	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	ACY, MRK.
Adenine	ARA.
Alkylbenzene	ATR.
α-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	NES.
*5-Amino-2-(p-aminoanilino)benzenesulfonic acid	CMG, DUP, G, TRC, VPC, YAW.
1-Amino-4-(3-amino-4-sulfoanilino)-2-anthraquinonesulfonic acid.	TRC.
1-Amino-4-(4-amino-3-sulfoanilino)-2-anthraquinonesulfonic acid.	TRC.
5-Amino-2-anilinobenzenesulfonic acid	NAC.
*2-(p-Aminoanilino)-5-nitrobenzenesulfonic acid	ALT, CMG, DUP, NAC, TRC, VPC.
3-Amino-p-anisamide	G.
3-Amino-p-anisanilide	PCW.
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, DUP, 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-Aminoantipyrine	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.	DUP.
*6-(p-Aminobenzamido)-1-naphthol-3-sulfonic acid	DUP, G, TRC, VPC.
4-Aminobenzanilide	TRC.
4'-Aminobenzanilide	G.
*2-Amino-p-benzenedisulfonic acid [SO_3H=1]	DUP, G, NAC.
2-Aminobenzimidazole	EK.
5-Amino-2-benzimidazolinone	DUP.
p-Aminobenzoic acid, tech	DUP, G, NAC.
p-Aminobenzoic acid, diethylaminoethyl ester (Procaine)	SDW.
2-Amino-6-benzothiazolecarboxylic acid	DUP.
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, DUP, G, KPC, NAC, TRC.
*2-Amino-1-bromo-3-chloroanthraquinone	AHC, KPC, MAY.
*1-Amino-2-bromo-4-hydroxyanthraquinone	DUP, ICC, KPC, TRC.
1-Amino-4-bromo-2-methylanthraquinone	AHC.
1-Amino-2-bromo-4-(p-toluidino)anthraquinone	AHC, G.
*1-Amino-5-chloroanthraquinone	ACY, AHC, DUP, MAY, NAC, TRC.
1-Amino-5(and 8)-chloroanthraquinone	ACY, DUP.
1-Amino-8-chloroanthraquinone	DUP.
*2-Amino-3-chloroanthraquinone	AHC, G, MAY, TRC.
4-Amino-6-chloro-m-benzenedisulfonamide	ABB, KPC, 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	DUP, MEE, NAC.
*6-Amino-4-chloro-1-phenol-2-sulfonic acid	CMG, DUP, NAC, TRC.
3-Amino-6-chloropyridazine	ACY.
*2-Amino-5-chloro-p-toluenesulfonic acid [SO_3H=1]	ACY, HCC, SUC, SW.
*6-Amino-4-chloro-m-toluenesulfonic acid [SO_3H=1]	ACY, DUP, HCC, SDH, SW.
2-Amino-p-cresol	TRC.
*1-Amino-2,4-dibromoanthraquinone	AHC, DUP, G, ICC, KPC, 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	DUP.
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, SNA, 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_3H=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.
l-2-Amino-1-(p-nitrophenyl)-1,3-propanediol	PD.
4-Amino-4'-nitro-2,2'-stilbenedisulfonic acid	TRC.
2-Amino-5-nitrothiazole	EKT.
3'-Aminooxanilic acid	CMG, TRC.
4'-Aminooxanilic 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-Aminosalicylic 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_3H=1]	ACY, DUP, G, MEE, SNA.
*6-Amino-m-toluenesulfonic acid [SO_3H=1]	DUP, NAC, SDH, SW.
5-Amino-o-toluenesulfonic acid [SO_3H=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_3H=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.
*Anilinomethanesulfonic acid and salt	ACY, 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---	DUP, GIV, LIL.
4-(o-Anisylazo)-o-anisidine---	KPC.
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'-[1,5(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.
*Anthrarufin (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-methyltriazen-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---	KPC.
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, TBK.
*Benzidine hydrochloride	FIN.
*Benzidine hydrochloride and sulfate	CWN, NAC, x.
Benzil (Bibenzoyl)	LEM.
Benzilic acid	BPC, LEM.
2-Benzofuranacetonitrile	EK.
*Benzoic acid, tech	ACC, HK, HN, KLK, MON, TNP.
Benzoin	BPC, LEM.
Benzonitrile	TNP, x.
1,2,3-Benzotriazin-4(1H)-one	MEE.
1H-Benzotriazole	MEE, RZL.
Benzoylacetic 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	ICO, MLS.
Benzyl chloroformate	RSA.
Benzyl disulfide	CCW, MCO.
Benzylethanolamine	MLS.
Benzyl ether (Dibenzyl ether)	BPC, TBK.
4-(N-Benzyl-N-ethylamino)-o-toluenesulfonic acid	NAC.
N-Benzyl-N-ethyl-m-toluidine	DUP, NAC.
4-Benzylidineiminoantipyrine	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-anthraquinonylamino]anthraquinone	ACY, AHC, G, MAY, TRC.
1,4-Bis[1-anthraquinonylamino]anthraquinone and 1,4-Bis[5-chloro-1-anthraquinonylamino]anthraquinone (mixed).	TRC.
1,5-Bis[1-anthraquinonylamino]anthraquinone	DUP.
1,4-Bis(1-anthraquinonylamino)-5-benzamidoanthraquinone	TRC.
Bis[1-anthraquinonylamino]violanthrene	G.
α^2, α^6-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)-dinitroanthraquinone.	DUP.
α,α-Bis[4-(N-ethyl-4'-sulfobenzylamino)-2-tolyl]-α-hydroxy-p-toluenesulfonic acid.	TRC.
α,α-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	KPC.
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,ij]isoquinoline-2,7(3H)-dione.	G.
1-Bromonaphthalene	EK.
4-Bromonaphthalic anhydride	G.
β-Bromophenetole	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	PLC.
sec-Butylbenzene	PLC.
tert-Butylbenzene	PLC.
p-tert-Butylbenzoic acid	SHC.
o-(p-tert-Butylbenzoyl)benzoic acid	DUP.
6-Butyl-m-cresol [OH = 1]	KPT.
2-tert-Butyl-p-cresol	ACY.
2′-tert-Butyl-4′,6′-dimethylacetophenone	GIV.
2-tert-Butyl-4-ethylphenol	ACY.
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.
Butyrophenone	TBK.
Carbazole, refined	SDC.
1-(4-Carbonyl-o-anisyl)-3-methyl-3-(2-sulfoethyl)triazene-	G.
N,N'-Carbonylbis[4-methoxymetanilic acid]	G.
N,N'-Carbonylbis[4-methoxy-6-nitrometanilic 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)-3-ethyltriazene.	G.
3-(2-Carboxy-4-sulfophenyl)-3-ethyl-1-(5-nitro-o-anisyl)-triazene.	G.
Cedrene	GIV.
Chelidamic acid	G, SDW.
Chlorendic acid	HK.
2'-Chloroacetoacetanilide	FMP, UCC.
4'-Chloroacetophenone	LIL.
m-Chloroaniline	DUP, G.
*o-Chloroaniline	DUP, MON, NAC, VPC.
p-Chloroaniline	DUP, MON.
2-(Chloroanilino)ethanol	EKT.
3-(o-Chloroanilino)propionitrile	DUP.
5-Chloro-o-anisidine [$NH_2 = 1$] (4-Chloro-o-anisidine [$OCH_3 = 1$]).	KLS, VPC.
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-carboxamide.	TRC.
3-Chloro-2-anthroic 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-Chlorobenzenesulfinic 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-xylidine	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	DUP.
N-(3-Chloro-9,10-dihydroxy-2-anthryl)acetamide-bis[acid sulfate].	G.
4'-Chloro-2',5'-dimethoxyacetoacetanilide	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)-thianaphthenone	NAC.
*1-Chloro-2,4-dinitrobenzene (Dinitrochlorobenzene)	DUP, KPC, NAC, SDC.
1-Chloro-2,4-dinitrobenzene and 2-chloro-1,3-dinitrobenzene mixture.	DUP.
2-Chloro-3,5-dinitrobenzenesulfonic acid	G.
5-Chloro-2,4-dinitrobenzenesulfonic acid	TRC.
4-Chloro-3,5-dinitro-α,α,α-trifluorotoluene	MEE.
3-Chlorodiphenylamine	SK.
Chlorodiphenylmethane	OPC, TBK.
α-Chloro-o(and/or p)-dodecyltoluene [CH_3 = 1]	ORO.
p-[(2-Chloroethyl)methylamino]benzaldehyde	G.
2-Chloro-N-ethyl-5-nitrobenzenesulfonanilide	G.
Chloroformic acid, phenyl ester	EK.
4-Chloro-3-hydrazinobenzenesulfonic acid	G.
1-Chloro-4-hydroxyanthraquinone	AHC.
5'-Chloro-3-hydroxy-2-naphthol-o-anisidide	PCW, SDH.
6-Chloroisatoic anhydride	MEE.
5-Chloro-4-isopropylmetanilic acid	SW.
4-Chlorometanilic acid	DUP, G.
5-Chlorometanilic acid	DUP, NAC.
*6-Chlorometanilic acid	DUP, G, KPC, SW.
5-Chloro-2-methoxybenzenediazonium chloride	G.
N-(5-Chloro-2-methoxyphenylazo)sarcosine	ATL, SDH.
*1-Chloro-2-methylanthraquinone	ACY, AHC, CMG, G, KPC, NAC, TRC.
6-Chloro-4-methylbenzo-1,3-thiaza-2-thionium chloride	DUP.
5-Chloro-2-methylbenzothiazole	EK.
6-Chloro-2-methyl-7-chlorosulfamoyl-2H-1,2,4-benzothiadiazin-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.
α-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)benzenesulfonic acid.	DUP, G.
Chloronaphthalenes	ACY, KPT.
8-Chloro-1-naphthalenesulfonic acid, sodium salt	G.
8-Chloro-1-naphthalenesulfonyl chloride	G.
*2-Chloro-4-nitroaniline (o-Chloro-p-nitroaniline)	ACY, DOW, DUP, SUC.
*4-Chloro-2-nitroaniline (p-Chloro-o-nitroaniline)	DOW, DUP, KPC, NAC, VPC.
*1-Chloro-5-nitroanthraquinone	ACY, DUP, MAY, NAC, TRC.
1-Chloro-5(and 8)-nitroanthraquinone	DUP.
1-Chloro-8-nitroanthraquinone	DUP, TRC.
1-Chloro-2-nitrobenzene (Chloro-o-nitrobenzene)	DUP, KPC, MON, UPM.
*1-Chloro-2(and 4)-nitrobenzene (Chloronitrobenzenes, o- and p-).	DUP, KPC, SDC.
*1-Chloro-3-nitrobenzene (Chloro-m-nitrobenzene)	DUP, G, MON, UPM.
1-Chloro-4-nitrobenzene (Chloro-p-nitrobenzene)	DUP, KPC, MON, UPM.
*4-Chloro-3-nitrobenzenesulfonamide	DUP, EKT, G, ICC, KPC, TRC.
4-Chloro-3-nitrobenzenesulfonanilide	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	DUP, G, TRC.
4-Chloro-3-nitrobenzenesulfonic acid	NAC, TRC.
*4-Chloro-3-nitrobenzenesulfonyl chloride	DUP, EKT, KPC, TRC.
2-Chloro-5-nitrobenzoic acid	TRC.
4-Chloro-3-nitrobenzoic acid	PCW.
*o-(4-Chloro-3-nitrobenzoyl)benzoic acid	AHC, G, KPC, NAC.
4-Chloro-3-nitrophenyl methyl sulfone	TRC.
2-Chloro-4-nitrotoluene	DUP.
2-Chloro-6-nitrotoluene	DUP.
*4-Chloro-2-nitrotoluene	BUC, DUP, KPC.
*4-Chloro-3-nitrotoluene	BUC, DUP, KPC.
m-Chlorophenol	EK.
o-Chlorophenol	DOW, MON.
p-Chlorophenol	DOW, MON.
p-Chlorophenylacetonitrile	ICO, TBK.
1-(o-Chlorophenyl)-2-aminoethyl acetate	LIL.
4-Chloro-α-phenyl-o-cresol	MON.
4-Chloro-o-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.
α-(p-Chlorophenyl)-2-pyridinemethanol	RIL.
Chlorophenylsilanes	SPD.
4-Chlorophthalic acid	DUP, SW.
Chlorophthalic anhydride	HK, MON.
N^1-(6-Chloro-3-pyridazinyl)sulfanilamide	ACY.
2-Chloropyridine	FMT, NEP.
6-Chloroquinaldine	DUP.
*2-Chloroquinizarin	AHC, HSH, NAC, TRC.
7-Chloro-4-quinolinol	SDW.
4-(7-Chloro-4-quinolylamino)-α-diethylamino-o-cresol	PD.
4-(7-Chloro-4-quinolylamino)-α-diethylamino-o-cresol hydrochloride.	PD.
6-Chloroquinophthalone	DUP.
4-Chlororesorcinol	G, KPC.
2-Chloro-5-sulfamoylbenzoic acid	TRC.
8-Chlorotheophylline	MAL.
2-Chlorothiaxanthenone	KF.
m-Chlorotoluene	BPC, HK.
o-Chlorotoluene	HN.
p-Chlorotoluene	HN.
*α-Chlorotoluene (Benzyl chloride)	BPC, HK, HN, MON, TNP.
1-Chloro-5-p-toluenesulfonamidoanthraquinone	AHC.
5-Chloro-o-toluenesulfonic acid	G.
6-Chloro-m-toluidine	BUC.
3-Chloro-o-toluidine [$NH_2 = 1$]	DUP.
3-Chloro-p-toluidine [$NH_2 = 1$]	DUP.
4-Chloro-o-toluidine [$NH_2 = 1$] and hydrochloride	ACY, KPC, PCW.
*5-Chloro-o-toluidine [$NH_2 = 1$]	BUC, DUP, KPC, NAC, SDH.
*5-Chloro-o-toluidine hydrochloride [$NH_2 = 1$]	ALL, ATL, AUG, KLS, SDH.
N-(5-Chloro-o-tolylazo)sarcosine	ATL, BUC.
1-(5-Chloro-o-tolyl)-1-tetrazene	G.
(4-Chloro-o-tolylthio)acetic acid	ACY, G, NAC.
3-Chloro- α,α,α-trifluoro-6-nitrotoluene	MEE.
4-Chloro- α,α,α-trifluoro-3-nitrotoluene	G, KPC.
p-Chloro- α,α,α-trifluorotoluene	HK.
4-Chloro- α,α,α-trifluoro-m-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-xylenol	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	KPT.
*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, HPC, 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, MON, 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.
p-(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, HPC.
Decylbenzene	NAC.
1,5(and 1,8)-Diacetamidoanthraquinone	KPC.
4,4'-Diacetylamino-3,3'-dinitrobiphenyl	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	DUP.
1,4-Diamino-2,3-anthraquinonedicarboximide	DUP.
4,8-Diaminoanthrarufin	ICC.
*2,4-Diaminobenzenesulfonic acid [SO_3H=1]	DUP, G, NAC, TRC.
*4,4'-Diamino-2,2'-biphenyldisulfonic acid	ACY, KPC, 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	DUP.
1,5-Diamino-4,8-dihydroxyanthraquinone	VPC.
1,5(and 1,8)-Diamino-4,8(and 4,5)-dihydroxyanthraquinone	DUP.
3,6-Diamino-2,7-dimethylacridine	DUP.
3,6-Diamino-2,7-dimethylacridine sulfate	DUP.
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-pheryl-s-triazene	RH, TNP.
2,6-Diaminopyridine	NEP, RIL.
*4,4'-Diamino-2,2'-stilbenedisulfonic acid	ACY, DUP, G, NAC, SDH, TRC, VPC.
Diaminotetrabromoanthraquinone	AHC.
4,6-Diamino-m-toluenesulfonic acid [SO_3H=1]	NAC.
1,5-Dianilino-2,6-anthraquinonedicarboxylic acid	G, NAC.
*2,4-Dianilino-1-hydroxyanthraquinone	AHC, G, TRC.
o-Dianisidine	ALL.
1,2-Dianthronyl-1,2-ethanediol	AHC.
Diarylguanidine	DUP.
1,5-Dibenzamidoanthraquinone	G, TRC.
4,9-Dibenzamido-3',4',6',7'-diphthaloylcarbazole	AHC.
*4,5'-Dibenzamido-1,1'-iminodianthraquinone	ACY, AHC, DUP, G, MAY, NAC, TRC.
5,5'-Dibenzamido-1,1'-iminodianthraquinone	ACY.
5',5''-Dibenzamido-1,1',4,1''-trianthrimide	AHC.
2-Dibenzofuranol	G.
*1,5-Dibenzoylnaphthalene	ACY, AHC, DUP, G, HST, TRC, VPC.
1',2',6',7'-Dibenzpyrene-7,14-quinone	AHC, TRC.
Dibenzylamine	MLS.
N,N'-Dibenzylethylenediamine	WYT.
N,N'-Dibenzylethylenediamine diacetate	WYT.
2,4'-Dibromoacetophenone	EK.
*3,9-Dibromo-7H-benz[de]anthracen-7-one	AHC, DUP, G, MAY, NAC, TRC.
m-Dibromobenzene	EK.
p-Dibromobenzene	DOW.
Dibromoethylbenzene	DOW.
2,6-Dibromo-1,5-naphthalenediol	EK.
X,Y-Dibromothianthrene	TRC.
Dibromoviolanthrone	G.
1,4-Dibutoxy-2-morpholino-5-nitrobenzene	MEE.
2,4-Di-tert-butylphenol	DOW, KPT.
2,4-Dichloroaniline	EK.
3,4-Dichloroaniline	DUP, MON.
*2,5-Dichloroaniline and hydrochloride [NH_2=1]	ALL, DUP, KLS, NAC, SDH, VPC.
*1,5-Dichloroanthraquinone	ACY, AHC, DUP, G, MAY, NAC, TRC.
1,5(and 1,8)-Dichloroanthraquinone	DUP, 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, MON, OMC, PPG, SCC, SVT, WOI.
*o(and p)-Dichlorobenzene	GGY, HKD, MTO, UPM.
*p-Dichlorobenzene	ACS, CPD, DOW, DUP, DVC, HK, MON, PPG, 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-4-hydrazinobenzenesulfonic acid	G.
7,16-Dichloroindanthrene	AHC.
Dichloroisoviolanthrone	AHC.
*2,5-Dichloro-4-(3-methyl-5-oxo-2-pyrazolin-1-yl)benzenesulfonic acid.	ACY, CMG, DUP, G, TRC, VPC.
Dichloromethylphenylsilane	DCC, UCS.
2,4-Dichloro-1-naphthol	EK.
*2,6-Dichloro-4-nitroaniline	DUP, EKT, G, KPC, MEE, PCW.
1,4-Dichloro-5-nitroanthraquinone	TRC.
1,2-Dichloro-4-nitrobenzene	DUP, MON, NAC.
*1,4-Dichloro-2-nitrobenzene (Nitro-p-dichlorobenzene)	DUP, KPC, NAC, VPC.
2,4-Dichlorophenol	DOW, MON.
3,6-Dichloropyridazine	ACY.
4,7-Dichloroquinoline	SDW.
3,5-Dichlorosalicylic acid	ICO.
*2,5-Dichlorosulfanilic acid [SO_3H=1]	CMG, DUP, G, VPC.
2,5-Dichloro-4-sulfobenzenediazonium 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-xylenol	OTA.
Dicyclohexylamine	ABB, MON.
Dicyclohexylcarbodiimide	ACY, G, KK.
Dicyclopentadiene and cyclopentadiene	ENJ, UCC.
Dicyclopentadiene dioxide	UCC.
2,4-Di(1,1-dimethylpropyl)phenol (Di-tert-amylphenol)	PAS.
2,5-Diethoxyaniline	ALL.
p-Diethoxybenzene	G.
p-Diethylaminobenzaldehyde	G, NAC.
α-(2-Diethylaminoethyl)-α-phenylcyclohexanemethanol, hydrochloride.	ACY.
m-Diethylaminophenol (N,N-Diethyl-3-aminophenol)	ACY, DUP, MON.
3-Diethylaminopropiophenone	ACY.
4-Diethylamino-o-tolualdehyde	DUP.
*N,N-Diethylaniline	ACY, 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	DUP.
N^2,N^5-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	DUP, NAC.
3,4-Dihydroxybenzoic acid (Protocatechuic acid)	AMB.
2,4-Dihydroxybenzophenone	EK.
Dihydroxydinitroanthraquinone	DUP.
1,5-Dihydroxy-4,8-dinitroanthraquinone	AHC, KPC, 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.
17α,21-Dihydroxy-16α-methylpregna-1,4,9(11)-triene-3,20-dione, 21-(ethyl carbonate).	SCH.
4,5-Dihydroxy-2,7-naphthalenedisulfonic acid (Chromotropic acid).	HSH, NAC.
*6,7-Dihydroxy-2-naphthalenesulfonic acid	FMT, G, IDC, NAC.
3,5-Dihydroxy-2-naphthoic acid	G.
4,5-Dihydroxy-3-(p-sulfopherylazo)-2,7-naphthalenedisulfonic acid, trisodium salt.	EK.
*16,17-Dihydroxyviolanthrone (Dihydroxydibenzanthrone)	ACY, AHC, DUP, G, MAY, NAC, TRC.
m-Diiodobenzene	EK.
N,N'-Diisopropyl-p-phenylenediamine	DUP.
2',4'-Dimethoxyacetophenone	DUP.
2,5-Dimethoxyacetophenone	BPC.
2,5-Dimethoxyaniline	EKT, KLS.
1,5(and 1,8)-Dimethoxyanthraquinone	TRC.
2,5-Dimethoxybenzaldehyde	CWN.
*m-Dimethoxybenzene	ACY, DUP, G, ICO, KPC.
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-sulfoethyl)triazene].	G.
*1,4-Dimethoxy-2-nitrobenzene	DUP, EKT, G.
3,4-Dimethoxyphenethylamine (Homoveratrylamine)	LIL, OPC.
(3,4-Dimethoxypheryl)acetic acid	LIL.
(3,4-Dimethoxyphenyl)acetonitrile	LIL.
16,17-Dimethoxyviolanthrone	AHC, MAY, TRC.
p-Dimethylaminobenzaldehyde	FIN.
α-Dimethylamino-o-cresol	TKL.
6-Dimethylamino-2-(2-(2,5-dimethyl-1-phenyl-3-pyrryl)-vinyl)-1-methyl-1-quinolinium methyl sulfate.	x.
o-(2-Dimethylaminoethyl)phenol	RH.
2-[(2-Dimethylaminoethyl)therylamino]pyridine (non-medicinal grade).	ABB.
o-(Dimethylaminomethyl)-p-butylphenol	RH.
3-[(Dimethylamino)methyl]indole	GIV.
6-(Dimethylaminomethyl)-2-methoxy-4-nitrophenol	MEE.
6-Dimethylamino-1-methylquinaldiniummethyl sulfate	x.
m-Dimethylaminophenol	ACY.
N-(p-Dimethylaminopheryl)-1,4-naphthoquinoneimine	NAC.
6-Dimethylaminoquinaldine	EK.
*N,N-Dimethylaniline	ACY, DSC, DUP, NAC, SDH.
Di[1-(2-methyl)aziridinyl]phenyl phosphine oxide	ICO.
7,12-Dimethylbenz[a]anthracene	EK.
*N,N-Dimethylbenzylamine	ICO, MLS, x.
*2,2'-Dimethyl-1,1'-bianthraquinone	ACY, AHC, CMG, DUP, G, KPC, 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	GLY.
2,5-Dimethylhydroquinone	ACY.
2,6-Dimethylhydroquinone	ACY.
2,8-Dimethyl-13β-hydroxy-9(13β)-ceroxenone	WLM.
1,3-Dimethyl-4-imidazolin-2-one	MRA.
2,3-Dimethylindole	DUP.
*N,N-Dimethyl-p-nitrosoaniline	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-Dinitrochrysazin	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-xylylguanidine	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, MON, NAC, SOC.
Dodecylmethylbenzene	x.
Dodecylmethylbenzyl chloride	UCP, x.
*Dodecylphenol	G, MON, x.
Ethanediylidenetetraphenol (Tetraphenolethane)	SHC.
(o-Ethoxybenzoyl)acetonitrile	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-pyridaziryl)sulfanilamide	ACY.
3-Ethylamino-p-cresol	DUP.
3-Ethylamino-p-toluenesulfonic acid [SO_3H=1]	DUP, G.
*N-Ethylaniline, refined	ACY, DUP, NAC, SDH.
*2-(N-Ethylanilino)ethanol	DUP, EKT, G.
[2-(N-Ethylanilino)ethyl]trimethylammonium chloride	DUP.
(N-Ethylanilino)propionitrile	EKT.
α-(N-Ethylanilino)-m-toluenesulfonic acid	DUP.
*α-(N-Ethylanilino)-p-toluenesulfonic acid	G, ICC, NAC, SDH, TRC, WJ.
N-Ethyl-p-anisidine	EKT.
N-Ethylanthranilic acid	G, SDH.
2-Ethylanthraquinone	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, DUP, 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-Ethynylcyclohexanol	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	QKO.
Hexachlorobenzene	KPT, SCC.
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_3H=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	HPC.
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-anthroic acid	G.
p-Hydroxybenzaldehyde	DOW.
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-Hydroxyethylanilino)propionitrile	ICC.
3-(N-2-Hydroxyethylanilino)propionitrile acetate	EKT.
4-(2-Hydroxyethyl)pyridine	RIL.
N-β-Hydroxyethyl-o-toluidine	EKT.
2-Hydroxy-α^1,α^3-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, KPC, 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, MOB, NAC.
4,4'-Methylenebis[o-tolylisocyanate]	CWN.
p-Nitrophenylisocyanate	EK.
Phenylisocyanate	CWN, OTC.
Polycarbonates (complex)	MOB.
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, MOB, NAC.
Toluene diisocyanate mixture, other	MOB.
Other isocyanic acid derivatives	CWN, DUP.
Isonicotinic acid	RIL.
Isonicotinic acid, methyl ester	RIL.
Isonitrosopropiophenone	NEP.
Isophorone	UCC.
Isophthalic acid (1,3-Benzenedicarboxylic acid)	ACC, SOC.
5,5'-Isopropylidenebis(2-hydroxy-m-xylene-α, α'-diol)	ARK.
*4,4'-Isopropylidenediphenol (Bisphenol A)	DOW, MON, SHC, UCP.
4,4'-Isopropylidenediphenol, ethoxylated	APD.
4,4'-Isopropylidenediphenol, propoxylated	APD.
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, HNW.
p-Mentha-1,4(8)diene	GIV.
o-Mercaptobenzoic acid	MED.
Metanilamide	TRC, VPC.
Metanilanilide	G.
*Metanilic acid (m-Aminobenzenesulfonic acid)	ACY, DUP, NAC, TRC.
1-Methoxyanthraquinone	G.
4-Methoxy-3-nitrobenzanilide	PCW.
4-Methoxy-6-nitrometanilic acid	DUP.
2-Methoxy-4-nitrophenol	MEE.
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, CMG, DUP.
2-(N-Methylanilino)ethanol	G.
3-(N-Methylanilino)propionitrile	DUP.
5-Methyl-o-anisidine [NH_2=1]	BUC, DUP, TRC.
N-Methylanthranilic acid	G, ICC.
2-Methylanthraquinone	ACY, NAC.
1-(3-Methyl-2-anthraquinonylamino)-5-(7-oxo-7H-benz[de]-anthracen-3-ylamino)anthraquinone.	DUP.
2-Methylaziridine	ICC.
3-Methylbenzo[f]quinoline	ACY.
α-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-Methylcarbostyril	EK.
3-Methylcholanthrene	EK.
Methylcyclohexane	DOW, PLC.
Methylcyclohexenes, mixed	PLC.
N-Methylcyclohexylamine	DUP.
N-Methyleneaniline	DUP.
4,4'-Methylenebis[2-chloroaniline]	DUP.
4,4'-Methylenebis[N,N-diethylaniline]	DUP, TRC.
*4,4'-Methylenebis[N,N-dimethylaniline] (Methane base)	ACY, DSC, DUP, NAC, SDH.
4,4'-Methylenebis[N,N-dimethyl-3-nitroaniline]	G.
5,5'-Methylenebis[toluene-2,4-diamine]	DUP, NAC.
Methylenedianiline	DOW, NAC.
Methylenedisalicylic acid	HN.
N-Methyl-2-heptadecylbenzimidazoliniummethylol sulfate	TRC.
6-Methyl-2-(2-methyl-6-quinolyl)-7-benzothiazolesulfonic acid.	DUP.
4-Methylmercapto-m-cresol	MEE.
Methylnaphthalene, crude	KPT, VEL.
1-Methylnaphthalene	RIL.
2-Methylnaphthalene	RIL.
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	ICC.
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_3H=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	ICO, x.
5-Methyl-3-phenyl-4-isoxazolecarboxylic acid hydrochloride.	ICO.
*3-Methyl-1-phenyl-2-pyrazolin-5-one (Developer Z)	DOW, DUP, NAC, SDW, VPC.
Methylpropylcarbinylbarbituric 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, HPC.
N,Methyl-5-sulfoanthranilic acid	G.
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,ij]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-benzanisidide	G.
*Naphthalene, solidifying at 79° C. or above (refined flake):	
From domestic crude naphthalene	ACY, KPT, RIL, STN, SW.
From imported crude naphthalene	ACP, 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.
*Naphthionic acid (4-Amino-1-naphthalenesulfonic acid)	ACY, DUP, NAC.
Naphthionic 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 (Nevile & 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.
Naphthostyril	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-Hydroxypheryl)-2-naphthylamine).	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, UPM.
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, DUP, KPC, SDH.
*5-Nitro-o-anisidine [NH_2=1]	ACY, AUG, DUP, G, KLS.
5-Nitro-o-anisidine sulfate [NH_2=1]	DUP.
2-Nitro-p-anisidine [NH_2=1]	DUP.
o-Nitroanisole	DUP, MON.
p-Nitroanisole	DUP.
1-Nitroanthraquinone	DUP.
1'-Nitroanthraquinone-2'-carboxyaminoaceanthra[2,1-a]-aceanthrylene-5,13-dione.	AHC.
*1-Nitro-2-anthraquinonecarboxylic acid	AHC, DUP, G, NAC, TRC.
*5-Nitro-1-anthraquinonesulfonic acid	DUP, MAY, NAC, TRC.
5(and 8)-Nitro-1-anthraquinonesulfonic acid	AHC, DUP, TRC.
8-Nitro-1-anthraquinonesulfonic acid	NAC.
8-Nitro-1-anthraquinonesulfonic acid, sodium salt	DUP, 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.	DUP.
6-(p-Nitrobenzamido)-1-naphthol-3-sulfonic acid	DUP.
4'-Nitrobenzanilide	G, TRC.
*Nitrobenzene	ACY, DUP, G, MON, NAC.
3-Nitrobenzenesulfonanilide	G.
*m-Nitrobenzenesulfonic acid	DUP, NAC.
m-Nitrobenzenesulfonic acid, potassium salt	ACY.
*m-Nitrobenzenesulfonic acid, sodium salt	G, KPC, MAY, MEE, MON, MRA.
5'-Nitro-o-benzenesulfonotoluidide	DUP.
m-Nitrobenzenesulfonyl chloride	G.
o-Nitrobenzenesulfonyl chloride	EK.
p-Nitrobenzenesulfonyl chloride	EK.
5-Nitro-2(3H)-benzimidazolone	DUP.
m-Nitrobenzoic acid	HK, SDH, WAY.
p-Nitrobenzoic acid	DUP.
p-Nitrobenzoic acid, isobutyl ester	ICO.
m-Nitrobenzoyl chloride	HK.
p-Nitrobenzoyl chloride	HK.
m-Nitrobenzyl alcohol	DUP.
4'-Nitro-4-biphenylcarboxylic acid	DUP, TRC.
3-Nitro-4-chloro-N,N-dimethylbenzenesulfonamide	EKT.
2-Nitro-p-cresol	DUP, SW.
Nitrocyclohexane	x.
Nitrodiphenylamine	ACY.
4-Nitro-6-(5-hydroxy-3-methyl-1-pheryl-4-pyrazolylazo)-1-phenol-2-sulfonic acid.	TRC.
5-Nitro-1H-indazole	EK.
5-Nitroisophthalic acid	G, GAM.
1-Nitronaphthalene	DUP, 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	DUP.
p-Nitrophenethyl acetate	EKT.
Nitrophenethyl alcohol	EKT.
m-Nitrophenol	EK.
o-Nitrophenol	DUP.
*p-Nitrophenol	DUP, G, MON, SDC, UPM.
p-Nitrophenol, sodium salt	MON, UPM.
p-Nitrophenylacetic acid	BPC, EK, ICO.
p-Nitrophenylacetonitrile	ICC.
4'-(p-Nitropheryl)acetophenone	DUP, G.

TABLE 7B.-- *Cyclic intermedieates 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, VPC.
3-Nitrophthalic acid	EK.
Nitrophthalic anhydride	EK.
4-Nitrophthalimide	DUP.
5-Nitro-4,6-pyrimidinediol	KF.
2-Nitroresorcinol	EK.
5-Nitrosalicylaldehyde	EK.
3(and 5)-Nitrosalicylic acid	G.
p-Nitrosophenol	ACY, DUP, NAC.
β-Nitrostyrene	CWN.
2-[4-(4-Nitro-2-sulfostyryl)-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_3H=1]	ACY, DUP, G, NAC, SDH, TRC.
*3-Nitro-p-toluenesulfonic acid [SO_3H=1]	CMG, KPC, 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, DUP, KPC, 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-Nonyl-p-cresol	USR.
Nonyl-dinonylphenol, mixture	G, JCC.
*Nonylphenol	ENJ, G, JCC, MON, RH, UPM, 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, DUP, G, TRC.
*1,1'-(7-Oxo-7H-benz[de]anthracen-3,9-ylenediimino)-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, VPC.
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, KPC, VPC.
4,4'-Oxydianiline	x.
Pentachloronitrobenzene	OMC.
Pentadecyltoluene	CO.
1,1,3,3,5-Pentamethylindan	GIV.
Pentylnaphthalenes (Amylnaphthalenes)	PAS.
o-Pentylphenol (o-Amylphenol)	PAS.
3,4,9,10-Perylenetetracarboxylic acid	G.
3,4,9,10-Perylenetetracarboxylic diimide	G.
Phenethylamine	MLS.
β-Phenethylamine sulfate	MLS.
o-Phenetidine	MON.
p-Phenetidine	DOW, DUP, MON.

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%-84%	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.
*Phenylacetonitrile (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, DUP, G, KPC, NAC.
4-Phenylazodiphenylamine	EK.
4-Phenylazo-1-naphthylamine	DUP.
1-Phenyl-1,3-butanedione	EK.
2-Phenylbutyric acid	BPC.
α-Phenyl-o-cresol	RBC.
N-Phenyldibenzylamine	DUP.
N,N'-p-Phenylenebis[acetamide]	ACY.
*m-Phenylenediamine	ACY, DUP, G, NAC, PDC.
*o-Phenylenediamine	FMC, MEE, MRT, TRC.
p-Phenylenediamine	ACY, BFG, SW.
l-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 (Phenyldiethanolamine)	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.
Phenylphosphonous acid	VIC.
Phenylphosphonous 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, THC, 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, SDC.
Piperazine mixture, crude	JCC.
*Piperidine	ABB, DUP, MRK, RIL.
3-Piperidinopropiophenone hydrochloride	ACY.
Polychlorobiphenyl	MON.
Polydodecylbenzene	CO.
Polyethylbenzene (80% Diethylbenzene)	UCC.
Polypentadecyltoluene	CO, ICO.
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.
Pyrrolidine	ASL.
2-Pyrrolidinone	G.
Quinaldine	ACY, DUP.
*Quinizarin	ACY, 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.
β-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'-Sulfamoylacetanilide	ACY.
5-Sulfamoylanthranilic acid	TRC.
p-Sulfamoylbenzoic acid	ABB.
N-Sulfamoyl-2-benzoxazolinone	TRC.
Sulfanilic acid (p-Aminobenzenesulfonic acid) and salt	ACY, NAC.
4-Sulfoanthranilic acid	CMG, TRC.
5-Sulfoisophthalic acid, dimethyl ester	x.
4,4'-Sulfonyldiphenol (4,4'-Dihydroxydiphenylsulfone)	G, MON, UPF, WTC.
4-Sulfophthalic acid	CWN.
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'-Tetraaminobiphenyl	KPC.
Tetraaminophthalocyanine, copper derivative	DUP.
Tetrabromobisphenol A	DOW.
Tetrabromophenolphthalein, ethyl ester	EK.
Tetrabromophthalic anhydride	MCH.
Tetrabromo-8,16-pyranthrenedione	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.
α,α,2,6-Tetrachlorotoluene	DUP.
Tetrachloroviolanthrone	AHC.
Tetradecylbenzene	CO.
Tetrahydrofuran	DUP.
Tetrahydro-2-methylfuran	QKO.
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.
Tetranitrophthalocyanine, 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-Tolidine	CWN, DUP, NAC.
o-Tolidine hydrochloride	DUP, EK, KPC.
Toluene-2,4-diamine (4-m-Tolylenediamine)	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	UPF.
p-Toluenesulfono-o-toluidide	DUP.
p-Toluenesulfonyl chloride	MON.
α-Toluenethiol	RBC.
p-Toluenethiol	EVN.
p-Toluhydroquinone (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-Toluoyl)benzoic acid	ACY, DUP, G, NAC, TRC.
o-Tolylacetonitrile	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	DOW, HK.
N,2,6-Trichloro-p-benzoquinoneimine	EK.
1,2,4-Trichloro-5-nitrobenzene	ALL, PCW.
Trichlorophenylsilane	UCS.
α,α,α-Trichlorotoluene (Benzotrichloride)	HK, TNP.
α,2,4-Trichlorotoluene	HN.
α,2,4(and α,2,6)-Trichlorotoluene	BPC.
1,3,5-Triethylbenzene	DUP.
α,α,α-Trifluoro-m-cresol	MEE.
α,α,α-Trifluoro-4-nitro-m-cresol	MEE.
α,α,α-Trifluorotoluene	ACC, HK.
α,α,α-Trifluoro-m-toluidine	MEE.
α,α,α-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-$\Delta^{2,\alpha}$-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	ICC.
*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	PLC.
2,2′-Vinylenebis[benzimidazole]	TRC.
5-Vinyl-2-picoline (MVP)	PLC.
2-Vinylpyridine	RIL.
4-Vinylpyridine	RIL.
*Violanthrone (Dibenzanthrone)	ACY, AHC, DUP, G, KPC, MAY, TRC.
9-Xanthenecarboxylic acid	MAL.
m-Xylene	PLC, SNT, SOC.
*o-Xylene	ASH, CCP, CSD, 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	DUP.
*Acid Yellow 3	ACY, DUP, G, NAC.
Acid Yellow 4	SDH.
Acid Yellow 7	NAC.
Acid Yellow 9	ACY.
*Acid Yellow 11	CMG, DUP, VPC.
Acid Yellow 14	TRC.
*Acid Yellow 17	ACY, ATL, BKS, CMG, DUP, 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	DUP, G, NAC, TRC.
Acid Yellow 38	NAC.
*Acid Yellow 40	ACY, DUP, 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, SNA.
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	DUP, 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, DUP, 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, DUP, G, NAC, TRC.
*Acid Orange 10	ACY, ATL, DUP, 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	NYC.
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.

710-934 O-63—8

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	
Azoic Compositions	
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.
Azoic Diazo Components, Bases (Fast Color Bases)	
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	
Azoic Diazo Components, Bases (Fast Color Bases)--Continued	
Azoic Diazo Component 10, base	G, KLS, VPC.
*Azoic Diazo Component 12, base	ALL, DUP, KLS, KPC, SDH.
*Azoic Diazo Component 13, base	ALL, AUG, BUC, KLS, KPC, SDH.
Azoic Diazo Component 14, base	KPC.
Azoic Diazo Component 20, base	ALL, G.
Azoic Diazo Component 24, base	KLS.
Azoic Diazo Component 28, base	ALL, AUG, G, KLS.
*Azoic Diazo Component 32, base	ALL, ATL, AUG, BUC, DUP, G, KLS, KPC, SDH, SNA.
Azoic Diazo Component 41, base	ALL, G.
Azoic Diazo Component 42, base	ALL, KLS.
*Azoic Diazo Component 48, base	ALL, CWN, DUP, G, SNA.
Other azoic diazo components, bases	G, VPC.
Azoic Diazo Components, Salts (Fast Color Salts)	
*Azoic Diazo Component 1, salt	G, KLS, KPC,
Azoic Diazo Component 2, salt	ALL, G, KLS.
*Azoic Diazo Component 3, salt	ALL, AUG, BUC, G, KLS, KPC, NAC, SDH, VPC.
Azoic Diazo Component 4, salt	ALL.
*Azoic Diazo Component 5, salt	AUG, G, KLS, KPC, SDH, VPC.
*Azoic Diazo Component 6, salt	AUG, G, KLS, KPC.
*Azoic Diazo Component 8, salt	ALL, AUG, G, KPC.
*Azoic Diazo Component 9, salt	ALL, AUG, BUC, G, KLS, KPC, NAC, SDH, VPC.
Azoic Diazo Component 10, salt	G, KLS, SDH.
*Azoic Diazo Component 11, salt	ALL, G, KLS, KPC.
*Azoic Diazo Component 12, salt	ALL, AUG, BUC, G, KLS, KPC, SDH, VPC.
*Azoic Diazo Component 13, salt	ALL, AUG, BUC, KLS, KPC, NAC, SDH, VPC.
Azoic Diazo Component 14, salt	G, KPC.
*Azoic Diazo Component 20, salt	ALL, G, SDH.
*Azoic Diazo Component 28, salt	ALL, AUG, BUC, G, KLS, NAC, SDH, VPC.
Azoic Diazo Component 32, salt	ALL, KLS.
Azoic Diazo Component 34, salt	G.
Azoic Diazo Component 35, salt	G.
*Azoic Diazo Component 36, salt	ALL, G, KPC, NAC.
Azoic Diazo Component 37, salt	G.
Azoic Diazo Component 41, salt	ALL, G.
*Azoic Diazo Component 42, salt	ALL, G, KLS.
Azoic Diazo Component 44, salt	G.
*Azoic Diazo Component 48, salt	ALL, G, KLS, KPC, NAC.
*Azoic Diazo Component 49, salt	G, KLS, KPC, SDH.
Other azoic diazo components, salts	BUC, G.
Azoic Coupling Components (Naphthol AS and Derivatives)	
Azoic Coupling Component 1	AUG.
*Azoic Coupling Component 2	ACY, ATL, AUG, BUC, G, NAC, PCW.
*Azoic Coupling Component 3	AUG, G, PCW.
*Azoic Coupling Component 4	AUG, G, KPC, PCW.
*Azoic Coupling Component 5	ALL, G, KPC, PCW, SDH.
*Azoic Coupling Component 7	AUG, BUC, G, KPC, NAC, PCW.
Azoic Coupling Component 8	G, KPC, PCW.
Azoic Coupling Component 10	ATL, PCW.
Azoic Coupling Component 11	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	
Azoic Coupling Components (Naphthol AS and Derivatives)--Continued	
Azoic Coupling Component 12	ALL, AUG, BUC, G, KPC, PCW.
Azoic Coupling Component 13	ALL, G, PCW.
*Azoic Coupling Component 14	ALL, ATL, AUG, BUC, G, PCW.
Azoic Coupling Component 15	G.
Azoic Coupling Component 16	G, SDH.
*Azoic Coupling Component 17	ACY, ALL, ATL, AUG, BUC, DUP, G, PCW.
*Azoic Coupling Component 18	ACY, ATL, BUC, DUP, G, NAC, PCW.
Azoic Coupling Component 19	G, PCW.
*Azoic Coupling Component 20	ALL, ATL, AUG, BUC, DUP, G, KPC, NAC, PCW.
*Azoic Coupling Component 21	ALL, ATL, AUG, BUC, KPC, PCW.
Azoic Coupling Component 23	G, PCW.
Azoic Coupling Component 24	G, PCW.
*Azoic Coupling Component 29	AUG, G, PCW.
*Azoic Coupling Component 34	ALL, ATL, BUC, G, PCW.
*Azoic Coupling Component 35	ALL, G, KPC, PCW.
Azoic Coupling Component 36	G.
*Azoic Coupling Component 43	ALL, ATL, G.
Other azoic 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	ACY, 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, CMC, 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, CMC, DUP, G, NAC.
*Direct Orange 37	ACY, CMC, 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, BKS, 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, ANC, 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	
Food, Drug, and Cosmetic Dyes	
*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.
Drug and Cosmetic Dyes	
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	
Drug and Cosmetic Dyes--Continued	
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.
Drug and Cosmetic Dyes, External	
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.

710-934 O-63—9

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	ACY.
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, 25%	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%----------	ACY, 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, RCM, 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, ANC, 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	APC, 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	APC, 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, LVY, 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	APC.
*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	LIL, MRK, OMS, PFZ.
Erythromycin	ABB, LIL.
Fumagillin	ABB.
Gramicidin	BAX, PEN.
*Neomycin, 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.
Chloroprocaine penicillin O	UPJ.
Hydrabamine penicillin V	ABB.
NEP penicillin	MRK.
Penicillin V	LIL.
*dl-α-Phenoxyethylpenicillin and potassium salt	BRS, PFZ, WYT.
*Potassium penicillin G	ABB, LIL. MRK, OMS. PFZ, WYT.
Potassium penicillin V	ABB, LIL.
*Procaine penicillin G	ABB, LIL. 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	LIL, MRK, OMS, PFZ.
*Tetracycline	ACY, BRS, PFZ.
Thiostrepton	OMS.
Tyrothricin	BAX, PEN.
Vancomycin	LIL.
Viomycin	PFZ.
Other	BRS, OMS.
*Antibiotics for animal feed supplements, food preservation, and crop spraying:	
Aterrimin	IMC.
*Bacitracin	COM, DLI, GPR, IMC, PBS, PEN.
Chlortetracycline hydrochloride	ACY.
Hygromycin B	LIL.
Novobiocin mixture	x.
Oxytetracycline hydrochloride	PFZ.
Penicillin salts:	
Benzathine penicillin G	WYT.
*Procaine penicillin G	ABB, LIL, 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	RIK.
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-thenylethyl-enediamine 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-α-phenylbenzyloxy)ethylamine citrate.	RIK.
N,N-Dimethyl-2-(o-methyl-α-phenylbenzyloxy)ethylamine hydrochloride.	RIK.
N,N-Dimethyl-2-(α-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).	OMS.
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.	OMS.
1-[2-(Benzylcarbamoyl)ethyl]-2-isonicotinoylhydrazine-----	PFZ.
N,N'-Bis(3-nitrobenzenesulfonyl)ethylenediamine----------	SAL.
Bis(3-nitrophenyl) disulfide----------	ACY.
α-Butoxycinchoninic 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-pyrazolidinedione.	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-methylbutylamino)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	PBS.
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-methylpiperidine.	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-acetoxylidide	AST.
6-(2-Diethylaminoethoxy)-2-dimethylaminobenzothiazole hydrochloride.	HOF.
1-[p-(β-Diethylaminoethoxy)phenyl]-1-p-tolyl-2-(p-chlorophenyl) 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-$\Delta^{5,\gamma}$-propylamine.	MRK.
3,4-Dihydroxyphenylacetic acid	LIL.
l-3-(3,4-Dihydroxyphenyl)-2-methylalanine	MRK.
N,N-Diisopropylaminoethyl xanthene-9-carboxylate methobromide.	SRL.
6,7-Dimethoxy-1-(4-ethoxy-3-methoxybenzyl)-3-methylquinoline 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 (Dipyrone).	SDW.
3,4-Dimethyl-2-phenylmorpholine	x.

710-934 O-63—10

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.
Diphenylacetyldiethylaminoethanol 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.
17β-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.
*Imidazoline derivatives:	
2-Benzyl-2-imidazoline (Tolazoline) hydrochloride	ORT, SPC.
1-Methyl-2-undecyl-3-benzylimidazolium bromide	LIL.
α-2-(1,2,3,4-Tetrahydro-1-naphthyl)-2-imidazoline 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-Methoxyphenoxymethyl)-2-oxazolidinone	ACY.
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-diethylamino-ethoxy)ethyl ester, citrate.	PFZ.
Phenylethylhydrazine dihydrogen sulfate	NEP.
2-Phenyl-1,3-indandione	GAN, SPC.
*Phenylsulfonylurea derivatives:	
1-(p-Acetylphenylsulfonyl)-3-cyclohexylurea	LIL.
1-Butyl-3-p-tolylsulfonylurea	HST, x.
1-(p-Chlorophenylsulfonyl)-3-propylurea	PFZ.
1-(2H)-Phthalazone	NAC, SDH.
Piperazine derivatives:	
N-Benzhydryl-N^1-methylpiperazine base and hydrochloride	BUR.
N-(β-Cyclohexyl-β-hydroxy-β-phenyl)ethyl-N′-methyl-piperazine methosulfate.	ABB.
N-(β,β-Diphenyl-β-hydroxy)ethyl-N′-methylpiperazine dihydrochloride.	ABB.
Podophyllin powder	ABB.
Primaquine (8-(4-Amino-1-methylbutylamino)-6-methoxy-quinoline) phosphate.	PD.
Pyrazine-2-carboxamide	MRK.
2-Pyridinemethanol tartrate	HOF.
Pyrogallic 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 diprotrizoate).	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)	DOW, 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^1-(3,4-dimethyl-5-isoxazolyl)sulfanilamide	HOF.
N^1-Acetylsulfamethoxypyridazine	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.
Sulfaguanidine	ACY.
Sulfamerazine	ACY.
Sulfamerazine, sodium salt	ACY.
Sulfamethazine	ACY.
Sulfamethoxypyridazine	ACY.
Sulfanilamide (p-Aminobenzenesulfonamide)	MRK.
Sulfanilanilide	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)]dimethanesulfinic 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, PRR.
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-dimethylphenethylamine [1-(o-Methoxyphenyl)-2-methylaminopropane] hydrochloride (Methoxyphenamine).	x.
Methylaminoethanolcatechol, racemic	DOD, VB.
α-(1-Methylaminoethyl)benzyl alcohol (Pseudoephedrine) hydrochloride.	BUR, GAN.
α-(1-Methylaminoethyl)benzyl alcohol sulfate	GAN.
N-[2-(3,4-Methylenedioxyphenyl)isopropyl]-α-aminomethyl-protocatechuyl alcohol hydrochloride (Caytine).	LKL.
*dl-α-Methylphenethylamine (Amphetamine) base	HEX, ORT, SK.
α-Methylphenethylamine salts:	
α-Methylphenethylamine hydrochloride	PRR.
α-Methylphenethylamine sulfate	HEX, PRR.
All other	PRR.
d-α-Methylphenethylamine (Dextroamphetamine) base	HEX.
d-α-Methylphenethylamine salts:	
d-α-Methylphenethylamine hydrochloride	HEX.
d-α-Methylphenethylamine sulfate	HEX, PRR, SK.
*Norephedrine (Phenylpropanolamine) hydrochloride	GAM, GAN, HEX, ICO, NEP, ORT.
trans-2-Phenylcyclopropylamine sulfate	x.
l-Phenylephrine base	GAN, SPC.
*Phenylephrine hydrochloride	GAN, HEX, SDW, SPC.
Tannin albuminate (Tannalbin)	PYL.
2-(4-Thiazolyl)benzimidazole	MRK.
Thiosalicylic acid	LIL.
Thymol	GIV, HNW, OPC.
Thymol iodide	MAL.
Thymolphthalein	FIN.
3-o-Toloxy-1,2-propanediol (o-Cresyl α-glyceryl ether)	BKL, HEX.
*Tranquilizers:	
2-(n-Butylaminomethyl)-8-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-(3-[4-(2-hydroxyethyl)piperazinyl]propyl)-phenothiazine.	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-(γ-Dimethylaminopropyl)phenothiazine (Promazine) hydrochloride.	WYT.
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, HOF, MRK, PBS.
For human consumption	HOF, MRK.
B_6 (Pyridoxine)	HOF, 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)	HOF.
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 diphosphate, tetrasodium salt).	HOF.
K_5 (4-Amino-2-methyl-1-naphthol)	PD.
Magnesium nicotinate	NEP.
*Niacin (Nicotinic acid):	
Animal feed grade	CKL, 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	HOF.
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:	WLI.
Digitalis glucosides:	
Digitonin	
All other	PEN.
Veratrum viride (Alkavervir)	BUR.
All other	PEN, RIK.
*Amino acids:	LIL.
Acetylmethionine	DOW.
β-Alanine	BFG, NOP.
Arginine	GNM.
Arginine glutamate	GNM.
l(+)-Arginine hydrochloride	GNM.
dl-Aspartic acid	HEX, NAC.
Aspartic acid, magnesium salt	WYT.
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:	
l(+)-Glutamic acid	IMC.
l(+)-Glutamic acid hydrochloride	IMC, LEM.
l(+)-Glutamic acid, monoammonium salt	GNM, IMC.
l(+)-Glutamic acid, monopotassium salt	IMC.
Glycine (Aminoacetic acid)	BPC, DOW.
Glycine hydrochloride	EK.
Histidine hydrochloride	GNM.
l(+)-Lysine hydrochloride	MRK, PFZ.
l(+)-Lysine hydrochloride (feed grade)	MRK.
l(+)-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.
*Ketocholanic 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.
Camphosulfonic acid	PRR, PYL.
Camphosulfonic acid, calcium salt	PYL.
*Carbohydrates and derivatives:	
Aurothioglucose	SCH.
Carboxymethylcellulose, sodium salt (medicinal grade)	CBP.
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)	MLS.
2-Chlorothiophene	GAM.
β-Chlorovinylethylethynyl carbinol	ABB.
*Choline salts:	
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.
1-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,α-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-oxazolidinedione	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	LIL.
dl-Glutamine	LIL.
Glutathione (oxidized)	SBR.
Hendecanoic (Undecylenic) acid, zinc salt	LEM, MCO.
Heparin sodium	ABB, RIK.
Hexamethyldiaminoisopropanol diiodide	SDW.
*Hexamethylenebis(trimethylammonium chloride) (Hexamethonium chloride).	HEX, NEP, RSA.
Hexamethylenetetramine	HN.
Hexokinase	PBS.
Hormones:	
17α-Acetoxy-6α-methylprogesterone	JUL.
17α-Acetoxyprogesterone	JUL.
Adrenocorticotropic hormone (ACTH)	ARP, ORG, WIL.
Dehydroisoandrosterone alcohol	JUL.
Desoxycorticosterone acetate	ORG.
Desoxycorticosterone glucoside	JUL.
21-Desoxy-9α-fluoro-6α-methylprednisolone	x.
11-Desoxy-17-hydroxycorticosterone acetate	INI.
Dexamethasone	MRK, SCH.
Dexamethasone acetate (9α-Fluoro-11β,17α, 21-trihydroxy-16α-methylpregna-1,4-diene-3,20-dione, 21-acetate).	SCH.
9α,11β-Dichloro-17α,21-dihydroxypregna-1,4-diene-3,20-dione, 21-acetate.	SCH.
Dienediol	UPJ.
17α,21-Dihydroxypregn-4-en-3,20-dione, 21-acetate	JUL.
17α-Ethynyl-17β-hydroxy-5(10)-estren-3-one	SRL.
9α-Fluorohydrocortisone acetate	UPJ.
9α-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.
17β-Hydroxy-17α-methylandrostano[3,2-c]pyrazole	SDW.
11α-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	ACY, OMS.
3β,17α,21-Trihydroxypregn-5-en-20-one-3,21-diacetate	JUL.
Hydantoin derivatives:	
*Allantoin	FIN, HFT, SCL, SPC.
N-(5-Nitro-2-furfurylidene)-1-aminohydantoin	NOR.
trans-[4-(Hydroxydi-2-thienylmethyl)cyclohexyl]trimethylammonium bromide.	SCH.
1-(Hydroxymethyl)cyclohexaneacetic 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-camphoramate, disodium salt.	WYT.
3-Chloromercuri-2-methoxypropylurea	LKL.
Ethylmercuric chloride	LIL.
β-Methoxy-γ-hydroxymercuric propylamide of camphoric acid, sodium salt with theophylline.	FIN.
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 semioxamazide	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	DOW, HOU, JCC, UCC.
*Piperazine derivatives:	
N-Aminoethylpiperazine	UCC.
1-Diethylcarbamyl-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-acetoxylidide hydrochloride	EN.
Sodium caprylate	TNC.
Sodium tartrate	MAL.
Succinylcholine dichloride	ABB, SPC.
Sulfosuccinic acid, bis(2-ethylhexyl) ester	ACY.
Terpinol hydrate	PEN.
*Tetramethylammonium chloride	ASL, EK, RSA.
Tetramethylammonium hydroxide	RSA.
Thiosemicarbazide	FMT.
2-Thiouracil	ACY.
Thymidine	SBR.
*Tranquilizers:	
2-Methyl-2-sec-butyl-1,3-propanediol dicarbamate	x.
2-Methyl-2-n-propyl-1,3-propanediol dicarbamate (Meprobamate).	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	
Benzenoid and Naphthalenoid	
2'-Acetonaphthone (Methyl β-naphthyl ketone)	GIV, TBK.
Acetophenone	GIV, TBK..
7-Acetyl-6-ethyl-1,1,4,4-tetramethyl-1,2,3,4-tetrahydronaphthalene.	GIV, TBK.
p-Allylanisole	GIV.
Allyl phenoxyacetate	GIV.
*4-Allylveratrole (Eugenyl methyl ether)	FB, GIV, TBK.
*Anethole (p-Propenylanisole)	FB, GIV, GLD, HNW, 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)	CFC, DOW, HN, MON, PEN.
*α-Pentylcinnamaldehyde (α-Amylcinnamaldehyde)	GIV, IFF, NEO, RDA, TBK, VLY.
*Phenethyl acetate	GIV, IFF, NEO.
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	
Benzenoid and Naphthalenoid--Continued	
Phenylacetaldehyde, dimethyl acetal	GIV, TBK.
o-Phenylanisole (2-Methoxybiphenyl)	GIV.
4-Phenyl-3-buten-2-one (Benzylidene acetone)	FB, MYW.
*3-Phenyl-1-propanol (Hydrocinnamic alcohol)	FB, GIV, OPC, TBK.
3-Phenyl-1-propyl acetate	GIV.
5-Propenyl-2-ethoxyphenol (Propenylguaethol)	ICO, SHL.
*4-Propenylveratrole (Isoeugenyl methyl ether)	GIV, ICO, TBK.
p-Propylanisole	GIV.
Salicylaldehyde	DOW.
Styrolyl acetate	FB.
1,2,3,6-Tetrahydro-2,3,5-trimethylbenzaldehyde	IFF.
p-Tolualdehyde (p-Methylbenzaldehyde)	GIV, HN.
p-Tolyl acetate (p-Cresyl acetate)	GIV.
p-Tolyl isobutyrate (p-Cresyl isobutyrate)	IFF.
p-Tolyl phenylacetate (p-Cresyl α-toluate)	GIV, TBK.
α-(Trichloromethyl)benzyl acetate (Rosetone)	ICO, TBK.
p-α,α-Trimethylphenethyl alcohol	IFF.
Vanillin	MON, SLV.
All other	FB, VPC.
Terpenoid, Heterocyclic, and Alicyclic	
Acetyl ethyl tetramethyl tetralin	TBK.
Allyl ionone	GIV, IFF.
Amyris acetate	GIV, TBK.
Bornyl acetate	FEL, GIV.
4-tert-Butylcyclohexanol	IFF.
4-tert-Butylcyclohexyl acetate	DOW, IFF, VPC.
Cadinene	FB.
Carvone (Carvol)	FB, FRM, OPC.
*Caryophyllene	FB, GIV, GLD.
Cedranone	TBK.
Cedrenol	GIV.
Cedrol	GIV, IFF, TBK, UNG.
*Cedryl acetate	GIV, IFF, NEO, TBK, UNG.
*Citral (Geranial)	FB, GIV, LUE, MYW, NEO, RT, TBK, UNG, VLY.
Citral dimethyl acetal	GIV, VLY.
Citronellal	FB, GIV, IFF, TBK.
*Citronellol	FB, GIV, IFF, OPC, TBK, VLY.
*Citronellyl acetate	GIV, IFF, TBK, VLY.
Citronellyl butyrate	GIV, VLY.
*Citronellyl formate	FB, GIV, IFF, TBK.
*Citronellyl isobutyrate	GIV, IFF, TBK.
Citronellyl oxyacetaldehyde	IFF, TBK.
Citronellyl propionate	IFF.
*Coumarin	DOW, MON, NEO, RDA, TBK.
Cyclohexadecanolide	IFF.
Cyclohexylcyclohexanone	GIV.
Cyclopentanone	ARA.
Dihydrogeraniol	ICO.
Dihydroterpinyl acetate	GIV.
*Essential oils, chemically modified:	
Cedarwood acetate	FB.
Citronella oil, acetone condensation product	CP.
Ethyl oxyhydrate	FEL, FLO, LUE, RT, VND, VPC.
Guaiacwood acetate	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-Furfural 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.
*Nopyl acetate	DOW, SHL, VLY.
Phellandrene	ICO.
*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	
Terpenoid, Heterocyclic, and Alicyclic--Continued	
*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 alloocimenol	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.
Butyrone (Di-n-propyl ketone)	TBK.
Butyroyl 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)	CQM, 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.
Isodecanoyl acetate	VLY.
*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, VPC.
Myristaldehyde	GIV.
Nonanal (Pelargonaldehyde) (C_9)	GIV, TBK.
Nonanediol monoacetate	GIV.
Nonanol	TBK.
Nonyl acetate	TBK.
Nonynol 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, ICO.
Omega decenol	x.
Trimethylundecenal	VPC.
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, DUP, 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, GRG, GRV, HER, HKD, HVG, ICF, INL, IRC, IRI, KND, 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, DBG, 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, QCP, 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, GRG, GRV, GYR, HKD, HYC, ICF, INM, IPC, LAS, MCW, MFG, MOB, MRO, NOP, ORO, OSB, PFP, PLU, PPG, RCI, RH, RTF, SCN, SIC, SW, USR, UTR, VAL, x.
*Polyurethane and diisocyanate resins	ACB, ADM, ARK, ARO, BFG, CWN, DUP, 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, BCN, BFG, BOR, BPL, CSD, DOW, DSO, DUP, FG, GLD, GNT, GOR, GRD, GRP, GYR, ILC, KPP, MCB, MON, MPL, NSP, PLA, PPG, RCC, RMC, SCO, SHC, SOL, TIC, UBS, UCP, 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, PPG, SHC, SPI, SPP, UBS, x.
*Styrene-alkyd polyesters and styrenated alkyds	ACY, ACP, ADM, ARO, BOR, DEG, DUP, 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	ACO, ACY, CAT, DUP, ICF, RCI, RH, SAR, USP, WIC.
All other acrylic resins	ACY, APV, ARO, CAT, CLD, DOW, DUP, GLC, GLX, GRD, HMN, ICF, IOC, JOC, JOD, JSC, MEE, MMM, MRT, NIL, PCI, PII, QUN, RCI, RH, TRC, UBS, VAL, x.
*Alkyd resins (except phthalic)	ACP, ACY, ADM, AMF, AMR, APT, APV, BEN, CPV, DSO, DUN, DUP, EW, FAR, FCD, FLW, FOC, FSH, GEI, GLD, GRV, HPC, ICF, LON, MCC, MCW, MMM, ORO, OSB, PPG, PRT, RCI, RH, RMC, RUB, SCF, SCN, SPP, SRR, SW, TV, UCP, VTV.
*Dicyandiamide resins	ACY, APX, DEP, GGY, JSC, MRA, NOP, ONX, RPC, 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, EKX, ENJ, GRP, KPP, MON, PLC, RCC, SPN, UCP, USI.
*Density over 0.940	ACP, CEL, DOW, DUP, ENJ, GGC, GRP, HPC, KPP, MON, PLC, UCP, USI.
*Polypropylene resins	AVS, DOW, EKX, 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, FRP, HPC, MCC, NCI, RCI, SCN, SRR, TV.
*All other rosin modifications	ACP, ADM, APV, BEN, CBY, CPT, DPP, DUN, FAR, FLW, FRP, HPC, JOD, KRM, KYN, MCC, MID, MON, NCI, OSB, RCI, RED, RH, SCN, SHA, UCP, VSV, x.
*Silicone resins	ACP, DOC, SPD, UCS.
*Urea and melamine resins:	
*Melamine-formaldehyde type	ACP, ACY, APV, AV, CAP, CAT, CPV, CRC, DAN, DUP, FOM, GLD, GRV, ICF, JOD, MON, MRA, NPP, PPG, RCI, RH, SW, TRC, WRD.
*Urea-formaldehyde type	ACP, ACY, AMR, APX, AV, BGC, BOR, BRR, BRY, CAP, CAT, CBC, CLR, CRC, DA, DAN, DEP, DUP, EDY, GDN, GGY, GLD, GRV, HNC, HPC, HRT, IPR, JOD, JSC, MDP, MMM, MON, MRA, NPI, NTC, ONX, PC, PGU, PPG, QCP, RCI, RH, RPC, S, SFA, SIM, SNW, SOR, 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, DUP, FAR, FC, FLH, GLD, GRD, HAN, HRT, JOD, JSC, MCC, MCW, MRN, NPV, NSC, PCI, PGU, PII, PPG, QCP, RCI, REL, RPC, SCO, SED, SH, SNM, SRC, SW, SYR, UCP, USC, WAS, WIC, x.
*Polyvinyl alcohol	AIR, BOR, DSO, DUP, FC, GLD, PPG, SRC.
Polyvinyl butyral	DUP, PII, RMC, SRC, UCP.
*Polyvinyl chloride and copolymer resins (containing 50% or more polyvinyl chloride).	AME, ATU, BFG, BOR, CLR, CRY, CUC, DA, DOW, DSO, ESC, FCP, FIR, GNT, GRA, GYR, KYS, MON, ONX, PNT, PPG, RUB, THC, UCP, USR.
All other vinyl resins	ACP, BEN, CLD, DOW, FC, FCD, G, GRD, JOD, MR, SRC, SW, x.
All other nonbenzenoid plastics and resin materials	ACY, BEN, DUP, GE, GEI, GLD, HPC, HVG, IOC, JOC, KRM, MDB, PLU, PTT, UCP, 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'-Dibutyldithiodipamide	DUP.
4,4'-Dithiodimorpholine	MON.
α-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:	
Dibenzyldithiocarbamic acid, sodium salt	USR.
Dibenzyldithiocarbamic acid, zinc salt	USR.
Dibutyldithiocarbamic acid, N,N-dimethylcyclohexyl-amine salt.	MON.
Dibutyldithiocarbamic acid, diphenylguanidine salt	CCO.
Dimethylethylene diphenyldithiocarbamic acid, lead salt.	CCO.
2,4-Dinitrophenyl dimethyldithiocarbamate	USR.
Piperidinecarbodithioic acid, piperidinium-potassium salts.	DUP.
Guanidines:	
Dicatechol borate, di-o-tolylguanidine salt	DUP.
Diphenylguanidine	ACY.
Diphenylguanidine phthalate	MON.
Di-o-tolylguanidine	ACY, DUP.
1,2,3-Triphenylguanidine	NAC.
2-Imidazoline-2-thiol	DUP, RBC.
Poly-p-dinitrosobenzene	DUP.
*Thiazole derivatives:	
2-Benzothiazyl-N,N-diethylthiocarbamoyl sulfide	PAS.
1,3-Bis(2-benzothiazolylmercaptomethyl)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-α-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, UPM.
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, UPM.
N,N'-Di-2-naphthyl-p-phenylenediamine	BFG.
4,4'-Dioctyldiphenylamine	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-Toluenesulfonamido)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	MLS.
2,2'-Methylenebis(6-tert-butyl-p-cresol)	ACY.
2,2'-Methylenebis(6-tert-butyl-4-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-Stearoyl-p-aminophenol	MLS.
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:	
Dicresyl 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	
Dixylyl 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:	
*Dibutyldithiocarbamic acid, sodium salt	DUP, PAS, USR, VNC.
*Dibutyldithiocarbamic acid, zinc salt	ALC, DUP, GYR, PAS, RBC, USR, VNC.
Diethyldithiocarbamic acid, selenium salt	VNC.
Diethyldithiocarbamic acid, sodium salt	ALC, PAS, USR.
Diethyldithiocarbamic acid, tellurium salt	VNC.
*Diethyldithiocarbamic acid, zinc salt	ALC, GYR, RBC, USR, VNC.
Dimethyldithiocarbamic acid, bismuth salt	VNC.
Dimethyldithiocarbamic acid, copper salt	VNC.
Dimethyldithiocarbamic acid, lead salt	VNC.
*Dimethyldithiocarbamic acid, potassium salt	GYR, PAS, USR.
Dimethyldithiocarbamic acid, selenium salt	VNC.
*Dimethyldithiocarbamic acid, sodium salt	ALC, BFG, DUP, GYR, PAS.
Dimethyldithiocarbamic acid, sodium salt and sodium polysulfide.	BFG, GNT, USR.
*Dimethyldithiocarbamic 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, CPY, 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, DUP, GNT, NOP, 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)	DUP.
*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, PLC, SHC, TUS.
All other	ASY, DUP, 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.
Dipropanediol dibenzoate	TNP.
N-Ethyl-p-toluenesulfonamide	MON.
Isopropylidenediphenoxypropanol	DOW.
Naphthalene, alkylated	ACC.
Phosphoric acid esters:	
*Cresyl diphenyl phosphate	CEL, FMP, KLK, MON, MTR, SPP.
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.
*Dibutyl 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, QMC.
Didecanoyl phthalate (Dicapryl phthalate)	ACP, GRH, WTH.
Diethylene glycol phthalate	ARK.
*Diethyl phthalate	DUP, EKT, GRH, KF, MON.
*Dihexyl phthalate	ACP, CCA, ENJ, FCP, GRH, PCC.
*Diisodecyl phthalate	ACP, BFG, EKT, ENJ, GRH, HAL, MON, PCC, PFZ, RCI, ROS, RUB, THC, UCC, WTC, WTH.
*Di(2-methoxyethyl) phthalate	CEL, DUP, EKT, FMP, KES.
*Dimethyl phthalate	ACP, DUP, EKT, GRH, KF, KLK, MON.
Dinonyl phthalate	RCI.
*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.
Toluenesulfonamide, 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.
*Diisodecyl adipate	ACP, BFG, FMP, GRH, LEH, MON, PCC, PFZ, RCI, RH, RUB, THC, UCC, WTH.
*Diiso-octyl 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 dinonanoate	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.
Glyceryl tributyrate 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 acetylricincleic 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	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, EKX, 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	
Not Sulfated or Sulfonated	
*Amides, amines, and quaternary ammonium salts:	
*Heterocyclic amides, amines, and quaternary ammonium salts:	
1-Benzyl-2-heptadecyl-1-(2-hydroxyethyl)-2-imidazolinium chloride.	PCS, UVC.
2-Dodecylisoquinolinium bromide	BC, ONX, WSN.
1-Dodecylpyridinium chloride	BC, HK.
1-Hexadecylpyridinium chloride	FIN.
2-(2-Lauroyloxyethyl)carbamoyl-1-methylpyridinium chloride.	WTC.
1-Methyl-2-(2-stearoyloxyethyl)carbamoylpyridinium chloride.	WTC.
All other	FIN.
Trialkyl(alkylbenzyl)ammonium salts:	
(Dodecylbenzyl)dimethyloctadecylammonium 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)dimethylammonium chloride	APD, BC, FIN, WSN.
Benzyldimethyl(mixed alkyl)ammonium chloride	FIN, ONX, PCS, RH, VAC, WSN.
*Benzyldimethyloctadecylammonium chloride	APX, FIN, ONX, PCS, RET, WSN.
Benzyldimethyltetradecylammonium chloride	BC, SNW, WSN.
*Benzyldodecyldimethylammonium chloride	DEP, ONX, SDH, WSN.
Benzylhexadecyldimethylammonium chloride	FIN, ONX, RH, SDW.
*Benzyl(hydrogenated tallow alkyl)dimethylammonium chloride.	ARC, GNM, ONX.
Benzyltrimethylammonium chloride	COM.
(3,4-Dichlorobenzyl)dodecyldimethylammonium chloride	ONX, SDW, WSN.
Other amides, amines, and quaternary ammonium salts:	
Benzylbis(2-hydroxyethyl)(2-stearamidomethoxyethyl)-ammonium chloride.	TRC.
Benzyl(ethoxylated coconut oil alkyl)dimethylammonium chloride.	G.
N,N-Bis(tall oil amidoethyl)benzylamine hydrochloride, ethoxylated.	APD.
(Dodecylbenzyl)(2-hydroxyethyl)dimethylammonium chloride.	PCS.
(Ethoxybenzyl)dimethyl(octylphenoxy)ammonium chloride	RH.
(Ethoxybenzyl)dimethyl(octyltolyloxy)ammonium chloride	RH.
N-(2-Hydroxyethyl)-1,2-diphenylethylenediamine	APX.
(Tridecylbenzyl)diethyl(2-hydroxyethyl)ammonium chloride.	ORO.
*Carboxylic acid esters:	
Benzoic acid, ethoxylated tridecanol ester	OMC.
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	
Not Sulfated or Sulfonated--Continued	
*Carboxylic acid esters--Continued	
Phthalic acid, octadecyl ester, potassium salt	TRC.
Tall oil acids, alkoxylated pentylphenol - formaldehyde ester.	APD.
*Ethers:	
*Alkylphenol - formaldehyde, alkoxylated:	
Di-nonylphenol - formaldehyde, ethoxylated	PCS.
(Mixed alkyl)phenol - formaldehyde, alkoxylated	RTF, VIS.
(Mixed alkyl)phenol - formaldehyde, ethoxylated	RTF.
Nonylphenol - formaldehyde, alkoxylated	RTF.
t-Octylphenol - formaldehyde, ethoxylated	SDW.
Pentylphenol - formaldehyde, alkoxylated	APD, RTF.
Cresol, ethoxylated	VIS.
Diisobutylphenol, ethoxylated	G, RH.
Dinonylphenol, ethoxylated	G, JCC, RTF, VIS.
*Dodecylphenol, ethoxylated	G, MON, PCS, UCC.
Iso-octylphenol, ethoxylated	DRW, NOP, OMC, TRC.
(Mixed alkyl)phenol, ethoxylated	G, PCS, RH.
(Mixed alkyl)phenol, ethoxylated, butyl ether	RH.
*Nonylphenol, ethoxylated	AHC, APD, CLY, DOW, DRW, G, HPC, JCC, MON, OMC, PCS, RH, RTF, STP, TRC, UCC, VIS.
Pentadecylphenol, ethoxylated	G.
*Phenol, ethoxylated	APD, FBC, G, NOP, UCC.
Tetradecylphenol, ethoxylated	ORO.
Tridecylphenol, ethoxylated	PCS.
Xylenol, ethoxylated	THC, VIS.
All other	G.
*Phosphoric and polyphosphoric acid esters and salts:	
Dodecylphenol, ethoxylated and phosphated	TXZ.
Nonylphenol, ethoxylated and phosphated	CIN, G, RZL, TCC, UVC, WAY.
All other	SMC.
Sulfated and Sulfonated	
*Alkylphenols, ethoxylated and sulfated:	
Dodecylphenol, ethoxylated and sulfated	EFH, G, LEV.
*Nonylphenol, ethoxylated and sulfated	G, OMC, STP, TXZ, WTC.
Nonylphenol, ethoxylated and sulfated, ammonium salt	MYW.
n-Octylphenol, ethoxylated and sulfated	RH.
All other	x.
*Benzenesulfonates:	
Benzene-, toluene-, and xylenesulfonates:	
Benzenesulfonic acid, sodium salt	NES, UPF.
p-Toluenesulfonic acid, hexadecyltrimethylammonium salt.	FIN.
Toluenesulfonic acid, potassium salt	ATR, MYW, NES, RCD, WTC.
*Toluenesulfonic acid, sodium salt	CO, NES, PIL, STP, WTC.
*Xylenesulfonic acid, ammonium salt	ATR, CO, STP, WTC.
Xylenesulfonic acid, potassium salt	ATR, MYW, NES, RCD, WTC.
*Xylenesulfonic acid, sodium salt	ATR, CO, MYW, NES, PIL, STP, WTC.
*Dodecylbenzenesulfonates:	
*Dodecylbenzenesulfonic acid	ARD, CI, CIN, CO, HLI, LEV, MON, MYW, NAC, NOP, PIL, PRX, RCD, SEY, SOC, STP, TDC, TN, TXZ, WTC.
Dodecylbenzenesulfonic acid, ammonium salt	ARL, CTL, MYW, PRX.
Dodecylbenzenesulfonic acid, butylamine salt	CTL, WTC.
*Dodecylbenzenesulfonic acid, calcium salt	APD, 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	
Sulfated and Sulfonated--Continued	
*Benzenesulfonates--Continued	
*Dodecylbenzenesulfonates--Continued	
Dodecylbenzenesulfonic acid, diethanolamine condensate, fatty acid monoester.	MAH.
Dodecylbenzenesulfonic acid, diethanolamine salt-------	PCS, WON.
Dodecylbenzenesulfonic acid, ethylenediamine salt------	APD.
Dodecylbenzenesulfonic acid, isopropanolamine salt-----	SMC, WON.
*Dodecylbenzenesulfonic acid, isopropylamine salt-------	APD, 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, EMK, 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:	
Benzylnaphthalenesulfonic acid----------	G.
Butylnaphthalenesulfonic acid----------	SCP.
sec-Butylnaphthalenesulfonic acid----------	PFZ.
Butylnaphthalenesulfonic acid, sodium salt----------	CMG, GGY.
*Dibutylnaphthalenesulfonic acid----------	CI, G, MRA, S.
Didodecylnaphthalenesulfonic acid, sodium salt----------	PFZ.
Diisopropylnaphthalenesulfonic acid----------	DUP, G, GRD.
*Diisopropylnaphthalenesulfonic acid, sodium salt---------	G, PFZ, WTC.
Dipentylnaphthalenesulfonic acid----------	GGY.
Dipentylnaphthalenesulfonic acid, (mixed alkyl)amine salt.	VIS.
*Isopropylnaphthalenesulfonic acid----------	DUP, NAC, NOP, ONX.
Methylenebis(2-naphthalenesulfonic acid)----------	DUP.
6,6'-Methylenebis(2-naphthalenesulfonic acid), calcium salt.	DUP.
Methylnaphthalenesulfonic acid, sodium salt----------	UDI.
Methylnonylnaphthalenesulfonic acid, sodium salt---------	UDI.
Pentylnaphthalenesulfonic 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	
Sulfated and Sulfonated--Continued	
*Other benzenoid surface-active agents:	
Butylhydroxybiphenylsulfonic acid	ICO, RBC.
Dodecyldiphenyloxidedisulfonic acid, sodium salt	DOW.
Heptadecylmethylbenzimidazolinesulfonic acid, sodium salt.	TRC.
n-Octylphenol, ethoxylated and sulfonated	RH.
Petroleumsulfonic acid, water soluble (acid layer), sodium salt.	SIN, SON.
Trichlorophenol sulfate, ethanolamine salt	G.
NONBENZENOID SURFACE-ACTIVE AGENTS	
Not Sulfated or Sulfonated	
*Amides, amines, and quaternary ammonium salts:	
Acyclic quaternary ammonium salts:	
Alkylethyldimethylammonium salts:	
Ethyldimethyl(9-octadecenyl)ammonium bromide	ONX.
Ethyldimethyloctadecylammonium bromide	RCD.
Ethyldimethyloctadecylammonium ethyl hydrogen phosphite.	APD.
Ethyldimethyl(soybean oil alkyl)ammonium bromide	BC, WSN.
Ethylhexadecyldimethylammonium bromide	FIN.
Alkyltrimethylammonium salts:	
(Coconut oil alkyl)trimethylammonium chloride	ARC.
Dodecyltrimethylammonium bromide	DUP.
*Dodecyltrimethylammonium chloride	ARC, GNM, RCD.
*Hexadecyltrimethylammonium bromide	AHC, DUP, FIN.
*Hexadecyltrimethylammonium chloride	ARC, BC, WSN.
(Hydrogenated tallow alkyl)trimethylammonium chloride.	ARC.
Trimethyl(mixed alkyl)ammonium chloride	GNM.
Trimethyloctadecylammonium chloride	ARC.
Trimethyl(soybean oil alkyl)ammonium chloride	ARC.
Trimethyl(tallow alkyl)ammonium chloride	ARC, GNM.
Dialkyldimethylammonium salts:	
Bis(coconut oil alkyl)dimethylammonium chloride	ARC, GNM.
*Bis(hydrogenated tallow alkyl)dimethylammonium chloride.	ADM, ARC, FOR, GNM, VAC.
Didodecyldimethylammonium bromide	ONX.
Dimethylbis(soybean oil alkyl)ammonium chloride	ARC.
Dimethyldioctadecylammonium chloride	PG.
Other acyclic quaternary ammonium salts:	
(Coconut oil alkyl)bis(2-hydroxyethyl, ethoxylated)-methylammonium chloride.	ARC.
Decylbetaine	DUP.
Dodecyl(epoxypropyl)dimethylammonium chloride	TRC.
Hexadecylbetaine	DUP.
(2-Hydroxyethyl)dimethyl(stearamidopropyl)ammonium dihydrogen phosphate.	ACY.
(2-Hydroxypropyl)dimethyl(stearamidopropyl)ammonium nitrate.	ACY.
Methyltris(mixed alkyl)ammonium chloride	ADM.
Octadecylbetaine	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	
Not Sulfated or Sulfonated--Continued	
*Amides, amines, and quaternary ammonium salts--Continued	
*Amine salts:	
*Amine acetates:	
(Coconut oil alkyl)amine acetate	ADM, ARC.
N-(2-Cyanoethyl)-N′,N″-dioctadecyldiethylenetriamine acetate.	TRC.
(Hydrogenated tallow alkyl)amine acetate	ARC, CIN.
(9-Octadecenyl)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-propylenediamine salt.	APD.
Oleic acid, 2-amino-2-methyl-1-propanol salt	PCH.
Oleic acid, diethylamine salt	WTC.
Oleic acid, morpholine salt	PCH.
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, HPC, 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, KNP, 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, CCL, 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, NOP, 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	
Not Sulfated or Sulfonated--Continued	
*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, STP, VND, WTC.
*(Amine/acid ratio=1/2)----------	SBC, WTC.
*All other ratios----------	CLI, CST.
Tall oil acid - ethanolamine condensate: (Amine/acid ratio=1/2)----------	PCH.
Isopropanolamine condensates:	
Coconut oil acids - isopropanolamine condensate-----	LEV, STP.
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, ethoxylated.	ARC.
Mixed fatty acids - ethanolamine condensate, ethoxylated.	RTF.
*Oleic acid - ethanolamine condensate, ethoxylated-----	ARC, G, WTC.
Oleic acid - methanolamine condensate, ethoxylated----	G.
*Fatty acid - polyamine condensates:	
Adipic and stearic acids - diethylenetriamine condensate.	APX.
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 acid salt.	PCS.
Oleic acid-- N,N-dimethyl-1,3-propylenediamine condensate.	CCW, DUP, SNW, UVC.
Oleic acid - ethylenediamine condensate (amine/acid ratio=1/2).	CCW.
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--	CBP.
Stearic acid - N,N -diethylethylenediamine condensate (amine/acid ratio=1/2).	SNW.
Stearic acid - ethylenediamine condensate (amine/acid ratio=1/2).	CCW, GGY.
Stearic acid - tetraethylenepentamine condensate------	AHC, ONX.
Tall oil acids - diethylene triamine condensate-------	NCW.
*Fatty acid - polyamine condensates, ethoxylated:	
Coconut oil acids - diethylenetriamine condensate, polyethoxylated.	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	
*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.	SCP.
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, SCP, 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-imidazolinium hydroxide, disodium salt.	MIR.
1-Carboxymethyl-2-heptadecyl-1-(2-hydroxyethyl)-2-imidazolinium hydroxide, sodium derivative, sodium salt.	MIR.
1-Carboxymethyl-1-(2-hydroxyethyl)-2-nonyl-2-imidazolinium chloride, sodium salt.	PCS.
1-Carboxymethyl-1-(2-hydroxyethyl)-2-nonyl-2-imidazolinium hydroxide, sodium derivative, sodium salt.	MIR.
1-Carboxymethyl-1-(2-hydroxyethyl)-2-undecyl-2-imidazolinium chloride, sodium derivative, sodium salt.	PCS.
1-Carboxymethyl-1-(2-hydroxyethyl)-2-undecyl-2-imidazolinium hydroxide, sodium derivative, sodium salt.	MIR.
1-Ethyl-2-(8-heptadecenyl)-1-(2-hydroxyethyl)-2-imidazolinium 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-imidazolinium 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	CP, 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)ethylamine.	TRC.
N,N-Bis(2-hydroxyethyl)-2-(stearamidomethoxy)ethylamine - melamine ether condensate.	TRC.
N-(Coconut oil alkyl)-1,3-propylenediamine	GNM.
N-Dodecyldiethylenetriamine	FIN.
N-(2-Hydroxyethyl)-N,N′,N′,-tris(2-hydroxypropyl)-ethylenediamine.	VIS.
N-(Mixed alkyl)polyethylenepolyamine	CCW.
Mixed oleamides	FIN.
Polyethylenepolyamine, alkoxylated	VIS.
Stearic acid - N-(2-cyanoethyl)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, PCS.
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, CIN, CLI, CP, HAL, HDG, KES, NOP, PC, PCS, 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 sates 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	
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, KNP, PCS, VND, WM.
*Glycerol esters:	
Glycerol diacetyltartrate 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	NOP, 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, KNP.
*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	AFX, CCW, CP, DRW, EFH, EK, GLY, HAL, KES, LUR, MCO, MRA, NOP, NW, PC, 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	EFH, GGY, GLY, HAL, HDG, JOR, KES, PCS, UVC, WM.
*Polyethylene glycol dioleate	CI, EFH, 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, KNP, NOP, PCS, QCP, SYC, TCH, UVC, VND, WM.
*Polyethylene glycol mono-oleate	AHC, ARC, CCA, CI, CRC, DEX, DRW, EFH, G, GGY, GLY, HAL, KES, NOP, ONX, PAR, QCP, SPP, SYC, TCH, UVC, WM.
Polyethylene glycol monopalmitate	APD.
Polyethylene glycol monoricinoleate	KES, NOP.
*Polyethylene glycol monostearate	AHC, AML, APD, ARC, CCW, CIN, DEP, DEX, DRW, G, GGY, GLY, HAL, HDG, JOR, KES, KNP, NOP, PC, PCS, PD, RH, SEY, TCC, TCH, UNN, VAC, VND, WTC.
Polyethylene glycol rosin ester	APD, HPC, QCP.
Polyethylene glycol sesqui(coconut oil) ester	JRG.
*Polyethylene glycol tall oil ester	AML, APD, APX, ARC, DRW, EFH, GLY, HDG, JCC, KES, MON, NOP, OMB, PCS, RTF, TCH, UVC, WTC.
Polyethylene glycol tallow ester	ONX, SOS.
All other	CCA.
1,2-Propanediol esters:	
1,2-Propanediol distearate	PCS.
1,2-Propanediol mono(coconut oil) ester	CP.
*1,2-Propanediol monolaurate	CP, HAL, KES, SBC.
1,2-Propanediol mono-oleate	HAL, KES.
*1,2-Propanediol monostearate	APD, CCW, CP, GLY, HAL, KES, PCS, PG, WTC.
All other	GLY.
Other carboxylic acid esters:	
Anhydrosorbitol glycerol monolaurate	APD.
Coconut oil acids, ethoxylated methanol ester	DRW, JOR.
Diisobutylene maleate	RH.
Disorbitolethoxyethylpropoxypropyl diglycolate	APD.
Ethoxylated 1,2-propanediol oleate	APD.
Ethoxylated 1,2-propanediol stearate	APD.
Pentaerythritol distearate	VAL.
*Polyalkylene glycol diglycolate	APD, RTF, VIS.
Polyalkylene glycol dimaleate	VIS.
Polyalkylene glycol naphthenate	APD.
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	APD.
*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-Octadecenyl alcohol, ethoxylated	AAC, APD, DUP, 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	PCS, x.
Rosin alcohol, ethoxylated	APD, HPC, TRC, VIS.
Sorbitol, ethoxylated	RTF.
Sperm oil alcohol, ethoxylated	DUP.
Tall oil alcohol, ethoxylated	JCC.
2,4,7,9-Tetramethyl-5-decyne-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, PCH, TXZ.
Coconut oil acids, sodium salt	CON.
Corn oil acids, potassium salt	PCH.
Corn oil acids, sodium salt	LUR.
*Lauric acid, potassium salt	BSC, DRW, NOP.
Mixed vegetable fatty acids, potassium salt	AML, PCH.
*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	PCH.
*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, PCH, 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	
Not Sulfated or Sulfonated--Continued	
*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-Octadecenyl 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.
Sulfated and Sulfonated	
*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	
Sulfated and Sulfonated--Continued	
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-imidazolinium ethyl sulfate.	APD.
1-Ethyl-2-(8-heptadecenyl)-2-imidazolinium 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, DEP, 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----------	RPC.
Dimethyldioctadecylammonium methyl sulfate----------	ONX.
Ethyldimethyl(mixed alkyl)ammonium ethyl sulfate-------	x.
N-(2-Hydroxyethyl)-N,N',N'-tris(2-hydroxypropyl)-ethylenediamine, distearate 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	
Sulfated and Sulfonated--Continued	
Carboxylic acid esters, sulfated and sulfonated:	
*Dicarboxylic acid esters, sulfated and sulfonated:	
*Sulfosuccinic acid, bis(2-ethylhexyl) ester	ACY, AHC, CIN, CRC, CST, DAN, EFH, EMK, GGY, HRT, MOA, MRA, PC, QCP, RCD.
Sulfosuccinic acid, bis(2-ethylhexyl) ester, sodium salt.	TXZ.
Sulfosuccinic acid, bis(tallow monoglyceride) ester	ACY.
Sulfosuccinic acid, didecyl ester, sodium salt	RH.
Sulfosuccinic acid, dihexyl ester	ACY, MOA.
Sulfosuccinic acid, dipentyl ester, sodium salt	ACY.
Sulfosuccinic acid, ditridecyl ester, sodium salt	ACY.
All other	G.
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-Lauroyloxy-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 sulforicinoleate	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, QCP, 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:	
*Grease, 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, FRR, 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	
Sulfated and Sulfonated--Continued	
*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:	
Oleostearin, 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-o-chloroanilino-s-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)-p-toluenesulfonanilide	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-Quinolinol (8-Hydroxyquinoline), copper salt	GAM, HNX, MTL.
2,3,4,6-Tetrachlorophenol	DOW.
2,3,4,6-Tetrachlorophenol, sodium salt	DOW.
Tetrachloro-p-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, ethanolamine salt	DOW, G.
*2,4,5-Trichlorophenol, sodium salt	DOW, MON.
2,4,6-Trichlorophenol	DOW.
*Herbicides and plant hormones:	
5-Bromo-3-sec-butyl-6-methyluracil	DUP.
5-Bromo-3-isopropyl-6-methyluracil	DUP.
1-Butyl-3-(3,4-dichlorophenyl)-1-methylurea (Neburon)	DUP.
2-sec-Butyl-4,6-dinitrophenol (DNBP)	DOW, FMN.
2-sec-Butyl-4,6-dinitrophenol, ammonium salt	FMN.
2-sec-Butyl-4,6-dinitrophenol, triethanolamine salt	CIS, DOW, FMN.
2-Chloro-4,6-bis(ethylamino)-s-triazine (Simazine)	GGY.
4-Chloro-2-butynyl m-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)	DUP.
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)	DUP.
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)	DUP.
3,4-Dichloropropionanilide	MON, x.
1,2-Dihydro-3,6-pyridazinedione (Maleic hydrazide)	ACY, USR.
1,1-Dimethyl-3-phenylurea (Fenuron)	DUP.
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.
Diphenylacetonitrile	LIL.
Gibberellic acid	ABB, MRK.
Indolebutyric acid	ARA.
Isopropyl carbanilate (Isopropyl N-phenylcarbamate) (IPC)	FMP, PPG.
Isopropyl 3-chlorocarbanilate (Isopropyl N-(3-chlorophenyl)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-Naphthyloxyacetic acid	BKL.
N-1-Naphthylphthalamic acid (NPA)	USR.
7-Oxabicyclo[2.2.1]heptane-2,3-dicarboxylic acid, disodium 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, butoxypolypropyleneglycol 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)----------	BKM, CLY, GUA, MTL, SCI, TRO, WRC.
Polychloro-tetrahydro-methanoindene (Polychlorodicyclo-pentadiene) isomers.	VEL.
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)----------	BPC.
Benzyl thiocyanate----------	HK.
*Chlorinated insecticides:	
1,1-Bis(p-chlorophenyl)-2-nitrobutane----------	CCM.
1,1-Bis(p-chlorophenyl)-2-nitropropane----------	CCM.
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-α-methylbenzhydrol----------	ARA.
4,4'-Dichloro-α-(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, GMC.
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 phosphorodithioate (Carbophenothion).	SF.
S-(p-Chlorophenylthio)methyl O,O-dimethyl phosphorodithioate.	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]phosphorothioate.	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) phosphorothioate (Ronnel).	DOW.
p-Dioxane-2,3-diyl ethyl phosphorodithioate----------	HPC.
O-Ethyl O-(p-nitrophenyl) phenylphosphonothioate-------	VIC.
α-Methylbenzyl 3-hydroxycrotonate, dimethyl phosphate ester.	SHC.
Nematocides: O-2,4-Dichlorophenyl O,O-diethyl phosphorothioate.	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 cyanodithioimidocarbonate----------	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.
0,0-Dimethyl (2,2,2-trichloro-1-butyryloxyethyl)phosphonate.	CHG.
S-Ethyl dipropylthiocarbamate (EPTC)----------	SF.
Hexachloroacetone----------	ACG.
Methanearsinic acid, calcium salt----------	VIN.
*Methanearsonic acid, disodium salt----------	ASL, CLY, VIN.
Methanearsonic acid, dodecyl- and octylammonium salts----	CLY, VIN.
S-Propyl butylethylthiocarbamate----------	SF.
S,S,S-Tributyl phosphorotrithioate----------	CHG.
Tributyl phosphorotrithioite----------	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.
Metaldehyde----------	COM.
*Organophosphorus insecticides:	
S-[1,2-Bis(ethoxycarbonyl)ethyl] 0,0-dimethyl phosphorodithioate (Malathion).	ACY.
1,2-Dibromo-2,2-dichloroethyl dimethyl phosphate (Naled).	SHC.
2,2-Dichlorovinyl dimethyl phosphate (DDVP)----------	MTR, SHC.
0,0-Diethyl S-[2-(ethylthio)ethyl] phosphorodithioate--	CHG.
0,0-Diethyl O-[2-(ethylthio)ethyl] phosphorothioate----	CHG.
0,0-Diethyl S-[2-(ethylthio)ethyl] phosphorothioate----	CHG.
0,0-Diethyl S-[(ethylthio)methyl] phosphorodithioate---	ACY.
0,0-Diethyl phosphorochloridothioate----------	MON.
Diethyl phosphorochloridothionate----------	VIC.
0,0-Diethyl phosphorodithioate, sodium salt----------	MON.
Dimethyl 3-hydroxycrotonate, dimethyl phosphate ester--	SHC.
0,0-Dimethyl phosphorochloridothioate----------	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 phosphorochloridothionate	VIC.
Ethyl methylene phosphorodithioate (Ethion)	FMN.
Ethyl pyrophosphate (Tetraethyl pyrophosphate) (TEPP)	ALC.
S-2-(Ethylsulfinyl)ethyl O,O-dimethyl phosphorodithicate.	CHG.
Methyl 3-hydroxycrotonate, dimethyl phosphate ester	SHC.
2-Thiocyanatoethyl laurate	x.
*Rodenticides: Sodium fluoroacetate	RBC.
*Soil conditioners: Polyacrylonitrile, hydrolyzed, sodium salt.	ACY, ALC.
*Soil fumigants:	
*Bromomethane (Methyl bromide)	AMP, DOW, GTL, KLK, MCH.
Chloropicrin (Trichloronitromethane)	DOW, IMC.
*1,2-Dibromo-3-chloropropane	AMP, DOW, SHC.
1,3-Dichloropropane	DOW.
1,3-Dichloropropene, 1,2-Dichloropropane	DOW, SHC.
N-Methyldithiocarbamic acid, sodium salt	DUP, 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	GIV.
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	ACY.
*Benzoyl peroxide	CAD, NOC, OXY, RCI, SDH, UPR, WTL.
Benzoylresorcinol	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.
α-[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-α-methylcinnamaldehyde	GIV.
tert-Butyl peroxybenzoate	WTL.
4-tert-Butylpyrocatechol	DOW.
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	ALM.
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	OMC.
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)	ASL, EKT.
5,6-Dimethylbenzimidazole	ALH.
2,2-Dimethylethylenimine	CEM.
2,5-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 (Propenylmethylguaethol)	ICO.
5-Ethyl-10,10-diphenylphenazasiline	MRK.
Ethylenediaminebis[o-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 carbamate	DOW.
Dicresylphosphorodithioic acid (Dicresylthiophosphoric acid).	ACY.
Dicresylphosphorodithioic acid, ammonium salt	ACY.
Dicresylphosphorodithioic acid, sodium salt	KCU.
2,2'-Dimethylthiocarbanilide (Di-o-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	ICO.
*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-α-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, HPC.
8-p-Menthyl hydroperoxide	HNW, HPC.
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	CRN.
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	CHM.
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-Paraphenylenedioxy-diethanol).	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-Dimethylaminobenzenediazonium chloride (p-Diazo-N,N-dimethylaniline) - zinc chloride.	FMT, IDC.
p-Diphenyldiazonium sulfate	FMT.
p-(N-Ethylbenzimido)benzenediazonium 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-triazoindolizine	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-Methylthiazoline	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 (Diresorcyl sulfide)	BKC.
1-(2,4,6-Trichlorophenyl)-3-(4-nitroanilino)-2-pyrazolin-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 octabenzoate	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, SRR, 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 interpolymer, 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-naphthylmethylidyne-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, sulfurated	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	ACY.
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.
Acetamidine hydrothloride	BPC, MRK.
2-Acetamidoethanol (N-Acetylethanolamine)	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-phase process.	CEL, EKT.
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	NOR.
*Acetonitrile	EKX, SFA, UCC.
Acetyl chloride	TBK.
Acetyl peroxide	WTL.
Acrolein (Acrylaldehyde)	SHC, UCC.
*Acrylic acid	BFG, CEL, DBC, MMM, RH, UCC.
Acrylic monomers not specifically listed	RH.
*Acrylonitrile	ACY, BFG, DUP, MON, SOH, UCC.
*Adipic acid	CS, DUP, MON, NAC.
Adipic acid, ethylene glycol-propylene glycol ester	PFZ.
Adiponitrile	CS, x.
Adipoyl chloride	TBK.
*Alcohols, monohydric, unsubstituted:	
*Alcohols C_9 or lower:	
*Allyl alcohol	DOW, OMC, SHC, UCC.
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, EKX.
2,6-Dimethyl-4-heptanol (Diisobutylcarbinol)	UCC.
*Ethyl alcohol, synthetic	DUP, EKX, ENJ, HPC, SHC, UCC, USI.
2-Ethyl-1-butanol (sec-Hexyl alcohol)	UCC.
2-Ethyl-1-hexanol	CEL, EKX, UCC.
2-Ethyl-4-methyl-1-pentanol	EKX.
Hexyl alcohol	ENJ, EKX, PG, UCC.
1-Hexyn-3-ol	AIR.
*Iso-octyl alcohols	EKX, 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	EKX.
All other	CEL, EKX.
*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, DUP, 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	HMY.
Alkyl and alkylene succinic anhydrides	HMY.
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 (Guanylurea) phosphate	ACY.
Amidinourea (Guanylurea) sulfate	ACY.
*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.
Diisopropylamine	PAS, UCC.
*Dimethylamine	COM, DUP, PAS, RH.
Dimethylamine hydrochloride	EK, ICO, TNC.
Dimethylamine sulfate	RH.
N,N-Dimethylhexadecylamine	ONX.
Dimethylmyrystylamine	BC.
N,N-Dimethyloctadecylamine (Stearyldimethylamine)	ARC.
N,N-Dimethyl-1,3-propanediamine	UCC.
Dipentylamine (Diamylamine)	PAS.
Dipropylamine	PAS, UCC.
Dipropylenetriamine	UCC.
*Dodecylamine	ADM, ARC, FOR, GNM.
Ethylamine	PAS, UCC.
Ethylenediamine	DOW, UCC.
Ethylenediamine dihydrochloride	BKC, 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.
Tricaprylylamine	GNM.
Tridodecylamine	GNM.
Triethylamine	PAS, UCC.
Triethylenetetramine	CCW, DOW, UCC.
*Trimethylamine	COM, DUP, PAS, RH.
Trimethylenediamine fatty derivatives	ARC, FOR.
Tripentylamine	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)	DOW, 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] (α,α'-Azodiisobutyronitrile).	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	ACG.
Boron trifluoride monoethylamine complex	ACG.
Triethyl borate	USB.
Triethylboron	TNA.
Trihexylene glycol biborate	USB.
Trimethoxyboroxine	CAL.
N-Bromoacetamide	ARA.
2-Bromododecanoic acid (α-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, RCI, 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, PAS, 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 peroxypivalate	WTL.
1-Butyne (Ethylacetylene)	AIR.
2-Butyne-1,4-diol	G.
Butyraldehyde	CEL, EKX, UCC.
Butyraldehyde oxime	NAC.
*Butyric acid	CEL, EKT, UCC.
Butyric anhydride	EKT, UCC.
Butyrolactone	G.
Butyronitrile	EKX, UCC.
*Caprolactam (2-Oxohexamethylenimine) (Hexahydro-2H-azepin-2-one).	DBC, DUP, NAC.
*Carbon disulfide	ACG, 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, MTO.
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)	LIL.
*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-propanediol (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.
Coconitrile	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	CAD.
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-Diethylacetoacetamide	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)	LIL.
*Diethylene glycol	ACN, CAU, DOW, G, HCH, JCC, QMC, UCC, WYN.
Diethylene glycol chloroformate	PPG.
Diethyl (ethoxymethylene)malonate	KF.
Diethyl ethylisopentylmalonate	BPC, LIL.
Diethyl ethylmalonate (Ethyl malonic ester)	LIL.
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, LIL.
Diethyl (1-methylbutyl)malonate	ABB, LIL.
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, Y-lactone (Pantolactone).	ACY.
1,3-Dihydroxy-2-propanone	BAX, PFZ.
Diisodecyl fumarate	RUB.
2-Diisopropylaminoethanol	PAS, UCC.
Diisopropylammonium nitrite	OMC.
O,O-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.
Dioctyl fumarate	MON.
*Dioctyl 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-Dipropylenimine sulfone	RBC.
Dithiooxamide	MAL.
Ditridecyl maleate	RUB.
Dodecenylsuccinic 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'-Iminodiethanol (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	ACY.
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-methyllactate (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(lauric-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, GIV, KES, PRP, WM.
Isopropyl oleate	AHC, EMR, KES.
*Isopropyl palmitate	AHC, DRW, GIV, 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	KCC, USR.
Sodium sec-butylxanthate	ACY, DOW.
Sodium ethylxanthate	ACY, DOW.
Sodium isopropylxanthate	ACY, DOW.
All other	ACY, DOW.

710-934 O-63—14

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 35% chlorine	ENJ, HK.
*35%-64% chlorine	CCH, DA, DVC, HK, HPC, KPT, WOI.
65% 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	ACG.
*Chlorodifluoromethane	ACG, 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)	ACG, MMM.
Chlorotrifluoroethylene, polymerized	ACG, HK, MMM.
Chlorotrifluoromethane	ACG, 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	ACG, DUP, PAS, UCC.
*1,2-Dichloroethane (Ethylene dichloride)	AME, DA, DOW, JCC, MON, OMC, PPG, TNA, UCC, WYN.
Dichlorofluoromethane	ACG.
*Dichloromethane (Methylene chloride)	ACS, DA, DOW, DUP, FRO, SF.
Dichloropentanes, mixed isomers	PAS.
*1,2-Dichloropropane (Propylene dichloride)	DOW, JCC, OMC, UCC, WYN.
2,3-Dichloropropene	UCC.
*Dichlorotetrafluoroethane	ACG, DUP, PAS.
1,1-Difluoroethane	ACG, DUP.
1,1-Difluoroethylene	ACG.
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	ACG, 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)	DOW, TNA.
Vinylidene fluoride	DUP.
All other	CLB, EK, SDH, x.
2-Heptanone (Methyl amyl ketone)	UCC.
3-Heptanone (Ethyl butyl ketone)	UCC.
Hexadecane	HMY.
1-Hexadecene	HMY.
Hexa(2-ethylbutoxy)disiloxane	UCC.
Hexamethylenediamine dicarbamate	BKL.
Hexamethylenediammonium adipate	CS.
2,5-Hexanedione (Acetonylacetone)	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	ACY.
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	GIV.
Isobutyl isobutyrate	EKX.
Isobutyl vinyl ether	UCC.
Isobutyraldehyde	EKX, UCC.
Isobutyraldehyde oxime	ALB.
Isobutyric acid and anhydride	EKT.
Isobutyronitrile	EKX.
Isodecaldehyde, mixed isomers	UCC.
Isodecanoic 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	EKT, 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	FB.
Lactide (3,6-Dimethyl-2,5-p-dioxanedione)	CLN.
Lactonitrile	ACY.
Lauric acid salts	CCW.
Lauronitrile	FOR.
Lauroyl bromide	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	HSH, SHP, SRR.
Copper linoleate	WTC.
Iron linoleate	HSH.
Lead linoleate	SHP, SRR.
Lead manganese linoleate	SDH, SRR.
Manganese linoleate	SHP.
*Lubricating oil additives:	
Chloronaphtha 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.
*Phosphorodithicates (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	
Phosphorosulfurized 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 thioglycolate).	EVN, HAB, RET.
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.
Methacrylatochromic 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 ether).	DOW, JCC, OMC, UCC.
2-[2-(2-Methoxyethoxy)ethoxy]ethanol (Triethylene glycol monomethyl ether).	DOW, OMC, UCC.
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 ether).	DOW.
3-[3-(3-Methoxypropoxy)propoxy]propanol (Tripropylene glycol methyl ether).	DOW.
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 butynoxyethanol	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	ACY.
N,N'-Methylenebisoctadecanamide	ARC.
Methyl ether (Dimethyl ether)	COM, DUP.
Methyl ethyl carbamate (Methyl urethane)	BKL.
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)	DOW, UCC.
2-Methyllactonitrile (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	ACY.
Nitroethane	COM.
Nitromethane	COM.
1-Nitropropane	COM.
2-Nitropropane	COM.
Nonanoic acid (Pelargonic acid)	EMR.
Nylon	CS, DUP.
1-Octadecene	ADM, HMY.
Octadecyl isocyanate	CWN, 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.
Oleonitrile	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	CGM, 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, Flotation 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.
Didodecyl 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	GP, 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	ACS, DOW. JCC, OMC, UCC. VIS. WYN.
Polytetramethylene glycol ether	x.
Potassium methylate	RBC.
Propionaldehyde	EKX. UCC.
*Propionic acid	CEL, COM, DUP, EKT, UCC.
Propionic acid salts:	
*Calcium propionate	CEL. CPR, DUP, ISC, UCC, WSN.
*Sodium propionate	CEL, CPR, 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	DOW, JCC, UCC.
*Propylene glycol (1,2-Propanediol)	APD, CEL, DOW, DUP, JCC, OMC, UCC.
*Propylene oxide	CEL, DOW, JCC, OMC, UCC, WYN.
n-Propyl isocyanate	CWN.
Propyl 4-methylvalerate (Propyl isocaproate)	COM.
Propyne (Methylacetylene)	AIR.
Pseudoionone	GIV.
Pyruvaldehyde	UCC.
Quaternary ammonium compounds (butyl and lower)	EK, RSA.
Rare sugars	PFN.
Ricinolamide	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.
Semioxamazide	NOR.
*Sequestering agents:	
N,N-Bis(2-hydroxyethyl)glycine, sodium salt	RKD.
(Diethylenetrinitrilo)pentaacetic acid	RPC.
(Diethylenetrinitrilo)pentaacetic acid, monosodium hydrogen ferric salt.	GGY.
*(Diethylenetrinitrilo)pentaacetic acid, sodium salt	DOW, GGY, HMP, MOA, RPC, TCC.
N,N-Dihydroxyethylglycine, sodium salt	DOW, HMP, MOA.
*(Ethylenedinitrilo)tetraacetic acid (Ethylenediamine-tetraacetic acid).	DOW, GGY, HMP, MOA. RPC, VIC.
*(Ethylenedinitrilo)tetraacetic acid, dihydrogen, disodium salt.	DOW, EK, GGY, HMP, RPC.
(Ethylenedinitrilo)tetraacetic acid, dipotassium salt	EK.
(Ethylenedinitrilo)tetraacetic acid, disodium calcium salt.	DOW.
(Ethylenedinitrilo)tetraacetic acid, disodium copper salt.	GGY.
(Ethylenedinitrilo)tetraacetic acid, disodium zinc salt, dihydrate.	GGY.
(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.
Nitrilotriacetic acid, tripotassium salt	GGY.
Sodium salts of sugar acids	PFN.
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 lysalbinate	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, CCA, 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.
Triacetoxyvinylsilane	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 acetylcitrate	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.
Triisobutylaluminum	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, GCC, JDC, MON, MSC, SHC, SOH.
*In liquid fertilizer	ACN, ARC, CFA, DUP, ESC, GCC, HPC, JDC, MON, MSC, SHC, SNI, SOH, SPN.
*In solid fertilizer	ACN, DUP, GCC, HPC, JDC, MON, MSC, SHC, SNO, SOH, SPN.
In plastics	DUP, MON.
All other	ACN, DUP, HPC, MON, SHC, SOH.
Urea peroxide	FMB.
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., Arco 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.
ACO	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.		
AHC	Arnold, Hoffman & Co., Inc.	BAC	Baker Castor Oil Co.
AIR	Air Reduction Co., Inc., Air Reduction Chemical & Carbide Co. Div.	BAL	Baltimore Paint & Chemical Corp.
		BAO	Bayoil Co., Inc.
ALB	Ames Laboratories, Inc.	BAT	Bates Chemical Co.
ALC	Alco Chemical Corp.	BAX	Baxter Laboratories, Inc.
ALH	Aldrich Chemical Co., Inc.	BC	Barlow Chemical Corp.
ALL	Alliance Color & Chemical Co.	BCC	Bercen Chemical Co., Inc.
ALT	Crompton & Knowles Corp., Althouse Chemical Co. Div.	BCM	Belding Chemical Industries
		BCN	Beacon Chemical Industries, Inc.
ALX	Alox Corp.	BEN	Bennett's
AMB	American Bio-Synthetics Corp.	BFG	B. F. Goodrich Co., B. F. Goodrich Chemical Co. Div.
AMC	Amchem Products, Inc.	BFR	Branchflower Co.
AME	American Chemical Corp.	BGC	Balfour, Guthrie & Co., Ltd.
AMF	Martin-Marietta Corp., Ferbert-Schorndorfer Co. Div.	BKC	J. T. Baker Chemical Co.
		BKL	Berkeley Chemical Corp.
AML	Amalgamated Chemical Corp.	BKM	Buckman Laboratories, Inc.
AMO	American Oil Co. (Texas)	BKS	Berkshire Color & Chemical Co.
AMP	American Potash & Chemical Corp.	BKT	J. T. Baker Chemical Co., Taylor Div.
AMR	Pacific Resins & Chemical Co.	BL	Belle Chemical Co., Inc.
AMS	Martin-Marietta Corp., Ridgway Color & Chemical Co. Div.	BLA	Blue Arrow, Inc.
		BLN	Brooklyn Color Works, Inc.
AMZ	American Maize Products Co.	BLS	Beech-Nut Life Savers, Inc.
ANC	Antro Chemical Co.	BME	Bendix Corp., Marshall-Eclipse Div.
APC	Appleton Coated Paper Co.	BOR	Borden Chemical Co.
APD	Atlas Chemical Industries, Inc., Chemicals Div.	BOY	Walter N. Boysen Co.
APR	Atlas Processing Co.	BPC	Benzol Products Co.
APT	American Petrochemical Corp.	BPL	Brand Plastics Co.
APV	Armstrong Paint & Varnish Works, Inc.	BRR	Brown Co., Resi-Chem Div.
APX	Apex Chemical Co., Inc.	BRS	Bristol-Meyers Co., Bristol Laboratories Div.
ARA	Arapahoe Chemicals, Inc.	BRU	M. A. Bruder & Sons, Inc.
ARC	Armour & Co., Armour Industrial Chemical Co. Div.	BRY	Bryant Chemical Corp.
		BSC	Burkart-Schier Chemical Co.

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

Code	Name of company
BUC	Blackman-Uhler Chemical Co.
BUK	Buckeye Cellulose Corp.
BUR	Burroughs-Wellcome & Co. (U.S.A.), Inc.
BXT	J. H. Baxter & Co.
BZ	Bzura Chemical Co., Inc.
CAD	Cadet Chemical Corp.
CAL	Callery Chemical Co.
CAP	Capital Plastics, Inc.
CAT	Catalin Corp. of America
CAU	Calcasieu Chemical Corp.
CBA	Ciba Corp., Ciba Products Co. Div.
CBC	Georgia-Pacific Corp., Coos Bay Div.
CBP	Ciba Corp., Ciba Pharmaceutical Co. Div.
CBT	Samuel Cabot, Inc.
CBY	Crosby Chemicals, Inc.
CCA	Carlisle Chemical Works, Inc., Advance Solvents & Chemical Div.
CCC	Chase Chemical Corp.
CCH	Pearsall Chemical Co.
CCL	Charlotte Chemical Laboratories
CCO	Chemico, Inc.
CCP	Crown Central Petroleum Corp.
CCW	Carlisle Chemical Works, Inc.
CD	Budd Co., Polychem Div.
CEL	Celanese Corp. of America: Celanese Chemical Co. Div. Celanese Polymer Co. Div.
CEM	Chemirad Corp.
CFA	Cooperative Farm Chemicals Association
CFC	Rexall Chemical Co. - Kearny
CFX	Chemfax, Inc.
CHC	Chipman Chemical Co., Inc.
CHG	Chemagro Corp.
CHL	Chemol, Inc.
CHM	Chapman Chemical Co.
CHO	Stauffer Chemical Co., Calhio Chemicals Div.
CIK	California Ink Co., Inc.
CIN	Cindet Chemicals, Inc.
CIS	Chemical Insecticide Corp.
CKL	Chemlek Laboratories, Inc.
CLB	Columbia Organic Chemicals Co., Inc.
CLD	Colloids, Inc.
CLI	Clintwood Chemical Co.
CLN	Standard Brands, Inc., Clinton Corn Processing Co. Div.
CLR	Colab Resin Corp.
CLV	Clover Chemical Co.
CLY	W. A. Cleary Corp.
CM	Carpenter-Morton Co.
CMG	Chemical Manufacturing Co., Inc.
CO	Continental Oil Co.
COK	Cockerille Chemicals, Inc.
COL	Collier Carbon & Chemical Corp.
COM	Commercial Solvents Corp.
CON	Concord Chemical Co., Inc.
COP	Coopers Creek Chemical Corp.
COR	Commonwealth Oil Refining Co., Inc.
COS	Coastwise Petroleum Co.
CP	Colgate-Palmolive Co.
CPC	Childs Pulp Colors, Inc.
CPD	Chemical Products Corp. (Georgia)
CPL	Reliance Varnish Co., Coast Paint & Lacquer Co. Div.
CPR	Certified Proteins
CPT	Consolidated Paint Co.
CPV	Cook Paint & Varnish Co.
CPY	Copolymer Rubber & Chemical Corp.
CRC	Crown Chemical Corp.
CRN	Corn Products Co.
CRS	Carus Chemical Co., Inc.
CRT	Crown Tar & Chemical Works, Inc.
CRY	Cary Chemicals, Inc.
CRZ	Crown Zellerbach Corp., Chemical Products Div.
CS	Chemstrand Corp.
CSD	Cosden Petroleum Corp.
CSO	Cities Service Oil Co.
CST	Charles S. Tanner Co.
CTA	Conestoga Chemical Corp.
CTL	Continental Chemical Co.
CUC	Cumberland Chemical Corp.
CUT	Cutter Laboratories, Inc.
CW	Collett-Week Corp.
CWL	Cowles Chemical Co.
CWN	Upjohn Co., Carwin Co. Div.
CWP	Consolidated Papers, Inc.
DA	Diamond Alkali Co., and Western Div.
DAN	Dan River Mills, Inc.
DAV	Conchemco, Inc., H. B. Davis Co. Div.
DBC	Dow Badische Chemical Co.
DCC	Dow Corning Corp.
DCH	Dearborn Chemical Co.
DCI	Delaware Chemicals, Inc.
DEG	Degen Oil & Chemical Co.
DEP	DePaul Chemical Co., Inc.
DEX	Dexter Chemical Corp.
DGS	Douglas Laboratories, Inc.
DLH	Delhi-Taylor Oil Corp.
DLI	Dawe's Laboratories, Inc.
DLM	Delmar Chemical Co., Inc.
DOD	Donald A. Dodd
DOM	Dominion Products, Inc.
DOW	Dow Chemical Co.
DPP	Dixie Pine Products Co., Inc.
DRW	Drew Chemical Corp.
DSC	Dye Specialties, Inc.
DSO	DeSoto Chemical Coatings, Inc.
DUN	Frank W. Dunne Co.
DUP	E. I. duPont de Nemours & Co., Inc.
DUR	Duraphene Corp.
DVC	Dover Chemical Co.
DXS	Sunray DX Oil Co.
EAK	J. S. & W. R. Eakins, Inc.
EDC	Edcan Laboratories
EDY	Eddystone Manufacturing Co.
EFH	E. F. Houghton & Co.
EK	Eastman Kodak Co.
EKT	Eastman Kodak Co., Tennessee Eastman Co. Div.
EKX	Eastman Kodak Co., Texas Eastman Co. Div.
ELP	El Paso Natural Gas Products Co.
EMK	Emkay Chemical Co.
EMR	Emery Industries, Inc.
EN	Endo Laboratories, Inc.
ENJ	Enjay Chemical Co., Div. of Humble Oil & Refining Co.
EPC	Epoxylite Corp.
ERD	Erdmann Chemical Co., Inc.
ESC	Escambia Chemical Corp.
ETD	Ethyl-Dow Chemical Co.
EVM	Everledge Manufacturing, Inc.
EVN	Evans Chemetics, Inc.
EW	Westinghouse Electric Corp., Micarta Div.
FAB	Fabricolor Chemical Corp.
FAR	Farnow, Inc.
FB	Fritzsche Bros., Inc.
FBC	Diamond Alkali Co., Fiber Chemical Dept.
FBR	Fibreboard Paper Products Corp.
FC	Franklin Chemical Co.
FCD	France, Campbell & Darling, Inc.
FCL	Federal Color Laboratories, 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
FG	Foster-Grant Co., Inc.
FH	Foster-Heaton Co.
FIN	Fine Organics, Inc.
FIR	Firestone Tire & Rubber Co., Firestone Plastics Co. Div.
FLA	Florida Chemical Co., Inc.
FLH	H. B. Fuller Co.
FLO	Florasynth Laboratories, Inc.
FLW	W. P. Fuller & Co.
FMB	FMC Corp., Inorganic Chemicals Div.
FMN	FMC Corp., Niagara Chemical Div.
FMO	Fermco Laboratories, Inc.
FMP	FMC Corp., Organic Chemicals Div.
FMT	Fairmount Chemical Co., Inc.
FMW	FMC Corp., Chemical Div.
FOC	Farac Oil & Chemical Co.
FOM	Formica Corp.
FOR	Foremost Food & Chemical Co.
FRE	Freeman Chemical Corp.
FRM	Farmers' Chemical Co.
FRO	Vulcan Materials Co., Frontier Chemical Co. Div.
FRP	Filtered Rosin Products Co.
FRR	Estate of W. U. Farrington
FRS	Firestone Tire & Rubber Co., Firestone Synthetic Rubber & Latex Co. Div.
FSH	Frisch & Co., Inc.
FTE	Foote Mineral Co.
G	General Aniline & Film Corp.
GAM	Gamma Chemical Corp.
GAN	Gane's Chemical Works, Inc.
GCC	W. R. Grace & Co., Nitrogen Products Div.
GDL	Gordon-Lacey Chemical Products & Co., Inc.
GDN	Gordon Chemicals, Inc.
GE	General Electric Co., Chemical Materials Dept.
GEI	General Electric Co., Insulating Materials Dept.
GFS	G. Frederick Smith Chemical Co.
GGC	Goodrich-Gulf Chemicals, Inc.
GGY	Geigy Chemical Corp.
GIL	Gilman Paint & Varnish Co.
GIV	Givaudan Corp.
GLC	General Latex & Chemical Corp.
GLD	Glidden Co.
GLX	Glasflex, Inc.
GLY	Glyco Chemicals, Inc.
GNF	General Foods Corp., Maxwell House Div.
GNM	General Mills, Inc.
GNT	General Tire & Rubber Co., Chemical Div.
GOC	Gulf Oil Corp.
GOR	Gordon Chemical Co., Inc.
GPM	General Plastics Manufacturing Co.
GPR	Grain Processing Corp.
GRA	Great American Chemical Corp.
GRD	W. R. Grace & Co., Dewey & Almy Chemical Div.
GRG	P. D. George Co.
GRH	W. R. Grace & Co., Hatco Chemical Div.
GRP	W. R. Grace & Co., Polymer Chemicals Div.
GRS	Pontiac Refining Corp.
GRV	Guardsman Chemical Coatings, Inc.
GRW	Great Western Sugar Co.
GTH	Guth Chemical Co.
GTL	Great Lakes Chemical Corp.
GUA	Guard Chemical Co., Inc.
GYR	Goodyear Tire & Rubber Co.
HAB	Halby Products Co., Inc.
HAL	C. P. Hall Co. of Illinois
HAM	Hampden Color & Chemical Co.
HAN	Hanna Paint Manufacturing Co., Inc.
HAP	Applied Plastics Co., Inc.
HAR	Allied Chemical Corp., National Aniline Div., Harmon Color Works
HCC	Holland Color & Chemical Co.
HCH	Houston Chemical Corp.
HDG	Hodag Chemical Corp.
HER	Heresite & Chemical Co.
HET	Heterochemical Corp.
HEX	Hexagon Laboratories, Inc.
HFT	Hoffman-Taff, Inc.
HK	Hooker Chemical Corp.
HKD	Hooker Chemical Corp., Durez Plastics Div.
HLC	Hartman-Leddon Co.
HLI	Haag Laboratories, Inc.
HML	Hummel Chemical Co., Inc.
HMN	Hamilton Chemical Corp.
HMP	Hampshire Chemical Corp.
HMY	Humphrey-Wilkinson, Inc.
HN	Heyden Newport Chemical Corp.
HNC	H & N Chemical Co.
HNW	Heyden Newport Chemical Corp., Newport Industries Div.
HNX	Heyden Newport Chemical Corp., Nuodex Products Div.
HOF	Hoffmann-LaRoche, Inc.
HOU	Air Products & Chemicals, Inc., Houdry Process & Chemical Co. Div.
HPC	Hercules Powder Co.
HRS	Rapid American Corp., Harris Standard Paint Co. Div.
HRT	Hart Products Corp.
HSH	Harshaw Chemical Co.
HST	Hoechst Chemical Corp.
HUM	National Dairy Products Corp., Humko Products Chemical Div.
HUS	Husky Briquetting
HVG	Haveg Industries, Inc., Resin & Compound Div.
HYC	Hysol Corp.
HYN	Hynson, Westcott & Dunning, Inc.
IBI	Industrial Biochemicals
ICC	Interchemical Corp., Color & Chemicals Div.
ICF	Interchemical Corp., Finishes Div.
ICO	Interchemical Corp., Organic Chemicals Dept.
IDC	Industrial Dyestuff Co.
IFF	International Flavors & Fragrances, Inc.
ILC	International Latex Corp.
IMC	International Minerals & Chemical Corp.
IMP	Hercules Powder Co., Imperial Color & Chemical Dept.
INI	Intermediates, Inc.
INL	Inland Steel Container Co.
INM	Industrial Marine Chemical Co.
INP	International Paper Co.
IOC	Pfaudler Permutit, Inc., Ionac Chemical Co. Div.
IPC	Interplastic Corp., Commercial Resins Div.
IPI	Isocyanate Products, Inc.
IPR	Inter-Pacific Resins, Inc.
IRC	International Resistance Co.
IRI	Ironsides Co.
ISC	Importers Service Corp.
ISO	Isochem Resins Co.
JAM	Jamestown Paint & Varnish Co.
JCC	Jefferson Chemical Co., Inc.
JDC	John Deere Chemical Co.
JEN	Jennison-Wright Corp.
JMS	J. Meyer & Sons, Inc.
JNS	S. C. Johnson & Son, Inc.
JOB	Jones-Blair Paint Co.
JOC	Joclin Manufacturing Co.
JOD	Jones-Dabney Co.
JOR	W. H. & F. Jordan, Jr. Manufacturing Co., Inc.
JRG	Andrew Jergens Co.
JSC	Jersey State Chemical Co.
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
KAL	Kali Manufacturing Co.
KCC	Kennecott Copper Corp., Chino Mines Div.
KCH	Keystone Chemurgic Corp.
KCU	Kennecott Copper Corp., Utah Copper Div.
KCW	Keystone Color Works, Inc.
KEL	Kelly-Pickering Chemical Corp.
KEN	Kendall Refining Co.
KES	Armour & Co., Armour Industrial Chemical Co. Div., Kessler Chemical Div.
KF	Kay-Fries Chemicals, Inc.
KK	K & K Laboratories, Inc.
KLK	Kolker Chemical Corp., DBA Frontier Chemical Co.
KLS	Kilsdonk Chemical Corp.
KND	Knoedler Chemical Co.
KNG	Far-Best Corp., O. L. King Div.
KNP	Knapp Products, Inc.
KON	H. Kohnstamm & Co., Inc.
KPC	Koppers Co., Inc., Chemicals & Dyestuffs Div.
KPI	Kenrich Petrochemicals, Inc.
KPP	Koppers Co., Inc., Plastics Div.
KPT	Koppers Co., Inc., Tar Products Div.
KPV	Keystone Paint & Varnish Corp.
KRM	Lawter Chemicals, Inc., Krumbhaar Resin Div.
KYN	Kyanize Paints, Inc.
KYS	Keysor Chemical Co.
LAM	LaMotte Chemical Products Co.
LAS	Lasco Industries, Inc.
LEA	Leatex Chemical Co.
LEB	Lebanon Chemical Corp.
LEF	Leffingwell Chemical Co.
LEH	Lehigh Chemical Co.
LEM	B. L. Lemke & Co., Inc.
LEN	Leonard Refineries, Inc.
LEV	Lever Brothers Co.
LIL	Eli Lilly & Co.
LKL	Lakeside Laboratories, Inc.
LKY	St. Regis Paper Co., Lake States Yeast & Chemical Div.
LMI	Lawrence Mills, Inc.
LON	Martin-Marietta Corp., American-Marietta Paint Div.
LPC	Lignin Products Co.
LUB	Lubrizol Corp.
LUE	George Lueders & Co.
LUR	Laurel Soap Manufacturing Co.
LVR	C. Lever Co., Inc.
LVY	Fred'k H. Levey Co., Inc.
MAH	Maher Color & Chemical Co.
MAK	MacKenzie Chemical Works, Inc.
MAL	Mallinckrodt Chemical Works
MAR	American Can Co., Marathon Div.
MAY	Otto B. May, Inc.
MCA	Masonite Corp., Alpine Chemical Div.
MCB	Borg-Warner Corp., Marbon Chemical Div.
MCC	McCloskey Varnish Co.
MCH	Michigan Chemical Corp.
MCO	Mathe Chemical Co.
MCW	McWhorter Chemicals, Inc.
MDP	Maryland Plastics, Inc.
MED	Medical Chemicals Corp.
MEE	Maumee Chemical Co.
MER	Jefferson Lake Sulphur Co., Chemical Div.
MET	M & T Chemicals, Inc.
MFG	Molded Fiber Glass Body Co., Resin Div.
MGR	Magruder Color Co., Inc.
MHI	Metal Hydrides, Inc.
MID	Midland Industrial Finishes Co.
MIR	Miranol Chemical Co., Inc.
MLD	Metalead Products Corp.
MLS	Miles Laboratories, Inc.
MMM	Minnesota Mining & Manufacturing Co.
MNO	Monochem, Inc.
MNP	Minnesota Paints, Inc.
MOA	Mona Industries, Inc.
MOB	Mobay Chemical Co.
MOC	Marathon Oil Co., Texas Refining Div.
MON	Monsanto Chemical Co.
MOR	Mineral Oil Refining Co.
MOT	Motomco, Inc.
MPL	Massachusetts Plastic Corp.
MR	Benjamin Moore & Co.
MRA	Metro-Atlantic, Inc.
MRB	Marblette Corp.
MRD	Marden-Wild Corp.
MRK	Merck & Co., Inc.
MRN	Morningstar Paisley, Inc.
MRO	Marco Chemical Corp.
MRT	Morton Chemical Co.
MRV	Marlowe-Van Loan Corp.
MRW	Morwear Paint Co.
MRX	Max Marx Color & Chemical Co.
MSC	Mississippi Chemical Corp.
MTL	Metalsalts Corp.
MTO	Montrose Chemical Corp. of California
MTR	Baldwin-Montrose Chemical Co., Inc., Montrose Chemical Div.
MYW	Stepan Chemical Co., Maywood Chemical Works Div.
NAC	Allied Chemical Corp., National Aniline Div.
NCI	Nelio Chemicals, Inc.
NCW	Nostrip Chemical Works, Inc.
NEO	Norda Essential Oil & Chemical Co., Inc.
NEP	Nepera Chemical Co., Inc.
NES	Nease Chemical Co., Inc.
NEV	Neville Chemical Co.
NIL	Nilok Chemicals, Inc.
NOC	Norac Co., Inc.
NON	A. P. Nonweiler Co.
NOP	Nopco Chemical Co., Inc.
NOR	Norwich Pharmacal Co.
NPI	National Polychemicals, Inc.
NPP	National Plastic Products Co., Inc.
NPV	Norris Paint & Varnish Co.
NRS	Norse Chemical Corp.
NSC	National Starch & Chemical Corp.
NSP	Alabama Binder & Chemical Corp.
NTB	National Biochemical Co.
NTC	National Casein Co.
NTL	National Lead Co.
NVF	National Vulcanized Fibre Co.
NVT	Novamont Corp.
NW	Northwestern Chemical Co.
NYC	American Dyewood Co., Inc., New York Color & Chemical Co. Div.
OCF	Owens-Corning Fiberglas Corp.
OH	Ohio Chemical & Surgical Equipment Co.
OLH	Old Hickory Chemical Co.
OMB	Olin Mathieson Chemical Corp., Blockson Works
OMC	Olin Mathieson Chemical Corp.
OMS	Olin Mathieson Chemical Corp., E. R. Squibb & Sons Div.
ONX	Onyx Chemical Corp.
OPC	Orbis Products Corp.
ORG	Organics, Inc.
ORO	California Chemical Co., Oronite Div.
ORT	Roehr Chemicals, Inc.
OSB	C. J. Osborn Co.
OTA	Ottawa Chemical Co.
OTC	Ott Chemical Co.
OTH	California Chemical Co., Ortho Div.
OTT	Ottol Oil Co.
OXY	Oxy Chemical Co.

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

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

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

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

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

Code	Name of company
WRD	Weyerhaeuser Co., Wood Products Div.
WSN	Washine Chemical Corp.
WST	Westville Chemical Corp.
WTC	Witco Chemical Co., Inc.
WTH	Wallace & Tiernan, Inc., Harchem Div.
WTL	Wallace & Tiernan, Inc., Lucidol Div.
WTM	Wallace & Tiernan, Inc.
WVA	West Virginia Pulp & Paper Co., Polychemicals Div.
WYN	Wyandotte Chemicals Corp.
WYT	American Home Products Corp., Wyeth Laboratories, Inc. Div.
YAW	Young Aniline Works, 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 Binder & 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	33 Avenue P, Newark 5, N.J.
	Allied Chemical Corp:	
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.
APC	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	633 Court St., Brooklyn 31, N.Y.
	Armour & Co.:	
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.
APD	Atlas Chemical Industries, Inc., Chemicals Div	New Murphy Rd. and Concord Pike, Wilmington 99, Del.
APR	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 416, 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	Bercen 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. Boysen 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.
BRS	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.
BRR	Brown Co., Resi-Chem Div	100 E. Broadway, Swanton, Ohio.
ABR	Andrew Brown Co	5431 District Blvd., Los Angeles 22, Calif.
BRU	M. A. Bruder & Sons, Inc	52d St. and Grays Ave., Philadelphia 43, Pa.
BRY	Bryant Chemical Corp	6 North St., N. Quincy 71, Mass.
BUK	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 Scarsdale Rd., Tuckahoe 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., Burt, N.Y.
CAU	Calcasieu Chemical Corp	P.O. Box 1522, Lake Charles, La.
	California Chemical Co.:	
ORO	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.
CRS	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.
SPC	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.
VLY	Chem-Fleur, Inc	200 Pulaski St., Newark, N.J.
CIS	Chemical Insecticide Corp	30 Whitman Ave., Metuchen, N.J.
CMG	Chemical Manufacturing Co., Inc	Magunco Rd., Ashland, Mass.
CPD	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	4040 W. 123d St., Alsip 58, Ill.
CHL	Chemol, Inc	P.O. Box 3227, Greensboro, N.C.
CS	Chemstrand Corp	350 5th Ave., New York 1, N.Y.
CPC	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 Munsey Bldg., Baltimore 2, Md.
COK	Cockerille Chemicals, Inc	Greenwood, Va.
CLR	Colab Resin Corp	Main St., Tewksbury, Mass.
CP	Colgate-Palmolive Co	300 Park Ave., New York 22, N.Y.
CW	Collett-Week Corp	Quimby St., Ossining 12, N.Y.
COL	Collier Carbon & Chemical Corp	714 W. Olympic Blvd., Los Angeles 15, Calif.
CLD	Colloids, Inc	394 Frelinghuysen Ave., Newark 14, N.J.
CLB	Columbia Organic Chemicals Co., Inc	1012 Drake St., Columbia 5, 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.
CTA	Conestoga Chemical Corp	Wilmington Industrial Park, Wilmington 1, Del.
CPT	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.
CPV	Cook 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.
CPY	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 Pear St., Reading, Pa.
CBY	Crosby Chemicals, Inc	Drawer 111, Picayune, 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	Pryor, 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.
TTX	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.
FBC	Fiber Chemical Dept	P.O. Box 218, Mattawan, N.J.
TDC	Diversey Corp	212 W. Monroe St., Chicago 6, Ill.
DPP	Dixie Pine Products Co., Inc	P.O. Box 470, Hattiesburg, Miss.
DOD	Donald A. Dodd	Route 5, 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
DGS	Douglas Laboratories, Inc	1624 Darrow Ave., Evanston, Ill.
DVC	Dover Chemical Co	15th and Davis Sts., Dover, Ohio.
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 14, 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 2068, 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	Emkay 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	Escambia 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	Farac Oil & 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.
FMO	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.
FRP	Filtered Rosin Products Co	P.O. Box 179, Baxley, Ga.
FIN	Fine Organics, Inc	205 Main St., Lodi, N.J.
	Firestone Tire & Rubber Co.:	
FIR	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	P.O. Box 997, Lake Alfred, Fla.
	FMC Corp.:	
FMW	Chemical Div	633 3d Ave., New York 17, N.Y.
FMB	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	Foote Mineral Co	Route 100, Exton, Pa.
FOR	Foremost Food & Chemical Co	P.O. Box 599, Oakland 4, Calif.
FOM	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	Geigy 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., Schenectady 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	666 Main St., Cambridge 39, Mass.
GNM	General Mills, Inc	9200 Wayzata Blvd., Minneapolis 26, Minn.
GPM	General Plastics Manufacturing Co	3481 S. 35th St., Tacoma 9, Wash.
GNT	General Tire & Rubber Co., Chemical Div	1708 Englewood Ave., Akron 9, Ohio.
GRG	P. 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	Dewey & Almy Chemical Div	62 Whittenmore Ave., Cambridge 40, Mass.
GRH	Hatco Chemical Div	King George Post Rd., P.O. Box 27, Fords, N.J.
GCC	Nitrogen Products Div	P.O. Box 277, Memphis 1, Tenn.
GRP	Polymer Chemicals Div	225 Allwood Rd., Clifton, N.J.
GPR	Grain Processing Corp	1600 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 2, 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. Seeley, Blue Island, Ill.
HAB	Halby Products Co., Inc	P.O. Box 366, Wilmington 99, Del.
HAL	C. P. Hall Co. of Illinois	5245 W. 73d St., Chicago 38, Ill.
HMN	Hamilton Chemical Corp	45 Andrews St., Lowell, Mass.
HAM	Hampden Color & Chemical Co	5 Albany St., Springfield 1, Mass.
HMP	Hampshire Chemical Corp	Poisson Ave., Nashua, N.H.
HAN	Hanna Paint Manufacturing Co., Inc	1313 Windsor Ave., Columbus 16, Ohio.
HSH	Harshaw Chemical Co	1945 E. 97th St., Cleveland 6, Ohio.
HLC	Hartman-Leddon 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 8, 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	Heresite & Chemical Co	822 S. 14th St., Manitowoc, 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.
HNX	Nuodex Products Div	830 Magnolia Ave., Elizabeth, N.J.
HDG	Hodag Chemical Corp	7247 N. Central Park Ave., Skokie, Ill.
HST	Hoechst Chemical Corp	129 Quidnick St., W. Warwick, R.I.
HOF	Hoffmann-LaRoche, Inc	324 Kingsland Rd., Nutley 10, N.J.
HFT	Hoffman-Taff, Inc	P.O. Box 1246, Springfield, Mo.
HCC	Holland Color & 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.
EFH	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.
HYC	Hysol Corp----------	1100 Seneca Ave., Olean, N.Y.
ISC	Importers Service Corp----------	233 Suydam Ave., Jersey City 4, N.J.
IBI	Industrial Biochemicals----------	Edison Industrial Center, Edison, N.J.
IDC	Industrial Dyestuff Co----------	Dexter Rd., E. Providence 14, R.I.
INM	Industrial Marine Chemical Co----------	P.O. Box 6201, Fort Worth, Tex.
INL	Inland Steel Container Co----------	6532 S. Menard Ave., Chicago 38, Ill.
	Interchemical Corp.:	
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.
INI	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----------	Playtex Park, Dover, Del.
IMC	International Minerals & Chemical Corp--------	5401 Old Orchard Rd., Skokie, Ill.
INP	International Paper Co----------	220 E. 42d St., New York 17, N.Y.
IRC	International Resistance Co----------	401 N. Broad St., Philadelphia 8, Pa.
IPR	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	Ironsides Co----------	270 W. Mound St., Columbus 15, Ohio.
ISO	Isochem Resins Co----------	221 Oak St., Providence 9, R.I.
IPI	Isocyanate Products, Inc----------	900 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 1, 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.
JSC	Jersey State Chemical Co----------	59 Lee Ave., Haledon, N.J.
JWL	Jewel Paint & Varnish Co----------	345 N. Western Ave., Chicago 12, Ill.
JOC	Joclin 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. Moyer 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----------	1177 Kendall Ave., Bradford, Pa.
	Kennecott Copper Corp.:	
KCC	Chino Mines Div----------	Hurley, N. Mex.
KCU	Utah Copper Div----------	P.O. Box 1650, Salt Lake City 10, Utah.
KPI	Kenrich Petrochemicals, Inc----------	Foot of E. 22d St., Bayonne, N.J.
KYS	Keysor 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.
KPV	Keystone Paint & Varnish Corp----------	71 Otsego St., Brooklyn 31, N.Y.
KLS	Kilsdonk Chemical Corp----------	101 Canal St., Lock Haven, Pa.
KNP	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., DBA Frontier Chemical Co	600 Doremus Ave., Newark 5, N.J.
	Koppers Co., Inc.:	
KPC	Chemicals & Dyestuffs Div----------	Koppers Bldg., 430 7th Ave., Pittsburgh 19, Pa.
KPP	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.
LUR	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., Krumbhaar 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	Maher 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	P.O. Box 1191, Texas City, Tex.
MRB	Marblette Corp	37-31 30th St., Long Island City 1, N.Y.
MRO	Marco Chemical Corp	1711 W. Elizabeth Ave., Linden, N.J.
MRD	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., Federalsburg, 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 36, 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.
MLD	Metalead Products Corp	2901 Park Blvd., Palo Alto, Calif.
MHI	Metal Hydrides, Inc	12-24 Congress St., Beverly, Mass.
MTL	Metalsalts Corp	200 Wagaraw 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.
MID	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	Penn Lincoln Parkway, W. Pittsburgh 5, Pa.
MFG	Molded Fiber Glass Body Co., Resin Div	4601 Benefit Ave., Ashtabula, Ohio.
MOA	Mona Industries, Inc	65 E. 23d St., Paterson 17, N.J.
MNO	Monochem, Inc	P.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	Humko 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
NPP	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.
NVF	National Vulcanized Fibre Co	1000 Beach St., Wilmington, Del.
USR	Naugatuck Chemical, Div. of U.S. Rubber Co	Naugatuck, Conn.
NES	Nease Chemical Co., Inc	P.O. Box 221, State College, Pa.
NCI	Nelio 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. P. Nonweiler Co	P.O. Box 1007, Oshkosh, Wis.
NOP	Nopco Chemical Co., Inc	60 Park Pl., Newark 1, N.J.
NOC	Norac Co., Inc	405 S. Motor Ave., Azusa, Calif.
NEO	Norda Essential Oil & Chemical Co., Inc	600 W. 26th St., New York 1, N.Y.
NPV	Norris Paint & Varnish Co	1710 Front St. NE., Salem, Oreg.
NRS	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	Onyx Chemical Corp	190 Warren St., Jersey City 2, N.J.
OPC	Orbis Products Corp	601 W. 26th 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 Fiberglas Corp	National Bank Bldg., Toledo 1, Ohio.
OXY	Oxy Chemical Co	P.O. Box 28, Hackettstown, N.J.
PBS	Pabst 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.
PAN	Pan American Petroleum Corp	P.O. Box 591, Tulsa 2, Okla.
PNT	Pantasote Co	26 Jefferson St., Passaic, N.J.
PRC	Paragon Chemicals	221 Oak St., Providence 9, R.I.
PD	Parke, Davis & Co	Foot of Jos. Campau, Detroit 32, Mich.
PRP	M. W. Parsons-Plymouth, Inc	100 Church St., New York 8, N.Y.
PAT	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.
PCH	Peerless Chemical Co	3850 Oakman Blvd., Detroit 4, Mich.
PEL	Pelron Corp	7847 W. 47th St., Lyons, Ill.
PEN	S. B. Penick & Co	100 Church St., New York, N.Y.
PAS	Pennsalt Chemicals Corp	3 Penn Center, Philadelphia 2, Pa.
PAI	Pennsylvania Industrial Chemical Corp	120 State St., Box 240, Clairton, Pa.
PAR	Pennsylvania Refining Co	Commonwealth Bank & Trust Co. Bldg., Butler, Pa.
PGU	Perkins Glue Co	632 Cannon Ave., Lansdale, Pa.
PRR	L. Perrigo Co	Allegan, 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	Pharmachem Corp	Broad and Wood Sts., Bethlehem, Pa.
PFP	Phelan-Faust Paint Manufacturing Co	932 Loughborough Ave., St. Louis 11, Mo.
	Phelan's Resins & Plastics Div	P.O. Box 189, Burlington, Iowa.
PLC	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 Doremus 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.
PPG	Pittsburgh Plate Glass Co	1 Gateway Center, Pittsburgh 22, Pa.
PLS	Plastics Engineering Co	1607 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.
PYR	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 1581, Corpus Christi, Tex.
PDC	Poughkeepsie Dyestuff Corp	77 N. Water St., Poughkeepsie, N.Y.
PRT	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.
PRX	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	690 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 8, Ind.
RPC	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	Varcum Chemical Div	Niagara Falls, N.Y.
RIL	Reilly Tar & Chemical Corp	1615 Merchants Bank Bldg., Indianapolis 4, Ind.
REL	Reliance Varnish Co	4730 Crittenden Dr., Louisville 9, Ky.
CPL	Coast Paint & Lacquer Co. Div	6901 Cavalcade, Houston, Tex.
REM	Remington Arms Co., Inc	939 Barnum Ave., Bridgeport 2, Conn.
RTF	Retzloff 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	814 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.
SCH	Schering Corp	1011 Morris Ave., Union, N.J.
SCO	Scholler Bros., Inc	Collins and Westmoreland Sts., Philadelphia 34, Pa.
SCL	Schuylkill 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., NW., Cleveland 1, Ohio.
SHL	Shulton, Inc	697 Route 46, Clifton, N.J.
SID	George F. Siddall Co., Inc	P.O. Box 925, Spartanburg, S.C.
SOG	Signal Oil & Gas Co	P.O. Box 5008, Harrisburg Station, Houston 12, Tex.
SIC	Silmar Chemical Corp	335 N. Van Nese 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.
SIP	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	150 E. 42d St., New York 17, N.Y.
	Mobil Oil Co. Div	612 S. Flower St., Los Angeles 54, Calif., and P.O. Box 3311, Beaumont, Tex.
SPP	Socony Paint Products Co	Metuchen, N.J.
SOH	Sohio Chemical Co., Agent:	
	Sohio Petroleum Co	621 Republic Bldg., Cleveland 15, Ohio.
	Solar Nitrogen Chemicals, Inc	621 Republic Bldg., Cleveland 15, Ohio.
SOL	Solar Chemical Corp	Solar Park, Leominster, Mass.
SLC	Soluol Chemical Co., Inc	Green Hill and Market Sts., W. Warwick, R.I.
SVT	Solvent Chemical Co., Inc	341 Commercial St., Malden 48, Mass.
SON	Sonneborn Chemical & Refining Corp	300 Park Ave. S., New York 10, N.Y.
SNC	Sonoco Products Co	Hartsville, S.C.
STC	Sou-Tex Chemical Co., Inc	E. Catawba Ave., Mount Holly, N.C.
SNI	Southern Nitrogen Co., Inc	P.O. Box 246, Savannah, Ga.
SOR	Southern Resin Glue Co	P.O. Box 352, Fayetteville, N.C.
SOS	Southern Sizing Co	P.O. Box 391, East Point, Ga.
STH	South Hampton Co	P.O. Box 6966, Houston 5, Tex.
SPL	Spaulding Fibre Co., Inc	310 Wheeler St., Tonawanda, N.Y.
SPN	Spencer Chemical Co	610 Dwight Bldg., Kansas City 5, Mo.
SFC	Stahl Finish Co	26 Howley St., Peabody, Mass.
STA	A. E. Staley Manufacturing Co	N. 22d and Eldorado Sts., Decatur, Ill.
UBS	U B S Chemical Co. Div	491 Main St., Cambridge 42, Mass.
SMC	Stamford Chemical Co	45 Jefferson St., Stamford, Conn.
CLN	Standard Brands, Inc., Clinton Corn Processing Co. Div.	Clinton, Iowa.
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----------	100 W. Hunter Ave., Maywood, N.J.
	Sterling Drug, Inc.:	
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 5, 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 McLean Blvd., Paterson 4, N.J.
SYP	Synthetic Products Co----------	1636 Wayside Rd., Cleveland 20, Ohio.
SYT	Synthron, Inc----------	Ryan Ave., Ashton, R.I.
SYV	Synvar Corp----------	726 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----------	61 Broadway, New York 6, N.Y.
TNP	Tennessee Products & Chemical Corp----------	2611 West End Ave., Nashville 5, Tenn.
TX	Texaco, Inc----------	135 E. 42d St., New York 17, N.Y.
TSA	Texas Alkyls, Inc----------	P.O. Box 988, 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, Port 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	Thiokol Chemical Corp----------	P.O. Box 27, Bristol, Pa.
THC	Thompson Chemical Co----------	90 Mendor Ave., Pawtucket, R.I.
TMH	Thompson-Hayward Chemical Co----------	P.O. Box 768, 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.
TBK	Trubek Laboratories, Inc----------	State Highway 17, E. Rutherford, N.J.
TCH	TryIon 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.
	Union Carbide Corp.:	
UCC	Union Carbide Chemicals Co. Div----------	270 Park Ave., New York 17, N.Y.
UCP	Union Carbide Plastics Co. Div----------	270 Park Ave., New York 17, N.Y.
UCS	Silicones Div----------	270 Park Ave., New York 17, N.Y.
UOC	Union Oil Co. of California----------	461 S. Boylston St., Los Angeles 17, Calif.
UNN	United Chemical Corp. of Norwood----------	Endicott St., Norwood, Mass.
UNP	United Chemical Products Corp----------	York and Colgate Sts., Jersey City 2, N.J.
UNC	United Cork Companies----------	Central Ave., Kearny, N.J.
URC	United Rubber & Chemical Co----------	P.O. Box 149, Baytown, Tex.
USB	U.S. Borax Research Corp----------	630 Shatto Pl., Los Angeles 5, Calif.
USC	U.S. Coatings Co----------	225 Manida St., Bronx 59, N.Y.
USO	U.S. Oil Co----------	P.O. Box 307, Providence, R.I.
UPR	U.S. Peroxygen Corp----------	850 Morton Ave., Richmond 5, Calif.
UPF	United States Pipe & Foundry Co----------	3300 1st Ave. N., Birmingham 2, Ala.
USP	U.S. Plastic & Chemical Corp----------	P.O. Box 49, Metuchen, N.J.
UPL	United States Plywood Corp----------	P.O. Box 1688, Redding, Calif.
UVC	Universal Chemicals Corp----------	48 Hunt St., Central Falls, R.I.
UDI	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
UPM	Universal Oil Products Co	30 Algonquin Rd., Des Plaines, Ill.
UPJ	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 Afton Rd., Janesville, Wis.
VEL	Velsicol Chemical Corp	330 E. Grand Ave., Chicago 11, Ill.
VB	Vermilye-Bell	21707 Bothell Way, Bothell, Wash.
VPC	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. 58th St., Chicago 21, Ill.
VTV	Vita-Var Corp., Div. of Textron Industries, Inc.	177 Oakwood Ave., Orange, N.J.
FRO	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	2526 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.
WSN	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.
WOI	Western Organics, Inc	12800 E. Imperial Hwy., Santa Fe Springs, Calif.
EW	Westinghouse Electric Corp., Micarta 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	Whittemore-Wright Co., Inc	62 Alford St., Boston 29, Mass.
WIC	Wica Co., Inc	P.O. Box 506, Charlotte, N.C.
WLM	Wilmot & 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	19,029	12,339	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	7,619	5,152	11,060	5,416	10,997
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	1,014	2,254
Disperse	124	312	177	403	183	426
Fiber-reactive	265	735	1,003	2,716	373	1,004
Fluorescent brightening agents	296	454	424	936	438	1,182
Ingrain	6	20	20	125	5	26
Mordant	194	335	112	238	241	489
Solvent	28	82	55	172	85	253
Sulfur	11	8	4	3	319	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	3,605	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.

[1] U.S. Tariff Commission, *Imports of Coal-Tar Products, 1962*, TC Publication 98, 1963 [processed].

(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	Aceanthra[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-Acetoacetochlorcanilide	2′-Chloroacetoacetanilide.
Acetoaceto-1-naphthylamide	N-1-Naphthylacetoacetamide.
N-Acetoaceto-1-naphthylamine	N-1-Naphthylacetoacetamide.
m-Acetoacetoxylidide	2′,4′-Acetoacetoxylidide.
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.
Acetylamino 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)-Diacetamidoanthraquinone.
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^4-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^4-Acetylsulfanilamide	4′-Sulfamoylacetanilide.
2-(N^4-Acetylsulfanilamido)thiazole	4′-(2-Thiazolylsulfamoyl)acetanilide.
Acetylsulfathiazole	4′-(2-Thiazolylsulfamoyl)acetanilide.
N^4-Acetyl-2-sulfo-p-phenylenediamine	5-Acetamido-2-aminobenzenesulfonic acid.
N-Acetyl-o-toluidine	o-Acetotoluidide.
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
Aminoazoxylenetoluidine	4-(2,4-Xylylazo)-o-toluidine [NH_2=1].
p-Aminobenzenearsonic acid	Arsanilic acid [AsO_3H_2=1].
3-Aminobenzenesulfonanilide	Metanilanilide.
4-Aminobenzenesulfonanilide	Sulfanilanilide.
m-Aminobenzenesulfonic acid	Metanilic acid [SO_3H=1].
p-Aminobenzenesulfonic acid	Sulfanilic acid [SO_3H=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-bromoanthraquinone-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_2NH_2=1].
p-Amino-N-(n-butyl)phenol	p-Butylaminophenol.
2-Amino-4′-chloroacetanilide	4′-Chloroglycinanilide.
5-Amino-2-chlorobenzenesulfonic acid	6-Chlorometanilic acid [SO_3H=1].
5-Amino-3-chlorobenzenesulfonic acid	5-Chlorometanilic acid [SO_3H=1].
5-Amino-4-chlorobenzenesulfonic acid	4-Chlorometanilic acid [SO_3H=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.
ω-Amino-ψ-cumene	2,4-Dimethylbenzylamine.
Aminodichlorobenzenesulfonic acid	2,5-Dichlorosulfanilic acid.
2-Amino-1,4-diethoxybenzene	2,5-Diethoxyaniline.
2-Amino-5-diethylaminotoluene hydrochloride	N^5,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-anilinobenzenesulfonic acid.
Aminodiphenyl ether	p-Phenoxyaniline.
4-Aminoethoxyethylaniline	2-(p-Amino-N-ethylanilino)ethanol.
Amino G acid	7-Amino-1,3-naphthalenedisulfonic acid.
2-Amino-4-hydroxybenzenearsonic acid	4-Hydroxy-o-arsanilic acid [AsO_3H_2=1].
Amino I(or J) acid	6-Amino-1,3-naphthalenedisulfonic acid.
p-Amino-N-isobutylphenol	(p-Isobutylamino)phenol.
4-Amino-2-methylanisole [CH_3O=1]	3-Methyl-p-anisidine [NH_2=1].
4-Amino-4′-(3-methyl-5-pyrazolone)-2,2′-stilbenedisulfonic acid.	4′-Amino-4′-(3-methyl-5-oxo-2-pyrazolin-1-yl)-2,2′-stilbenedisulfonic acid.
4-Amino-1-naphthalenesulfonic acid	Naphthionic acid.
2-Aminonaphthalene-3,6,8-trisulfonic acid	7-Amino-1,3,6-naphthalenetrisulfonic acid.
8-Amino-1-naphthoic lactam	Naphthostyril.
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_3O=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_2H_5O=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.
Aminophenylphenyl 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-Aminoaaligenin-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_3H=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	Pentylnaphthalenes.
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_3H=1].
Aniline-p-sulfonic acid	Sulfanilic acid [SO_3H=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-sulfobutylamide	N^2-Butyl-4-methoxymetanilamide.
o-Anisidine-p-sulfonic acid	4-Methoxymetanilic acid [SO_3H=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	Naphtho[2,3-h]quinoline.
Anthraquinonylaminoanthraquinone	1,1′-Iminodianthraquinone.
1,4,9,10-Anthratetrol	Leucoquinizarin.

Cyclic intermediates: Glossary of synonymous names--Continued

Common name	Standard (Chemical Abstracts) name
4-Antipyrinecarboxylic acid	Antipyric acid.
p,p′-Azobis(N,N-dimethylaniline hydrochloride)	p-Dimethylaminobenzenediazonium chloride.
4,4′-Azobisdiphenylamine	p-Anilinobenzenediazonium chloride.
Azohydroxyaniline	p-(p-Aminophenylazo)phenol.
Azoxyaniline	3,3′-Azoxydianiline.
m,m′-Azoxybisaniline	3,3′-Azoxydianiline.
Benzal chloride	α,α-Dichlorotoluene.
Benzaldehydedisulfonic acid	4-Formyl-m-benzenedisulfonic acid.
Benzaldehydemonosulfonic acid	o-Formylbenzenesulfonic acid.
1-(4-Benzamido-1-anthraquinonylimino)-5-benzamidoanthraquinone.	4,5′-Dibenzamido-1,1′-iminodianthraquinone.
2-[3-(4-Benzamido-2,5-diethoxyphenyl)-1-methyldiazoamino]ethanesulfonic acid.	2-[3-(4-Benzamido-2,5-diethoxyphenyl)-1-methyltriazen-3-yl]ethanesulfonic acid.
N-(4-Benzamido-2,5-diethoxyphenyl)-N-methyldiazotaurine.	2-[3-(4-Benzamido-2,5-diethoxyphenyl)-1-methyltriazen-3-yl]ethanesulfonic acid.
3-(4-Benzamido-2,5-diethoxyphenyl)-3-sulfoethyl-1-methyltriazene.	2-[3-(4-Benzamido-2,5-diethoxyphenyl)-1-methyltriazen-3-yl]ethanesulfonic acid.
[3-(4-Benzamido-6-methoxy-m-tolyl)-1-methyldiazoamino]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-biphenylsulfonic acid.
Benz[cd]indol-2(1H)-one	Naphthostyril.
Benzocaine (nonmedicinal grade)	p-Aminobenzoic acid, ethyl ester.
2-Benzofurylcyanomethyl ketone	2-Benzofuranacetonitrile.
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-nitrodimethoxybenzene	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-Benzylacetamide	Hydrocinnamamide.
m-Benzyl-p-aminophenol hydrochloride	4-Amino-α-phenyl-m-cresol hydrochloride.
Benzyl chloride	α-Chlorotoluene.
o-Benzyl-p-chlorophenol	4-Chloro-α-phenyl-o-cresol [OH=1].
Benzyl cyanide	Phenylacetonitrile.
N-Benzyl-ethylaniline	N-Ethyl-N-phenylbenzylamine.
N-Benzyl-N-ethyl-p-nitrosoaniline	N-Ethyl-N-(p-nitrosophenyl)benzylamine.
3-Benzyl-7-hydroxy-4-methylcoumarin	3-Benzyl-4-methylumbelliferone.
Benzylidineacetophenone	Chalcone.
4-Benzylidineaminoantipyrine	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′-Diphenylthiocarbanilide.
N,N-Bis(2-hydroxyethyl)aniline	2,2′-(Phenylimino)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′-Isopropylidinedi-o-cresol.
Bisphenol G	4,4′-Isopropylidinebis[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.
Bromamine acid	1-Amino-4-bromo-2-anthraquinonesulfonic acid.
p-Bromoacetamidoanthraquinone	1-Acetamido-4-bromoanthraquinone.
Bromobenzanthrone	3-Bromo-7H-benz[de]anthracen-7-one.
2-Bromobiphenylene oxide	2-Bromodibenzofuran.
p-Bromomethylaminoanthraquinone	4-Bromo-1-methylaminoanthraquinone.
4-Bromo-N-methyl-1,9-anthrapyridone	6-Bromo-3-methyl-7H-dibenz[f,ij]isoquinoline-2,7(3H)-dione.
α-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	α-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-acetaminoanthraquinone	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_3H_2=1].
5-Chloro-2-aminoanisole [CH_3O=1]	4-Chloro-o-anisidine [NH_2=1].
4-Chloro-2-amino-6-benzenesulfonic acid	5-Chlorometanilic acid [SO_3H=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_3O=1]	5-Chloro-o-anisidine [NH_2=1].
5-Chloro-o-anisidine [CH_3O=1]	4-Chloro-o-anisidine [NH_2=1].
3-Chloro-2-anthracenecarboxylic acid	3-Chloro-2-anthroic acid.
2-Chloroanthraquinone-3-carboxylic acid	3-Chloro-2-anthraquinonecarboxylic acid.
Chloroarsacetin	N-Acetyl-2-chloroarsanilic acid [AsO_3H_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)acetonitrile.
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-quinolinol.
3-Chloro-3′-methoxy-6-diphenylaminecarboxylic 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-diphenylaminecarboxylic acid	4-Chloro-N-(p-methoxyphenyl)anthranilic acid.
α-Chloro-2-methoxy-5-nitrotoluene	2-(Chloromethyl)-4-nitroanisole [CH_3O=1].
[3-(5-Chloro-2-methoxyphenyl)-1-methyldiazoamino]-acetic acid.	N-(5-Chloro-2-methoxyphenylazo)-N-methylglycine.
Chloromethylanthraquinone	1-Chloro-2-methylanthraquinone.
o-Chloro-p-nitroaniline	2-Chloro-4-nitroaniline.
p-Chloro-o-nitroaniline	4-Chloro-2-nitroaniline.
Chloro-o-nitrobenzene	1-Chloro-2-nitrobenzene.
4-Chloro-3-nitrobenzotrifluoride	4-Chloro-α,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_3H=1].
4-Chlorotoluene-2-sulfonic acid	5-Chloro-o-toluenesulfonic acid [SO_3H=1].
m-Chlorotoluenethioglycolic 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_3H=1].
2-Chloro-p-toluidine-5-sulfonic acid	6-Amino-4-chloro-m-toluenesulfonic acid [SO_3H=1].
2-Chloro-5-toluidine-4-sulfonic acid	2-Amino-5-chloro-p-toluenesulfonic acid [SO_3H=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-xylenol	4-Chloro-3,5-xylenol.
Chloroxylidenesulfonic acid	6-Amino-3-chloro-2,5-xylenesulfonic acid [SO_3H=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_3O=1].
m-Cresolsulfonic acid	5-Hydroxy-m-toluenesulfonic acid [SO_3H=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_3O=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.
Desoxyanisoin	4'-Methoxy-2-(p-methoxyphenyl)acetophenone.
Developer Z	3-Methyl-1-phenyl-2-pyrazolin-5-one.
3,6-Diaminoacridine	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	4,5′-Dibenzamido-1,1′-iminodianthraquinone.
1,4-Diamino-2,3-dihydroxyanthraquinone	1,4-Diaminohystazarin.
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-toluidine).
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′-Diaminocarbanilide.
Di(p-aminophenyl)sulfide	4,4′-Thiodianiline.
1,3-Di(m-aminophenyl)urea	3,3′-Diaminocarbanilide.
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-Dianisidine	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	Benzenediazonium 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-Phenyldibenzylamine.
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-Dibromoindanthrene.
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-Dichlorobenzalchloride	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-toluene-sulfonamide [SO_2NH_2=1].
Dicresyldisulfide	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-Diethoxyphenol)benzamide	2′,5′-Diethoxybenzanilide.
Diethylaniline-m-sulfonic acid	N,N-Diethylmetanilic acid [SO_3H=1].
Diformyl-m-tolylenediamine	N^2,N^5-Diformyltoluene-2,5-diamine [CH_3=1].
1,2-Dihydroacenaphthylene	Acenaphthene.
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′-Isopropylidinediphenol.
7,8-Diketoacenaphthene	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-methyltaurine).	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-methyldiazoamino)]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	Acetoxylidide.
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-toluidide.
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-13b-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.	Antipyric acid.
2,3-Dimethyl-1-phenyl-3-pyrazolin-5-one	Antipyrine.
2,7-Dimethylquinoline	m-Toluquinaldine.
Dinaphtho[1,2,3-cd,1′,2′,3′-lm]perylene-9,18-dione	Isoviolanthrone.
Dinaphtho[1,2,3-cd,3′,2′,1′-lm]perylene-5,10-dione	Violanthrone.
1,4-Dinitrobenzene	p-Dinitrobenzene.
2,4-Dinitrobenzene	m-Dinitrobenzene.
Dinitrochlorobenzene	1-Chloro-2,4-dinitrobenzene.
Dinitrochlorobenzenesulfonic acid	4-Chloro-3,5-dinitrobenzenesulfonic acid [SO_3H=1].
3,5-Dinitro-4-chlorobenzoic acid	4-Chloro-3,5-dinitrobenzoic acid [COOH=1].
2,6-Dinitro-4-chlorophenol	4-Chloro-2,6-dinitrophenol [OH=1].
Dinitro-o-cyclohexylphenol	2-Cyclohexyl-4,6-dinitrophenol [OH=1].
4,4′-Dinitro-1,1′-dianthraquinonylamine	1,1′-Iminobis[4-nitroanthraquinone].
Dinitrodibenzanthronyl	Dinitro(3,3′-bi-7H-benz[de]anthracene)-7,7′-dione.
Dinitrohydroxydiphenylamine	p-(2,4-Dinitroanilino)phenol.
Dinitrotetramethyldiaminodiphenylmethane	4,4′-Methylenebis[N,N-dimethyl-2-nitroaniline].
2,4-Dinitrotoluenesulfonic acid	3,5-Dinitro-o-toluenesulfonic acid [SO_3H=1].
1,2-Dioxoacenaphthene	Acenaphthenequinone.
Dioxy S acid	4,5-Dihydroxy-1-naphthalenesulfonic acid.
Diphenol	Biphenol.
Diphenyl	Biphenyl.
2,4-Diphenylamine-1-hydroxyanthraquinone	2,4-Dianilino-1-hydroxyanthraquinone.
2,4-Diphenylamino-1-oxyanthraquinone	2,4-Dianilino-1-hydroxyanthraquinone.
Diphenylcarbazide	1,5-Diphenylcarbohydrazide.
Diphenyleneimine	Carbazole.
Diphenylene oxide	Dibenzofuran.
Diphenyl epsilon acid	8-Diphenylamino-1,6-naphthalenedisulfonic acid.
Diphenyl ether	Phenyl ether.
Diphenyl ketone	Benzophenone.
Diphenylmethanol	Benzhydrol.
Diphenyl oxide	Phenyl ether.
1,3-Diphenyl-2-propen-1-one	Chalcone.
Diphenyl silicon dichloride	Dichlorophenylsilane.
1,3-Diphenylurea	Carbanilide.
N,N-Diphenylurea	Carbanilide.
sym-Diphenylurea	Carbanilide.
Dipyrazoledianthrone	[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′-Diphenylthiocarbanilide.
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_3H=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_3H=1].
Ethyleneglycol 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-Nitrobenzoylacetic acid, ethyl ester.
Ethyl phenyl ether	Phenetole.
Ethylsulfobenzylaniline	α-(N-Ethylanilino)-p-toluenesulfonic acid [SO_3H=1].
N-Ethyl-o-toluidine-p-sulfonic acid	3-Ethylamino-p-toluenesulfonic acid [SO_3H=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 disulfo 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.
Halocrin	6,9-Dichloro-2-methoxyacridine.
Hexahydrobenzoic acid	Cyclohexanecarboxylic acid.
Hexahydropyridine	Piperidine.
Homophthalic acid	α-Carboxy-o-toluic acid.
α-m-Homosalicylic acid	2,4-Cresotic acid [COOH=1].
p-Homosalicylic acid	2,5-Cresotic acid [COOH=1].
Homoveratric acid	(3,4-Dimethoxyphenyl)acetic acid.
o-Homoveratric acid	(2,3-Dimethoxyphenyl)acetic acid.
Homoveratronitrile	(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-Hydroxycoumarin	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-Hydroxymetanilic acid	6-Amino-1-phenol-2-sulfonic acid.
4-Hydroxymetanilic 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-nitrometanilic acid	6-Amino-4-nitro-1-phenol-2-sulfonic acid.
4-Hydroxy-5-nitrometanilic acid	2-Amino-6-nitro-1-phenol-4-sulfonic acid.
2-Hydroxyphenetole	o-Ethoxyphenol.
p-Hydroxyphenylarsonic acid	p-Hydroxybenzenearsonic acid [AsO_3H_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)-α-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-Quinolinol.
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	Isoviolanthrone.
p-Isopropylaniline	Cumidine.
Isopropylbenzene	Cumene.
Isopropyl p-toluenesulfonate	p-Toluenesulfonic acid, isopropyl ester [SO_3H=1].
J acid	6-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_3H=1].
Laurent's acid	5-Amino-1-naphthalenesulfonic acid.
Lead styphnate	Styphnic acid, lead salt.
Lead trinitroresorcinate	Styphnic acid, lead salt.
Leuco-1,4-di(methylamino)anthraquinone	1,4-Dimethylamino-9,10-anthradiol.
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_3H=1].
Methoxyaniline	Anisidine [NH_2=1].
o-Methoxyanilinomethanesulfonic acid	o-Anisidinomethanesulfonic acid.
2-(o-Methoxyanilino)-5-nitrobenzenesulfonic acid	2-(o-Anisidino)-5-nitrobenzenesulfonic acid.
o-Methoxyanilino-p-sulfonic acid	4-Methoxymetanilic acid [SO_3H=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_3H=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-sulfoanthranilic 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(toluenediamine)	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'-Methylenediphenylisocyanate	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-toluene-sulfonic acid [SO_3H=1].
3-Methyl-1-(2-methyl-4-sulfophenyl)-5-pyrazolone	4-(3-Methyl-5-oxo-2-pyrazolin-1-yl)-m-toluene-sulfonic acid.
N-(5-Methyl-4-nitro-o-anisyl)-p-toluenesulfonamide	N-(5-Methyl-4-nitro-o-methoxyphenyl)-p-toluene-sulfonamide.
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-sulfophenyl)-2-pyrazolin-5-one	m-(3-Methyl-5-oxo-2-pyrazolin-1-yl)benzenesulfonic acid.
3-Methyl-1-(p-sulfophenyl)-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)benzene-sulfonic acid.
3-Methyl-1-(p-sulfophenyl)-5-pyrazolone	p-(3-Methyl-5-oxo-2-pyrazolin-1-yl)benzenesulfonic acid.
Methyl-p-toluenesulfonate	p-Toluenesulfonic acid, methyl ester [SO_3H=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	Naphthostyril.
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.
2-Naphthol ethyl ether	2-Ethoxynaphthalene.
Naphthosulfochloride	1-Naphthalenesulfonyl chloride.
1,8-Naphthosultone	1-Naphthol-8-sulfonic acid sultone.
Naphthylacetonitrile	Naphthaleneacetonitrile.
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-napthalenesulfonic acid.
1-Naphthylamine-3-sulfonic acid	4-Amino-2-naphthalenesulfonic acid.
1-Naphthylamine-4-sulfonic acid	Naphthionic 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.
Nevile & Winther's acid	1-Naphthol-4-sulfonic acid.
3-Nitro-4-aminoanisole [CH_3O=1]	2-Nitro-p-anisidine [NH_2=1].
4-Nitro-2-aminoanisole [CH_3O=1]	5-Nitro-o-anisidine [NH_2=1].
5-Nitro-2-aminoanisole [CH_3O=1]	4-Nitro-o-anisidine [NH_2=1].
6-Nitro-2-aminoanisole [CH_3O=1]	3-Nitro-o-anisidine [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-anisidine [CH_3O=1]	2-Nitro-p-anisidine [NH_2=1].
3-Nitro-p-anisidine [CH_3O=1]	2-Nitro-p-anisidine [NH_2=1].
4-Nitro-2-anisidine [CH_3O=1]	5-Nitro-o-anisidine [NH_2=1].
5-Nitro-2-anisidine [CH_3O=1]	4-Nitro-o-anisidine [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_3H=1].
2-Nitrobenzenesulfonic acid	o-Nitrobenzenesulfonic acid [SO_3H=1].
3-Nitrobenzenesulfonic acid	m-Nitrobenzenesulfonic acid [SO_3H=1].
3-Nitrobenzenesulfonyl chloride	m-Nitrobenzenesulfonyl chloride [SO_3Cl=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	6-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_3O=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_3H=1].
4-Nitrodiphenylamino-2-sulfonic acid	2-Anilino-5-nitrobenzenesulfonic acid [SO_3H=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-4,8-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_3H=1].
4-Nitrotoluneanilide	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-toluidide.
o-Nitrotoluenesulfonic acid	3-Nitro-p-toluenesulfonic acid [SO_3H=1].
p-Nitrotoluene-o-sulfonic acid	5-Nitro-o-toluenesulfonic acid [SO_3H=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-toluidide.
6-Nitro-o-toluidine-4-sulfonic acid	4-Amino-5-nitro-m-toluenesulfonic acid [SO_3H=1].
N-(4-Nitro-o-tolyl)-p-toluenesulfonamide	4'-Nitro-p-toluenesulfono-o-toluidide.
5-Nitro-1,2,4-trichlorobenzene	1,2,4-Trichloro-5-nitrobenzene.
Nitroviolanthrene	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_3H=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	Benzenearsonic 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-aminoanilino)benzenesulfonic acid.
Phenylethanolamine	2-Anilinoethanol.
Phenyl gamma acid	7-Anilino-1-naphthol-3-sulfonic acid.
Phenylhydrazine-p-sulfonic acid	p-Hydrazinobenzenesulfonic acid [SO_3H=1].
Phenylhydrazine-2-sulfonic acid	o-Hydrazinobenzenesulfonic acid [SO_3H=1].
Phenylhydrazine-3-sulfonic acid	m-Hydrazinobenzenesulfonic acid [SO_3H=1].
N-Phenyl-N′-(β-hydroxyethyl)thiourea	1-(2-Hydroxyethyl)-3-phenyl-2-thiourea.
Phenyl isocyanate	Isocyanic acid, phenyl ester.
Phenyl J acid	6-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-Phenylphloretic acid.
Phenyl peri acid	8-Anilino-1-naphthalenesulfonic acid.
N-Phenyl-p-phenylenediaminesulfonic acid	5-Amino-2-anilinobenzenesulfonic acid [SO_3H=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 KB 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-Anthraquinonesulfonic 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_3H=1].
4-Sulfo-o-benzoylbenzoic acid	2-Benzoyl-4-sulfobenzoic acid [COOH=1].
1-Sulfo-5-nitroanthraquinone	5-Nitro-1-anthraquinonesulfonic 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].
Tetraethyldiaminotriphenylmethane	4,4′-Benzylidenebis[N,N-diethylaniline].
Tetrahydrophthalimide	4-Cyclohexene-1,2-dicarboximide.
Tetramethyldiaminoacridine hydrochloride	2,7-Bis[dimethylamino]acridine hydrochloride.
Tetramethyldiaminobenzophenone	4,4′-Bis[dimethylamino]benzophenone.
Tetramethyldiaminobenzoylhydrol	4,4′-Bis[diethylamino]benzhydrol.
Tetramethyldiaminodiphenylmethane	4,4′-Methylenebis[N,N-dimethylaniline].
Tetramethyldiaminotriphenylmethane	4,4′-Benzylidinebis[N,N-dimethylaniline].
Thioaniline	4,4′-Thiodianiline.
Thioanilinedisulfonic acid	6,6′-Thiodimetanilic acid [SO_3H=1].
p,p′-Thiobis(4-amino-o-benzenesulfonic acid)	6,6′-Thiodimetanilic acid [SO_3H=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_2Cl=1].
4-Toluenesulfonamido-1-aminoanthraquinonesulfonic acid.	1-Amino-4-(p-toluenesulfonamido)-2-anthraquinonesulfonic acid.
β-Toluenesulfonic acid	p-Toluenesulfonic acid, methyl ester [SO_3H=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_3H=1].
m-Toluidine-p-sulfonic acid	2-Amino-p-toluenesulfonic acid [SO_3H=1].
o-Toluidine-m-sulfonic acid	4-Amino-m-toluenesulfonic acid [SO_3H=1].
o-Toluidine-omega-sulfonic acid	(o-Toluidino)methanesulfonic acid [SO_3H=1].
p-Toluidine-m-sulfonic acid	6-Amino-m-toluenesulfonic acid [SO_3H=1].
p-Toluidine-o-sulfonic acid	5-Amino-o-toluenesulfonic acid [SO_3H=1].
p-Toluidine-o-sulfonic acid, isopropyl ester	5-Amino-o-toluenesulfonic acid, isopropyl ester [SO_3H=1].
3-Toluidine-6-sulfonic acid	4-Amino-o-toluenesulfonic acid [SO_3H=1].
6-(p-Toluidino)metanilic acid	5-Amino-2-(p-toluidino)benzenesulfonic acid.
α-Tolunitrile	Phenylacetonitrile.
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.
Tolylenediamine	Toluenediamine.
p-m-Tolylenediamine	Toluene-2,5-diamine.
4-m-Tolylenediamine	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_3H=1].
m-Tolylene diisocyanates	Isocyanic acid, 4(and2)-methyl-m-phenylene ester.
[3-(p-Tolyl)-1-methyltriazeno]acetic acid	[3-(p-Tolyl)-1-methyltriazen-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-Trioxyanthraquinone	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_3H=1].
Xylyl 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-acetoacetanisidide).
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-methoxymetanilamide and Naphthol AS-ITR).
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	Permanent 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	Setoglaucine.
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*.

U S GOVERNMENT PRINTING OFFICE 1963 O—710-934

REPORTS OF THE UNITED STATES TARIFF COMMISSION ON THE OPERATION OF THE TRADE AGREEMENTS PROGRAM

*Operation of the Trade Agreements Program, June 1934 to April 1948 (Rept. No. 160, 2d ser., 1949):
- Part I. Summary
- Part II. History of the Trade Agreements Program
- Part III. Trade-Agreement Concessions Granted by the United States
- Part IV. Trade-Agreement Concessions Obtained by the United States
- Part V. Effects of the Trade Agreements Program on United States Trade

*Operation of the Trade Agreements Program: Second Report, April 1948–March 1949 (Rept. No. 163, 2d ser., 1950)

*Operation of the Trade Agreements Program: Third Report, April 1949–June 1950 (Rept. No. 172, 2d ser., 1951)

*Operation of the Trade Agreements Program: Fourth Report, July 1950–June 1951 (Rept. No. 174, 2d ser., 1952)

*Operation of the Trade Agreements Program: Fifth Report, July 1951–June 1952 (Rept. No. 191, 2d ser., 1954)

*Operation of the Trade Agreements Program: Sixth Report, July 1952–June 1953 (Rept. No. 193, 2d ser., 1954)

*Operation of the Trade Agreements Program: Seventh Report, July 1953–June 1954 (Rept. No. 195, 2d ser., 1955)

*Operation of the Trade Agreements Program: Eighth Report, July 1954–June 1955 (Rept. No. 197, 2d ser., 1956)

*Operation of the Trade Agreements Program: Ninth Report, July 1955–June 1956 (Rept. No. 199, 2d ser., 1957)

*Operation of the Trade Agreements Program: 10th Report, July 1956–June 1957 (Rept. No. 202, 2d ser., 1959)

*Operation of the Trade Agreements Program: 11th Report, July 1957–June 1958 (Rept. No. 204, 2d ser., 1959)

*Operation of the Trade Agreements Program: 12th Report, July 1958–June 1959 (TC Publication 9)

Operation of the Trade Agreements Program: 13th Report, July 1959–June 1960 (TC Publication 51), 45¢

NOTE.—The reports preceded by an asterisk (*) are out of print. That followed by a price may be purchased from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C., 20402. See inside front cover for additional reports. All U.S. Tariff Commission reports reproduced by the Government Printing Office may be consulted in the official depository libraries throughout the United States.