UNITED STATES TARIFF COMMISSION

SYNTHETIC ORGANIC CHEMICALS

United States Production and Sales, 1959

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UNITED STATES TARIFF COMMISSION

SYNTHETIC ORGANIC CHEMICALS

United States Production and Sales, 1959

UNDER THE GENERAL PROVISIONS
OF TITLE III, PART II, SECTIONS 332
AND 333 OF THE TARIFF ACT OF 1930

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Introduction

This is the forty-third 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 1959 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, toners and lakes, medicinals, 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 653 primary manufacturers listed in part III.

This report incorporates a number of changes based on suggestions made by the Committee on Chemicals of the Advisory Council on Federal Reports. The most important of the changes in this year's report is the replacement of the numerical identification code previously used to identify manufacturers, by an alphabetical code. Each producing 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. The identification symbols are permanent and, except for such changes as may be necessary, will be used in all future reports in this series. Important changes first incorporated in the Commission's 1958 report and continued in this report include the larger format, certain revisions of the basic definitions, and adoption of the new *Colour Index* classification and terminology for dyes and toners and lakes. This report, like the 1958 report, 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.

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 medicinals, 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.

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 medicinals. 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 1959 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 includes a table that shows the number of technically trained research workers in the synthetic organic chemical industry and the cost of research in the industry. Appendix C 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 D is a cross-reference list of the *Colour Index* and common names of toners and lakes.

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[2] Sec. 4(a), Federal Reports Act of 1942 (56 Stat. 1079, 5 U.S.C. 139b) and sec. 1, Public Law 685, 80th Cong., 2d sess. (62 Stat. 791, 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 1959 was 89,874 million pounds--12.3 percent more than the output in 1958 (see table 1). Sales in 1959, which totaled 52,973 million pounds, valued at $7,267 million, were 22.3 percent larger than in 1958 in terms of quantity and 22.1 percent larger in terms of value. Since these figures include data on production and sales of chemicals at several successive steps in the manufacturing process, they necessarily contain considerable duplication.

In 1959, production of all synthetic organic chemicals, including cyclic intermediates and finished products, totaled 50,315 million pounds, or 16.3 percent more than the output in 1958. The production of plastics and resin materials (5,865 million pounds) was 29.8 percent larger in 1959 than in 1958; that of elastomers (synthetic rubbers) (2,825 million pounds) was 28.3 percent larger; that of cyclic intermediates (8,459 million pounds) was 27.3 percent larger; and that of plasticizers (539 million pounds) was 28.9 percent larger.

Production of all other groups of synthetic organic chemicals was also larger in 1959 than in 1958. Output of rubber-processing chemicals (210 million pounds) was 24.4 percent larger; that of toners and lakes (43 million pounds) was 20.6 percent larger; that of coal-tar dyes (170 million pounds) was 21.1 percent larger; that of miscellaneous chemicals (29,958 million pounds) was 10.6 percent larger; that of surface-active agents (1,504 million pounds) was 11.0 percent larger; that of pesticides and other agricultural chemicals (585 million pounds) was 8.5 percent larger; that of flavor and perfume materials (50 million pounds) was 15.8 percent larger; and that of medicinal chemicals (107 million pounds) was 5.1 percent larger.

TABLE 1.--*Synthetic organic chemicals and their raw materials: U.S. production and sales, 1958 and 1959*

Chemical	Production			Sales					
				Quantity			Value		
	1958	1959	Increase or decrease (-), 1959 over 1958[1]	1958	1959	Increase or decrease (-), 1959 over 1958[1]	1958	1959	Increase or decrease (-), 1959 over 1958[1]
	Million pounds	*Million pounds*	*Percent*	*Million pounds*	*Million pounds*	*Percent*	*Million dollars*	*Million dollars*	*Percent*
Grand total	80,007	89,874	12.3	43,309	52,973	22.3	5,953	7,267	22.1
Tar	6,979	6,690	-4.1	3,738	3,497	-6.4	50	44	-12.5
Tar crudes	[2] 8,879	8,447	-4.9	[2] 5,653	5,353	-5.3	[2] 157	142	-9.6
Crude products from petroleum and natural gas	20,903	24,422	16.8	11,904	16,599	39.4	380	583	53.5
Synthetic organic chemicals, total	43,246	50,315	16.3	22,014	27,524	25.0	5,366	6,498	21.1
Intermediates	6,643	8,459	27.3	2,646	3,511	32.7	439	556	26.6
Dyes	140	170	21.1	139	159	14.1	178	206	16.0
Toners and lakes	35	43	20.6	28	33	20.0	53	66	22.9
Medicinals	101	107	5.1	81	87	7.2	555	582	5.0
Flavor and perfume materials	44	50	15.8	40	45	14.4	52	57	8.4
Plastics and resin materials	4,518	5,865	29.8	4,057	5,170	27.4	1,275	1,640	28.6
Rubber-processing chemicals	169	210	24.4	123	159	29.6	80	102	27.6
Elastomers (synthetic rubbers)	2,202	2,825	28.3	2,008	2,601	29.5	544	693	27.5
Plasticizers	418	539	28.9	356	477	33.8	111	142	27.9
Surface-active agents	1,355	1,504	11.0	1,202	1,372	14.1	235	271	15.2
Pesticides and other organic agricultural chemicals	539	585	8.5	467	503	7.7	196	225	14.9
Miscellaneous chemicals	27,082	29,958	10.6	10,867	13,407	23.4	1,648	1,958	18.8

[1] Percentages calculated from figures rounded to thousands.
[2] Revised to eliminate duplication insofar as possible.

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 1959 was 669 million gallons, or 4.1 percent less than the 698 million gallons produced in 1958. Of the total quantity produced in 1959, 654 million gallons was coal tar and 15 million gallons was water-gas and oil-gas tar (see table 2).

TABLE 2.--*Tar: U.S. production and consumption, 1958 and 1959*

[In thousands of gallons]

Product	1958	1959
PRODUCTION		
Total	697,856	669,018
Water-gas and oil-gas tar[1]	28,540	15,290
Coal tar from coke-oven byproduct plants,[2] total	669,316	653,728
Plants not owned by city gas companies	663,228	648,838
Plants owned by city gas companies (public utilities)	6,088	4,890
CONSUMPTION		
Total	683,689	670,585
Tar consumed by distillation, total	555,339	534,112
Water-gas and oil-gas tar distilled by producers and tar distillers[3]	18,561	10,400
Coal tar distilled or topped by coke-oven operators[2]	228,044	205,797
Coal tar distilled by tar distillers[4]	308,734	317,915
Tar consumed chiefly as fuel, total	99,703	109,447
Water-gas and oil-gas tar consumed as fuel[5]	...	...
Coal tar sold or consumed as fuel by coke-oven operators[2]	99,703	109,447
Tar consumed otherwise than by distillation or as fuel, total	28,647	27,026
Coal tar consumed at coke-oven plants for roads and upkeep[2]	3,786	1,537
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[5]	24,861	25,489

[1] Reported to the American Gas Association.
[2] Reported to the U.S. Bureau of Mines.
[3] Reported to the U.S. Tariff Commission.
[4] Represents tar purchased from companies operating coke ovens and gas-retort plants and distilled by companies operating tar-distillation plants.
[5] Reported to the American Gas Association and to the U.S. Tariff Commission.

Total consumption of tar in 1959 amounted to 671 million gallons, of which 534 million gallons was consumed by distillation, 110 million gallons as fuel, and 27 million gallons in miscellaneous uses.

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 1959 amounted to 347 million gallons--20.9 percent more than the 287 million gallons reported for 1958. These totals include data for benzene produced from domestic tars, from imported and domestic crude light oil, from domestic petroleum, and from imported motor-grade benzene. Sales of benzene in 1959 amounted to 330 million gallons, valued at $96 million, compared with 243 million gallons, valued at $79 million, in 1958. The output of toluene from all sources (including material produced for use in blending in aviation fuel) amounted to 282 million gallons--17.5 percent more than the 240 million gallons reported for 1958. Sales of toluene in 1959 were 167 million gallons, valued at $33 million, compared with 137 million gallons, valued at $29 million, in 1958. The output of xylene in 1959 (including that produced for blending in motor fuels) was 241 million gallons, compared with 200 million gallons in 1958. More than 95 percent of the xylene produced in 1959 was obtained from petroleum sources.

TABLE 3.--*Tar and tar crudes: Summary of U.S. production and sales of specified products, average 1954-58, annual 1958 and 1959*[1]

Chemical	Unit of quantity	Average 1954-58	1958	1959	Increase, or decrease (-)	
					1959 over 1954-58	1959 over 1958
					Percent	*Percent*
Tar: Production[2]	1,000 gal--	834,936	697,856	669,018	-19.9	-4.1
Benzene:						
Production	1,000 gal--	304,585	287,170	347,118	14.0	20.9
Sales	1,000 gal--	254,849	243,308	330,450	29.7	35.8
Value of sales	1,000 dol--	92,234	79,322	96,191	4.3	21.3
Toluene:						
Production	1,000 gal--	191,087	[3] 239,595	[3] 281,614	47.4	17.5
Sales	1,000 gal--	133,244	136,570	166,809	25.2	22.1
Value of sales	1,000 dol--	34,737	29,085	32,921	-5.2	13.2
Xylene:						
Production	1,000 gal--	136,423	[3] 200,498	[3] 241,467	77.0	20.4
Sales	1,000 gal--	81,498	95,113	128,848	58.1	35.5
Value of sales	1,000 dol--	21,381	23,186	28,494	33.3	22.9
Naphthalene:						
Production	1,000 lb--	407,237	345,085	425,293	4.4	23.2
Sales	1,000 lb--	268,090	212,645	266,510	-.6	25.3
Value of sales	1,000 dol--	15,907	13,528	12,670	-20.4	-6.4
Creosote oil:[4]						
Production	1,000 gal--	[5] 118,446	105,258	90,437	-23.6	-14.1
Sales	1,000 gal--	[5] 114,161	103,987	84,313	-26.2	-18.9
Value of sales	1,000 dol--	[5] 23,952	20,565	17,958	-25.0	-12.7

[1] For details concerning statistics on tar crudes shown in this table, see table 4A.
[2] 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.
[3] Includes data for material produced for use in blending motor fuels.
[4] Quantity figures shown are on a 100-percent-creosote basis.
[5] Average is for 4 years--1955-58, inclusive; data have been revised.

Production of crude naphthalene in 1959 amounted to 425 million pounds, compared with 345 million pounds in 1958. Sales of naphthalene in 1959 were 267 million pounds, valued at $13 million, compared with 213 million pounds, valued at $14 million, in 1958. In 1959 the output of creosote oil (100-percent creosote basis), used principally in wood preserving, was 90 million gallons, compared with 105 million gallons in 1958. Production of road tar in 1959 was 66 million gallons, compared with 69 million gallons in 1958.

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

TABLE 4A.--*Organic chemicals: U.S. production and sales of tar crudes, 1959*

[Listed below are all tar crudes for which any reported data on production or sales may be published. 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--	213,036	19,515	2,993	$0.15
Intermediate light oil: Coke-oven operators	1,000 gal--	2,986	3,026	535	.18
Light-oil distillates:					
Benzene, specification and industrial grades, total	1,000 gal--	347,118	330,450	96,191	.29
Tar distillers[2]	1,000 gal--	18,498	9,055	2,694	.30
Coke-oven operators	1,000 gal--	119,831	123,489	35,708	.29
Petroleum operators	1,000 gal--	208,789	197,911	57,789	.29
Toluene, all grades, total[3]	1,000 gal--	281,614	166,809	32,921	.20
Tar distillers	1,000 gal--	3,670	3,366	882	.26
Coke-oven operators	1,000 gal--	26,964	26,506	5,466	.21
Petroleum operators	1,000 gal--	250,980	136,937	26,573	.19
Xylene, all grades, total[3]	1,000 gal--	241,467	128,848	28,494	.22
Tar distillers	1,000 gal--	484	447	152	.34
Coke-oven operators	1,000 gal--	7,524	7,641	2,114	.28
Petroleum operators	1,000 gal--	233,459	120,760	26,228	.22
Solvent naphtha, total	1,000 gal--	7,834	7,210	1,897	.26
Tar distillers	1,000 gal--	3,811	3,419	886	.26
Coke-oven operators	1,000 gal--	4,023	3,791	1,011	.27
All other light-oil distillates, total	1,000 gal--	6,370	5,065	892	.18
Tar distillers	1,000 gal--	2,723	2,656	547	.21
Coke-oven operators	1,000 gal--	3,647	2,409	345	.14
Pyridine crude bases (dry basis)	1,000 gal--	808	323	334	1.03
Naphthalene, crude (tar distillers and coke-oven operators), total[4]	1,000 lb---	425,293	266,510	12,670	.05
Solidifying at--					
Less than 74° C.	1,000 lb---	26,079	26,673	729	.03
74° C. to less than 76° C	1,000 lb---	18,190	7,037	301	.04
76° C. to less than 79° C	1,000 lb---	381,024	232,800	11,640	.05
Crude tar-acid oils:					
Tar distillers	1,000 gal--	787	461	207	.45
Coke-oven operators	1,000 gal--	20,958	21,159	4,416	.21
Creosote oil (Dead oil) (tar distillers and coke-oven operators) (100% creosote basis), total[5]	1,000 gal--	90,437	84,313	17,958	.21
Distillate as such (100% creosote basis)	1,000 gal--	81,982	76,052	15,487	.20
Creosote content of coal-tar solution (100% creosote basis)	1,000 gal--	8,455	8,261	2,471	.30
All other distillate products[6]	1,000 gal--	20,213	12,152	2,546	.21
Tar, road	1,000 gal--	66,108	64,806	11,357	.18
Tar (crude and refined) for other uses[7]	1,000 gal--	28,798	21,468	4,419	.21
Pitch of tar:					
Soft and medium (water softening point less than 110° F., and 110° F. to 160° F. ASTM D61-24)	1,000 tons-	909	378	15,879	42.01
Hard (water softening point above 160° F.)	1,000 tons-	619	539	23,078	42.82
Pitch-of-tar coke and pitch emulsion	1,000 tons-	35	18	693	38.50

[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] Statistics represent combined data for the 3 commercial grades of naphthalene to avoid disclosure of individual company operations. Owing to conversion between grades, the figures may include some duplication.
[5] Statistics include data for only creosote oil sold for, or used in, wood preserving.
[6] Includes data for shingle-stain oil and neutral oils produced by tar distillers, and for crude sodium phenolate produced by coke-oven operators.
[7] Includes data for tar used as paint, and for 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. Statistics for materials produced in tar and petroleum refineries are compiled by the U.S. Tariff Commiasion.

Some of the products included in the statistics in table 4A are derived from other products, data for which 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 production of these products and of tar burned as fuel was $360 million in 1959, compared with $343 million in 1958 and $403 million in 1957.

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[2]). 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 toluene and xylene, which are not used directly as fuels but in blending aviation and motor-grade gasolines.

TABLE 5A. --*Synthetic organic chemicals: U.S. production and sales of crude products from petroleum and natural gas for chemical conversion, 1959*

[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	24,421,700	16,598,504	582,914	$0.035
AROMATICS AND NAPHTHENES[2]				
Total	6,749,827	4,913,739	132,880	.027
Alkyl aromatics, distillates, and solvents	1,629,831	1,543,895	19,350	.013
Benzene (1° and 2°), total	1,530,423	1,450,688	57,789	.040
Benzene, 1°	993,435	1,059,867	43,017	.041
Benzene, 2°	536,988	390,821	14,772	.038
Cresylic acid, crude	37,888	20,440	494	.024
Naphthenic acids, total	19,843	12,277	1,415	.115
Acid No. 225-249	4,486	4,368	491	.112
All other	15,357	7,909	924	.117
Toluene, all grades, total	1,817,095	991,424	26,573	.027
Nitration grade, 1°	779,878	721,567	19,076	.026
Pure commercial grade, 2°	499,915	241,838	6,488	.027
All other[3]	537,302	28,019	1,009	.036
Xylenes, mixed, total	1,683,239	870,680	26,228	.030
Three- and five-degree	440,906	265,364	8,108	.031
All other[3]	1,242,333	605,316	18,120	.030
All other aromatics and naphthenes[4]	31,508	24,335	1,031	.042

See footnotes at end of table.

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

TABLE 5A. --*Synthetic organic chemicals: U.S. production and sales of crude products from petroleum and natural gas for chemical conversion, 1959*--Continued

Product	Production	Sales		
		Quantity	Value	Unit value[1]
ALIPHATIC HYDROCARBONS	*1,000 pounds*	*1,000 pounds*	*1,000 dollars*	*Per pound*
Total	17,671,873	11,684,765	450,034	$0.004
Methane	...	45,450	616	.014
C_2 hydrocarbons, total	5,789,638	3,143,601	149,851	.048
Ethane	690,582	202,373	1,678	.008
Ethylene	5,099,056	2,941,228	148,173	.050
C_3 hydrocarbons, total	5,488,679	4,209,635	55,602	.013
Propane	2,971,630	2,790,253	32,567	.012
Propane-propylene mixture	364,268	363,974	4,320	.012
Propylene	2,152,781	1,055,408	18,715	.018
C_4 hydrocarbons, total	4,698,230	3,128,646	201,334	.064
1,3-Butadiene, grade for rubbers (elastomers)[5]	1,816,122	1,095,564	146,891	.134
Butadiene and butylene fractions	559,782	152,598	3,672	.024
n-Butane	510,001	325,682	3,538	.011
1-Butene and 2-butene mixture[6]	1,054,433	887,242	29,574	.033
Isobutane	228,135	239,907	4,494	.019
Isobutylene	309,822	227,124	7,393	.033
All other[7]	219,935	200,529	5,772	.029
C_5 hydrocarbons[8]	100,452	85,412	3,048	.036
All other aliphatic hydrocarbons and derivatives, total	1,594,874	1,072,021	39,583	.037
Di-isobutylene	25,899	21,951	1,515	.069
1-Dodecene (Tetrapropylene)	447,145	295,672	9,193	.031
Nonene (Tripropylene)	122,859	92,181	3,527	.038
Polybutene	43,358	43,375	4,473	.103
Hydrocarbon derivatives[9]	7,684	6,686	1,846	.276
All other[10]	947,929	612,156	19,029	.031

[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 above table 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 materials used as solvents and those blended in aviation and motor gasolines.
[4] Includes data for 90-percent benzene, sodium cresylate, 1,4-methano-2,5-cyclopentadiene, mixed pyridines, sodium carbolate and phenate, and miscellaneous cyclic hydrocarbons.
[5] In 1959 all butadiene was produced in privately owned plants. For some years prior to 1956, separate statistics are available on butadiene production for private account and for Government account.
[6] The statistics represent principally the butene content of crude refinery gases from which butadiene is manufactured.
[7] Includes data for 1-butene, 2-butene, n-butylene, and mixed olefins.
[8] Includes data for isoprene, pentanes, pentenes, and mixtures.
[9] Includes data for di-tert-butyldisulfide, miscellaneous mercaptans, and aliphatic acids.
[10] Includes data for acetylene, hexanes, heptanes and heptenes, octanes, eicosane, and hydrocarbon mixtures. The total production of acetylene for chemical processing from all sources in 1959, as reported by the U.S. Bureau of the Census, amounted to 707,908 thousand pounds (acetylene production figures converted from cubic feet to pounds as follows: 1 cu. ft. weighs 0.06897 lb. at 60° F. and 1 atmosphere pressure).

The output of crude products derived from petroleum and natural gas as a group amounted to 24,422 million pounds in 1959, or 16.8 percent more than the 20,903 million pounds reported for 1958. The larger output in 1959 is accounted for chiefly by the increase in the production of ethylene, benzene, propylene, and 1,3-butadiene. Sales of crude chemicals from petroleum in 1959 were 16,599 million pounds, valued at $583 million, compared with 11,904 million pounds, valued at $380 million, in 1958.

The output of all aromatic and naphthenic products amounted to 6,750 million pounds in 1959, compared with 5,285 million pounds in 1958. Sales in 1959, which amounted to 4,914 million pounds, valued at $133 million, were 1,502 million pounds larger, and valued at $35 million more, than those in 1958. Benzene, toluene, and xylene were produced from petroleum sources in substantially greater quantities in 1959 than in 1958, and production of naphthenic acids was 4.6 percent larger. The output of 1° and 2° benzene from petroleum amounted to 1,530 million pounds in 1959--46.9 percent more than the 1,042 million pounds produced in 1958. The output of toluene in 1959 was 1,817 million pounds--21.0 percent more than the 1,501 million pounds produced in 1958. Production of xylene was 1,683 million pounds in 1959, compared with 1,381 million pounds in 1958. These figures include toluene and xylene used in blends in aviation and motor-grade gasolines. The output of naphthenic acids amounted to 20 million pounds in 1959, compared with 19 million pounds in 1958. Production of cresylic acid in 1959--38 million pounds--was slightly smaller than production in 1958.

Production of all aliphatic hydrocarbons and derivatives from petroleum and natural gas was 17,672 million pounds in 1959, compared with 15,619 million pounds in 1958. Sales of these products were 11,685 million pounds, valued at $450 million, in 1959, compared with 8,492 million pounds, valued at $282 million, in 1958. The statistics on production and sales of acetylene (footnote 10, table 5A) include only acetylene produced from calcium carbide and from natural gas and used as a raw material in the production of other chemicals; they exclude acetylene used for welding and cutting. Total production of acetylene (principally from calcium carbide), as reported to the U.S. Bureau of the Census, amounted to 708 million pounds in 1959, compared with 589 million pounds in 1958 (see footnote 10, table 5A, for conversion factor). Production of ethylene was 5,099 million pounds in 1959, or 22.9 percent more than the 4,149 million pounds produced in 1958. The output of the C_3 hydrocarbons, propane, propylene, and propane-propylene mixture, was 5,489 million pounds in 1959--9.0 percent more than the 5,036 million pounds produced in 1958. Production of 1,3-butadiene, one of the principal ingredients of S-type synthetic rubber, was 1,816 million pounds in 1959, compared with 1,443 million pounds in 1958. The output of 1,3-butadiene in 1959 was not only 25.9 percent larger than that in 1958, but was the largest on record.

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, toners and lakes, medicinals, 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 much duplication.

Total production of synthetic organic chemicals (intermediates and finished products combined) in 1959 was 50,315 million pounds, or 16.3 percent more than the output in 1958 (see table 6). Sales totaled 27,524 million pounds, valued at $6,498 million, in 1959, compared with 22,014 million pounds, valued at $5,366 million, in 1958. Production of all cyclic products (intermediates and finished cyclic products combined) in 1959 totaled 16,372 million pounds, or 23.9 percent more than the 13,212 million pounds produced in 1958. In 1959 the output of acyclic organic chemicals was 33,943 million pounds, or 13.0 percent more than the 30,034 million pounds produced in 1958.

TABLE 6.--*Synthetic organic chemicals: Summary of U.S. production and sales of intermediates and finished products, average 1954-58, annual 1958 and 1959*

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

Chemical	Average 1954-58	1958	1959	Increase, or decrease (-)	
				1959 over 1954-58	1959 over 1958
				Percent	*Percent*
Organic chemicals, cyclic and acyclic, grand total:					
Production	38,177,048	43,245,989	50,314,692	31.8	16.3
Sales	19,930,760	22,014,099	27,524,428	38.1	25.0
Sales value	4,932,136	5,366,116	6,498,314	31.8	21.1
Cyclic, total:					
Production	12,227,714	13,211,501	16,372,032	33.9	23.9
Sales	7,508,396	8,145,535	10,245,044	36.4	25.8
Sales value	2,453,399	2,594,467	3,111,095	26.8	19.9
Acyclic, total:					
Production	25,949,334	30,034,488	33,942,660	30.8	13.0
Sales	12,422,364	13,868,564	17,279,384	39.1	24.6
Sales value	2,478,737	2,771,649	3,387,219	36.7	22.2
1. Intermediates, Cyclic					
Production	6,160,060	6,643,003	8,459,308	37.3	27.3
Sales	2,376,065	2,646,482	3,511,311	47.8	32.7
Sales value	412,366	438,978	555,695	34.8	26.6
2. Dyes, Cyclic					
Production	149,110	139,936	169,503	13.7	21.1
Sales	142,848	139,290	158,939	11.3	14.1
Sales value	174,208	177,465	205,873	18.2	16.0
3. Toners and Lakes, Cyclic					
Production	39,717	35,377	42,675	7.4	20.6
Sales	32,659	27,758	33,309	2.0	20.0
Sales value	57,254	53,410	65,634	14.6	22.9

TABLE 6.--*Synthetic organic chemicals: Summary of U.S. production and sales of intermediates and finished products, average 1954-58, annual 1958 and 1959*--Continued

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

Chemical	Average 1954-58	1958	1959	Increase, or decrease (-)	
				1959 over 1954-58	1959 over 1958
4. Medicinals					
				Percent	*Percent*
Cyclic:					
Production	63,162	70,038	73,180	15.9	4.5
Sales	49,782	51,750	57,526	15.6	11.2
Sales value	473,501	518,438	548,234	15.8	5.7
Acyclic:					
Production	23,663	31,353	33,417	41.2	6.6
Sales	21,472	29,655	29,776	38.7	.4
Sales value	32,008	36,226	33,976	6.1	-6.2
5. Flavor and Perfume Materials					
Cyclic:					
Production	24,726	24,999	29,684	20.1	18.7
Sales	20,439	20,941	24,251	18.6	15.8
Sales value	31,574	31,498	34,489	9.2	9.5
Acyclic:					
Production	17,408	18,433	20,624	18.5	11.9
Sales	17,085	18,759	21,147	23.8	12.7
Sales value	21,490	20,748	22,147	3.1	6.7
6. Plastics and Resin Materials					
Cyclic:					
Production	1,963,619	2,102,506	2,646,178	34.8	25.8
Sales	1,627,060	1,767,464	2,200,013	35.2	24.5
Sales value	440,908	468,716	605,881	37.4	29.3
Acyclic:					
Production	1,916,826	2,415,122	3,218,709	67.9	33.3
Sales	1,778,329	2,289,318	2,970,389	67.0	29.7
Sales value	676,244	806,191	1,034,174	52.9	28.3
7. Rubber-Processing Chemicals					
Cyclic:					
Production	139,924	144,246	177,722	27.0	23.2
Sales	105,946	103,151	134,329	26.8	30.2
Sales value	65,177	67,260	85,815	31.7	27.6
Acyclic:					
Production	25,872	24,734	32,492	25.6	31.4
Sales	20,297	19,528	24,673	21.6	26.3
Sales value	13,472	12,596	16,063	19.2	27.5
8. Elastomers (Synthetic Rubbers)					
Cyclic:					
Production	1,605,412	1,752,541	2,212,757	37.8	26.2
Sales	1,505,188	1,553,744	2,006,179	33.3	29.1
Sales value	359,838	361,597	463,117	28.7	28.1
Acyclic:					
Production	472,169	449,409	612,582	29.7	36.3
Sales	460,564	454,273	594,450	29.1	30.8
Sales value	183,476	182,122	230,022	25.4	26.3
9. Plasticizers					
Cyclic:					
Production	296,154	312,225	403,114	36.1	29.1
Sales	242,560	265,102	361,742	49.1	36.4
Sales value	70,702	75,946	98,306	39.0	29.4
Acyclic:					
Production	98,580	105,719	135,720	37.7	28.4
Sales	84,571	90,817	114,687	35.6	26.3
Sales value	32,690	35,150	43,765	33.9	24.5

TABLE 6. --*Synthetic organic chemicals*: *Summary of U.S. production and sales of intermediates and finished products, average 1954-58, annual 1958 and 1959*--Continued

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

Chemical	Average 1954-58	1958	1959	Increase, or decrease (-)	
				1959 over 1954-58	1959 over 1958
10. Surface-Active Agents					
Cyclic:				*Percent*	*Percent*
Production	730,789	846,322	936,063	28.1	10.6
Sales	674,710	764,668	895,229	32.7	17.1
Sales value	122,229	125,123	139,348	14.0	11.4
Acyclic:					
Production	422,299	508,752	567,996	34.5	11.6
Sales	374,691	437,872	476,948	27.3	8.9
Sales value	94,941	110,249	131,774	38.8	19.5
11. Pesticides and Other Organic Agricultural Chemicals					
Cyclic:					
Production	422,637	444,870	468,833	10.9	5.4
Sales	338,674	377,745	409,580	20.9	8.4
Sales value	128,590	147,689	172,492	34.1	16.8
Acyclic:					
Production	86,668	94,526	116,613	34.6	23.4
Sales	71,437	88,941	93,272	30.6	4.9
Sales value	36,284	48,460	52,977	46.0	9.3
12. Miscellaneous					
Cyclic:					
Production	632,404	695,438	753,015	19.1	8.3
Sales	392,465	427,440	452,636	15.3	5.9
Sales value	117,052	128,347	136,211	16.4	6.1
Acyclic:					
Production	22,885,849	26,386,440	29,204,507	27.6	10.7
Sales	9,593,918	10,439,401	12,954,042	35.0	24.1
Sales value	1,388,132	1,519,907	1,822,321	31.3	19.9

The following tabulation shows, by chemical groups, the number of companies that reported production in 1959 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	157	Rubber-processing chemicals	31
Dyes	50	Elastomers (synthetic rubbers)	24
Toners and lakes	45	Plasticizers	53
Medicinals	110	Surface-active agents	152
Flavor and perfume materials	48	Pesticides and other organic agricultural chemicals	76
Plastics and resin materials	222	Miscellaneous chemicals	261

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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, medicinals, 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 1959. 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 1959 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 1959--8,459 million pounds--was the largest on record, and was 27.3 percent larger than the 6,643 million pounds reported for 1958. The larger output of cyclic intermediates in 1959 was attributable to increased demand by a number of industries that consume large quantities of intermediates, particularly those industries that produce rubber-processing chemicals, elastomers, and plasticizers. Sales of cyclic intermediates in 1959 amounted to 3,511 million pounds, valued at $556 million, compared with 2,646 million pounds, valued at $439 million, in 1958. In terms of quantity, sales of cyclic intermediates in 1959 were 32.7 percent larger than those in 1958 and, in terms of value, 26.6 percent larger.

TABLE 7A. -- *Synthetic organic chemicals: U.S. production and sales of cyclic intermediates, 1959*

[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 C 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	8,459,308	3,511,311	555,695	$0.16
Chemicals for which separate statistics may not be shown	1,662,205	847,568	191,787	.23
Chemicals for which separate statistics are shown below	6,797,103	2,663,743	363,908	.14
Acetanilide, tech	4,187	4,198	1,259	.30
4'-Aminoacetanilide (Acetyl-p-phenylenediamine)	375	...	...	...
5-Amino-2-(p-aminoanilino)benzenesulfonic acid	14	...	...	...
2-(p-Aminoanilino)-5-nitrobenzenesulfonic acid	42	...	...	...
1-Aminoanthraquinone and salt	920	12	46	3.83
2-Aminoanthraquinone and salt	827	...	...	...
6-Amino-3,4'-azodi(benzenesulfonic acid)	47	...	...	...
1-Amino-4-benzamidoanthraquinone	43	...	...	...
1-Amino-5-benzamidoanthraquinone	121	...	...	...
6-(p-Aminobenzamido)-1-naphthol-3-sulfonic acid	41	...	...	...
2-Amino-p-benzenedisulfonic acid [$SO_3H=1$]	30	...	...	...
1-Amino-4-bromo-2-anthraquinonesulfonic acid and sodium salt	162	...	...	...
1-Amino-5-chloroanthraquinone	72	...	...	...
1-Amino-8-chloroanthraquinone	48	...	...	...
2-Amino-3-chloroanthraquinone	34	...	...	...
o-(3-Amino-4-chlorobenzoyl)benzoic acid	89	...	...	...

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 1957-59; and appendix C, which is a glossary of synonymous names of cyclic intermediates.

TABLE 7A. --*Synthetic organic chemicals: U.S. production and sales of cyclic intermediates, 1959*-- Continued

Chemical	Production	Sales		
		Quantity	Value	Unit value[1]
	1,000 pounds	*1,000 pounds*	*1,000 dollars*	*Per pound*
2-Amino-5-chloro-p-toluenesulfonic acid [SO_3H=1]	990	363	338	$0.93
1-Amino-2,4-dibromoanthraquinone	138	...	...	...
4'-Amino-2',5'-diethoxybenzanilide	40	...	...	...
2-Amino-1,5-naphthalenedisulfonic acid	23	...	...	...
6-Amino-1,3-naphthalenedisulfonic acid (Amino I acid)	1,117	...	...	...
7-Amino-1,3-naphthalenedisulfonic acid (Amino G acid)	701	...	...	...
2-Amino-1-naphthalenesulfonic acid (Tobias acid)	3,238	...	...	...
5-Amino-1-naphthalenesulfonic acid (Laurent's acid)	136	...	...	...
5-Amino-2-naphthalenesulfonic acid (1,6-Cleve's acid)	257	...	...	...
5(and 8)-Amino-2-naphthalenesulfonic acid (Cleve's acid, mixed)	368	...	...	...
6-Amino-2-naphthalenesulfonic acid (Broenner's acid)	103	...	...	...
8-Amino-1-naphthalenesulfonic acid (Peri acid)	469	...	...	...
8-Amino-2-naphthalenesulfonic acid (1,7-Cleve's acid)	253	17	36	2.12
8-Amino-2-naphthol	125	...	...	...
8-Amino-1-naphthol-3,6-dieulfonic acid (H acid), monosodium salt	2,999	...	...	...
8-Amino-1-naphthol-5,7-disulfonic acid (Chicago acid) (2S acid), monosodium salt	82	28	87	3.11
1-Amino-2-naphthol-4-sulfonic acid (1,2,4-acid)	2,038	...	...	...
6-Amino-1-naphthol-3-sulfonic acid (J acid) and sodium salt	667	42	102	2.43
7-Amino-1-naphthol-3-sulfonic acid (Gamma acid), sodium salt	566	244	220	.90
2-Amino-5-nitrobenzenesulfonic acid [SO_3H=1]	32	...	...	...
2-Amino-4-nitrophenol	109	...	...	...
3'- and 4'-Aminooxanilic acid	23	...	...	...
2-Amino-1-phenol-4-sulfonic acid	122	...	...	...
p-(p-Aminophenylazo)benzenesulfonic acid	199	...	...	...
2-(p-Aminophenyl)-6-methyl-7-benzothiazolesulfonic acid and salt	56	...	...	...
4-Amino-m-toluenesulfonic acid [SO_3H=1]	261	40	37	.92
5-Amino-2-(p-toluidino)benzenesulfonic acid	28	...	...	...
Aniline (Aniline oil)	130,126	45,468	7,623	.17
Anilinomethanesulfonic acid and salt	234	...	...	...
8-Anilino-1-naphthalenesulfonic acid (Phenyl peri acid)	255	38	83	2.18
6-Anilino-1-naphthol-3-sulfonic acid (Phenyl J acid)	36	...	...	...
7-Anilino-1-naphthol-3-sulfonic acid (Phenyl gamma acid)	23	...	...	...
o-Anisidine	1,212	529	400	.76
o-Anisidinomethanesulfonic acid	161	...	...	...
Anthranilic acid (o-Aminobenzoic acid)	252	164	177	1.08
Anthraquinone, 100%	1,359	...	...	...
1,5-Anthraquinonedisulfonic acid and salt	581	...	...	...
2,6-Anthraquinonedisulfonic acid and salt	235	...	...	...
1-Anthraquinonesulfonic acid and salt	1,822	...	...	...
N,N'-(1,5-Anthraquinonylene)dianthranilic acid	29	...	...	...
Anthrarufin (1,5-Dihydroxyanthraquinone)	212	...	...	...
Benzaldehyde, tech	2,175	2,145	925	.43
1-Benzamido-5-chloroanthraquinone	56	...	...	...
7H-Benz[de]anthracen-7-one (Benzanthrone)	1,367	...	...	...
Benzenesulfonyl chloride	448	...	...	...
Benzidine hydrochloride and sulfate	1,157	...	...	...
o-Benzoylbenzoic acid	4,493	...	...	...
3,3'-Bianthra[1,9]pyrrole-6,6'(2H,2'H)-dione (Pyrazoleanthrone yellow)	16	...	...	...
[4,4'-Bi-7H-benz[de]anthracen]-7,7'-dione	288	...	...	...
1,4-Bis[1-anthraquinonylamino]anthraquinone	99	...	...	...
4,4'-Bis[dimethylamino]benzophenone (Michler's ketone)	141	...	...	...
3-Bromo-7H-benz[de]anthracen-7-one (Bromobenzanthrone)	197	...	...	...
1-Bromo-4-methylaminoanthraquinone	27	...	...	...
6-Bromo-3-methyl-7H-dibenz[f,ij]isoquinoline-2,7(3H)-dione	12	...	...	...
m-Chloroaniline and hydrochloride	921	869	640	.74
o-Chloroaniline	...	256	129	.50
1-Chloroanthraquinone	228	...	...	...
2-Chloroanthraquinone	588	...	...	...
o-Chlorobenzaldehyde	274	...	...	...
Chlorobenzene, mono-	562,070	88,858	6,162	.07
o-(p-Chlorobenzoyl)benzoic acid	1,404	...	...	...
5-Chloro-2,4-dimethoxyaniline	101	...	...	...
1-Chloro-2,4-dinitrobenzene (Dinitrochlorobenzene)	7,581	...	...	...
6-Chlorometanilic acid	23	...	...	...

See footnotes at end of table.

TABLE 7A. --*Synthetic organic chemicals: U.S. production and sales of cyclic intermediates, 1959*--Continued

Chemical	Production	Sales		
		Quantity	Value	Unit value[1]
	1,000 pounds	*1,000 pounds*	*1,000 dollars*	*Per pound*
1-Chloro-2-methylanthraquinone	136	...	...	...
2-Chloro-4-nitroaniline (o-Chloro-p-nitroaniline)	412	...	...	...
4-Chloro-2-nitroaniline (p-Chloro-o-nitroaniline)	448	279	217	$0.78
1-Chloro-5-nitroanthraquinone	89	...	...	...
1-Chloro-2(and 4)-nitrobenzene (Chloronitrobenzenes, o- and p-)	7,031	...	...	...
4-Chloro-3-nitrobenzenesulfonamide	89	...	...	...
2-Chloro-5-nitrobenzenesulfonic acid and sodium salt	270	...	...	...
4-Chloro-3-nitrobenzenesulfonic acid	102	...	...	...
4-Chloro-3-nitrobenzenesulfonyl chloride	76	...	...	...
o-(4-Chloro-3-nitrobenzoyl)benzoic acid	109	...	...	...
2-Chloroquinizarin	30	...	...	...
α-Chlorotoluene (Benzyl chloride)	20,106	6,478	1,490	.23
4-Chloro-o-toluidine [NH_2=1] and hydrochloride	37	...	...	...
5-Chloro-o-toluidine [NH_2=1] and hydrochloride	438	312	351	1.12
4-Chloro-2,5-xylenesulfonyl chloride	58	...	...	...
Cresols, total[2]	55,775	44,271	8,130	.18
o- and p-Cresols	16,017	13,777	4,319	.31
(m,p)-Cresol, total	24,138	16,481	2,029	.12
From coal tar	10,986	7,382	937	.13
From petroleum	13,152	9,099	1,092	.12
(o,m,p)-Cresol[3]	15,620	14,013	1,782	.13
Cresylic acid, refined, total[2]	62,325	45,714	4,942	.11
From coal tar	33,714	27,810	3,220	.12
From petroleum	28,611	17,904	1,722	.10
Cumene	213,598	...	...	...
Cyclohexane	387,697	...	...	...
Cyclohexanol	...	4,895	1,217	.25
Cyclohexylamine	4,321	2,188	914	.42
p-Cymene	...	814	156	.19
1,4-Diaminoanthraquinone	109	...	...	...
2,6-Diaminoanthraquinone	126	...	...	...
4,8-Diaminoanthrarufin	7	...	...	...
4,4′-Diamino-2,2′-stilbenedisulfonic acid	1,209	...	...	...
4,6-Diamino-m-toluenesulfonic acid [SO_3H=1]	16	...	...	...
4,5′-Dibenzamido-1,1′-iminodianthraquinone	146	...	...	...
1,5-Dibenzoylnaphthalene	178	...	...	...
3,9-Dibromo-7H-benz[de]anthracen-7-one	122	...	...	...
2,5-Dichloroaniline and hydrochloride [NH_2=1]	262	...	...	...
1,5-Dichloroanthraquinone	55	...	...	...
1,5(and 1,8)-Dichloroanthraquinone	36	...	...	...
1,8-Dichloroanthraquinone	67	...	...	...
o-Dichlorobenzene	27,449	20,615	2,050	.10
o(and p)-Dichlorobenzene	20,504	19,187	1,150	.06
p-Dichlorobenzene	58,146	45,867	4,626	.10
3,3′-Dichlorobenzidine base and salts	1,488	...	...	...
2,5-Dichloro-4-(3-methyl-5-oxo-2-pyrazolin-1-yl)benzenesulfonic acid	143	...	...	...
2,6-Dichloro-4-nitroaniline	19	...	...	...
2,5-Dichlorosulfanilic acid [SO_3H=1]	42	...	...	...
m-Diethylaminophenol (N,N-Diethyl-3-aminophenol)	213	...	...	...
N,N-Diethylaniline	1,186	867	483	.56
4,5-Dihydroxy-2,7-naphthalenedisulfonic acid (Chromotropic acid)	74	...	...	...
6,7-Dihydroxy-2-naphthalenesulfonic acid	416	383	1,020	2.66
16,17-Dihydroxyviolanthrone (Dihydroxydibenzanthrone)	224	...	...	...
3,3′-Dimethoxybenzidine	615	426	824	1.93
N,N-Dimethylaniline	8,105	5,174	1,393	.27
N,N-Dimethylbenzylamine	41	9	14	1.56
2,2′-Dimethyl-1,1′-bianthraquinone	84	...	...	...
p-(2,4-Dinitroanilino)phenol	41	...	...	...
2,4-Dinitrophenol, tech	598	...	...	...
4,4′-Dinitro-2,2′-stilbenedisulfonic acid	2,256	...	...	...

See footnotes at end of table.

TABLE 7A. --*Synthetic organic chemicals: U.S. production and sales of cyclic intermediates, 1959*--Continued

Chemical	Production	Sales		
		Quantity	Value	Unit value[1]
	1,000 pounds	*1,000 pounds*	*1,000 dollars*	*Per pound*
1,4-Di(p-toluidino)anthraquinone	75	...	...	...
Dodecylbenzene[4]	493,997	447,722	44,728	$0.10
N-Ethylaniline, refined	402	...	...	...
2-(N-Ethylanilino)ethanol	70	...	...	...
α-(N-Ethylanilino)-p-toluenesulfonic acid	401	...	...	...
Ethylbenzene	1,422,556	...	...	...
o-Formylbenzenesulfonic acid (o-Sulfobenzaldehyde)	164	22	54	2.45
Hexachlorobenzene	724	965	233	.24
p-Hydrazinobenzenesulfonic acid	163	...	...	...
3-Hydroxy-2-naphthoic acid (B.O.N.)	3,752	1,989	2,039	1.03
1,1'-Iminobis[4-aminoanthraquinone]	121	...	...	...
1,1'-Iminobis[5-benzamidoanthraquinone]	62	...	...	...
6,6'-Iminobis[1-naphthol-3-sulfonic acid]	7	...	...	...
1,1'-Iminobis[4-nitroanthraquinone]	84	...	...	...
1,1'-Iminodianthraquinone (Dianthrimide)	108	...	...	...
Isocyanic acid, 4-methyl-m-phenylene ester	30,738	23,975	18,184	.76
4,4'-Isopropylidenediphenol (Bisphenol A)	43,792	23,346	6,366	.27
Isoviolanthrone (Isodibenzanthrone)	66	...	...	...
Leuco-1,4-diaminoanthraquinone	214	...	...	...
Leuco quinizarin (1,4,9,10-Anthratetrol)	106	...	...	...
Leuco tetrahydroxyanthraquinone	53	...	...	...
Metanilic acid (m-Aminobenzenesulfonic acid)	1,789	...	...	...
4-Methoxymetanilic acid	5	...	...	...
2-Methyl-1-nitroanthraquinone	112	...	...	...
p-(3-Methyl-5-oxo-2-pyrazolin-1-yl)benzenesulfonic acid	102	...	...	...
3-Methyl-1-phenyl-2-pyrazolin-5-one (Developer Z)	378	...	...	...
α-Methylstyrene	20,610	7,029	517	.07
Naphthalene, acolidifying at 79° C., or above (refined flake), total	72,400	38,253	4,699	.12
From domestic crude naphthalene	28,347	12,945	1,678	.13
From imported crude naphthalene	44,053	25,308	3,021	.12
1,5-Naphthalenedisulfonic acid	210	...	...	...
2,7-Naphthalenedisulfonic acid	50	...	...	...
2-Naphthol-3,6-disulfonic acid (R acid) and disodium salt	1,503	...	...	...
2-Naphthol-6,8-disulfonic acid (G acid) and disodium salt	1,708	28	21	.75
1-Naphthol-4-sulfonic acid (Nevile & Winther's acid)	183	...	...	...
2-Naphthol-6-sulfonic acid (Schaeffer's acid)	473	...	...	...
1-Naphthol-8-sulfonic acid sultone (1,8-Naphthosultone)	17	...	...	...
Naphth[1,2]oxadiazole-5-sulfonic acid	1,177	...	...	...
2-(Naphthylthio)acetic acid	104	...	...	...
m-Nitroaniline	201	...	...	...
4-Nitro-o-anisidine [NH_2=1]	133	18	41	2.28
5-Nitro-o-anisidine [NH_2=1]	748	...	...	...
1-Nitro-2-anthraquinonecarboxylic acid	40	...	...	...
5-Nitro-1-anthraquinonesulfonic acid	86	...	...	...
Nitrobenzene	172,133	6,897	756	.11
m-Nitrobenzenesulfonic acid and salt	1,472	1,386	564	.41
m- and p-Nitrobenzoic acids	650	...	...	...
3-Nitro-p-toluenesulfonic acid [SO_3H=1]	276	...	...	...
5-Nitro-o-toluenesulfonic acid [SO_3H=1]	3,730	...	...	...
5-Nitro-o-toluidine [NH_2=1]	337	86	118	1.37
2-Nitro-p-toluidine [NH_2=1]	1,573	706	872	1.24
16-Nitroviolanthrone	47	...	...	...
Nitroxylenes, mixed	545	...	...	...
Nonylphenol	35,917	11,424	2,314	.20
1-(7-Oxo-7H-benz[de]anthracen-3-ylamino)anthraquinone	257	...	...	...
1,1'-(7-Oxo-7H-benz[de]anthracen-3,9-ylenediimino)dianthraquinone	195	...	...	...
5-Oxo-1-(p-sulfophenyl)-2-pyrazoline-3-carboxylic acid (Pyrazolone T)	22	...	...	...

See footnotes at end of table.

TABLE 7A.--*Synthetic organic chemicals: U.S. production and sales of cyclic intermediates, 1959*--Continued

Chemical	Production	Sales		
		Quantity	Value	Unit value[1]
	1,000 pounds	*1,000 pounds*	*1,000 dollars*	*Per pound*
Phenol, total[2]	691,987	414,264	59,860	$0.14
Natural, total	40,005	40,594	5,639	.14
From coal tar, total	32,180	32,993	4,506	.14
82%-84%	3,692	4,446	609	.14
Other	28,488	28,547	3,897	.14
From petroleum	7,825	7,601	1,133	.15
Synthetic, total	651,982	373,670	54,221	.15
From cumene	137,658	114,293	16,235	.14
Other synthetic	514,324	259,377	37,986	.15
1-Phenol-4-sulfonic acid	3,968	3,156	585	.19
Phenylacetic acid (α-Toluic acid)	338	...	...	...
Phenylacetic acid, potassium salt	1,387	1,303	474	.36
Phenylacetonitrile (α-Tolunitrile)	1,192	342	172	.50
p-Phenylazoaniline (p-Aminoazobenzene) and hydrochloride	176	...	...	...
m-Phenylenediamine	1,141	553	598	1.08
o-Phenylenediamine	491	95	145	1.53
p-Phenylenediamine	...	448	610	1.36
2,2'-(Phenylimino)diethanol (Phenyldiethanolamine)	515	...	...	...
Phthalic anhydride	357,871	261,829	42,085	.16
Phthalic anhydride residue	658	...	...	...
Phthalimide	1,940	...	...	...
Picolines, total[3]	2,234	2,419	1,365	.56
2-Picoline (α-Picoline)	891	996	350	.35
All other	1,343	1,423	1,015	.71
Piperidine	308	...	...	...
2° Pyridine[3]	2,175	1,856	1,275	.69
Quinaldine	29	...	...	...
Quinizarin	1,115	26	39	1.50
Salicylic acid, tech	...	1,563	572	.37
Styrene, all grades	1,571,311	915,592	105,751	.12
4-Sulfoanthranilic acid	10	...	...	...
1,4,5,8-Tetrachloroanthraquinone	32	...	...	...
1,4,5,8-Tetrakis[1',1'',1''',1''''-anthraquinonylamino]-anthraquinone (Pentanthramide)	66	...	...	...
3,3'-Thiobis[7H-benz[de]anthracen-7-one]	71	...	...	...
4-(o-Tolylazo)-o-toluidine (o-Aminoazotoluene)	545	...	...	...
2,2'-(m-Tolylimino)diethanol	36	...	...	...
6,6'-Ureylenebis[1-naphthol-3-sulfonic acid] (J acid urea)	359	...	...	...
Veratraldehyde (3,4-Dimethoxybenzaldehyde)	...	8	22	2.75
Violanthrone (Dibenzanthrone)	430	...	...	...
o-Xylene	61,722	...	...	...
p-Xylene	157,966	155,540	21,589	.14
Xylenols (not classified as to b.p.)	153	153	19	.12
Xylidine (original mixture)	520	...	...	...

[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, 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 keryl-type benzenes.
[5] Includes data for coke ovens and gas-retort ovens, reported to the Division of Bituminous Coal, U.S. Bureau of Mines, and for tar refineries and other producers reported to the U.S. Tariff Commission.

In 1959, production of two of the largest volume intermediates exceeded 1 billion pounds for the fourth successive year. The output of styrene totaled 1,571 million pounds (28.4 percent more than in 1958) and that of ethylbenzene, 1,423 million pounds (20.9 percent more than in 1958). 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. Other large-volume intermediates the output of which was substantially larger in 1959 than in 1958, were monochlorobenzene (44.9 percent larger), phenol (36.7 percent), cumene (20.4 percent), phthalic anhydride (18.8 percent), cyclohexane (17 percent), and naphthalene (17.1 percent). Production of dodecylbenzene in 1959 was only slightly smaller than that in 1958. Statistics on the production of ortho-xylene (62 million pounds in 1959) are given separately for the first time in this report.

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 1959, total and by individual dyes, using the new *Colour Index* classification and terminology, which was used for the first time in the 1958 report. Dyes for which individual statistics are given in the table represent 56 percent of the total quantity produced.

Total domestic production of dyes in 1959 amounted to 170 million pounds, or 21.1 percent more than the 140 million pounds produced in 1958 and 18.5 percent more than the 143 million pounds produced in 1957. Sales of dyes in 1959 amounted to 159 million pounds, valued at $206 million, compared with 139 million pounds, valued at $177 million, in 1958. In terms of quantity, sales of dyes in 1959 were thus 14.1 percent larger than those in 1958 and, in terms of value, 16.0 percent larger.

TABLE 8A.--*Synthetic organic chemicals: U.S. production and sales of coal-tar dyes, 1959*

[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	169,503	158,939	205,873	$1.30
ACID DYES				
Total	16,236	15,257	28,373	1.86
Acid yellow dyes, total	1,919	1,641	3,481	2.12
Acid yellow 3	...	49	174	3.55
Acid yellow 11	66	70	177	2.53
Acid yellow 17	213	186	387	2.08
Acid yellow 23	336	288	570	1.98
Acid yellow 36	311	305	388	1.27
Acid yellow 40	52	51	146	2.86
Acid yellow 42	...	30	57	1.90
Acid yellow 44	23	16	52	3.25
Acid yellow 54	73	54	119	2.20
Acid yellow 73	138	50	116	2.32
Acid yellow 99	69	75	154	2.05
All other	638	467	1,141	2.44
Acid orange dyes, total	2,528	2,460	3,150	1.28
Acid orange 7	827	872	665	.76
Acid orange 8	396	402	365	.91
Acid orange 10	331	323	420	1.30
Acid orange 24	457	439	604	1.38
Acid orange 74	88	...	...	...
All other	429	424	1,096	2.58
Acid red dyes, total	2,797	2,234	4,098	1.83
Acid red 1	398	308	334	1.08
Acid red 4	78	77	138	1.79
Acid red 12	25	...	...	...

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 1957-59.

TABLE 8A.--*Synthetic organic chemicals: U.S. production and sales of coal-tar dyes, 1959*--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	104	87	119	$1.37
Acid red 17	...	60	75	1.25
Acid red 18	173	138	141	1.02
Acid red 26	165	150	176	1.17
Acid red 37	40	29	67	2.31
Acid red 73	362	333	670	2.01
Acid red 85	151	121	189	1.56
Acid red 87	254	...	...	...
Acid red 88	173	160	231	1.44
Acid red 89	42	38	61	1.61
Acid red 115	28	21	30	1.43
Acid red 137	177	138	422	3.06
Acid red 151	...	28	61	2.18
Acid red 167	...	23	46	2.00
Acid red 182	34	...	...	...
Acid red 183	...	15	65	4.33
Acid red 186	9	14	42	3.00
All other	584	494	1,231	2.49
Acid violet dyes, total	444	414	878	2.12
Acid violet 1	41	41	67	1.63
Acid violet 7	70	58	77	1.33
Acid violet 12	31	21	30	1.43
Acid violet 43	...	11	38	3.45
Acid violet 49	81	82	177	2.16
All other	221	201	489	2.43
Acid blue dyes, total	2,833	2,780	7,858	2.83
Acid blue 7	90	73	233	3.19
Acid blue 9	586	569	720	1.27
Acid blue 22	42	...	...	...
Acid blue 25	40	50	269	5.38
Acid blue 40	...	13	59	4.54
Acid blue 43	26	24	124	5.17
Acid blue 45	651	622	2,070	3.33
Acid blue 59	...	16	53	3.31
Acid blue 78	57	47	248	5.28
Acid blue 90	18	14	181	12.93
Acid blue 113	375	368	494	1.34
Acid blue 120	...	22	34	1.55
Acid blue 158 and 158A	...	221	732	3.31
All other	948	741	2,641	3.56
Acid green dyes, total	560	500	1,204	2.41
Acid green 3	164	139	171	1.23
Acid green 9	27	24	102	4.25
Acid green 16	51	41	162	3.95
Acid green 20	30	28	59	2.11
Acid green 25	165	164	431	2.63
Acid green 50	39	...	...	...
All other	84	104	279	2.68
Acid brown dyes, total	625	587	1,255	2.14
Acid brown 14	312	305	398	1.30
All other	313	282	857	3.04
Acid black dyes, total	4,530	4,641	6,449	1.39
Acid black 1	1,819	1,929	2,183	1.13
Acid black 24	117	128	193	1.51
Acid black 26, 26A, and 26B	...	223	349	1.56

See footnotes at end of table.

TABLE 8A. --*Synthetic organic chemicals: U.S. production and sales of coal-tar dyes, 1959*--Continued

Dye	Production	Sales		
		Quantity	Value	Unit value[1]
ACID DYES--Continued				
Acid black dyes--Continued	*1,000 pounds*	*1,000 pounds*	*1,000 dollars*	*Per pound*
Acid black 48	35	40	206	$5.15
All other	2,559	2,321	3,518	1.52
AZOIC DYES AND COMPONENTS				
Azoic Compositions				
Total	2,691	2,476	3,851	1.56
Azoic yellow 2	37	19	37	1.95
Azoic orange 3	37	47	72	1.53
Azoic red dyes, total	658	541	815	1.51
Azoic red 1	175	167	215	1.29
Azoic red 2	45	62	78	1.26
Azoic red 6	308	194	291	1.50
Azoic red 15	...	11	18	1.64
Azoic red 16	25	23	40	1.74
All other	105	84	173	2.06
Azoic violet 1	20	14	46	3.29
Azoic blue dyes, total	238	257	304	1.18
Azoic blue 2	44	60	63	1.05
Azoic blue 3	52	62	81	1.31
All other	142	135	160	1.19
Azoic brown dyes, total	305	247	605	2.45
Azoic brown 9	159	113	452	4.00
All other	146	134	153	1.14
Azoic black dyes	1,214	1,200	1,759	1.47
All other azoic compositions	182	151	213	1.41
Azoic Diazo Components, Bases (Fast Color Bases)				
Total	1,551	1,434	1,947	1.36
Azoic diazo component 4, base	...	38	46	1.21
Azoic diazo component 5, base	...	7	19	2.71
Azoic diazo component 13, base	620	598	588	.98
Azoic diazo component 20, base	...	21	112	5.33
Azoic diazo component 28, base	...	88	212	2.41
Azoic diazo component 32, base	166	175	268	1.53
All other azoic diazo components, bases	765	507	702	1.38
Azoic Diazo Components, Salts (Fast Color Salts)				
Total	2,444	2,466	2,667	1.08
Azoic diazo component 1, salt	24	20	25	1.25
Azoic diazo component 3, salt	307	301	231	.77
Azoic diazo component 5, salt	93	96	116	1.21
Azoic diazo component 8, salt	76	70	68	.97
Azoic diazo component 9, salt	282	267	171	.64
Azoic diazo component 11, salt	46	38	103	2.71
Azoic diazo component 12, salt	170	155	156	1.01
Azoic diazo component 13, salt	437	429	302	.70

See footnotes at end of table.

TABLE 8A. --*Synthetic organic chemicals: U.S. production and sales of coal-tar dyes, 1959*--Continued

Dye	Production	Sales		
		Quantity	Value	Unit value[1]
AZOIC DYES AND COMPONENTS--Continued				
Azoic Diazo Components, Salts (Fast Color Salts)--Continued	*1,000 pounds*	*1,000 pounds*	*1,000 dollars*	*Per pound*
Azoic diazo component 20, salt	26	28	83	$2.96
Azoic diazo component 28, salt	367	363	443	1.22
Azoic diazo component 36, salt	107	110	200	1.82
Azoic diazo component 42, salt	...	13	33	2.54
Azoic diazo component 48, salt	146	139	152	1.09
All other azoic diazo components, salts	363	437	584	1.34
Azoic Coupling Components (Naphthol AS and Derivatives)				
Total	2,441	2,464	4,850	1.97
Azoic coupling component 2	546	584	558	.96
Azoic coupling component 3	8	11	38	3.45
Azoic coupling component 4	10	18	34	1.89
Azoic coupling component 5	44	56	172	3.07
Azoic coupling component 7	614	644	1,143	1.77
Azoic coupling component 11	...	6	19	3.17
Azoic coupling component 13	...	35	167	4.77
Azoic coupling component 14	57	54	108	2.00
Azoic coupling component 17	170	110	206	1.87
Azoic coupling component 18	381	417	539	1.29
Azoic coupling component 20	56	61	127	2.08
Azoic coupling component 21	36	41	74	1.80
Azoic coupling component 29	17	21	47	2.24
Azoic coupling component 34	14	11	24	2.18
Azoic coupling component 35	31	48	188	3.92
All other azoic coupling components	457	347	1,406	4.05
BASIC DYES				
Total	8,054	6,579	15,006	2.28
Basic yellow 2	546	530	1,152	2.17
Basic orange dyes, total	865	819	1,049	1.28
Basic orange 1	221	205	214	1.04
Basic orange 2	549	527	514	.98
All other	95	87	321	3.69
Basic red 2	201	165	482	2.92
Basic violet 1	1,417	901	1,318	1.46
Basic violet 3	890	829	1,778	2.14
Basic violet 4	74	71	222	3.13
Basic violet 10	178	155	676	4.36
Basic blue dyes, total	929	797	2,351	2.95
Basic blue 1	24	24	103	4.29
Basic blue 5	...	8	54	6.75
Basic blue 7	179	135	488	3.61
Basic blue 9	419	350	721	2.06
Basic blue 26	77	78	229	2.94
All other	230	202	756	3.74
Basic green 1	74	71	235	3.31
Basic green 4	393	375	1,048	2.79

See footnotes at end of table.

TABLE 8A. -- *Synthetic organic chemicals: U.S. production and sales of coal-tar dyes, 1959*-- Continued

Dye	Production	Sales		
		Quantity	Value	Unit value[1]
BASIC DYES--Continued	*1,000 pounds*	*1,000 pounds*	*1,000 dollars*	*Per pound*
Basic brown 1	300	239	293	$1.23
Basic brown 4	730	681	823	1.21
All other basic dyes	1,457	946	3,579	3.78
DIRECT DYES				
Total	26,711	25,903	37,981	1.47
Direct yellow dyes, total	4,418	3,833	6,996	1.83
Direct yellow 4	312	318	640	2.01
Direct yellow 5	131	119	517	4.34
Direct yellow 6	1,077	937	1,365	1.46
Direct yellow 11	808	674	756	1.12
Direct yellow 12	485	368	866	2.35
Direct yellow 28	197	183	310	1.69
Direct yellow 29	67	69	95	1.38
Direct yellow 44	302	275	485	1.76
Direct yellow 50	187	173	338	1.95
Direct yellow 59	106	71	93	1.31
All other	746	646	1,531	2.37
Direct orange dyes, total	1,557	1,531	3,440	2.25
Direct orange 1	11	9	26	2.89
Direct orange 8	132	131	152	1.16
Direct orange 15	228	221	242	1.10
Direct orange 26	41	30	65	2.17
Direct orange 29	56	76	174	2.29
Direct orange 34	80	72	159	2.21
Direct orange 37	72	58	147	2.53
Direct orange 72	82	...	...	...
Direct orange 73	90	116	387	3.34
Direct orange 81	83	71	221	3.11
All other	682	747	1,867	2.50
Direct red dyes, total	3,183	2,999	6,531	2.18
Direct red 1	112	101	140	1.39
Direct red 2	599	536	824	1.54
Direct red 10	24	19	27	1.42
Direct red 13	54	58	96	1.66
Direct red 16	27	23	40	1.74
Direct red 23	296	292	621	2.13
Direct red 24	242	210	428	2.04
Direct red 26	99	87	213	2.45
Direct red 28	155	158	169	1.07
Direct red 31	16	14	50	3.57
Direct red 37	103	97	239	2.46
Direct red 39	43	33	90	2.73
Direct red 75	26	23	84	3.65
Direct red 79	...	144	328	2.28
Direct red 80	265	273	583	2.14
Direct red 81	230	186	486	2.61
Direct red 83	...	44	83	1.89
Direct red 84	...	17	35	2.06
Direct red 122	55	42	301	7.17
Direct red 123	...	19	46	2.42
Direct red 127 and 127A	...	13	42	3.23
Direct red 149	14	11	39	3.55
Direct red 153	10	7	18	2.57
All other	813	592	1,549	2.62

See footnotes at end of table.

TABLE 8A.--*Synthetic organic chemicals: U.S. production and sales of coal-tar dyes, 1959*--Continued

Dye	Production	Sales		
		Quantity	Value	Unit value[1]
DIRECT DYES--Continued	*1,000 pounds*	*1,000 pounds*	*1,000 dollars*	*Per pound*
Direct violet dyes, total	117	117	355	$3.03
Direct violet 1	13	13	26	2.00
Direct violet 9	56	49	132	2.69
All other	48	55	197	3.58
Direct blue dyes, total	5,297	5,279	7,208	1.37
Direct blue 1	234	206	457	2.22
Direct blue 2	2,173	2,188	2,000	.91
Direct blue 6	395	440	235	.53
Direct blue 8	73	57	96	1.68
Direct blue 14	136	140	113	.81
Direct blue 15	46	32	35	1.09
Direct blue 22	35	28	50	1.79
Direct blue 24	...	24	32	1.33
Direct blue 25	36	44	128	2.91
Direct blue 26	...	21	33	1.57
Direct blue 67	34	25	103	4.12
Direct blue 71	59	57	164	2.88
Direct blue 76	83	79	98	1.24
Direct blue 78	77	74	213	2.88
Direct blue 80	50	66	95	1.44
Direct blue 86	523	470	912	1.94
Direct blue 98	146	141	226	1.60
Direct blue 120 and 120A	79	89	194	2.18
Direct blue 126	128	136	289	2.13
Direct blue 151	36	40	52	1.30
All other	954	922	1,683	1.83
Direct green dyes, total	1,159	1,085	2,055	1.89
Direct green 1	216	169	190	1.12
Direct green 6	533	538	586	1.09
Direct green 38	...	10	39	3.90
All other	410	368	1,240	3.37
Direct brown dyes, total	2,231	2,207	2,873	1.30
Direct brown 1	333	370	327	.88
Direct brown 2	328	312	432	1.38
Direct brown 6	51	48	51	1.06
Direct brown 31	101	94	242	2.57
Direct brown 74	61	57	80	1.40
Direct brown 95	647	627	431	.69
Direct brown 111	122	98	340	3.47
Direct brown 154	218	219	262	1.20
All other	370	382	708	1.85
Direct black dyes, total	8,749	8,852	8,523	.96
Direct black 4	300	309	285	.92
Direct black 22	543	478	383	.80
Direct black 37	19	19	23	1.21
Direct black 38	5,884	5,993	4,972	.83
Direct black 51	154	159	339	2.13
Direct black 78	139	...	...	...
Direct black 80	1,003	1,038	1,046	1.01
All other	707	856	1,475	1.72
DISPERSE DYES				
Total	6,901	6,647	13,810	2.08
Disperse yellow dyes, total	715	738	1,730	2.34
Disperse yellow 3	285	295	564	1.91

See footnotes at end of table.

TABLE 8A.--*Synthetic organic chemicals: U.S. production and sales of coal-tar dyes, 1959*--Continued

Dye	Production	Sales		
		Quantity	Value	Unit value[1]
DISPERSE DYES--Continued				
	1,000 pounds	*1,000 pounds*	*1,000 dollars*	*Per pound*
Disperse yellow dyes--Continued				
Disperse yellow 33	67	51	91	$1.78
All other	363	392	1,075	2.74
Disperse orange dyes, total	389	364	650	1.79
Disperse orange 3	47	52	89	1.71
Disperse orange 5	31	48	97	2.02
Disperse orange 17	169	133	146	1.10
All other	142	131	318	2.43
Disperse red dyes, total	1,087	1,068	2,540	2.38
Disperse red 1	146	154	236	1.53
Disperse red 5	64	57	66	1.16
Disperse red 13	17	26	39	1.50
Disperse red 15	113	98	218	2.22
Disperse red 17	74	63	90	1.43
All other	673	670	1,891	2.82
Disperse violet dyes, total	263	...	...	...
Disperse violet 1	42	32	101	3.16
Disperse violet 4	46	38	132	3.47
All other	175	...	...	...
Disperse blue dyes, total	2,786	2,587	6,537	2.53
Disperse blue 1	161	167	626	3.75
Disperse blue 3	783	667	1,111	1.67
Disperse blue 7	...	127	726	5.72
All other	1,842	1,626	4,074	2.51
Disperse black 9	1,090	1,175	1,013	.86
All other disperse dyes	571	[2] 645	[2] 1,107	[2] 1.72
FIBER-REACTIVE DYES				
Total	188	174	759	4.36
FLUORESCENT BRIGHTENING AGENTS				
Total	7,050	6,910	16,887	2.44
Fluorescent brightening agent 68	107	67	751	11.21
All other fluorescent brightening agents	6,943	6,843	16,136	2.36
FOOD, DRUG, AND COSMETIC DYES				
Total	2,112	2,028	9,341	4.61
Food, Drug, and Cosmetic Colors				
Total	1,836	1,779	7,360	4.14
Blue No. 1	35	36	459	12.75
Red No. 1	58	82	461	5.62
Red No. 2	389	392	1,268	3.23
Red No. 3	24	24	425	17.71
Yellow No. 5	348	321	1,040	3.24
Yellow No. 6	485	401	1,344	3.35
All other food, drug, and cosmetic colors	497	523	2,363	4.52
Drug and Cosmetic Colors				
Total	262	237	1,881	7.94
Orange No. 4	8	6	32	5.33

See footnotes at end of table.

TABLE 8A.--*Synthetic organic chemicals: U.S. production and sales of coal-tar dyes, 1959*--Continued

Dye	Production	Sales		
		Quantity	Value	Unit value[1]
FOOD, DRUG, AND COSMETIC DYES--Continued				
Drug and Cosmetic Colors--Continued	*1,000 pounds*	*1,000 pounds*	*1,000 dollars*	*Per pound*
Red No. 7	6	7	22	$3.14
Red No. 11	6	...	...	...
Red No. 19	27	23	98	4.26
Red No. 21	48	45	158	3.51
All other drug and cosmetic colors except external	167	156	1,571	10.07
Drug and Cosmetic Colors, External				
Total	14	12	100	8.33
MORDANT DYES				
Total	6,655	6,250	8,641	1.38
Mordant yellow dyes, total	243	232	374	1.61
Mordant yellow 1	...	42	48	1.14
Mordant yellow 5	...	19	46	2.42
Mordant yellow 8	15	13	34	2.62
Mordant yellow 10	...	6	6	1.00
Mordant yellow 16	...	25	38	1.52
Mordant yellow 20	...	11	12	1.09
All other	228	116	190	1.64
Mordant orange dyes, total	136	131	253	1.93
Mordant orange 1	53	53	74	1.40
Mordant orange 6	33	28	28	1.00
All other	50	50	151	3.02
Mordant red dyes, total	148	200	486	2.43
Mordant red 3	11	15	44	2.93
Mordant red 7	60	65	128	1.97
Mordant red 9	27	23	32	1.39
All other	50	97	282	2.91
Mordant violet 5	...	9	14	1.56
Mordant blue 1	42	37	126	3.41
Mordant blue 9	...	8	15	1.88
Mordant green dyes, total	53	60	120	2.00
Mordant green 36	14	14	25	1.79
All other	39	46	95	2.07
Mordant brown dyes, total	452	436	969	2.22
Mordant brown 1	159	136	263	1.93
Mordant brown 19	...	12	32	2.67
Mordant brown 33	...	76	129	1.70
Mordant brown 40	28	26	75	2.88
All other	265	186	470	2.53
Mordant black dyes, total	5,563	5,126	6,248	1.22
Mordant black 1	53	43	64	1.49
Mordant black 5	107	92	205	2.23
Mordant black 9	...	85	148	1.74
Mordant black 11	3,786	3,549	4,272	1.20
Mordant black 13	112	80	221	2.76
Mordant black 17	1,275	1,133	1,080	.95
Mordant black 38	25	19	52	2.74
All other	205	125	206	1.65
All other mordant dyes	18	11	36	3.27

See footnotes at end of table.

TABLE 8A.--*Synthetic organic chemicals: U.S. production and sales of coal-tar dyes, 1959*--Continued

Dye	Production	Sales		
		Quantity	Value	Unit value[1]
	1,000 pounds	*1,000 pounds*	*1,000 dollars*	*Per pound*
SOLVENT DYES				
Total	7,228	6,402	9,468	$1.48
Solvent yellow dyes, total	1,167	958	1,776	1.85
Solvent yellow 2	63	70	96	1.37
Solvent yellow 3	...	36	56	1.56
Solvent yellow 14	900	675	790	1.17
All other	204	177	834	4.71
Solvent orange dyes, total	346	329	643	1.95
Solvent orange 3	15	11	25	2.27
Solvent orange 7	132	147	250	1.70
All other	199	171	368	2.15
Solvent red dyes, total	1,145	863	1,783	2.07
Solvent red 24	716	484	848	1.75
Solvent red 26	278	238	392	1.65
Solvent red 49	...	20	130	6.50
All other	151	121	413	3.41
Solvent violet dyes	217	196	393	2.01
Solvent blue 4	73	54	208	3.85
Solvent green dyes, total	42	45	249	5.53
Solvent green 1	...	10	63	6.30
Solvent green 3	...	30	161	5.37
All other	42	5	25	5.00
Solvent brown dyes	33	36	121	3.36
All other solvent dyes	4,205	3,921	4,295	1.10
SULFUR DYES				
Total	31,776	30,941	8,653	.28
Sulfur red 1	63	49	41	.84
Sulfur red 6	57	65	122	1.88
Sulfur blue 5	...	20	28	1.40
Sulfur blue 7	335	234	203	.87
Sulfur green 2	25	23	39	1.70
Sulfur black 1	1,949	1,727	552	.32
All other sulfur dyes	29,347	28,823	7,668	.27
VAT DYES				
Total	47,395	42,959	43,416	1.01
Vat yellow dyes, total	3,049	2,676	3,872	1.45
Vat yellow 2, 8-1/2%	1,768	1,473	1,448	.98
Vat yellow 4, 12-1/2%	768	672	944	1.40
Solubilized vat yellow 4, 37-1/2%	14	11	87	7.91
All other	499	520	1,393	2.68
Vat orange 1, 20%	267	214	329	1.54
Solubilized vat orange 1, 26%	6	7	56	8.00
Vat orange 2, 12%	292	284	660	2.32
Vat orange 5, 10%	532	388	599	1.54
Vat orange 9, 12%	402	168	436	2.60
Vat orange 15, 10%	582	608	1,079	1.77
Vat red dyes, total	1,236	1,039	2,556	2.46
Vat red 1, 13%	762	638	1,139	1.79
Vat red 10, 18%	112	110	491	4.46
Vat red 13, 11%	39	66	194	2.94
Vat red 35, 12-1/2%	37	...	...	...
All other	286	225	732	3.25

See footnotes at end of table.

TABLE 8A.--Synthetic organic chemicals: U.S. production and sales of coal-tar dyes, 1959--Continued

Dye	Production	Sales		
		Quantity	Value	Unit value[1]
VAT DYES--Continued	*1,000 pounds*	*1,000 pounds*	*1,000 dollars*	*Per pound*
Vat violet dyes, total	1,236	1,076	2,390	$2.22
Vat violet 1, 11%	482	330	779	2.36
Vat violet 2, 20%	70	65	154	2.37
Vat violet 3, 15%	...	53	88	1.66
Vat violet 9, 12%	82	75	244	3.25
Vat violet 13, 6-1/4%	507	507	936	1.85
Vat violet 17, 12-1/2%	...	30	98	3.27
All other	95	16	91	5.69
Vat blue dyes, total	22,551	...	...	...
Vat blue 1, 20%	8,852	8,027	2,058	.26
Vat blue 4, 10%	...	133	233	1.75
Vat blue 5, 16%	539	474	449	.95
Vat blue 6, 8-1/3%	3,226	2,916	3,206	1.10
Solubilized vat blue 6, 17-1/2%	39	47	310	6.60
Vat blue 14, 8-1/3%	479	376	428	1.14
Vat blue 18, 13%	762	729	1,166	1.60
Vat blue 20, 14%	720	674	1,038	1.54
All other	7,934	...	...	...
Vat green 1, 6%	3,069	2,982	2,069	.69
Solubilized vat green 1, 12-1/2%	49	55	208	3.78
Vat green 3, 10%	2,222	1,791	1,190	.66
Solubilized vat green 3, 26%	14	16	110	6.88
Vat green 8, 8-1/2%	896	826	687	.83
Vat green 9, 12-1/2%	851	1,036	880	.85
Vat brown dyes, total	4,326	4,029	6,607	1.64
Vat brown 1, 11%	855	785	1,117	1.42
Vat brown 3, 11%	1,110	1,088	1,471	1.35
Vat brown 5, 13%	638	566	904	1.60
Vat brown 20, 10-1/2%	177	205	393	1.92
All other	1,546	1,385	2,722	1.97
Vat black dyes, total	4,674	4,525	6,467	1.43
Vat black 9, 16%	199	...	...	...
Vat black 25, 12-1/2%	1,771	1,681	1,544	.92
Vat black 27, 12-1/2%	743	956	1,105	1.16
All other	1,961	1,888	3,818	2.02
All other vat dyes	1.141	7,863	4,333	.55
All other dyes[3]	70	49	223	4.55

[1] Calculated from rounded figures.
[2] Includes sales of disperse violet dyes.
[3] Includes oxidation bases and ingrain and miscellaneous dyes.

For many important low- and medium-priced dyes for which statistics are given in this report, production was larger in 1959 than in 1958. The output of vat blue 1 (synthetic indigo) was 8.9 million pounds in 1959, or 13.7 percent more than the 7.8 million pounds reported for 1958; that of direct black 38 (direct black EW) was 5.9 million pounds, or 25.0 percent more than the 4.7 million pounds reported for 1958. Production of mordant black 11 in 1959 (3.8 million pounds) was almost double that in 1958 (1.9 million pounds). Other important dyes the output of which was substantially larger in 1959 than in 1958 were vat green 3 (77.2 percent larger), vat black 25 (54.0 percent larger), vat yellow 2 (51.1 percent larger), direct yellow 6 (37.2 percent), acid black 1 (28.1 percent), and mordant black 17 (26.2 percent).

On the other hand, the output of a few important dyes was smaller in 1959 than in 1958. Production of vat green 9 in 1959 was 0.9 million pounds, or 41.3 percent less than the 1.4 million pounds reported for 1958; that of direct black 80 was 23.7 percent smaller; that of vat blue 6 was 8.6 percent smaller; and that of vat green 1 was 10.2 percent smaller.

Although the revision of the *Colour Index* has resulted in a number of changes in the classification of dyes, the differences resulting from these changes are small in most instances, so that comparisons between the class totals for 1958 and 1959 and those for former years are still significant.

Table 9 summarizes production and sales of dyes in 1959, by class of application. Four classes of dyes accounted for more than 70 percent of the output of all dyes in 1959: Vat dyes accounted for 28 percent of the total output; sulfur dyes, for 18.7 percent; direct dyes, for 15.8 percent; and acid dyes, for 9.6 percent. In 1959 the output of each of these four major classes was larger than that in 1958. Production of acid dyes was 41.4 percent larger; sulfur dyes, 24.0 percent; direct dyes, 24.0 percent; and vat dyes, 13.8 percent. The total output of azoic dyes and components--the fifth ranking class of dyes--was 9.1 million pounds in 1959, or 3.6 percent more than the 8.8 million pounds reported for 1958. The output of two of the four groups of azoic dyes and components was larger in 1959 than in 1958: Production of fast color bases was 44.1 percent greater and that of azoic compositions was 26 percent greater. On the other hand, the output of fast color salts was 13.9 percent smaller in 1959 than in 1958, and that of the azoic coupling components, 11.7 percent smaller.

The output of all the remaining classes of dyes also was greater in 1959 than in 1958: That of mordant dyes was 65.7 percent larger; solvent dyes, 21.7 percent; disperse dyes, 22 percent; basic dyes, 21.3 percent; fluorescent brightening agents, 20.3 percent; and food, drug, and cosmetic dyes, 10.9 percent. In 1959 the fluorescent dyes were the fourth most important group of dyes in terms of value of sales; sales in that year amounted to $16.9 million.

Table 10 shows production and sales of dyes in 1959 by chemical class. In 1959 five chemical classes of dyes accounted for more than 80 percent of all the dyes produced: Azo dyes accounted for 30.4 percent of the total; anthraquinone dyes, for 20.2 percent; sulfur dyes (not including vat sulfur dyes), for 18.7 percent; indigoid dyes, for 7 percent; and stilbene dyes, for 5.4 percent. The output of each of these five classes was larger in 1959 than in 1958; that of stilbene dyes was 32.3 percent larger; that of azo dyes, 27.8 percent; that of sulfur dyes, 24 percent; that of indigoid dyes, 16.6 percent; and that of anthraquinone dyes, 13.9 percent. Production of all but two of the remaining chemical classes--the phthalocyanine dyes and the ketone imine dyes--was greater in 1959 than in 1958; the output of the phthalocyanine dyes was 26.1 percent smaller and that of the ketone imine dyes, 4.9 percent smaller. In terms of value of sales, the most important classes of dyes in 1959 were the azo dyes ($78.4 million), the anthraquinone dyes ($51.5 million), the stilbene dyes ($19.3 million), and the azoic dyes ($13.3 million).

TABLE 9. --*Synthetic organic chemicals: U.S. production and sales of coal-tar dyes, by class of application, 1959*

Class of application	Production	Sales		
		Quantity	Value	Unit value[1]
	1,000 pounds	*1,000 pounds*	*1,000 dollars*	*Per pound*
Total	169,503	158,939	205,873	$1.30
Acid	16,236	15,257	28,373	1.86
Azoic dyes and components:				
Azoic compositions	2,691	2,476	3,851	1.56
Azoic diazo components, bases (Fast color bases)	1,551	1,434	1,947	1.36
Azoic diazo components, salts (Fast color salts)	2,444	2,466	2,667	1.08
Azoic coupling components (Naphthol AS and derivatives)	2,441	2,464	4,850	1.97
Basic	8,054	6,579	15,006	2.28
Direct	26,711	25,903	37,981	1.47
Disperse	6,901	6,647	13,810	2.08
Fiber-reactive	188	174	759	4.36
Fluorescent brightening agents	7,050	6,910	16,887	2.44
Food, drug, and cosmetic dyes	2,112	2,028	9,341	4.61
Mordant	6,655	6,250	8,641	1.38
Solvent	7,228	6,402	9,468	1.48
Sulfur	31,776	30,941	8,653	.28
Vat	47,395	42,959	43,416	1.01
All other[2]	70	49	223	4.55

[1] Calculated from rounded figures.

[2] Includes oxidation bases and ingrain and miscellaneous dyes. Statistics for these groups cannot be published separately without disclosing information received in confidence.

TABLE 10. --*Synthetic organic chemicals: U.S. production and sales of coal-tar dyes, by chemical class, 1959*

Chemical class	Production	Sales		
		Quantity	Value	Unit value[1]
	1,000 pounds	*1,000 pounds*	*1,000 dollars*	*Per pound*
Total	169,503	158,939	205,873	$1.30
Acridine	28	...	...	...
Anthraquinone	34,311	30,443	51,483	1.69
Azo, total	51,479	49,619	78,351	1.58
Monoazo	17,298	16,249	27,824	1.71
Disazo	16,478	15,690	25,158	1.60
Trisazo	10,695	10,761	11,827	1.10
Polyazo	1,409	1,349	2,354	1.74
Not specified	5,599	5,570	11,188	2.01
Azoic	9,127	8,840	13,315	1.51
Indigoid	11,825	10,547	6,201	.59
Ketone imine	559	540	1,183	2.19
Nitro	311	288	676	2.35
Oxazine	65	50	175	3.50
Phthalocyanine	557	506	1,087	2.15
Quinoline	227	199	822	4.13
Stilbene	9,161	8,706	19,302	2.22
Sulfur[2]	31,776	30,941	8,653	.28
Thiazine	421	351	726	2.07
Thiazole	414	367	737	2.01
Triarylmethane	5,606	4,373	10,537	2.41
Xanthene	862	505	2,472	4.90
All other[3]	12,774	12,664	10,153	.80

[1] Calculated from rounded figures.

[2] Does not include vat sulfur dyes.

[3] Includes oxidation bases, aminoketone, azine, hydroxyketone, methine, nitroso, vat sulfur, and miscellaneous dyes and sales of acridine dyes. Statistics for these groups cannot be published separately without disclosing information received in confidence.

Toners and Lakes

As the terms are used in this report, toners and lakes are synthetic organic pigments. Synthetic organic pigments are used in paints and related products, in printing inks, and in plastics and resin materials. Toners are full-strength pigments; reduced toners and lakes are extended or diluted colors.

Statistics on production and sales of all toners and lakes are given in table 11A.[3] Statistics on the commercial forms (dry, flushed, pulp, and dispersed) of a few selected pigments are given in table 12. In this report, individual toners and lakes are identified by the names used in the second edition of the *Colour Index*, rather than by their common names.[4]

Total production of full-strength toners, reduced toners, and lakes in 1959 was 42.7 million pounds, the largest output in any year since 1955. Total sales of toners, reduced toners, and lakes in 1959 amounted to 33.3 million pounds, valued at $65.6 million, compared with 27.8 million pounds, valued at $53.4 million, in 1958. In terms of quantity, sales of toners, reduced toners, and lakes in 1959 were 20.0 percent larger than those in 1958 and, in terms of value, 22.9 percent larger.

Production of full-strength toners in 1959 amounted to 32.3 million pounds, compared with 26.0 million pounds in 1958--representing an increase of 23.9 percent. Sales in 1959 were 24.6 million pounds, valued at $54.4 million, compared with 19.5 million pounds, valued at $43.2 million, in 1958--showing an increase of 26.4 percent in terms of quantity and 26.0 percent in terms of value. In 1959, red toners comprised 52.7 percent of the total output of full-strength toners (17 million pounds). The individual toners produced in the largest quantities in 1959 were Pigment Red 49 (C.I. 15 630), 4.8 million pounds; Pigment Blue 15 (C.I. 74 160), 3.7 million pounds; Pigment Green 7 (C.I. 74 260), 2.9 million pounds; Pigment Red 3 (C.I. 12 120), 2.6 million pounds; Pigment Yellow 12 (C.I. 21 090), 2.3 million pounds; Pigment Red 48 (C.I. 15 865), 1.8 million pounds; the barium toner of Pigment Red 53 (C.I. 15 585), 1.4 million pounds; and Pigment Red 90 (C.I. 45 380), 1.3 million pounds.

[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 toners and lakes during the years 1957-59.

[4] See appendix D, which is a cross-reference list of *Colour Index* and common names of toners and lakes.

Production of reduced or extended toners totaled 6.5 million pounds in 1959, compared with 5.4 million pounds in 1958--showing an increase of 21.2 percent. Sales in 1959 were 5.8 million pounds, valued at $8.0 million, compared with 5.3 million pounds, valued at $7.5 million, in 1958--representing an increase of 9.1 percent in terms of quantity and 6.4 percent in terms of value. Pigment Green 7 (C.I. 74 260), the output of which was 1.1 million pounds, was the reduced toner produced in largest quantity in 1959.

Production of lakes (laked colors) amounted to 3.9 million pounds in 1959, compared with 4.0 million pounds in 1958--showing a decrease of 1.6 percent. Sales of lakes in 1959 totaled 2.9 million pounds, showing a slight decrease from sales in 1958. However, the value of sales in 1959 was $3.2 million, compared with $2.7 million in 1958--representing an increase of 19.1 percent. Pigment Blue 24 (C.I. 42 090) was the lake produced in the largest quantity in 1959; the output amounted to 1.9 million pounds.

Statistics on the production and sales of the dry, flushed, pulp, and dispersed forms of 13 selected colors are given in table 12. Sales of these colors in the flushed form (including the value of the oil) were larger (value basis) than sales of any other form for Pigment Blue 19 (C.I. 42 750A), Pigment Blue 24 (C.I. 42 090), and Pigment Red 90 (C.I. 45 380); for each of the other 10 colors, sales (value basis) of the dry form were largest.

TABLE 11A. --*Synthetic organic chemicals: U.S. production and sales of toners and lakes, 1959*

[Listed below are all toners and lakes for which any reported data on production or sales may be published. 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	42,675	33,309	65,634	$1.97
TONERS OR FULL-STRENGTH COLORS				
Total	32,262	24,621	54,378	2.21
Products for which separate statistics may not be shown[2]	286	211	1,113	5.27
Products for which separate statistics are shown below	31,976	24,410	53,265	2.18
Blue toners, total	5,784	4,240	12,891	3.04
Pigment Blue 1, C.I. 42 595, PMA	138	132	588	4.45
Pigment Blue 1, C.I. 42 595, PTA	47	35	187	5.34
Pigment Blue 9, C.I. 42 025, PMA	4	4	16	4.00
Pigment Blue 9, C.I. 42 025, PTA	8	8	45	5.62
Pigment Blue 15, C.I. 74 160, alpha modification	2,738	1,964	6,115	3.11
Pigment Blue 15, C.I. 74 160, beta modification	955	870	2,675	3.07
Pigment Blue 19, C.I. 42 750A	943	931	2,327	2.50
Pigment Blue 25, C.I. 21 180	57	19	65	3.42
All other	894	277	873	3.15
Brown toners	33	29	86	2.97
Green toners:				
Pigment Green 1, C.I. 42 040, PMA	11	6	27	4.50

See footnotes at end of table.

TABLE 11A. --*Synthetic organic chemicals: U.S. production and sales of toners and lakes, 1959*--Continued

Product	Production	Sales		
		Quantity	Value	Unit value[1]
TONERS OR FULL-STRENGTH COLORS--Continued	*1,000 pounds*	*1,000 pounds*	*1,000 dollars*	*Per pound*
Green toners--Continued				
Pigment Green 1, C.I. 42 040, PTA	8	7	37	$5.29
Pigment Green 2, C.I. 42 040 and C.I. 49 005, PMA	48	44	183	4.16
Pigment Green 2, C.I. 42 040 and C.I. 49 005, PTA	55	53	351	6.62
Pigment Green 4, C.I. 42 000, PTA	9	7	40	5.71
Pigment Green 7, C.I. 74 260	2,851	2,138	6,476	3.03
Pigment Green 8, C.I. 10 006	397	315	415	1.32
Orange toners, total	546	435	1,231	2.83
Pigment Orange 2, C.I. 12 060	50	53	75	1.42
Pigment Orange 5, C.I. 12 075	194	163	251	1.54
Pigment Orange 13, C.I. 21 110	89	61	195	3.20
Pigment Orange 16, C.I. 21 160	137	123	292	2.37
All other	76	35	418	11.94
Red toners, total	16,991	13,810	23,100	1.67
Naphthol reds, total	704	563	1,516	2.69
Pigment Red 2, C.I. 12 310	33	33	106	3.21
Pigment Red 5, C.I. 12 490	134	71	180	2.54
Pigment Red 17, C.I. 12 390	103	69	225	3.26
Pigment Red 18, C.I. 12 350	19	15	52	3.47
Pigment Red 22, C.I. 12 315	90	92	277	3.01
Pigment Red 23, C.I. 12 355	108	87	323	3.71
Other naphthol reds	217	196	353	1.80
Pigment Red 1, C.I. 12 070, dark	349	331	395	1.19
Pigment Red 1, C.I. 12 070, light	568	470	559	1.19
Pigment Red 3, C.I. 12 120	2,636	1,713	2,987	1.74
Pigment Red 4, C.I. 12 085	471	321	434	1.35
Pigment Red 38, C.I. 21 120	128	118	541	4.58
Pigment Red 41, C.I. 21 200	116	103	347	3.37
Pigment Red 48, C.I. 15 865	1,786	1,632	2,984	1.83
Pigment Red 49, C.I. 15 630, total	4,841	4,536	4,799	1.06
Barium toner	3,019	2,723	2,841	1.04
Calcium toner	1,566	1,447	1,560	1.08
Other toners and sodium salt	256	366	398	1.09
Pigment Red 52, C.I. 15 860	660	468	689	1.47
Pigment Red 53, C.I. 15 585, barium toner	1,426	1,376	1,771	1.29
Pigment Red 57, C.I. 15 850, calcium toner	808	763	1,043	1.37
Pigment Red 63, C.I. 15 880	68	55	102	1.85
Pigment Red 81, C.I. 45 160, PMA	90	80	477	5.96
Pigment Red 81, C.I. 45 160, PTA	147	136	770	5.66
Pigment Red 90, C.I. 45 380	1,261	416	846	2.03
All other	932	729	2,840	3.90
Violet toners:				
Pigment Violet 1, C.I. 45 170, PMA	19	18	99	5.50
Pigment Violet 1, C.I. 45 170, PTA	26	25	168	6.72
Pigment Violet 3, C.I. 42 535, fugitive	436	396	625	1.58
Pigment Violet 3, C.I. 42 535, PMA	258	223	618	2.77
Pigment Violet 3, C.I. 42 535, PTA	49	42	181	4.31
Yellow toners, total	4,455	2,622	6,737	2.57
Benzidine yellows:				
Pigment Yellow 12, C.I. 21 090	2,276	1,068	2,556	2.39
Pigment Yellow 13, C.I. 21 100	37	44	204	4.64
Pigment Yellow 14, C.I. 21 095	897	618	1,619	2.62
Acetoacetanisidide Yellow, dcb --→ saoa	178	132	450	3.41
Hansa yellows:				
Pigment Yellow 1, C.I. 11 680	648	480	1,130	2.35
Pigment Yellow 3, C.I. 11 710	157	125	278	2.22
All other	262	155	500	3.23

See footnotes at end of table.

TABLE 11A. -- *Synthetic organic chemicals: U.S. production and sales of toners and lakes, 1959*--Continued

Product	Production		Sales		
	Total	Toner content	Quantity	Value	Unit value[1]
REDUCED OR EXTENDED TONERS	*1,000 pounds*	*1,000 pounds*	*1,000 pounds*	*1,000 dollars*	*Per pound*
Total	6,510	1,628	5,832	8,006	$1.37
Black toners, reduced	272	40	300	121	.40
Blue toners, reduced, total	2,544	552	2,040	3,087	1.51
Pigment Blue 1, C.I. 42 595, PMA	97	10	73	86	1.18
Pigment Blue 9, C.I. 42 025, PMA	7	2	7	16	2.29
Pigment Blue 14, C.I. 42 600, PMA	557	64	480	716	1.49
Pigment Blue 15, C.I. 74 160, alpha modification	1,125	360	923	1,259	1.36
Pigment Blue 15, C.I. 74 160, beta modification	81	21	73	66	.90
All other	677	95	484	944	1.95
Brown toners, reduced	8	2	6	7	1.17
Green toners, reduced, total	1,544	434	1,424	2,019	1.42
Pigment Green 1, C.I. 42 040, PMA	28	7	23	40	1.74
Pigment Green 2, C.I. 42 040 and C.I. 49 005, PMA	21	8	21	53	2.52
Pigment Green 2, C.I. 42 040 and C.I. 49 005, PTA	36	8	22	48	2.18
Pigment Green 7, C.I. 74 260	1,142	345	1,054	1,691	1.60
Pigment Green 8, C.I. 10 006	153	43	156	95	.61
All other	164	23	148	92	.62
Orange toners, reduced	94	19	83	284	3.42
Red toners, reduced, total	1,129	339	1,121	1,241	1.11
Naphthol reds, reduced: Pigment red 23, C.I. 12 355	134	26	136	118	.87
Pigment Red 1, C.I. 12 070, dark	37	5	42	14	.33
Pigment Red 3, C.I. 12 120	80	8	82	49	.60
Pigment Red 48, C.I. 15 865	325	148	306	381	1.24
Pigment Red 49, C.I. 15 630, barium toner	101	23	100	51	.51
Pigment Red 57, C.I. 15 850	16	11	23	31	1.35
Pigment Red 81, C.I. 45 160, PMA	127	20	126	179	1.42
Pigment Red 81, C.I. 45 160, PTA	29	4	29	24	.83
All other	280	94	277	394	1.42
Violet toners, reduced, total	346	95	325	545	1.68
Pigment Violet 1, C.I. 45 170, PMA	24	3	23	22	.96
Pigment Violet 3, C.I. 42 535, PMA	166	49	149	188	1.26
Pigment Violet 3, C.I. 42 535, fugitive	100	29	93	104	1.12
All other	56	14	60	231	3.85
Yellow toners, reduced, total	573	147	533	702	1.32
Benzidine yellows: Pigment Yellow 14, C.I. 21 095	187	47	197	136	.69
Hansa yellows: Pigment Yellow 1, C.I. 11 680	206	53	169	109	.64
(Basic Yellow 2), C.I. 41 000, fugitive	7	1	7	7	1.00
All other	173	46	160	450	2.81

Product	Production	Sales		
		Quantity	Value	Unit value[1]
LAKES OR LAKED COLORS	*1,000 pounds*	*1,000 pounds*	*1,000 dollars*	*Per pound*
Total	3,903	2,856	3,250	$1.14
Products for which separate statistics may not be shown[3]	107	80	179	2.24
Products for which separate statistics are shown below	3,796	2,776	3,071	1.11
Black lakes: (Natural Black 3), C.I. 75 291	92	90	81	.90
Blue lakes: Pigment Blue 24, C.I. 42 090	1,852	996	1,325	1.33
Green lakes	27	28	57	2.04
Orange lakes	518	475	201	.42

See footnotes at end of table.

TABLE 11A. --*Synthetic organic chemicals: U.S. production and sales of toners and lakes, 1959*--Continued

Product	Production	Sales		
		Quantity	Value	Unit value[1]
LAKES OR LAKED COLORS--Continued	*1,000 pounds*	*1,000 pounds*	*1,000 dollars*	*Per pound*
Red lakes, total	1,001	894	989	$1.11
Pigment Red 60, C.I. 16 105	192	176	252	1.43
Pigment Red 83, C.I. 58 000	114	75	240	3.20
(Acid Red 26), C.I. 16 150	593	543	237	.44
All other	102	100	260	2.60
Violet lakes, total	126	116	241	2.08
Pigment Violet 5, C.I. 58 055	123	113	237	2.10
All other	3	3	4	1.33
Yellow lakes: (Acid Yellow 23), C.I. 19 140	180	177	177	1.00

[1] Calculated from rounded figures.
[2] Includes all black toners and unspecified green and violet toners.
[3] Includes all brown lakes and unspecified black, blue, and yellow lakes.

Note.--The C.I. (*Colour Index*) numbers shown in this report are the identifying numbers 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. The abbreviation dcb stands for dichlorobenzene, and the abbreviation aaoa, for o-acetoacetanisidide.

TABLE 12.--*Synthetic organic chemicals: U.S. production and sales of selected dry, flushed, pulp, and dispersed colors, 1959* [1]

Dry, flushed, pulp, and dispersed forms	Production	Sales		
		Quantity	Value	Unit value [2]
	1,000 pounds	*1,000 pounds*	*1,000 dollars*	*Per pound*
Pigment Blue 15, C.I. 74 160:				
Dry form	2,753	2,491	6,228	$2.50
Flushed form	1,042	559	646	1.16
Pulp form	2,578	2,082	2,001	.96
Dispersed form	886	857	638	.74
Pigment Blue 19, C.I. 42 750A: [3]				
Dry form	120	114	267	2.34
Flushed form	3,441	2,888	3,570	1.24
Pigment Blue 24, C.I. 42 090: [4]				
Dry form	465	135	148	1.10
Flushed form	3,435	2,559	1,575	.62
Pigment Green 7, C.I. 74 260:				
Dry form	2,082	1,769	4,545	2.57
Flushed form	387	281	312	1.11
Pulp form	1,872	1,405	2,212	1.57
Dispersed form	685	633	593	.94
Pigment Red 3, C.I. 12 120:				
Dry form	2,069	1,304	2,166	1.66
Flushed form	970	653	571	.87
Pulp form	281	158	70	.44
Dispersed form	129	78	48	.62
Pigment Red 49, C.I. 15 630, barium toner: [3]				
Dry form	2,406	2,092	2,014	.96
Flushed form	2,256	2,106	1,062	.50
Pigment Red 49, C.I. 15 630, calcium toner: [4]				
Dry form	1,387	1,232	1,194	.97
Flushed form	706	687	400	.58
Dispersed form	12	12	16	1.33
Pigment Red 49, C.I. 15 630, sodium salt: [4]				
Dry form	320	284	287	1.01
Flushed form	317	288	165	.57
Pigment Red 53, C.I. 15 585, barium toner: [3]				
Dry form	1,120	919	1,065	1.16
Flushed form	1,075	996	691	.69
Pigment Red 90, C.I. 45 380: [4]				
Dry form	61	32	55	1.72
Flushed form	2,557	1,342	1,125	.84
Pigment Violet 3, C.I. 42 535, fugitive: [4]				
Dry form	344	331	445	1.34
Flushed form	549	485	390	.80
Pigment Violet 3, C.I. 42 535, permanent: [5]				
Dry form	295	246	568	2.31
Flushed form	259	223	267	1.20
Pulp form	34	22	13	.59
Pigment Yellow 12, C.I. 21 090; Pigment Yellow 13, C.I. 21 100; Pigment Yellow 14, C.I. 21 095; and other benzidine yellows:				
Dry form	1,621	1,192	2,729	2.29
Flushed form	4,261	3,581	2,391	.67
Pulp form	330	129	79	.61
Dispersed form	727	721	308	.43

[1] Statistics on production and sales of the organic pigments (toners and lakes) listed in this table are given in terms of the commercial (physical) forms in which they enter commercial channels. Data on the flushed, pulp, and dispersed forms, therefore, are in terms of total weight, including pigment and vehicle (water or oil).

[2] Calculated from rounded figures.

[3] Data on the pulp and dispersed forms were accepted in confidence and may not be published, since publication would reveal the operations of individual companies.

[4] Data on the pulp form were accepted in confidence and may not be published, since publication would reveal the operations of individual companies.

[5] Data on the dispersed form were accepted in confidence and may not be published, since publication would reveal the operations of individual companies.

Medicinals

In this report, medicinal chemicals are divided into three major groups: (1) Benzenoid compounds, derived principally from coal tar; (2) alicyclic and heterocyclic compounds, usually derived from vegetable products and animal tissues, but sometimes also from coal tar; and (3) acyclic compounds, usually derived from petroleum and from natural gas, or from grain by fermentation.

Statistics on the production of medicinals are in terms of 100-percent content of the medicinal itself, exclusive of all diluents or other materials used in mixing or compounding tablets, solutions, and suspensions for consumer use. Except for the 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 forms--diluted or undiluted--in bulk or in packages.

In 1959 the output of all the medicinal chemicals covered in this report amounted to 106.6 million pounds (see table 13A[5]), or 5.1 percent more than the 101.4 million pounds reported for 1958. Sales totaled 87.3 million pounds, valued at $582.2 million, in 1959, compared with sales of 81.4 million pounds, valued at $554.7 million, in 1958.

The output of all cyclic medicinals in 1959 amounted to 73.2 million pounds. Of this quantity, 46.2 million pounds consisted of benzenoid medicinals and 27.0 million pounds, of alicyclic and heterocyclic medicinals. Production of acyclic medicinals was 33.4 million pounds in 1959, compared with 31.4 million pounds in 1958. In terms of quantity, acetylsalicylic acid (aspirin) was the most important medicinal produced in 1959. The output in that year was 18.1 million pounds, compared with 20.8 million pounds in 1958; sales amounted to 17.2 million pounds, valued at $9.2 million, in 1959, compared with 16.3 million pounds, valued at $8.8 million, in 1958. Production of sulfa drugs in 1959 was 5.8 million pounds, compared with the 3.7 million pounds produced in 1958. Production of barbituric acid and derivatives totaled 819,000 pounds in 1959--slightly more than the 790,000 pounds produced in 1958. Sales of barbituric acid and derivatives totaled 583,000 pounds, valued at $2.9 million, in 1959, compared with 513,000 pounds, valued at $2.4 million, in 1958.

In terms of value, the antibiotics--as a group--were the most important medicinals produced in 1959. Total production of antibiotics for human and veterinary use was 2.3 million pounds in 1959, or 317,000 pounds less than the output reported for 1958. Sales totaled 2.0 million pounds, valued at $318.2 million, in 1959, compared with 1.9 million pounds, valued at $304.7 million, in 1958. Production of penicillin salts totaled 430 trillion international units in 1959, compared with 392 trillion international units in 1958. Sales of penicillin salts totaled 371 trillion international units, valued at $57.3 million, in 1959, compared with 372 trillion international units, valued at $60.3 million, in 1958. The output of dihydrostreptomycin amounted to 470,000 pounds in 1959, compared with the 561,000 pounds reported for 1958; sales totaled 492,000 pounds, valued at $13.7 million, in 1959, compared with 465,000 pounds, valued at $17.9 million, in 1958. The output of streptomycin totaled 281,000 pounds in 1959, compared with 179,000 pounds in 1958. Production of neomycin base amounted to 38,000 pounds in 1959; sales were 28,000 pounds, valued at $6.0 million. Production of tetracycline was 307,000 pounds in 1959; sales were 257,000 pounds, valued at $89.4 million--$32.1 million more than the value of sales of penicillin salts. Total production of antibiotics for animal feed supplements, food preservation, and crop spraying in 1959 was 1.4 million pounds, compared with the 903,000 pounds reported for 1958. Sales of these products in 1959 amounted to 1.1 million pounds, valued at $39.2 million.

Among the other important groups of medicinal products in 1959 were the vitamins. In 1959 the combined output of vitamins--as a group--was 10.9 million pounds, compared with 9.8 million pounds in 1958. Sales of vitamins totaled 7.3 million pounds, valued at $73.7 million, in 1959, compared with 6.9 million pounds, valued at $78.1 million, in 1958. In terms of quantity, the 1959 output of some of the more important vitamins was as follows: Niacin, 2.5 million pounds; ascorbic acid and derivatives, 4.8 million pounds; pantothenic acid and derivatives, 1.2 million pounds; thiamine derivatives, 245,000 pounds; and vitamin A (alcohol and esters), 382,000 pounds (374,250 billion U.S. P. units). In terms of value of sales, vitamin A (alcohol and esters) was the most important product in the vitamin group. Sales of this medicinal in 1959 totaled 336,000 pounds, valued at $25.9 million. Sales of vitamin B_{12} were 729 pounds, valued at $13.1 million, and those of ascorbic acid and derivatives, 3.1 million pounds, valued at $10.8 million.

In 1959, sales of all hormones totaled 42,000 pounds, valued at $23.3 million. The output of tranquilizers in 1959 amounted to 1.4 million pounds. By far the most important tranquilizer was 2-methyl-2-n-propyl-1,3-propanediol dicarbamate, production of which totaled 1.2 million pounds; sales amounted to 1.1 million pounds, valued at $4.1 million.

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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 medicinals and pharmaceuticals during the years 1957-59.

TABLE 13A.--*Synthetic organic chemicals: U.S. production and sales of medicinals, 1959*

[Listed below are all synthetic organic medicinals 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 medicinals 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	106,507	87,302	582,210	$6.67
MEDICINALS, CYCLIC				
Total	73,180	57,526	548,234	9.53
Chemicals for which separate statistics may not be shown	28,217	22,961	75,303	3.28
Chemicals for which separate statistics are shown below	44,963	34,565	472,931	13.68
Benzenoid				
Total	46,216	36,168	42,552	1.18
Acetylsalicylic acid (Aspirin)	18,097	17,155	9,235	.54
Amino acids	1	1	22	22.00
p-Aminobenzoic acid and derivatives, total	428	513	1,350	2.63
Procaine hydrochloride	323	419	979	2.34
All other	105	94	371	3.95
Antihistamines	87	...	...	...
Bismuth subgallate	23	25	82	3.28
Carbasone (p-Carbamidobenzenearsonic acid)	3	2	17	8.50
N,α-Dimethylphenethylamine (Desoxyephedrine) hydrochloride	...	2	19	9.50
d-N,α-Dimethylphenethylamine hydrochloride	...	3	40	13.33
Dyes, medicinal	15	17	310	18.24
α-Methylphenethylamine (Amphetamine) base and salts	63	...	...	...
Norephedrine (Propadrine) hydrochloride	58	57	608	10.67
Phenylephrine hydrochloride	19	20	2,104	105.20
Salicylic acid	6,886	6,154	2,379	.39
Salicylic acid salts, total	656	586	486	.83
Sodium salicylate	616	519	381	.73
All other	40	67	105	1.57
Sulfa drugs	5,835	...	...	...
3-o-Toloxy-1,2-propanediol (o-Cresyl α-glyceryl ether)	...	78	134	1.72
Vitamin K (Menadione) (2-Methyl-1,4-naphthoquinone)	15	...	...	...
All other benzenoid medicinals	14,030	11,555	25,766	2.33
Alicyclic and Heterocyclic				
Total	26,964	21,358	505,682	23.68
Alkaloids and related products, total	19	10	2,122	212.20
Homatropine methyl bromide	2	2	67	33.50
All other	17	8	2,055	256.88
Antibiotics for human or veterinary use, total	2,295	2,042	318,188	155.82
Bacitracin	7	6	1,629	271.50
Dihydrostreptomycin	470	492	13,721	27.89
Neomycin, base	38	28	5,986	213.79
Penicillin salts, total[4]	567	489	57,343	([5])
Potassium penicillin	195	160	27,807	([5])
Procaine penicillin G	306	268	14,732	([5])
All other	66	61	14,804	([5])
Streptomycin	281	240	5,388	22.45
Tetracycline	307	257	89,429	347.97
All other	625	530	144,692	273.00

See footnotes at end of table.

TABLE 13A. --*Synthetic organic chemicals: U.S. production and sales of medicinals, 1959*--Continued

Chemical	Production[1]	Sales[2]		
		Quantity	Value	Unit value[3]
MEDICINALS, CYCLIC--Continued				
Alicyclic and Heterocyclic--Continued	*1,000 pounds*	*1,000 pounds*	*1,000 dollars*	*Per pound*
Antibiotics for animal feed supplements, food preservation, and crop spraying, total	1,351	1,108	39,164	$35.35
Bacitracin	62	...	...	...
Procaine penicillin G	...	29	615	21.21
All other	1,289	1,079	38,549	35.73
Antihistamines, total	205	123	3,436	27.93
2-[1-(p-Chlorophenyl)-3-dimethylaminopropyl]pyridine maleate (Chlorophenylpyridamine maleate)	14	4	335	83.75
2-[3-(Dimethylamino)-1-phenylpropyl]pyridine maleate	13	12	468	39.00
All other	178	107	2,633	24.61
Barbituric acid and derivatives, total	819	583	2,853	4.89
5-Allyl-5-(1-methylbutyl)barbituric acid (Secobarbital) and salt	...	12	116	9.67
5-Ethyl-5-(1-methyl-n-butyl)barbituric acid (Pentobarbital)	...	5	29	5.80
5-Ethyl-5-(1-methyl-n-butyl)barbituric acid, sodium salt	73	37	222	6.00
5-Ethyl-5-phenylbarbituric acid (Phenobarbital) (Luminal)	297	274	895	3.27
5-Ethyl-5-phenylbarbituric acid, sodium salt	7	12	58	4.83
All other	442	243	1,533	6.31
Bile acids and salts, total	238	126	1,383	10.98
Dehydrocholic acid	70	...	...	...
Ketocholanic acid	19	...	...	...
All other	149	126	1,383	10.98
Bromocamphor, mono-	8	7	27	3.86
Caffeine, natural and synthetic	1,933	1,886	3,801	2.02
Caffeine citrate	...	2	9	4.50
5-Chloro-7-iodo-8-quinolinol (Iodochlorohydroxyquinoline)	11	...	...	...
Dihydrocodeinone bitartrate	3	3	938	312.67
5,7-Diiodo-8-quinolinol	21	11	36	3.27
Hormones, total	...	42	23,326	555.38
Hydrocortisone alcohol and acetate	9	...	...	...
17-Hydroxy-11-dehydrocorticosterone (Cortisone) and acetate	2	...	...	...
Prednisolone	2	1	2,411	2,411.00
Prednisone	1	...	...	...
All other	...	41	20,915	510.12
Piperazine derivatives	474	439	468	1.07
8-Quinolinol base	93	...	...	...
8-Quinolinol sulfate (Quinosol)	10	...	...	...
Theophylline base and derivatives, total	117	106	317	2.99
Theophylline ethylenediamine (Aminophylline)	58	...	...	...
All other	59	106	317	2.99
Tranquilizers (including benzenoid)	242	21	621	29.57
Vitamins, total	4,924	3,443	59,456	17.27
A (Alcohol and esters),[6] from all sources	382	336	25,935	77.19
B_1 (Thiamine derivatives)	245	...	...	...
B_2 (Riboflavin for human consumption) (100%)	163	154	2,037	13.23
B_2 (Riboflavin for animal and poultry consumption) (100%)	267	201	2,452	12.20
B_6 (Pyridoxine)	60	...	...	...
B_{12}, all grades[7]	1	1	13,088	13,088.00
D_2 (Irradiated ergosterol)	(8)	(8)	132	469.74
D_3 (Irradiated animal sterol)[9]	2	1	255	255.00
Folic acid	6	...	...	...
Niacin (Nicotinic acid) including animal feed grade	2,548	1,490	2,730	1.83
Niacinamide	1,023	671	2,143	3.19
All other	227	589	10,684	18.14
All other alicyclic and heterocyclic medicinals	14,187	11,406	49,537	4.34

See footnotes at end of table.

TABLE 13A.--*Synthetic organic chemicals: U.S. production and sales of medicinals, 1959*--Continued

Chemical	Production[1]	Sales[2]		
		Quantity	Value	Unit value[3]
MEDICINALS, ACYCLIC	*1,000 pounds*	*1,000 pounds*	*1,000 dollars*	*Per pound*
Total	33,417	29,776	33,976	$1.14
Chemicals for which separate statistics may not be shown	8,788	8,057	5,344	.66
Chemicals for which separate statistics are shown below	24,629	21,719	28,632	1.32
Amino acids, total	4,879	4,445	7,123	1.60
β-Alanine	668	435	874	2.01
l(+)-Glutamic acid hydrochloride	...	69	119	1.72
l(+)-Lysine hydrochloride	273	226	1,160	5.13
All other	3,938	3,715	4,970	1.34
Betaine hydrochloride	...	26	32	1.23
Chloretone (tert-Trichlorobutyl alcohol)	19	14	28	2.00
Choline compounds, total	12,612	12,268	3,035	.25
Choline chloride, for animal and poultry feed and for use as an intermediate	12,323	12,036	2,797	.23
All other	289	232	238	1.03
Gluconic acid salts	4	...	...	...
Hexamethylenebis[trimethylammonium chloride] (Hexamethonium chloride)	2	...	...	...
Tranquilizers: 2-Methyl-2-n-propyl-1,3-propanediol dicarbamate	1,192	1,138	4,129	3.63
Vitamins, total	5,921	3,828	14,285	3.73
Ascorbic acid and derivatives, total	4,764	3,148	10,808	3.43
Ascorbic acid	3,946	2,447	8,218	3.36
All other	818	701	2,590	3.69
Pantothenic acid and derivatives, total	1,157	680	3,477	5.11
Pantothenic acid, dl-calcium salt	913	532	1,416	2.66
All other	244	148	2,061	13.93

[1] Production of medicinals is in bulk only. The statistics do not include the production of finished preparations, such as tablets, capsules, and ampoules, which are manufactured from bulk medicinals.

[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] Penicillin salts in terms of international units based on 1,667 units per milligram of the penicillin G standard of the Food and Drug Administration were reported as follows:

Chemical	Production	Sales		
		Quantity	Value	Unit value
	Billion international units	*Billion international units*	*1,000 dollars*	*Per billion international units*
Penicillin salts, total	429,781	370,668	57,343	$154.70
Potassium penicillin	147,995	121,741	27,807	228.41
Procaine penicillin G	231,384	202,567	14,732	72.73
All other	50,402	46,360	14,804	319.33

[5] Commercial sales are based on international units.

[6] Quantities reported in units have been converted to pounds by using as a factor the average units per pound of the medicinal grade as determined by the Food and Drug Administration.

Production of vitamin A alcohol and esters from all sources totaled 374,250 billion U.S.P. units; sales totaled 330,352 billion U.S.P. units.

[7] Production of vitamin B_{12}, all grades, totaled 938 pounds; sales totaled 729 pounds.

[8] Production of vitamin D_2 totaled 8,401 billion U.S.P. units and sales totaled 5,104 billion U.S.P. units. Calculated at the rate of 18.14 billion units per pound, production totaled 463 pounds and sales totaled 281 pounds.

[9] Production of vitamin D_3 totaled 36,195 billion U.S.P. units and sales totaled 13,858 billion U.S.P. units. Calculated at the rate of 18.14 billion units per pound, production totaled 1,995 pounds and sales totaled 764 pounds.

Flavor and Perfume Materials

Flavor and perfume materials are chemicals--with desirable flavors or odors--that are used in the manufacture of food, 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 the production and sales of flavor and perfume materials in 1959 are given in table 14A.[6]

Production of flavor and perfume materials as a group totaled 50.3 million pounds in 1959--15.8 percent more than the 43.4 million pounds produced in 1958. Sales were 45.4 million pounds, valued at $56.6 million, in 1959, compared with 39.7 million pounds, valued at $52.2 million, in 1958.

TABLE 14A.--*Synthetic organic chemicals: U.S. production and sales of flavor and perfume materials, 1959*

[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	50,308	45,398	56,636	$1.25
FLAVOR AND PERFUME MATERIALS, CYCLIC				
Total	29,684	24,251	34,489	1.42
Materials for which separate statistics may not be shown	9,988	7,016	12,742	1.82
Materials for which separate statistics are shown below	19,696	17,235	21,747	1.26
Benzenoid and Naphthalenoid				
Total	14,933	13,788	17,387	1.26
4-Allylveratrole (Eugenyl methyl ether)	8	...	...	...
p-Anisaldehyde (p-Methoxybenzaldehyde)	407	413	609	1.47
Benzophenone[2]	157	163	178	1.10
Benzyl acetate	1,026	905	449	.50
Benzyl alcohol[2 3]	850	857	402	.47
Benzyl benzoate	263	235	134	.57
Benzyl cinnamate	3	2	8	3.17
Benzyl propionate	...	8	9	1.17
Cinnamaldehyde	611	...	...	...
Cinnamyl alcohol	155	122	159	1.30
Ethyl α,β-epoxy-β-methylhydrocinnamate	5	6	27	4.73
Eugenol	233	198	341	1.72
Isobutyl phenylacetate	31	27	24	.89
Isobutyl salicylate	25	...	...	...
Isoeugenol	80	83	254	3.08
Isopentyl salicylate (Amyl salicylate)	361	344	212	.62
p-Isopropyl-α-methylhydrocinnamaldehyde (Cyclamen aldehyde)	129	116	402	3.48
4'-Methoxyacetophenone	8	6	13	2.07
Methyl anthranilate	171	...	...	...
α-Methylbenzyl acetate	16	...	...	...
α-Methylcinnamaldehyde	8	...	...	...
Methyl salicylate (Synthetic wintergreen oil)	3,442	3,333	1,852	.56
α-Pentylcinnamaldehyde (α-Amylcinnamaldehyde)	264	203	333	1.64
Phenethyl acetate	47	43	48	1.13
Phenethyl alcohol	1,117	1,066	1,120	1.05
Phenethyl isobutyrate	3	4	11	2.90
Phenethyl phenylacetate (Phenethyl α-toluate)	6	5	17	3.59
4-Propenylveratrole (Isoeugenyl methyl ether)	8	8	34	4.18
α-(Trichloromethyl)benzyl acetate (Rosetone)	40	...	...	...
All other benzenoid and naphthalenoid materials	5,459	5,641	10,751	1.91

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 flavor and perfume materials during the years 1957-59.

TABLE 14A.--*Synthetic organic chemicals: U.S. production and sales of flavor and perfume materials, 1959*--Continued

Material	Production	Sales		
		Quantity	Value	Unit value[1]
FLAVOR AND PERFUME MATERIALS, CYCLIC--Continued				
Terpenoid, Heterocyclic, and Alicyclic	*1,000 pounds*	*1,000 pounds*	*1,000 dollars*	*Per pound*
Total	14,751	10,463	17,102	$1.63
Cedryl acetate	62	50	91	1.82
Citral (Geranial)	86	78	209	2.68
Citronellol	370	298	499	1.67
Citronellyl acetate	14	10	22	2.21
Citronellyl formate	20	19	65	3.35
Coumarin	671	617	1,817	2.95
Ethyl oxyhydrate	35	32	28	.86
Geraniol	361	195	304	1.56
Geranyl acetate	35	24	45	1.90
Hydrocoumarin (3,4-Dihydrocoumarin)	18	17	79	4.54
Hydroxycitronellal	302	250	945	3.78
Hydroxycitronellal, dimethyl acetal	4	4	17	4.23
Ionones, total	311	314	924	2.95
α-Ionone	26	26	95	3.71
All other	285	288	829	2.88
Linalool	151	121	378	3.11
Linalyl acetate	179	156	434	2.79
Menthol, synthetic, total	300	358	1,744	4.89
Tech	44	36	75	2.08
U.S.P	256	322	1,669	5.19
Menthone	...	2	11	4.63
Methylionones	310	311	1,196	3.84
Nerol	4	4	41	11.28
Piperonal (Heliotropin)	238	244	579	2.37
Rhodinol	9	8	311	37.74
Safrole	77	70	43	.61
Sweeteners, synthetic	2,992	2,538	4,027	1.59
Terpineols	2,943	2,703	698	.26
Terpinyl acetate	714	652	302	.46
Vetivenyl acetate	16	13	302	23.59
All other terpenoid, heterocyclic, and alicyclic materials[4]	4,529	1,375	1,991	1.45
FLAVOR AND PERFUME MATERIALS, ACYCLIC				
Total	20,624	21,147	22,147	1.05
Materials for which separate statistics may not be shown	442	411	843	2.05
Materials for which separate statistics are shown below	20,182	20,736	21,304	1.03
Allyl hexanoate (Allyl caproate)	6	6	14	2.44
Ethyl butyrate	187	172	113	.66
Ethyl hexanoate (Ethyl caproate)	3	...	...	...
Glutamic acid, monosodium salt (Monosodium glutamate)	19,937	20,514	21,128	1.03
4-Hydroxyundecanoic acid, γ-lactone (γ-Undecalactone)	5	4	20	4.73
Isopentyl butyrate (Amyl butyrate)	34	33	23	.71
n-Octyl isobutyrate	10	7	6	.77

[1] Calculated from the unrounded figures.
[2] Includes some of technical grade.
[3] Includes some of medicinal grade.
[4] Includes chemically modified essential oils.

The output of benzenoid and naphthalenoid flavor and perfume materials in 1959 was 14.9 million pounds--11.6 percent more than the 13.4 million pounds reported for 1958. The individual chemical in the cyclic group that was produced in the greatest volume in 1959 was methyl salicylate (synthetic wintergreen oil, 3.4 million pounds). Sales of benzenoid and naphthalenoid flavor and perfume materials as a group totaled 13.8 million pounds, valued at $17.4 million, in 1959, compared with 12.5 million pounds, valued at $15.9 million, in 1958.

Production of terpenoid, heterocyclic, and alicyclic flavor and perfume materials in 1959 was 14.8 million pounds--26.9 percent more than the 11.6 million pounds reported for 1958. Production of synthetic sweeteners, which include derivatives of cyclohexanesulfamic acid and saccharin, totaled 3.0 million pounds. Sales of terpenoid, heterocyclic, and alicyclic materials as a group totaled 10.5 million pounds, valued at $17.1 million, in 1959, compared with 8.5 million pounds, valued at $15.6 million, in 1958.

The output of acyclic flavor and perfume materials in 1959 totaled 20.6 million pounds--11.9 percent more than the 18.4 million pounds reported for 1958. By far the most important product in this group was monosodium glutamate, production of which totaled 19.9 million pounds, or over 96.0 percent (by quantity) of the acyclic group. Sales of acyclic materials totaled 21.1 million pounds, valued at $22.1 million, in 1959, compared with 18.8 million pounds, valued at $20.7 million, in 1958.

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 on vinyl resins are given on the basis of resin content.

Statistics on the production and sales of plastics and resins are given in table 15A[7] according to chemical composition, and in table 16 according to broad end uses. In 1959 the total production

TABLE 15A.--*Synthetic organic chemicals: U.S. production and sales of plastics and resin materials, grouped by chemical composition, 1959*

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

[Dry basis[1]]

Material	Production	Sales		
		Quantity	Value	Unit value[2]
	1,000 pounds	*1,000 pounds*	*1,000 dollars*	*Per pound*
Grand total	5,864,887	5,170,402	1,640,055	$0.32
PLASTICS AND RESIN MATERIALS, BENZENOID				
Total	2,646,178	2,200,013	605,881	.28
Materials for which separate statistics may not be shown[3]	11,130	10,741	5,523	.51
Materials for which separate statistics are shown below	2,635,048	2,189,272	600,358	.27
Coumarone-indene and petroleum polymer resins	318,330	299,062	31,322	.10
Epoxy resins:				
Unmodified (condensation products of phenol and derivatives with epoxy compounds)	49,152	43,201	26,647	.62
Modified (with hardening agents and esterified with fatty acids)	7,669	2,032	1,263	.62
Phenolic and other tar-acid resins, total	624,793	554,589	154,244	.28
Unmodified, total	570,041	510,550	141,651	.28
Cresols-formaldehyde	7,073	4,205	1,533	.36
Cresylic acid-formaldehyde	8,888	2,354	693	.29
Phenol-(and substituted phenol-)formaldehyde	502,219	463,162	126,964	.27
Resorcinol-formaldehyde	4,932	4,606	2,886	.63
All other	46,929	36,223	9,575	.26
Modified, total	54,752	44,039	12,593	.29
Phenol-(and substituted phenol-)formaldehyde with modifiers (except rosin)	25,112	17,750	5,029	.28
Rosin and rosin esters modified with phenolic and other tar-acid resins (hard resins)	24,332	21,363	4,913	.23
All other	5,308	4,926	2,651	.54

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.--*Synthetic organic chemicals: U.S. production and sales of plastics and resin materials, grouped by chemical composition, 1959*--Continued

[Dry basis[1]]

Material	Production	Sales		
		Quantity	Value	Unit value[2]
PLASTICS AND RESIN MATERIALS, BENZENOID--Continued	*1,000 pounds*	*1,000 pounds*	*1,000 dollars*	*Per pound*
Phthalic alkyd resins, total	472,775	211,702	68,947	$0.32
Unmodified	349,222	145,749	44,496	.31
Modified	123,553	65,953	24,051	.36
Polyester resins[4]	180,672	169,544	61,732	.36
Polyurethane and diisocyanate resins	4,720	3,621	1,887	.52
Styrene resins, total	976,937	905,521	254,716	.28
Polystyrene	626,630	603,497	144,685	.24
Styrene-acrylonitrile copolymer	32,178	30,750	10,909	.35
Styrene-alkyd polyesters (for protective coatings only)	25,148	19,449	8,410	.43
Styrene-butadiene copolymer (containing 50% or more styrene), total	224,126	186,990	65,746	.35
Latexes	130,485	118,775	33,800	.28
Other	93,641	68,215	31,946	.47
Styrene-divinylbenzene copolymer	21,347	20,619	12,759	.62
All other styrene resins	47,508	44,216	12,207	.28
PLASTICS AND RESIN MATERIALS, NONBENZENOID				
Total	3,218,709	2,970,389	1,034,174	.35
Materials for which separate statistics may not be shown[5]	229,814	196,036	142,903	.73
Materials for which separate statistics are shown below	2,988,895	2,774,353	891,271	.32
Alkyd resins, except phthalic, total	87,186	66,639	21,617	.32
Unmodified	34,369	28,926	11,978	.41
Modified, total	52,817	37,713	9,639	.26
Rosin and rosin esters, modified with maleic and fumaric acids only (hard resins)	41,687	31,748	7,264	.23
All other	11,130	5,965	2,375	.40
Polyamide (Nylon) resins	38,105	29,592	31,987	1.08
Polyethylene resins, total	1,194,987	1,116,248	354,873	.32
High-pressure process	1,079,580	1,017,280	322,605	.32
Low-pressure process	115,407	98,968	32,268	.33
Rosin modifications, total	73,523	69,077	14,137	.20
Rosin and terpene adduct resins	8,132	7,268	2,432	.33
Rosin and rosin esters, unmodified (ester gums), total	60,478	57,879	10,952	.19
Esterified with glycerol	26,286	25,071	4,967	.20
Esterified with other alcohols (methanol, glycols, pentaerythritol, etc.)	34,192	32,808	5,985	.18
All other rosin modifications	4,913	3,930	753	.19
Silicone resins	5,027	4,302	12,784	2.97
Urea and melamine resins, total	423,602	386,897	115,680	.30
Melamine-formaldehyde type	143,122	127,475	56,407	.44
Urea-formaldehyde type	280,480	259,422	59,273	.23
Vinyl and vinyl copolymer resins (resin content), total	1,166,465	1,101,598	340,193	.31
Polyvinyl acetate	139,363	125,106	42,996	.34
Polyvinyl chloride and copolymer resins (containing 50% or more polyvinyl chloride)	905,323	875,528	219,214	.25
All other vinyl resins[6]	121,779	100,964	77,983	.77

[1] "Dry basis," for the purpose of this report, 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.
[2] Calculated from rounded figures.

Footnotes continued on p. 40.

Footnotes for table 154--Continued

[3] Includes data for aniline-formaldehyde, toluenesulfonamide, and other benzenoid plastics and resin materials not specifically classified.
[4] Polyester resins, for the purpose of this report, include unsaturated alkyds copolymerized with monomers such as styrene, and polyallyl resins such as diallyl phthalate or allyl diglycol carbonate. Styrene-alkyd polyesters for protective coatings are included under "Styrene resins".
[5] Includes data for acrylic and other nonbenzenoid plastics and resin materials.
[6] Includes data for polyvinyl alcohol, butyral, and formal, and for copolymers containing less than 50% polyvinyl chloride.

TABLE 16. --*Synthetic organic chemicals: U.S. production and sales of plastics and resin materials, grouped by classes and uses, 1959*

[In thousands of pounds, dry basis[1]]

Material	Production	Sales
Cellulose plastics, total	158,088	151,993
Cellulose acetate and mixed esters:		
Sheets, continuous, under 0.003 gage	19,482	19,025
Sheets, continuous, 0.003 gage and over	22,581	20,630
All other sheets, rods, and tubes (including other cellulose plastics)	9,052	9,906
Molding and extrusion materials (including other cellulose plastics)	103,993	100,463
Nitrocellulose sheets, rods, and tubes	2,980	1,969
Phenolic and other tar-acid resins, total	624,793	554,589
Molding materials	229,022	213,462
Bonding and adhesive resins for--		
Laminating	75,597	51,137
Coated and bonded abrasives	16,208	14,416
Friction materials	16,872	14,824
Thermal insulation	51,716	51,572
Plywood	61,455	50,099
All other bonding and adhesive uses	63,415	62,043
Protective coatings:		
Unmodified	25,251	20,777
Modified, except by rosin	4,786	2,110
Rosin esters modified by phenolic and other tar-acid resins (hard resins)	29,112	26,056
Resins for all other uses	51,359	48,093
Urea and melamine resins, total	423,602	386,897
Textile-treating and textile-coating resins	46,094	39,881
Paper-treating and paper-coating resins	30,381	27,702
Bonding and adhesive resins for--		
Laminating	36,382	29,651
Plywood	106,468	104,290
All other bonding and adhesive uses	27,663	23,365
Protective-coating resins, straight and modified	38,566	26,965
Resins for all other uses, including molding	138,048	135,043
Styrene resins, total	976,937	905,521
Molding materials:		
Straight polystyrene	319,200	285,677
All other	348,589	310,246
Protective-coating resins, straight and modified[2]	81,642	71,050
Textile and paper treating and coating resins	63,155	48,011
Resins for all other uses	164,351	190,537
Vinyl and vinyl copolymer resins (resin content), total	1,166,465	1,101,598
Polyvinyl chloride and copolymer resins (containing 50% or more polyvinyl chloride) for--		
Film (under 0.010 gage)	...	88,904
Sheeting (0.010 gage and over)	...	130,178
Molding and extrusion	...	305,947
Textile and paper treating and coating	...	68,449
Flooring	...	153,007
Protective coatings	...	31,367
All other uses	...	96,506
All other vinyl resins for--		
Adhesives	...	59,495
Protective coatings	...	25,275
All other uses	...	142,470

See footnotes at end of table.

TABLE 16.--*Synthetic organic chemicals: U.S. production and sales of plastics and resin materials, grouped by classes and uses, 1959*--Continued

[In thousands of pounds, dry basis[1]]

Material	Production	Sales
Alkyd resins, total	559,961	278,341
For protective coatings:		
Phthalic anhydride types:		
Unmodified	348,121	144,833
Modified	120,630	63,742
Polybasic acid types:		
Unmodified	15,224	10,101
Modified (except by rosin)	10,933	5,862
Rosin esters modified with maleic and fumaric acids only (hard resins)	40,099	29,973
For all other uses	24,954	23,830
Rosin esters:		
Unmodified (ester gums) for protective coatings	25,653	23,847
All other modifications for protective coatings and other uses	47,870	45,230
Coumarone-indene and petroleum polymer resins	318,330	299,062
Polyester resins, total	180,672	169,544
For reinforced plastics	129,472	123,297
For all other uses	51,200	46,247
Polyethylene resins, total	1,194,987	1,116,248
For film and sheeting	...	344,353
Molding materials	...	216,479
Extrusion materials	...	155,049
For all other uses	...	400,367
Epoxy resins, total	56,821	45,233
For protective coatings	...	20,672
For all other uses	...	24,561
Miscellaneous plastics and resin materials[3]	257,159	242,660

[1] "Dry basis," for the purpose of this report, 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.

[2] Includes data for styrene-alkyd polyester resins.

[3] Includes data for acrylic, polyamide, toluenesulfonamide, and other plastics and resin materials.

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. While the group totals are in substantial agreement with those given in table 15A, they are partially estimated, and may not be correlated exactly with those given in that table. The data given in the above table are more nearly complete than those given in the Tariff Commission's release for January 1960, which gave a summation of the data reported by months for 1959. Changes in classification and an increase in coverage on some products result in some differences between the detail figures given in the above table and those given in the January 1960 release.

of all synthetic plastics and resin materials (except cellulosics) amounted to 5,865 million pounds, or 29.8 percent more than the 4,518 million pounds reported for 1958. Sales amounted to 5,170 million pounds, valued at $1,640 million, in 1959, compared with 4,057 million pounds, valued at $1,275 million, in 1958.

Total production of benzenoid plastics and resins was 2,646 million pounds in 1959--25.8 percent more than the 2,103 million pounds reported for 1958. Sales in 1959 amounted to 2,200 million pounds, valued at $606 million. Of the benzenoid group, styrene resins were produced in the largest volume, as in previous years. The output of styrene resins in 1959 was 977 million pounds; sales totaled 906 million pounds, valued at $255 million. Second in volume of output in the benzenoid group in 1959 were the phenolic and other tar-acid resins. Production of these resins in 1959 was 625 million pounds--28.1 percent more than the 488 million pounds reported produced in 1958. Sales amounted to 555 million pounds, valued at $154 million, compared with 440 million pounds, valued at $117 million, in 1958. The phthalic alkyd resins, used principally in the manufacture of protective coatings, were third in volume of production in the benzenoid group; production in 1959 amounted to 473 million pounds. The output of epoxy resins in 1959 was 57 million pounds; that of polyester resins was 181 million pounds.

Production of nonbenzenoid plastics and resins in 1959 amounted to 3,219 million pounds, compared with the 2,415 million pounds reported for 1958. Sales of these resins in 1959 amounted to 2,970 million pounds, valued at $1,034 million, compared with 2,289 million pounds, valued at $806 million, in 1958. Of the nonbenzenoid group, polyethylene resins were produced in the largest volume in 1959, exceeding the output of vinyl resins for the first time. The output of polyethylene

resins amounted to 1,195 million pounds in 1959, compared with 865 million pounds in 1958. Sales of polyethylene resins in 1959 totaled 1,116 million pounds, valued at $355 million, compared with 845 million pounds, valued at $270 million, in 1958. In this report, statistics are given for production and sales of polyethylene resins produced by both the high-pressure and the low-pressure processes. The output of vinyl resins in 1959, which ranked next to that of polyethylene resins, amounted to 1,166 million pounds, compared with 869 million pounds in 1958. Sales of vinyl resins in 1959 totaled 1,102 million pounds, valued at $340 million, compared with 829 million pounds, valued at $266 million, in 1958.

The output of urea and melamine resins in 1959 was 424 million pounds--about 21 percent more than the 349 million pounds produced in 1958. Sales of these resins amounted to 387 million pounds, valued at $116 million, in 1959, compared with 326 million pounds, valued at $97 million, in 1958. Other important resins in the nonbenzenoid group are the acrylic, polyamide, silicone, and nonphthalic alkyd resins.

The statistics shown in table 16 on 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. The largest single use reported for plastics materials in 1959--as in previous years--was for the molding and extrusion of finished and semifinished articles. Other important uses for which statistics are shown are for adhesives, treatment of textiles and paper, protective coatings, and bonding materials.

Production of cellulose plastics as a group amounted to 158 million pounds in 1959--about 12 percent more than in 1958. Sales in 1959 were 152 million pounds, compared with 136 million pounds in 1958.

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 the production and sales of rubber-processing chemicals in 1959 are given in table 17A.[8]

Production of rubber-processing chemicals as a group in 1959 amounted to 210 million pounds, or 24.4 percent more than the 169 million pounds reported for 1958. The larger total output of

TABLE 17A.--*Synthetic organic chemicals: U.S. production and sales of rubber-processing chemicals, 1959*

[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	210,214	159,002	101,878	$0.64
RUBBER-PROCESSING CHEMICALS, CYCLIC				
Total	177,722	134,329	85,815	.64
Accelerators, total	70,862	46,330	28,220	.61
Aldehyde-amines	2,138	1,593	1,365	.86
Dithiocarbamic acid derivatives	263	231	405	1.75
Thiazole derivatives, total	58,789	35,655	19,692	.55
N-Cyclohexyl-2-benzothiazolesulfenamide	6,422	5,748	4,001	.70
2,2'-Dithiobis(benzothiazole)	19,479	11,612	5,744	.49
2-Mercaptobenzothiazole	6,872	4,068	1,692	.42
All other[2]	26,016	14,227	8,255	.58
All other accelerators	9,672	8,851	6,758	.76
Antioxidants, amino and hydroxy compounds, total[3]	58,892	44,110	32,224	.73
Amino compounds, total	41,674	34,434	23,401	.68
N,N'-Diphenyl-p-phenylenediamine	2,861	2,343	2,099	.90
All other	38,813	32,091	21,302	.66

See footnotes at end of table.

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

TABLE 17A.--*Synthetic organic chemicals: U.S. production and sales of rubber-processing chemicals, 1959*--Continued

Chemical	Production	Sales		
		Quantity	Value	Unit value[1]
RUBBER-PROCESSING CHEMICALS, CYCLIC--Continued				
	1,000 pounds	*1,000 pounds*	*1,000 dollars*	*Per pound*
Antioxidants, amino and hydroxy compounds--Continued				
Hydroxy compounds, total	17,218	9,676	8,823	$0.91
Phenol, alkylated	5,977	2,382	1,379	.58
All other	11,241	7,294	7,444	1.02
Peptizers	4,477	4,145	3,600	.87
All other cyclic rubber-processing chemicals[4]	43,491	39,744	21,771	.55
RUBBER-PROCESSING CHEMICALS, ACYCLIC				
Total	32,492	24,673	16,063	.65
Accelerators, total	18,558	11,874	9,811	.83
Dithiocarbamic acid derivatives, total[5]	11,011	6,605	4,973	.75
Dibutyldithiocarbamic acid, zinc salt	1,415	1,182	1,189	1.01
Diethyldithiocarbamic acid, zinc salt	1,552	1,066	959	.90
Dimethyldithiocarbamic acid, potassium salt	388	...	...	...
Dimethyldithiocarbamic acid, sodium salt	3,891	2,525	1,010	.40
Dimethyldithiocarbamic acid, sodium salt and sodium polysulfide	...	919	329	.36
All other	3,765	913	1,486	1.63
Thiurams, total[6]	7,276	5,164	4,758	.92
Bis(dimethylthiocarbamoyl)disulfide	5,538	3,640	3,120	.86
All other	1,738	1,524	1,638	1.07
All other accelerators	271	105	80	.76
Blowing agents	394	339	565	1.67
Peptizers, modifiers, and conditioning and lubricating agents, total	13,540	12,460	5,687	.46
Dodecyl mercaptans	10,148	9,262	4,448	.48
All other	3,392	3,198	1,239	.39

[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, inhibitors, modifiers, stabilizers, blowing agents, and tackifiers.
[5] Data on dithiocarbamates included in this table are for material used chiefly in the processing of natural and synthetic rubbers. Data on dithiocarbamates which are used as fungicides are reported in the section "Pesticides and Other Organic Agricultural Chemicals."
[6] Includes data for small amounts of tetramethylthiuram sulfides for uses other than in the processing of natural and synthetic rubbers.

rubber-processing chemicals in 1959 is attributable principally to increased production of cyclic accelerators and antioxidants. Sales of rubber-processing chemicals in 1959 amounted to 159 million pounds, valued at $102 million, compared with 123 million pounds, valued at $80 million, in 1958.

The output of cyclic rubber-processing chemicals in 1959 amounted to 178 million pounds, or 23.2 percent more than the 144 million pounds reported for 1958. Sales were 134 million pounds, valued at $86 million, in 1959, compared with 103 million pounds, valued at $67 million, in 1958. Of the total output of cyclic rubber-processing chemicals in 1959, accelerators accounted for 39.9 percent and antioxidants for 33.1 percent. Production of antioxidants, which amounted to 58.9 million pounds in 1959, included 41.7 million pounds of amino compounds and 17.2 million pounds of hydroxy compounds. In 1958 the output of amino antioxidants amounted to 32.6 million pounds and that of hydroxy antioxidants, to 11.9 million pounds. Sales of amino antioxidants in 1959 were 34.4 million pounds, valued at $23.4 million; sales of hydroxy antioxidants were 9.7 million pounds, valued at $8.8 million.

Production of acyclic rubber-processing chemicals in 1959 amounted to 32.5 million pounds, compared with the 24.7 million pounds reported for 1958. Sales in 1959 totaled 24.7 million pounds, valued at $16.1 million, compared with 19.5 million pounds, valued at $12.6 million, in 1958. Accelerators, principally dithiocarbamic acid derivatives and tetramethylthiuram sulfides, accounted for about 57.1 percent of the output of acyclic rubber-processing chemicals in 1959. Peptizers and modifiers--chiefly dodecyl mercaptans, together with lubricating and conditioning agents--accounted for approximately 41.7 percent of the output in the acyclic group.

Elastomers (Synthetic Rubbers)

The synthetic rubber industry in the United States developed largely as the result of shortages of natural rubber during World War II. During the war several types of elastomers were developed and produced on a large scale. The most important of these was the styrene-butadiene copolymer, or S-type elastomer, a general-purpose material used in the manufacture of automobile tires and other rubber goods. Other types of elastomers, which are more specialized as to uses, include the nitrile type, or N-type; neoprene; polyalkalene sulfide; and silicone elastomers.

The total output of all types of elastomers in 1959 amounted to 2,825 million pounds--representing an increase of 28.3 percent over the 2,202 million pounds reported for 1958. Sales of all types of elastomers in 1959 amounted to 2,601 million pounds, valued at $693 million, compared with 2,008 million pounds, valued at $544 million, in 1958. Statistics on the production and sales of elastomers are given in table 18A.[9]

Production in 1959 of cyclic elastomers, which consisted principally of the polybutadiene-styrene type, or S-type, amounted to 2,213 million pounds, compared with 1,753 million pounds

TABLE 18A.--*Synthetic organic chemicals: U.S. production and sales of elastomers (synthetic rubbers), 1959*[1]

[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	2,825,339	2,600,629	693,139	$0.27
ELASTOMERS, CYCLIC				
Total	2,212,757	2,006,179	463,117	.23
Polybutadiene-styrene type (S-type)	2,210,380	2,004,000	460,836	.23
Polyurethane type	2,377	2,179	2,281	1.05
ELASTOMERS, ACYCLIC				
Total	612,582	594,450	230,022	.39
Polybutadiene-acrylonitrile type (N-type)	96,699	79,494	38,618	.49
Polychloroprene type (Neoprene)	279,586	...	...	...
Polyisobutylene-isoprene type (Butyl)	181,458	...	...	...
Silicone elastomers	5,215	4,828	19,008	3.94
All other acyclic elastomers[4]	49,624	510,128	172,396	.34

[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, return with force to approximately their original length.

[2] Calculated from rounded figures.

[3] Elastomer-content basis.

[4] Includes data for the production and sales of polyalkalene sulfide, polybutadiene, and polyisobutylene elastomers; for natural rubber modifications; and for sales of neoprene and butyl elastomers.

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

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

in 1958. Sales of cyclic elastomers in 1959 were 2,006 million pounds, valued at $463 million, compared with 1,554 million pounds, valued at $362 million, in 1958. Production of polyurethane-type elastomers, shown separately for the first time in this report, amounted to 2.4 million pounds in 1959.

The output in 1959 of acyclic elastomers, which consisted of the special-purpose types mentioned above, amounted to 613 million pounds, about 36 percent more than the 449 million pounds produced in 1958. Sales of acyclic elastomers in 1959 were 594 million pounds, valued at $230 million, compared with 454 million pounds, valued at $182 million, in 1958. Production of silicone elastomers, shown separately for the first time in this report, amounted to 5.2 million pounds in 1959.

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]

TABLE 19A. --*Synthetic organic chemicals: U.S. production and sales of plasticizers, 1959*

[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	538,834	476,429	142,071	$0.30
PLASTICIZERS, CYCLIC				
Total	403,114	361,742	98,306	.27
Chemicals for which separate statistics may not be shown[2]	46,372	45,568	15,320	.34
Chemicals for which separate statistics are shown below	356,742	316,174	82,986	.26
Phosphoric acid esters:				
Cresyl diphenyl phosphate[3]	10,525	9,509	2,644	.28
Tricresyl phosphate[3]	31,375	30,790	9,361	.30
Triphenyl phosphate	8,427	...	...	...
Phthalic anhydride esters, total	306,415	275,875	70,981	.26
Dibutyl phthalate	15,130	11,652	3,143	.27
Dicyclohexyl phthalate	6,683	3,461	1,449	.42
Didecanoyl phthalate (Dicapryl phthalate)	...	9,604	2,399	.25
Diethyl phthalate	16,128	10,615	2,492	.23
Diisodecyl phthalate	28,777	26,126	6,718	.26
Di(2-methoxyethyl) phthalate	2,991	2,805	960	.34
Dimethyl phthalate	3,318	3,582	850	.24
Dioctyl phthalates, total	152,702	132,215	32,757	.25
Di(2-ethylhexyl) phthalate	106,575	88,703	22,069	.25
Diiso-octyl and mixed octyl phthalates	46,127	43,512	10,688	.25
Octyl decyl phthalates, total	20,466	21,015	5,332	.25
Iso-octyl isodecyl phthalate	4,722	5,783	1,368	.24
n-Octyl n-decyl phthalate	10,291	10,136	2,705	.27
All other	5,453	5,096	1,259	.25
All other phthalic anhydride esters	60,220	54,800	14,881	.27
PLASTICIZERS, ACYCLIC				
Total	135,720	114,687	43,765	.38
Chemicals for which separate statistics may not be shown[4]	67,284	61,037	22,411	.37
Chemicals for which separate statistics are shown below	68,436	53,650	21,354	.40
Adipic acid esters, total	14,035	11,274	4,736	.42
Di(2-ethylhexyl) adipate	1,850	1,826	724	.40

See footnotes at end of table.

TABLE 19A.--*Synthetic organic chemicals: U.S. production and sales of plasticizers, 1959*--Continued

Chemical	Production	Sales		
		Quantity	Value	Unit value[1]
PLASTICIZERS, ACYCLIC--Continued				
	1,000 pounds	*1,000 pounds*	*1,000 dollars*	*Per pound*
Adipic acid esters--Continued				
Diisodecyl adipate	2,989	3,055	1,209	$0.40
Dioctyl adipate	3,561	1,952	742	.38
Octyl decyl adipate	1,770	1,506	569	.38
Complex adipic acid polyesters	3,068	2,310	1,181	.51
All other	797	625	311	.50
Azelaic acid esters, total	8,078	6,744	3,060	.45
Di(2-ethylhexyl) azelate	7,091	6,539	2,954	.45
All other	987	205	106	.52
Glycerol monoricinoleate	430	436	152	.35
Oleic acid esters, total	7,309	5,018	1,402	.28
Butyl oleate	2,101	686	154	.22
Methyl oleate	948	...	...	...
All other	4,260	4,332	1,248	.29
Palmitic acid esters	2,904	889	232	.26
Phosphoric acid esters	8,231	7,206	2,987	.41
Sebacic acid esters, total	9,969	6,593	3,908	.59
Dibutyl sebacate	3,993	1,251	807	.64
All other	5,976	5,342	3,101	.58
Stearic acid esters, total	14,792	12,949	3,966	.31
n-Butyl stearate	4,118	3,444	810	.24
All other	10,674	9,505	3,156	.33
Triethylene glycol di(caprylate-caprate)	2,688	2,541	911	.36

[1]Calculated from rounded figures.
[2]Includes data for synthetic camphor, toluenesulfonamides, tetrahydrofurfuryl oleate, and other cyclic plasticizers.
[3]Includes material produced for use as motor-fuel additive.
[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, complex polymeric materials, epoxydized soya oil, and other acyclic plasticizers.

The total domestic output of all types of plasticizers in 1959 amounted to 539 million pounds--an all-time high--compared with the 418 million pounds produced in 1958. Part of the larger production in 1959 is accounted for by the output of companies that did not report in 1958. Sales of plasticizers in 1959 amounted to 477 million pounds, valued at $142 million, compared with 356 million pounds, valued at $111 million, in 1958.

Production of cyclic plasticizers in 1959 amounted to 403 million pounds, compared with the 312 million pounds reported for 1958; a part of the larger output in 1959 is accounted for by more complete statistical coverage. Sales of cyclic plasticizers in 1959 were 362 million pounds, valued at $98 million, compared with 265 million pounds, valued at $76 million, in 1958. The principal types of plasticizers included in the cyclic group are the esters of phthalic anhydride and phosphoric acid, and certain complex polymeric-type materials.

The output of acyclic plasticizers in 1959 amounted to 136 million pounds, compared with 106 million pounds in 1958. Sales of acyclic plasticizers in 1959 were 115 million pounds, valued at $44 million, compared with 91 million pounds, valued at $35 million, in 1958. The most important products included in this class are the esters of adipic, azelaic, oleic, phosphoric, 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. Soap, waxes, and plasticizers are not included. The data are reported in terms of 100-percent active material, and thus exclude all inorganic salts, water, and diluents. Active material is defined as the organic ingredient that provides the primary surface-active properties. For example, sodium alkyl aryl sulfonate activity is based on the content of the sodium salt, and potassium alkyl aryl sulfonate activity, on the content of the potassium salt.

Originally developed as soap substitutes for the textile industry, surface-active agents have proved valuable in many other applications because of their varied and specific properties. About 60 percent of the total output of surface-active agents is now consumed in the form of packaged household and industrial detergents. The remainder of the surface-active agents, used as wetting, dispersing, penetrating, and emulsifying agents, find many applications in the processing of textiles and leather, in ore flotation and in oil-drilling operations, and in the manufacture of paints, agricultural sprays, lubricants, cosmetics, foods, and many other products.

Statistics on production and sales of surface-active agents in 1959 are given in table 20A.[11] Production of surface-active agents as a group totaled 1,504 million pounds in 1959, or 11.0 percent more than the 1,355 million pounds reported for 1958. Sales were 1,372 million pounds, valued at $271 million, in 1959, compared with 1,202 million pounds, valued at $235 million, in 1958.

In 1959 the production of anionic surface-active agents (sulfated and sulfonated cyclic and acyclic compounds, phosphorus-containing acyclic compounds, acyclic salts of fatty acids, and certain acyclic nonsulfonated nitrogen-containing compounds) amounted to 1,068 million pounds--71.0 percent of the total output of surface-active agents in 1959, and 89 million pounds more than the output reported for 1958. Sales in 1959 totaled 1,024 million pounds, valued at $167 million, compared with 901 million pounds, valued at $148 million, in 1958. In volume of production in 1959, the principal items in the anionic group were the alkyl benzenoid type of surface-active agents (531 million pounds) and the sulfated and sulfonated acids, alcohols, and esters (203 million pounds).

TABLE 20A.--*Synthetic organic chemicals: U.S. production and sales of surface-active agents, 1959*[1]

[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	Sales		
		Quantity	Value	Unit value[2]
	1,000 pounds	*1,000 pounds*	*1,000 dollars*	*Per pound*
Grand total	1,504,059	1,372,177	271,122	$0.20
Amphoteric and cationic	36,075	34,193	17,777	.52
Anionic	1,067,560	1,023,747	166,726	.16
Nonionic	400,424	314,237	86,619	.28
SURFACE-ACTIVE AGENTS, CYCLIC				
Total	936,063	895,229	139,348	.16
Esters and ethers, nonsulfonated (nonionic), total[3]	128,682	110,189	28,231	.26
Monylphenoxy polyethoxyethanol	71,967	58,669	13,056	.22
All other	56,715	51,520	15,175	.29
Nitrogen-containing surface-active agents, nonsulfonated (cationic and amphoteric), total[4]	11,289	10,899	6,809	.62
Benzyldodecyldimethylammonium chloride	2,197	2,135	1,624	.76
All other	9,092	8,764	5,185	.59
Sulfated and sulfonated cyclic surface-active agents (anionic), total	796,092	774,141	104,308	.13
Alkyl benzenoid compounds, sulfated and sulfonated, total	531,239	526,784	84,329	.16
Decylbenzenesulfonic acid	1,825	1,854	448	.24
Dodecylbenzenesulfonic acid	54,486	51,075	11,951	.23
Dodecylbenzenesulfonic acid, calcium salt	2,272	...	...	...
Dodecylbenzenesulfonic acid, isopropylammonium salt	2,372	2,173	694	.32
Dodecylbenzenesulfonic acid, sodium salt[5]	462,120	461,905	68,087	.15
Dodecylbenzenesulfonic acid, triethanolamine salt	2,354	2,268	685	.30
All other	5,810	7,509	2,464	.33

See footnotes at end of table.

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

TABLE 20A.--*Synthetic organic chemicals: U.S. production and sales of surface-active agents, 1959*[1]--Continued

Chemical	Production	Sales		
		Quantity	Value	Unit value[2]
SURFACE-ACTIVE AGENTS, CYCLIC--Continued				
Sulfated and sulfonated cyclic surface-active agents (anionic)--Continued	*1,000 pounds*	*1,000 pounds*	*1,000 dollars*	*Per pound*
Lignin derivatives, sulfonated, total	206,543	195,558	9,409	$.05
Lignosulfonic acid, calcium salt	173,637	163,206	7,384	.05
All other	32,906	32,352	2,025	.06
Naphthalene derivatives, sulfonated, total	4,435	3,497	1,467	.42
Butylnaphthalenesulfonic acid, mono and di-	1,524	1,250	653	.52
Di-isopropylnaphthalenesulfonic acid	425	339	128	.38
Isopropylnaphthalenesulfonic acid, mono-	457	307	149	.49
All other	2,029	1,601	537	.34
All other sulfated and sulfonated surface-active agents, total[6]	53,875	48,302	9,103	.19
Petroleum sulfonate, water-soluble type, sodium salt[7]	1,106	...	...	...
Toluene sulfonic acid, sodium salt	8,989	8,995	891	.10
Xylene sulfonic acid, sodium salt	16,248	15,900	1,519	.10
All other	27,532	23,407	6,693	.29
SURFACE-ACTIVE AGENTS, ACYCLIC				
Total	567,996	476,948	131,774	.28
Esters and ethers, nonsulfonated (nonionic), total[8]	188,326	125,218	33,235	.26
Diethylene glycol monolaurate	687	652	205	.31
Diethylene glycol mono-oleate	509	160	48	.30
Diethylene glycol monostearate	1,938	1,047	357	.34
Ethylene glycol monostearate	437	434	162	.37
Glycerol mono-oleate	1,271	919	281	.31
Glycerol monostearate	24,589	22,018	5,421	.25
Methoxypolyethoxyethyl coconut oil ester	72	72	30	.42
Polyethoxyethyl castor oil ether	1,978	...	...	...
Polyethoxyethyl laurate	472	380	147	.39
Polyethoxyethyl dioleate	1,117	498	180	.36
Polyethoxyethyl distearate	392	390	147	.38
Polyethoxyethyl monolaurate	2,353	1,951	841	.43
Polyethoxyethyl mono-oleate	2,755	1,655	657	.40
Polyethoxyethyl monostearate	3,229	2,561	1,025	.40
Polyethoxyethyl oleyl ether	1,749	1,736	1,001	.58
Polyethoxyethyl tridecyl ether	6,244	6,009	1,763	.29
1,2-Propanediol monolaurate	314	315	135	.43
1,2-Propanediol monostearate	1,662	1,670	569	.34
All other	136,558	82,601	20,266	.25
Nitrogen-containing surface-active agents, nonsulfonated (amphoteric, anionic, cationic, and nonionic), total	111,457	105,338	42,158	.40
N-(Aminoethyl)-N-(hydroxyethyl)octadecanamide (Stearamide of aminoethylethanolamine	2,087	2,439	1,439	.71
N-(Aminoethyl)-N-(hydroxyethyl)oleamide	...	283	79	.27
N,N-Bis(2-hydroxyethyl)dodecanamide	4,009	3,346	1,582	.47
N,N-Bis(2-hydroxyethyl)octadecanamide	1,260	1,056	411	.39
N,N-Bis(2-hydroxyethyl)oleamide	722	717	271	.38
Coconut oil amide of bis-diethanolamine	5,845	4,918	1,677	.34
Coconut oil amide of mono(diethanolamine)	16,363	16,233	6,204	.38
Coconut oil amide of diethanolamine, neither bis nor mono	4,597	4,413	1,315	.30
Triethanolamine oleate	154	137	49	.36
All other[9]	76,420	73,004	29,431	.40
Phosphorus-containing surface-active agents, nonsulfonated (anionic)	1,976	1,489	645	.43
Salts of fatty acids, nonsulfonated (anionic), total	12,761	12,605	2,562	.20
Coconut oil, potassium salt	65	56	22	.39
Potassium oleate	457	345	53	.15
Potassium tallate	3,637	3,611	652	.18

See footnotes at end of table.

TABLE 20A. -- *Synthetic organic chemicals: U.S. production and sales of surface-active agents, 1959*[1] --Continued

Chemical	Production	Sales		
		Quantity	Value	Unit value[2]
SURFACE-ACTIVE AGENTS, ACYCLIC--Continued				
	1,000 pounds	*1,000 pounds*	*1,000 dollars*	*Per pound*
Salts of fatty acids, nonsulfonated (anionic)--Continued				
Sodium stearate	1,683	1,688	834	$0.49
Tallow, sodium salt	2,977	2,971	324	.11
All other	3,942	3,934	677	.17
Sulfated and sulfonated acyclic surface-active agents (anionic), total	253,476	232,298	53,174	.23
Acids, alcohols, and esters, sulfated and sulfonated, total	203,384	196,165	43,098	.22
Oleic acid, sulfonated (Sulfonated red oil)	3,305	1,784	729	.41
Decyl sulfate	37	37	35	.95
Di(2-ethylhexyl) sulfosuccinate	2,210	2,051	1,110	.54
Dodecyl sulfate, ammonium salt	537	520	271	.52
Dodecyl sulfate, diethanolamine salt	779	605	477	.79
Dodecyl sulfate, sodium salt	16,291	11,557	6,152	.53
Dodecyl sulfate, triethanolamine salt	4,780	4,537	1,274	.28
Isopropyl sulfo-oleate	949	880	287	.33
n-Propyl sulfo-oleate	1,299	968	226	.23
All other	173,197	173,226	32,537	.19
Nitrogen-containing surface-active agents, sulfated and sulfonated, total	9,803	10,717	4,704	.44
Coconut oil amide of monoethanolamine, sulfated, potassium salt	116	111	89	.80
N-Methyl-N-oleoyltaurine	3,001	...	...	...
All other	6,686	10,606	4,615	.44
Oils, fats, and waxes, sulfated and sulfonated, total	40,289	25,416	5,372	.21
Animal fats and oils, sulfated and sulfonated:				
Neat's-foot oil, sulfonated	1,363	832	141	.17
Tallow, sulfonated	8,776	6,876	858	.12
Fish and marine-animal oils, sulfated and sulfonated:				
Cod oil, sulfonated	2,657	1,842	248	.13
Sperm oil, sulfonated	5,448	2,600	492	.19
Tall oil, sulfonated	355	329	94	.29
Vegetable oils, sulfated and sulfonated:				
Castor oil, sulfonated	8,606	4,257	1,135	27
Coconut oil, sulfonated	744	400	107	.27
Peanut oil, sulfonated	1,543	1,481	353	.24
Rice-bran oil, sulfonated	488	105	27	.26
Soybean oil, sulfonated	224	203	76	.37
All other oils, fats, and waxes, sulfated and sulfonated[10]	10,085	6,491	1,841	.28

[1] Data are given in terms of bulk surface-active agents, that is, in terms of 100-percent content of surface-active agents, exclusive of all inorganic salts, water, or other ingredients.
[2] Calculated from rounded figures.
[3] Includes polyhydric alcohol and phenyl ethers and esters.
[4] Includes quaternary ammonium compounds.
[5] Includes tridecylbenzenesulfonic acid, sodium salt.
[6] Includes sulfated and sulfonated phenyl ethers and substituted biphenyls.
[7] Oil-soluble-type petroleum sulfonates used chiefly as lubricating-oil additives were transferred to miscellaneous cyclic chemicals in 1956.
[8] Includes certain lauric, oleic, and stearic acid esters reported as plasticizers prior to 1953.
[9] Includes amine salts of fatty acids, esters of hydroxyamines, fatty acid amines, quaternary ammonium compounds, salts of nitrilo acids, and fatty acid derivatives of guanidine, glycine, polypeptides, and others.
[10] Includes sodium salt of aliphatic petroleum sulfonate, and sulfonated animal, fish, and vegetable oils.

Production of amphoteric and cationic surface-active agents (all cyclic and certain acyclic nonsulfonated nitrogen-containing compounds) in 1959 was 36 million pounds; sales totaled 34 million pounds, valued at $18 million.

In 1959 the output of all esters and ethers and those acyclic nonsulfonated nitrogen-containing compounds generally considered to be nonionic materials totaled 400 million pounds. Sales in 1959 totaled 314 million pounds, valued at $87 million.

Pesticides and Other Organic Agricultural Chemicals

Pesticides (fungicides, herbicides, insecticides, and rodenticides) and other organic agricultural chemicals, such as plant hormones, seed disinfectants, soil conditioners, and soil fumigants, are covered in this section of the report. 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 1959 are given in table 21A.[12]

In 1959, production of all pesticides and other organic agricultural chemicals amounted to 585 million pounds, or 8.5 percent more than the 539 million pounds reported for 1958. Sales amounted to 503 million pounds, valued at $225 million, in 1959, compared with 467 million pounds, valued at $196 million, in 1958.

TABLE 21A.--*Synthetic organic chemicals: U.S. production and sales of pesticides and other organic agricultural chemicals, 1959*

[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	585,446	502,852	225,469	$0.45
PESTICIDES AND OTHER ORGANIC AGRICULTURAL CHEMICALS, CYCLIC				
Total	468,833	409,580	172,492	.42
Fungicides, total	81,016	69,560	23,294	.33
Mercury fungicides, total	765	654	1,798	2.75
Phenylmercury oleate	407	374	503	1.34
All other	358	280	1,295	4.62
Naphthenic acid, copper salt	1,887	1,788	588	.33
Pentachlorophenol	38,814	30,848	5,198	.17
2,4,5-Trichlorophenol	5,152	...	...	...
All other	34,398	36,270	15,710	.43
Herbicides, total	82,195	46,188	38,672	.84
1-Naphthaleneacetic acid and derivatives	40	40	230	5.75
Phenoxyacetic acid derivatives:				
(2,4-Dichlorophenoxy)acetic acid (2,4-D)	29,282	15,961	5,750	.36
(2,4-Dichlorophenoxy)acetic acid, dimethylamine salt	2,749	2,473	1,401	.57
(2,4-Dichlorophenoxy)acetic acid esters, total	24,672	13,114	6,087	.46
(2,4-Dichlorophenoxy)acetic acid, n-butyl ester	7,895	5,412	2,596	.48
(2,4-Dichlorophenoxy)acetic acid, iso-octyl ester	2,934	1,521	652	.43
(2,4-Dichlorophenoxy)acetic acid, isopropyl ester	5,059	2,826	1,193	.42
All other	8,784	3,355	1,646	.49
(2,4,5-Trichlorophenoxy)acetic acid (2,4,5-T)	5,547	2,290	2,268	.99
(2,4,5-Trichlorophenoxy)acetic acid esters, total	8,033	4,063	4,489	1.10
(2,4,5-Trichlorophenoxy)acetic acid, n-butyl ester	...	106	116	1.09
(2,4,5-Trichlorophenoxy)acetic acid, iso-octyl ester	1,677	1,394	1,489	1.07
All other 2,4,5-T esters	6,356	2,563	2,884	1.13
Phenylmercury acetate	943	865	2,729	3.15
All other	10,929	7,382	15,718	2.13
Insecticides and rodenticides, total	305,622	293,832	110,526	.38
Chlorinated insecticides, total	287,065	275,317	90,241	.33
Hexachlorocyclohexane (Benzene hexachloride) and lindane[2]	27,574	30,036	4,580	.15
1,1,1-Trichloro-2,2-bis(p-chlorophenyl)ethane (DDT)	156,741	148,725	29,627	.20
All other	102,750	96,556	56,034	.58

See footnotes at end of table.

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

TABLE 21A.--*Synthetic organic chemicals: U.S. production and sales of pesticides and other organic agricultural chemicals, 1959*--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*
Insecticides and rodenticides--Continued				
0,0-Dimethyl 0-(p-nitrophenyl)phosphorothioate (Methyl parathion)	5,987	7,814	6,006	$0.77
Parathion (0,0-Diethyl 0-(p-nitrophenyl)phosphorothioate)	9,180	7,924	5,763	.73
All other	3,390	2,777	8,516	3.07
PESTICIDES AND OTHER ORGANIC AGRICULTURAL CHEMICALS, ACYCLIC				
Total	116,613	93,272	52,977	.57
Fungicides and soil fumigants, total	86,231	64,089	28,883	.45
Bromomethane (Methyl bromide)	11,193	11,094	5,027	.45
Dimethyldithiocarbamic acid, zinc salt (Ziram)	757	938	682	.73
Ethylene bis(dithiocarbamic acid), disodium salt (Nabam)	3,350	3,367	1,997	.59
All other	70,931	48,690	21,177	.43
Herbicides, rodenticides, and soil conditioners, total	17,844	15,361	9,099	.59
Methanearsonic acid, disodium salt	444	434	452	1.04
All other	17,400	14,927	8,647	.58
Insecticides	12,538	13,822	14,995	1.08

[1] Calculated from rounded figures.
[2] Production of the gamma isomer content in benzene hexachloride and lindane totaled 5.5 million pounds; sales amounted to 6.6 million pounds.

The output of cyclic pesticides and other cyclic chemicals in this group totaled 469 million pounds in 1959, or 5.4 percent more than the 445 million pounds produced in 1958. Sales were 410 million pounds, valued at $172 million, in 1959, compared with 378 million pounds, valued at $148 million, in 1958.

Production of cyclic insecticides and rodenticides in 1959 was 306 million pounds, or 52.2 percent of the total output of all organic pesticides and 65.2 percent of the total output of cyclic pesticides. Sales in 1959 totaled 294 million pounds, valued at $111 million. The chemical in this subgroup that was produced in the greatest quantity in 1959 was the insecticide DDT, production of which amounted to 157 million pounds, a record high for this chemical.

The output of acyclic pesticides and other acyclic organic agricultural chemicals in 1959 amounted to 117 million pounds, or 23.4 percent more than the 95 million pounds produced in 1958. Sales were 93 million pounds, valued at $53 million, in 1959, compared with 89 million pounds, valued at $48 million, in 1958.

Miscellaneous Synthetic Organic Chemicals

As used in this report, the term "miscellaneous synthetic organic chemicals" refers to such products as halogenated hydrocarbons, paint driers, photographic chemicals, solvents, and tanning materials that are not included in the use groups covered in the other sections of the report. Production of these miscellaneous chemicals as a group totaled 29,958 million pounds in 1959--about 10.6 percent more than the 27,082 million pounds produced in 1958. Sales totaled 13,407 million pounds, valued at $1,959 million, in 1959, compared with 10,867 million pounds, valued at $1,648 million, in 1958. Statistics on production and sales of miscellaneous chemicals in 1959 are given in table 22A.[13]

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

TABLE 22A. -- *Synthetic organic chemicals: U.S. production and sales of miscellaneous chemicals, 1959*

[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	29,957,322	13,406,678	1,958,532	$0.15
MISCELLANEOUS CHEMICALS, CYCLIC				
Total	753,015	452,636	136,211	.30
Chemicals for which separate statistics may not be shown	244,772	124,181	46,146	.37
Chemicals for which separate statistics are shown below	508,243	328,455	90,065	.27
Benzoic acid salts: Sodium benzoate, tech. and U.S.P	5,173	5,100	1,749	.34
Cyclopropane	177	144	2,419	16.80
2,6-Di-tert-butyl-p-cresol, total	13,617	13,018	8,343	.64
Food grade	3,219	3,181	2,142	.67
Tech	10,398	9,837	6,201	.63
Flotation reagents	5,110	3,620	1,193	.33
Gasoline additives, total[2]	8,604	7,379	8,151	1.10
N,N-Di-sec-butyl-p-phenylenediamine	6,006	5,336	5,437	1.02
All other	2,598	2,043	2,714	1.33
Hexamethylenetetramine, tech	27,790	15,132	3,081	.20
Lubricating oil additives, total	377,646	217,859	38,448	.18
Oil-soluble petroleum sulfonate, barium salt	73,781	...	...	...
Oil-soluble petroleum sulfonate, calcium salt	101,518	64,946	9,674	.15
Oil-soluble petroleum sulfonate, sodium salt	94,276	69,036	9,457	.14
All other	108,071	83,877	19,317	.23
Naphthenic acid salts, total[3 4]	17,275	14,880	6,270	.42
Calcium naphthenate	1,544	1,249	598	.48
Cobalt naphthenate	3,213	2,646	1,950	.74
Iron naphthenate	137	134	52	.39
Lead naphthenate	9,405	8,364	2,595	.31
Manganese naphthenate	1,608	1,321	552	.42
Zinc naphthenate	980	813	332	.41
All other	388	353	191	.54
Photographic chemicals, total	5,928	5,444	8,189	1.50
Benzotriazole	...	19	111	5.84
p-Diethylaminobenzenediazonium chloride (p-Diazo-N,N-diethylaniline) - zinc chloride	107	109	281	2.58
All other	5,821	5,316	7,797	1.47
Propyl gallate	87	48	139	2.90
Rosin acid salts, total[3]	800	392	117	.30
Lead resinate	34	25	7	.28
All other	766	367	110	.30
Tall oil salts (Linoleic-rosin acid salts), total[3]	6,338	5,839	2,135	.37
Cobalt tallate	2,350	2,129	1,058	.50
Lead tallate	2,935	2,699	778	.29
Manganese tallate	684	631	197	.31
All other	369	380	102	.27

See footnotes at end of table.

TABLE 22A. --*Synthetic organic chemicals: U.S. production and sales of miscellaneous chemicals, 1959*--Continued

Chemical	Production	Sales		
		Quantity	Value	Unit value[1]
MISCELLANEOUS CHEMICALS, CYCLIC--Continued	*1,000 pounds*	*1,000 pounds*	*1,000 dollars*	*Per pound*
Tanning materials, synthetic, total	37,169	37,083	6,524	$0.18
2-Naphthalenesulfonic acid, formaldehyde condensate and salts	33,426	33,329	5,063	.15
All other	3,743	3,754	1,461	.39
Textile chemicals	2,529	2,517	3,307	1.31
MISCELLANEOUS CHEMICALS, ACYCLIC				
Total	29,204,507	12,954,042	1,822,321	.14
Chemicals for which separate statistics may not be shown	6,537,771	2,288,559	694,062	.30
Chemicals for which separate statistics are shown below	22,666,736	10,665,483	1,128,259	.11
Acetaldehyde	...	57,429	4,804	.08
Acetic acid, synthetic 100%[2]	648,720	138,984	9,455	.09
Acetic acid salts, total	19,386	18,292	3,603	.20
Ammonium acetate	712	...	...	...
Copper acetate	...	75	48	.64
Potassium acetate	804	615	184	.30
Zinc acetate	558	636	140	.31
All other	17,812	16,936	3,181	.19
Acetic anhydride, 100%, from all sources	1,990,677	...	...	...
Acetone, total	736,209	441,744	31,699	.07
From isopropyl alcohol	622,139	341,610	24,872	.07
All other	114,070	100,134	6,827	.07
Acrylic acid	...	595	348	.58
Acrylonitrile	232,253	192,091	49,594	.26
Adipic acid	...	34,105	10,471	.31
Alcohols, monohydric, unsubstituted, total	8,401,[illegible]	2,390,508	203,294	.07
Alcohols C_9 or lower, total	5,[illegible]	2,[illegible]519	184,[illegible]	.07
Butyl alcohols	348,123	236,411	24,856	.13
Ethyl alcohol, synthetic only[3]	1,625,344	448,334	48,442	.06
Iso-octyl alcohols	53,115	53,791	10,139	.29
Isopropyl alcohol	1,126,389	428,092	25,569	.06
Methanol, synthetic only[3]	1,[illegible]59,182	1,831,046	38,020	.04
1- and 2-Octanol	8,109	8,101	4,627	.20
All other	252,952	184,742	32,304	.17
Alcohols C_{10} and higher, total	223,[illegible]72	98,[illegible]36	18,[illegible]38	.22
Decyl alcohols	46,[illegible]44	...	...	...
1-Hexadecanol (Cetyl alcohol)	[illegible]42	[illegible]96	247	.33
All other	176,183	98,[illegible]36	18,[illegible]91	.22
Amines, total	34[illegible],[illegible]86	86,[illegible]60	33,[illegible]86	.39
Butylamine	[illegible]48	[illegible]81	[illegible]41	.93
Coconut oil amine	[illegible]01	590	324	.55
Diethylamine	[illegible],[illegible]72	...	...	...
Dimethylamine	[illegible],[illegible]36	13,[illegible]10	3,614	.27
Hexadecylamine	2[illegible]5	...	...	...
Methylamine, mono-	[illegible],[illegible]25	[illegible],[illegible]72	[illegible],[illegible]27	.22
Tallow amine, hydrogenated	1,236	1,[illegible]58	441	.42
Trimethylamine	6,[illegible]00	[illegible],[illegible]43	383	.23
All other	296,[illegible]84	63,[illegible]83	27,[illegible]20	.43
Amyl acetates, 90%	[illegible],337	[illegible],[illegible]50	1,311	.17
Bis(2-chloroethyl) ether (Dichlorodiethyl ether	12,265	[illegible],820	530	.07
Butyl acetates, 90%, total	92,391	84,[illegible]36	11,328	.13
Normal	[illegible]4,139	[illegible]3,[illegible]40	8,[illegible]56	.14
All other	2[illegible],[illegible]24	2[illegible],[illegible]96	2,[illegible]72	.10

See footnotes at end of table.

TABLE 22A.--*Synthetic organic chemicals: U.S. production and sales of miscellaneous chemicals, 1959*--Continued

Chemical	Production	Sales		
		Quantity	Value	Unit value[1]
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued	*1,000 pounds*	*1,000 pounds*	*1,000 dollars*	*Per pound*
Butyric acid	...	620	166	$0.27
Carbon disulfide	563,138	522,248	26,194	.05
Cellulose esters and ethers, total	762,573	214,462	88,570	.41
Cellulose acetate	538,173	...	...	...
Sodium carboxymethylcellulose, 100%	40,514	39,809	17,784	.45
All other	183,886	174,653	70,786	.41
Chloral (Trichloroacetaldehyde)	55,792	...	...	...
Chloroacetic acid, mono-	42,660	...	...	...
Chloroacetic acid, mono, derivatives: Ethyl chloroacetate	1,164	...	...	...
2-Chloro-N,N-dimethylethylamine (Dimethylaminoethyl chloride) hydrochloride	150	78	127	1.63
Diethylene glycol	93,308	81,543	10,257	.13
Diethyl malonate (Malonic ester)	587	...	...	...
2-Dimethylaminoethanol	722	477	360	.75
Dodecenylsuccinic anhydride	883	...	...	...
Epichlorohydrin	...	25,185	6,909	.27
Ethanolamines, total	124,812	103,433	22,474	.22
2-Aminoethanol (Monoethanolamine)	43,177	37,866	7,873	.21
2,2'-Iminodiethanol (Diethanolamine)	52,178	37,705	8,571	.23
2,2',2''-Nitrilotriethanol (Triethanolamine)	29,457	27,862	6,030	.22
Ethyl acetate, 85%	101,027	85,417	9,954	.12
Ethyl acrylate	...	12,438	4,175	.34
Ethylene glycol	1,214,550	630,227	62,191	.10
Ethylene oxide	1,394,626	135,307	18,079	.13
Ethyl ether, all grades	86,682	77,209	5,653	.07
Ethyl formate	74	94	27	.29
2-Ethylhexanoic (α-Ethylcaproic) acid salts, total	2,600	1,481	1,138	.77
Calcium 2-ethylhexanoate	901	132	84	.64
Cobalt 2-ethylhexanoate	440	304	273	.90
Lead 2-ethylhexanoate	281	194	78	.40
Manganese 2-ethylhexanoate	35	30	16	.53
Zinc 2-ethylhexanoate	143	105	46	.44
All other	800	716	641	.90
Ethyl propionate	24	...	...	...
Fatty acid esters, not included with plasticizers or surface-active agents, total	2,858	2,104	815	.39
Isopropyl myristate	758	675	312	.46
Isopropyl oleate	632	...	...	...
All other	1,468	1,429	503	.35
Formaldehyde, 37% by weight	1,750,218	685,986	22,965	.03
Formic acid, 90%	19,786	17,909	2,590	.14
Formic acid salts	24,596	17,965	858	.05
Fumaric acid	16,258	13,844	3,997	.29
Halogenated hydrocarbons, total	5,062,926	2,418,958	301,975	.12
Carbon tetrachloride	367,847	311,935	25,082	.08
Chlorinated paraffins, total	32,607	30,052	4,002	.13
35%-64% Chlorine	15,791	14,550	1,828	.13
All other	16,816	15,502	2,174	.14
Chlorodifluoromethane	33,906	21,119	14,597	.69
Chloroethane (Ethyl chloride)	550,816	210,418	15,730	.07
Chloroform, total	70,717	48,724	5,553	.11
Tech	69,314	47,819	5,352	.11
U.S.P.	1,403	905	201	.22
Chloromethane (Methyl chloride)	67,067	31,931	3,779	.12

See footnotes at end of table.

TABLE 22A.--*Synthetic organic chemicals: U.S. production and sales of miscellaneous chemicals, 1959*--Continued

Chemical	Production	Sales		
		Quantity	Value	Unit value[1]
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued	*1,000 pounds*	*1,000 pounds*	*1,000 dollars*	*Per pound*
Halogenated hydrocarbons--Continued				
Dichlorodifluoromethane	157,132	151,716	46,830	$0.31
1,2-Dichloroethane (Ethylene dichloride)	1,140,112	354,771	17,423	.05
Dichloromethane (Methylene chloride)	112,740	98,688	10,997	.11
Dichlorotetrafluoroethane	8,198	7,967	4,895	.61
Tetrachloroethylene (Perchloroethylene)	202,992	185,990	19,604	.11
Trichloroethylene	360,223	302,215	34,950	.12
Trichlorofluoromethane	60,421	...	...	...
Vinyl chloride, monomer (Chloroethylene)	977,891	329,360	35,817	.11
All other	920,257	334,072	62,716	.19
Isoascorbic acid	212	...	...	...
Isopropyl acetate	31,300	29,311	3,146	.11
Isopropyl ether	4,171	2,573	165	.06
Lactic acid, 100%, total	5,660	5,435	2,250	.41
Edible	4,398	4,246	1,847	.43
Medicinal and tech	1,262	1,189	403	.34
Lactic acid salts	...	796	236	.30
Linoleic acid salts, total[3]	1,047	555	177	.32
Calcium linoleate	208	206	37	.18
Cobalt linoleate	124	...	...	...
Lead linoleate	22	24	8	.33
All other	693	325	132	.41
Lubricating oil additives, total	182,827	58,716	12,051	.21
Phosphorodithioates (Dithiophosphates)	52,780	...	...	...
Sulfurized sperm oil	14,147	2,104	395	.19
All other	115,900	56,612	11,656	.21
Maleic anhydride	60,607	49,231	12,853	.26
Mercaptoacetic (Thioglycolic) acid derivatives, total	2,528	1,975	1,961	.99
Ammonium mercaptoacetate (Ammonium thioglycolate)	1,780	1,307	1,338	1.02
All other	748	668	623	.93
Methyl acetate	8,869	...	...	...
Oleic acid salts, total[8]	255	250	78	.31
Copper oleate	21	30	10	.33
All other	234	220	68	.31
Oxalic acid	20,443	19,002	3,473	.18
Oxalic acid salts	5,342	5,241	1,260	.24
Palmitic acid salts: Zinc palmitate	375	...	...	...
Pentaerythritol	64,137	52,283	15,382	.29
Pentaerythritol tetranitrate	4,370	2,488	1,895	.76
Phosgene (Carbonyl chloride)	36,752	6,289	1,379	.22
Phosphorus acid esters, not elsewhere specified	7,963	7,388	4,074	.55
Polyacrylic acid salts	1,662	1,502	1,973	1.31
Polyethylene glycol	37,359	32,096	7,726	.24
Propionic acid	28,290	9,034	1,660	.18
Propionic acid salts:				
Calcium propionate	7,641	8,140	2,207	.27
Sodium propionate	4,710	4,928	1,388	.28
Propylene glycol (1,2-Propanediol)	151,510	...	...	...
Propylene oxide	288,359	...	...	...
Sequestering agents, total	19,584	15,338	6,269	.41
(Diethylenetrinitrilo)pentaacetic acid, sodium salt	268	222	85	.38

See footnotes at end of table.

TABLE 22A.--*Synthetic organic chemicals: U.S. production and sales of miscellaneous chemicals, 1959*--Continued

Chemical	Production	Sales		
		Quantity	Value	Unit value[1]
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued	*1,000 pounds*	*1,000 pounds*	*1,000 dollars*	*Per pound*
Sequestering agents--Continued				
(Ethylenedinitrilo)tetraacetic acid (Ethylenediamine-tetraacetic acid)	3,380	1,883	847	$0.45
(Ethylenedinitrilo)tetraacetic acid, monosodium iron salt	444	523	370	.71
(Ethylenedinitrilo)tetraacetic acid, tetrasodium salt	8,851	6,735	2,915	.43
(N-Hydroxyethylethylenedinitrilo)triacetic acid, trisodium salt	4,064	3,895	1,039	.27
All other	2,577	2,080	1,013	.49
Sodium formaldehydesulfoxylate	7,248	6,848	1,304	.19
Sodium methoxide (Sodium methylate)	3,856	...	...	...
Stearic acid salts, total[9]	24,593	23,167	9,075	.39
Aluminum stearates, total	5,910	6,031	2,306	.38
Aluminum distearate	4,474	4,623	1,753	.38
Aluminum stearate, other	1,436	1,408	553	.39
Ammonium stearate	326	348	59	.17
Calcium stearate	6,441	5,462	2,010	.37
Lead stearate	388	305	110	.36
Lithium stearate	158	152	74	.49
Magnesium stearate	877	919	385	.42
Zinc stearate	7,823	7,441	2,908	.39
All other	2,670	2,509	1,223	.49
Triethylene glycol	30,979	27,102	4,639	.17
Urea in compounds or mixtures (100% basis), total[10]	1,261,264	1,153,126	56,392	.05
In feed compounds	...	161,896	8,196	.05
In liquid fertilizer	371,906	325,062	17,079	.05
In solid fertilizer	516,237	502,373	23,386	.05
All other	373,121	163,795	7,731	.05
Vinyl acetate, monomer	243,845	160,123	25,540	.16
Zinc formaldehydesulfoxylate	1,364	1,333	543	.41

[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] In addition, production of natural acetic acid totaled 23,504 thousand pounds.
[6] Statistics on production of ethyl alcohol from natural sources by fermentation are issued by the Alcohol Tax Unit, U.S. Internal Revenue Service.
[7] In addition, production of methanol from natural sources totaled 14,097 thousand pounds.
[8] Statistics exclude production and sales of potassium and sodium oleate. Statistics on these oleates are included in the section "Surface-Active Agents."
[9] Statistics exclude production and sales of potassium and sodium stearates. Statistics on these stearates are included in the section "Surface-Active Agents."
[10] Production of urea in primary solution totaled 1,262,365 thousand pounds.

The output of cyclic miscellaneous chemicals as a group totaled 753 million pounds in 1959--8.3 percent more than the 695 million pounds reported for 1958. Sales totaled 453 million pounds, valued at $136 million, in 1959, compared with 427 million pounds, valued at $128 million, in 1958. On the basis of use, the most important group was the lubricating oil additives, production of which amounted to 378 million pounds in 1959, compared with 387 million pounds in 1958.

In 1959 the output of acyclic miscellaneous chemicals as a group totaled 29,204 million pounds, or 10.7 percent more than the 26,386 million pounds reported for 1958. This miscellaneous group includes chemicals used as acyclic intermediates, solvents, flotation reagents,

aerosol propellants, refrigerants, and for other purposes. Sales of acyclic miscellaneous chemicals totaled 12,954 million pounds, valued at $1,822 million, in 1959, compared with 10,439 million pounds, valued at $1,520 million, in 1958. The large difference between production and sales of acyclic miscellaneous chemicals indicates that a substantial part of the output is consumed at the producing plants in the manufacture of more advanced products.[14]

Production of halogenated hydrocarbons (a group consisting of chlorine, bromine, fluorine, and iodine derivatives of hydrocarbons) totaled 5,063 million pounds in 1959, compared with 4,083 million pounds in 1958. This subgroup includes such chemicals as ethyl chloride, ethylene dichloride, and monomeric vinyl chloride.

Individual chemicals the output of which exceeded 1 billion pounds in 1959 were synthetic methanol (1.8 billion pounds, compared with 1.4 billion pounds in 1958); formaldehyde (1.8 billion pounds, compared with 1.4 billion pounds in 1958); ethyl alcohol (1.6 billion pounds, compared with 1.5 billion pounds); ethylene oxide (1.4 billion pounds, compared with 1.2 billion pounds); urea (1.3 billion pounds, compared with 1.1 billion pounds); ethylene glycol (1.2 billion pounds, compared with 1.1 billion pounds); acetic anhydride and isopropyl alcohol (each 1.1 billion pounds, compared with 1.0 billion pounds); and dichloroethane (1.1 billion pounds, compared with 0.8 billion pounds).

[14] Acyclic miscellaneous chemicals used in the manufacture of more advanced products are acyclic intermediates. Although acyclic intermediates correspond in function to cyclic intermediates, the chemical industry does not commonly recognize any special group of acyclic miscellaneous chemicals as intermediates.

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 1959. The tables include only data on those chemicals for which the volume of production or sales in 1959 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.--*Organic chemicals: Tar crudes for which U.S. production or sales were reported, identified by manufacturer, 1959*

[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.
Light-oil distillates:	
*Benzene, specification and industrial grades	ACP, ACY, COS, KPP, OIL.
*Toluene, specification and other grades	ACP, ACY, COS, KPP, OIL.
*Xylene, all grades	ACP, ACY, KPP.
*Solvent naphtha	ACP, ACY, KPT, NEV, PAI.
All other light-oil distillates	ACP, KPP, NEV, PAI.
*Pyridine: Crude bases and semirefined	ACP, KPT.
*Naphthalene, crude, solidifying at--	
*Less than 74° C	COP, CRT, NEV, PAI.
*74° C. to less than 76° C	KPT, NEV, PAI, REP.
*76° C. to less than 79° C	ACP, ACY, KPT, PRD, RIL, RUR, TAR.
Crude tar-acid oils having a tar-acid content of--	
5% to less than 24%	ACP, ACY, RIL.
24% to 52%	ACP, KPT, NEV, RIL, TAR.
Cresylic acid, crude	ACP, KPT, PRD.
*Creosote oil (Dead oil):	
*Distillate as such	ACP, ACY, CBT, COP, CRT, JEN, KPT, LEW, REP, RIL, RUR, TAR.
*Creosote in coal-tar solution	ACP, HUS, JEN, KPT, RIL, RUR, TAR.
*All other distillate products	ACP, JEN, KPT, LEW, NEV, PAI.
*Tar, road	ACP, JEN, KPT, LEW, OLC, REP, RIL, TAR.
*Tar for other uses:	
Crude	LEW, RIL, TAR.
Refined	ACP, KPT, LEW, REP, RIL, RUR, TAR.
Pitch of tar:	
*Soft and medium (water softening points less than 110° F., and 110° F. to 160° F.).	ACP, COP, JEN, KPT, LEW, REP, RIL, RUR, TAR.
*Hard (water softening point above 160° F.)	ACP, COP, KPT, REP, RIL.
*Pitch-of-tar coke and pitch emulsion	CRT, JEN, KPT, REP, RIL, TAR.

[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 Information Circular No. 7996, *Coke Plants in the United States on December 31, 1959.*

Crude Products From Petroleum and Natural Gas for Chemical Conversion

TABLE 5B. --*Synthetic organic chemicals: Crude products from petroleum and natural gas for chemical conversion for which U.S. production or sales were reported, identified by manufacturer, 1959*

[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]

Product	Manufacturers' identification codes (according to list in table 23)
AROMATICS AND NAPHTHENES	
*Alkyl aromatics, distillates, and solvents	ACC, AMO, CSD, DOW, DUP, ESL, GOC, HUM, JCC, OMC, PET, PLC, SM, SNT, WYN.
*Benzene (except motor grade):	
*Benzene, 1°	APR, ASH, CSD, DLH, ESL, EST, GOC, GRS, HUM, RIC, SNT, SUN, VPT.
*Benzene, 2°	AMO, CO, DOW, EST, SHO, SOC, SOI, UCC, VEL.
*Cresylic acid, crude	ATR, PRD, PRO, RIC, SHO, SOI, UOC.
Cyclopentadiene	SHC.
*Naphthenic acids:	
Acid number less than 150	SUN, TX.
Acid number 150-199	RIC, SM, SOC, SUN.
Acid number 200-224	RIC, SM, SOC.
*Acid number 225-249	ESO, RIC, SHO, SM, SOC.
Sodium carbolate and phenate, crude	ATR, GOC.
*Toluene:	
*Nitration grade, 1°	ASH, CSD, DLH, EST, FG, GOC, GRS, LEN, RIC, SHO, SIN, SNT, SUN, VPT.
*Pure commercial grade, 2°	DOW, HUM, MTC, PRO, SHC, SHO.
Solvent grade	ASH, CO, SOI, UCC.
All other	DLH, EST, HUM, SOC, VEL.
*Xylenes, mixed:	
Aviation grade	CSD, PRO, SOC, VPT.
*Nitration grade, 3° and 5°	ASH, DLH, SIN, SNT.
All other	ACC, AMO, ASH, DLH, EST, GRS, HUM, SHO, SOC, SOI, SUN, VPT.
All other aromatics and naphthenes	ESL, LEN, PLC, SHC, SM.
ALIPHATIC HYDROCARBONS	
*C_1 hydrocarbon: Methane	CCP, NPC, PAN, PLC, SOI.
*C_2 hydrocarbons:	
Acetylene	ACY, DOW, MTC, U.
*Ethane	CCP, ESL, NPC, PAN, PLC, SOI, TX, UCC.
*Ethylene	CCP, DOW, DUP, EKX, ESL, ESO, GOC, HUM, JCC, KPP, MTC, NPC, OMC, PET, PLC, RIC, SHC, SOI, TX, UCC.
C_2 and C_3 hydrocarbons, mixed	ESL, JCC, SM.
*C_3 hydrocarbons:	
*Propane	AMO, ASH, CCP, CSD, DLH, DOW, ESL, EST, JCC, NPC, OMC, PAN, PET, PLC, PLP, PRO, RIC, SHO, SIN, SM, SNT, SOI, UCC.
*Propane-propylene mixture	GOC, PLC, TX.
*Propylene	ACS, CCP, DOW, DUP, EKX, ESL, HUM, JCC, MTC, PET, PLC, SHC, SHO, SIN, SOI, UCC, UOC, WYN.
*C_4 hydrocarbons:	
*1,3-Butadiene, grade for rubbers (elastomers)	CYP, DOW, DUP, ESL, FRS, GGC, HUM, ODB, PET, PLC, PTT, SHC, SOC, TUS, TXB, UCC.
*Butadiene and butylene fractions	ACS, DOW, MTC, PLC, SHO, SIN, SOC.
*n-Butane	CSD, EST, NPC, OMC, PAN, PLC, PLP, PRO, SHO, SM, SNT, SOC, SOI.
1-Butene	PLC, PTT.
2-Butene	PLC, PTT.
*1-Butene and 2-butene mixture	AMO, CCP, ESL, GOC, PRO, PTT, SHO, SOC, TX, TXB.
*Isobutane (2-Methylpropane)	CCP, NPC, OMC, PAN, PLC, SHO, SOI.
*Isobutylene (2-Methylpropene)	CCP, ESL, ESO, HUM, PTT, SIN.
All other	HUM, JCC, NPC, PLC, SOI, UCC.
*C_5 hydrocarbons:	
Isopentane (2-Methylbutane)	CCP, CSD, PLC, SOI.
Isoprene (2-Methyl-1,3-butadiene)	ESL, HUM, SHC, SOI.

TABLE 5B. --*Synthetic organic chemicals: Crude products from petroleum and natural gas for chemical conversion for which U.S. production or sales were reported, identified by manufacturer, 1959*--Continued

Product	Manufacturers' identification codes (according to list in table 23)
ALIPHATIC HYDROCARBONS--Continued	
*C_5 hydrocarbons--Continued	
n-Pentane	PLC.
All other	ACS, HUM, NPC, PAS, PLC, SHC.
C_6 hydrocarbons:	
Diisopropyl (2,3-Dimethylbutane)	PLC.
Hexane	EST, HUM, PLC.
Isohexane	PLC.
Neohexane (2,2-Dimethylbutane)	PLC.
All other	PLC.
C_7 hydrocarbons:	
n-Heptane	EKX, EST, HUM, PLC.
Heptenes	ESL, GOC, HUM.
Isoheptane	PLC.
All other	PLC.
C_8 hydrocarbons:	
*Diisobutylene (Diisobutene)	ATR, PTT, SHC, TX.
n-Octane	HUM, PLC.
2,2,4-Trimethylpentane (Iso-octane)	PLC.
All other	PLC
Hydrocarbons, C_9 and above:	
*1-Dodecene (Tetrapropylene)	ACC, AMO, CO, ESL, GOC, HUM, RIC, SNT, SOC, SUN, TX.
Eicosane	ATR.
*Nonene (Tripropylene)	AMO, ATR, ESL, GOC, HUM, SUN.
*Polybutene	CSD, SOC, SOI.
Triisobutylene	ATR.
All other	ACC, CO, EKX, GOC, KEN, PLC, PRO, PTT, SNT, SOC.
*Hydrocarbon derivatives:	
tert-Butyl mercaptan (2-Methyl-2-propanethiol)	PLC.
Di-tert-butyl disulfide	PLC.
Isopropyl mercaptan	SOC.
Methyl mercaptan (Methanethiol)	ACC, PAS.
tert-Octyl mercaptan	PLC.
All other	ACY, COP, DOW, EKX, MTC, NPC, PAN, PAS, PLC, SOC, SOI, UCC, UOC.

Cyclic Intermediates

TABLE 7B. --*Synthetic organic chemicals: Cyclic intermediates for which U.S. production or sales were reported, identified by manufacturer, 1959*

[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 C 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)
Aceanthra[2,1-a]aceanthrylene-5,13-dione	AHC.
5-Acetamido-2-aminobenzenesulfamic acid	GAF.
4-Acetamido-2-aminobenzenesulfonic acid	TRC.
2-Acetamido-3-chloroanthraquinone	AHC, GAF.
2-[5-Acetamido-6-hydroxy-3-methylphenylazo]-4-nitrophenol	TRC.
*Acetanilide, tech	DOW, EKT, MRK, SW.
Acetic acid, phenyl ester	KF.
Acetoacetanilide	FMP, UCC.
o-Acetoacetanisidide	KPC.
p-Acetoacetophenetidide	KPC.
o-Acetoacetotoluidide	FMP, UCC.
Acetophenone, tech	ACP, UCC.
p-Acetotoluidide	ACY.
21-Acetoxy-4-bromo-17-hydroxy-3,11,20-triketopregnane	x.
21-Acetoxy-17-hydroxy-3,11,20-triketopregnane	x.
N-Acetylanthranilic acid	DUP.
N-Acetylsulfanilyl chloride	ACY, MRK.
Alkyl benzene	ATR.
dl-5-Allyl-6-imino-1-methyl-5-(1-methyl-2-pentynyl)-barbituric acid.	LIL.
Amino-aceanthra[2,1-a]aceanthrylene-5,13-dione	AHC.
3'-Aminoacetanilide	TRC.
*4'-Aminoacetanilide (Acetyl-p-phenylenediamine)	ACF, DUP, EKT, GAF, TRC.
3'-Aminoacetophenone	SDH, TBK.
*5-Amino-2-(p-aminoanilino)benzenesulfonic acid	CMG, DUP, KPC, TRC, VPC.
5(and 8)-Amino-8(and 5)-(p-aminophenylazo)-2-naphthalenesulfonic acid.	TRC.
5-Amino-2-anilinobenzenesulfonic acid	ACF.
*2-(p-Aminoanilino)-5-nitrobenzenesulfonic acid	ACF, CMG, TRC, VPC.
3-Amino-p-anisanilide	PCW.
5-Amino-2-o-anisidinobenzenesulfonic acid	TRC.
*1-Aminoanthraquinone and salt	ACF, ACY, AHC, DUP, GAF, KPC, MAY, TRC, WOC.
*2-Aminoanthraquinone and salt	ACF, ACY, DUP, GAF, TRC.
4-Aminoanthraquinone-1(2H)-acridinone	GAF.
1-Amino-2-anthraquinonecarboxylic acid	DUP.
1-Amino-2-anthraquinonesulfonic acid	GAF.
N-(4-Amino-1-anthraquinonyl)anthranilic acid	GAF.
N-(5-Amino-1-anthraquinonyl)anthranilic acid	DUP.
N-(8-Amino-1-anthraquinonyl)anthranilic acid	DUP.
N-(2-Amino-1-anthraquinonyl)-p-toluenesulfonamide	DUP.
4-Aminoantipyrine	SDW.
*6-Amino-3,4'-azodi(benzenesulfonic acid)	ACF, CMG, KPC, TRC.
8-Aminobenz[a]acridin-7(12H)-one	ACF.
o-Aminobenzamide	MEE.
*1-Amino-4-benzamidoanthraquinone	ACY, DUP, GAF, MAY, TRC.
*1-Amino-5-benzamidoanthraquinone	ACF, AHC, DUP, GAF, TRC.
6-(m-Aminobenzamido)-1-naphthol-3-sulfonic acid	VPC.
*6-(p-Aminobenzamido)-1-naphthol-3-sulfonic acid	ACF, DUP, GAF, KPC, VPC.
*2-Amino-p-benzenedisulfonic acid [SO_3H=1]	ACF, DUP, GAF, TRC, VPC.
o-Aminobenzenesulfonic acid	ACY.
o-Aminobenzenethiol	ACY.
p-Aminobenzoic acid, tech	ACF, DUP, GAF.
p-Aminobenzoic acid, diethylaminoethyl ester	SDW.
2-(m-Aminobenzoyl)-o-acetanisidide	GAF.
5(and 8)-Amino-8(and 5)-bromo-1,6(and 1,7)-anthraquinonedisulfonic acid.	TRC.

TABLE 7B.--*Synthetic organic chemicals: Cyclic intermediates for which U.S. production or sales were reported, identified by manufacturer, 1959*--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
*1-Amino-4-bromo-2-anthraquinonesulfonic acid and sodium salt.	ACF, AHC, DUP, GAF, KPC, TRC.
2-Amino-1-bromo-3-chloroanthraquinone	AHC, KPC.
1-Amino-2-bromo-4-hydroxyanthraquinone	DUP.
1-Amino-4-bromo-2-methylanthraquinone	AHC.
1-Amino-2-bromo-4-(p-toluidino)anthraquinone	AHC, GAF.
*1-Amino-5-chloroanthraquinone	ACF, ACY, AHC, DUP, GAF, MAY, TRC.
1-Amino-5(and 8)-chloroanthraquinone	ACF, ACY.
*1-Amino-8-chloroanthraquinone	ACF, DUP, MAY, TRC.
2-Amino-1-chloroanthraquinone	DUP, GAF.
*2-Amino-3-chloroanthraquinone	AHC, GAF, KPC.
4-Amino-6-chloro-m-benzenedisulfonamide	TRC.
2-Amino-6-chlorobenzothiazole hydrochloride	DUP.
*o-(3-Amino-4-chlorobenzoyl)benzoic acid	AHC, GAF, KPC.
2-Amino-5-chloro-4-ethylbenzenesulfonic acid	ACY.
1-Amino-5-chloro-4-hydroxyanthraquinone	GAF.
2-Amino-4-chlorophenol	GAF, MEE, TRC.
6-Amino-4-chloro-1-phenol-2-sulfonic acid	CMG, DUP, GAF.
*2-Amino-5-chloro-p-toluenesulfonic acid [SO_3H=1]	ACY, HCC, SUC, SW.
6-Amino-4-chloro-m-toluenesulfonic acid [SO_3H=1]	DUP, SW.
*1-Amino-2,4-dibromoanthraquinone	ACF, AHC, DUP, GAF.
*4'-Amino-2',5'-diethoxybenzanilide	ALL, GAF, SDH.
4-Aminodiphenylamine	USR.
5-Amino-6-ethoxy-2-naphthalenesulfonic acid	TRC.
5-Amino-6-ethoxy-2-naphthoic acid	GAF.
p-Amino-N-ethyl-N-1-naphthylbenzamide	GAF.
1-Amino-4-hydroxyanthraquinone	ACF, GAF.
3-Amino-2-hydroxyanthraquinone	ACF, GAF.
5-Amino-8-(p-hydroxyanilino)-2-naphthalenesulfonic acid	DUP.
5(and 8)-Amino-8(and 5)-(p-hydroxyanilino)-2-naphthalenesulfonic acid.	DUP.
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)	ACF, TRC.
1-(2-Amino-5-hydroxy-7-sulfo-6-naphthylazo)-6-nitro-2-naphthol-4-sulfonic acid.	TRC.
6-Amino-5-(2-hydroxy-4-nitrophenylazo)naphthalene-2-sulfonic acid.	TRC.
5-Aminoisophthalic acid	GAF.
5-Aminoisophthalic acid, dimethyl ester	GAF.
2-Amino-n-isopropyl-1-phenyl-4-sulfonamide	TRC.
4-(4-Amino-3-methoxy-6-methylphenylazo)acetanilide	TRC.
5-Amino-6-methoxy-2-naphthalenesulfonic acid	TRC, VPC.
m-(4-Amino-3-methoxyphenylazo)benzeneaulfonic acid	DUP.
m-(4-Amino-3-methoxy-1-phenylazo)benzenesulfonic acid	TRC.
4-(4-Amino-3-methoxyphenyl)-m-toluenesulfonic acid [SO_3H=1]	TRC.
1-Amino-2-methoxy-4-(p-toluenesulfonamido)anthraquinone	GAF.
7-(4-Amino-5-methoxy-o-tolylazo)-1,3-naphthalenedisulfonic acid.	TRC.
4'-Amino-N-methylacetanilide	ACF, GAF.
1-Amino-2-methylanthraquinone	AHC, DUP.
4'-Amino-6'-methyl-m-benzanisidide	GAF.
4-Amino-4'-(3-methyl-5-oxo-2-pyrazolin-1-yl)-2,2'-stilbenedisulfonic acid.	TRC.
3-Amino-5-(3-methyl-5-oxo-2-pyrazolin-1-yl)-p-toluenesulfonic acid.	GAF.
8-Amino-7-methyl-2-phenazinol	DUP.
2-Amino-N-methyl-1-phenyl-4-sulfonamide	TRC.
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-Aminonaphth[2,3-c]acridan-5,8,14-trione	DUP.
4-Aminonaphth[2,3-c]acridan-5,8,14-trione	DUP.
*2-Amino-1,5-naphthalenedisulfonic acid	ACY, SDH, SW, TRC.
3-Amino-1,5-naphthalenedisulfonic acid (Cassella acid)	ACF, DUP, GAF, TRC.
3-Amino-2,7-naphthalenedisulfonic acid	TRC.
4-Amino-1,5-naphthalenedisulfonic acid	ACF, TRC.
4-Amino-1,6-naphthalenedisulfonic acid	ACF, DUP.
4-Amino-1,7-naphthalenedisulfonic acid	TRC.

TABLE 7B.--*Synthetic organic chemicals: Cyclic intermediates for which U.S. production or sales were reported, identified by manufacturer, 1959*--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
*6-Amino-1,3-naphthalenedisulfonic acid (Amino I acid)------	ACF, ACY, BL, DUP, GAF, TRC.
*7-Amino-1,3-naphthalenedisulfonic acid (Amino G acid)------	ACF, DUP, GAF, TRC.
1-Amino-2-naphthalenesulfonic acid (o-Naphthionic acid)----	DUP.
*2-Amino-1-naphthalenesulfonic acid (Tobias acid)----------	ACY, SUC, SW, TRC, x.
4(and 5)-Amino-1-naphthalenesulfonic acid-----------------	ACY.
*5-Amino-1-naphthalenesulfonic acid (Laurent's acid)-------	ACF, DUP, GAF, TRC.
*5-Amino-2-naphthalenesulfonic acid (1,6-Cleve's acid)------	ACF, DUP, GAF, TRC.
*5(and 8)-Amino-2-naphthalenesulfonic acid (Cleve's acid, mixed).	ACF, ALL, DUP, GAF, TRC.
*6-Amino-2-naphthalenesulfonic acid (Broenner's acid)-------	ACF, KLS, SNA, TRC.
6(and 7)-Amino-1-naphthalenesulfonic acid-----------------	TRC.
*8-Amino-1-naphthalenesulfonic acid (Peri acid)------------	ACF, DUP, GAF, TRC.
*8-Amino-2-naphthalenesulfonic acid (1,7-Cleve's acid)------	ACF, DUP, GAF, TRC.
7-Amino-1,3,6-naphthalenetrisulfonic acid-----------------	DUP.
8-Amino-1,3,6-naphthalenetrisulfonic acid (Koch's acid)----	ACF, DUP, TRC.
4-Amino-1,3,5-naphthalenetrisulfonic acid, 4,5-sultam, trisodium salt.	DUP.
8-Amino-1-naphthoic acid----------------------------------	GAF.
5-Amino-1-naphthol---	ACF.
5(and 8)-Amino-2-naphthol----------------------------------	GAF.
7-Amino-2-naphthol---	TRC.
*8-Amino-2-naphthol--	ALL, DUP, GAF, PCO, TRC, VPC.
8-Amino-1-naphthol-3,6-disulfonic acid, benzenesulfonate---	TRC.
7-Amino-1-naphthol-3,6-disulfonic acid (2R acid), monosodium salt.	ACF, DUP.
*8-Amino-1-naphthol-3,6-disulfonic acid (H acid), monosodium salt.	ACF, DUP, MAN.
*8-Amino-1-naphthol-5,7-disulfonic acid (Chicago acid) (2S acid), monosodium salt.	ACF, DUP, TRC.
*1-Amino-2-naphthol-4-sulfonic acid (1,2,4-acid)-----------	ACF, ACY, DUP, GAF, TRC, VPC.
*6-Amino-1-naphthol-3-sulfonic acid (J acid)---------------	BL.
*6-Amino-1-naphthol-3-sulfonic acid (J acid), sodium salt---	ACF, ACY, CMG, DUP, GAF, TRC, VPC.
*7-Amino-1-naphthol-3-sulfonic acid (Gamma acid), sodium salt	ACF, DUP, GAF, TRC.
8-Amino-1-naphthol-5-sulfonic acid (S acid), sodium salt---	ACF, TRC.
*2-Amino-5-nitrobenzenesulfonic acid [SO_3H=1]----------	ACF, ACY, DUP, GAF, KPC.
*2-Amino-4-nitrophenol------------------------------------	ACF, CMG, DUP, GAF, TRC, VPC.
2-Amino-5-nitrophenol-------------------------------------	ACF.
6-Amino-4-nitro-1-phenol-2-sulfonic acid------------------	CMG, TRC.
1,2-Amino-1-(p-nitropheryl)-1,3-propanediol---------------	PD.
4-Amino-4'-nitro-2,2'-stilbenedisulfonic acid-------------	TRC.
2-Amino-5-nitrothiazole-----------------------------------	EKT.
3-Amino-4-octadecylaminobenzenesulfonic acid, sodium salt--	x.
*3'-Aminooxanilic acid------------------------------------	CMG, TRC, VPC.
*4'-Aminooxanilic acid------------------------------------	DUP, GAF.
p-Aminophenethyl alcohol----------------------------------	EKT.
(2'-Aminophenethylthio)acetic acid------------------------	DUP.
5-Amino-2-o-phenetidinobenzenesulfonic acid----------------	ACF.
m-Aminophenol--	WOC.
o-Aminophenol--	VPC.
p-Aminophenol--	DUP, SDC, VPC, WOC.
6-Amino-1-phenol-2,4-disulfonic acid----------------------	TRC.
2-Amino-1-phenol-4-sulfonamide----------------------------	ACF, DUP, TRC.
2-Amino-1-phenol-4-sulfonanilide--------------------------	TRC.
*2-Amino-1-phenol-4-sulfonic acid-------------------------	ACF, CWN, DUP, KPC, TRC.
m-(p-Aminopheryazo)benzenesulfonic acid-------------------	TRC.
*p-(p-Aminopheryazo)benzenesulfonic acid------------------	ACF, ACY, CMG, DUP, GAF, KPC, PCO, TRC, VPC.
5-(p-Aminopheryazo)salicylic acid-------------------------	TRC.
2-(p-Aminopheryl)-6-methylbenzothiazole-------------------	ACF, DUP.
*2-(p-Aminopheryl)-6-methyl-7-benzothiazolesulfonic acid and salt.	DUP, PCO, TRC.
1-(m-Aminopheryl)-5-oxo-2-pyrazoline-3-carboxylic acid-----	DUP, TRC, VPC.
2-Aminopyridine--	NEP, RIL.
2-Aminopyrimidine--	ACY.
5-Aminosalicylic acid--------------------------------------	KPC, TRC.
N-(4-Amino-3-sulfo-anthraquinoryl)anthranilic acid---------	GAF.
2-Amino-5-(p-sulfopherylazo)benzenesulfonic acid-----------	DUP.
2-Aminothiazole--	ACY.
1-Amino-4-(p-toluenesulfonamido)-2-anthraquinonesulfonic acid.	GAF.
5-Amino-o-toluenesulfonanilide-----------------------------	GAF.
*4-Amino-m-toluenesulfonic acid [SO_3H=1]----------------	ACF, ACY, DUP, GAF, SNA, SW, TRC.

TABLE 7B.--*Synthetic organic chemicals: Cyclic intermediates for which U.S. production or sales were reported, identified by manufacturer, 1959*--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
4-Amino-o-toluenesulfonic acid [SO_3H=1]	SDH.
5-Amino-o-toluenesulfonic acid	TRC.
6-Amino-m-toluenesulfonic acid [SO_3H=1]	DUP.
*5-Amino-2-(p-toluidino)benzenesulfonic acid	ACF, DUP, TRC.
7-(4-Amino-o-tolylazo)-1,5-naphthalenedisulfonic acid	TRC.
4-(4-Amino-m-tolylazo)-m-toluenesulfonic acid	DUP, VPC.
N-(4-Amino-m-tolyl)-p-benzoquinoneimine	DUP.
4'-Amino-3'-(p-tolylsulfonyl)acetanilide	TRC.
16-Aminoviolanthrone	GAF, PCO.
2-Amino-3,5-xylenesulfonic acid [SO_3H=1]	GAM, STG, WRN.
*Aniline (Aniline oil)	ACF, ACY, DOW, DUP, EKT, MON.
Aniline hydrochloride	ACY, VPC.
1-Anilino-2-anthraquinonecarboxylic acid	ACF, DUP.
2-Anilinoethanol (Phenylethanolamine)	UCC.
8-Anilino-5-(p-hydroxyanilino)-1-naphthalenesulfonic acid	DUP.
*Anilinomethanesulfonic acid and salt	ACF, ACY, CMG, DUP, KPC, PCO, TRC, VPC.
*8-Anilino-1-napthalenesulfonic acid (Phenyl peri acid)	ACF, CMG, DUP, GAF, TRC.
*6-Anilino-1-naphthol-3-sulfonic acid (Phenyl J acid)	ACF, CMG, DUP, GAF, TRC, VPC.
*7-Anilino-1-naphthol-3-sulfonic acid (Phenyl gamma acid)	ACF, CMG, DUP, TRC, VPC.
p-Anilinophenol	DUP.
o-Anisaldehyde	ASL.
Anisic acid	GAF, HN.
o-Anisic acid	ACY.
*o-Anisidine	DUP, KPC, MON.
p-Anisidine	DUP, MON.
o-Anisidine nitrate	GAF.
*o-Anisidinomethanesulfonic acid	ACF, DUP, GAF, TRC, VPC.
2-(o-Anisidino)-5-nitrobenzenesulfonic acid	TRC.
Anisole, tech	DUP, LIL.
Anisoyl chloride	TBK.
Anthracene, refined	ACP.
Anthraflavic acid (2,6-Dihydroxyanthraquinone)	DUP, GAF.
*Anthranilic acid (o-Aminobenzoic acid)	ACF, DOW, DUP, MEE.
Anthra[1,9]pyrazol-6(2H)-one (Pyrazolanthrone)	ACF, DUP.
*Anthraquinone, 100%	ACY, AHC, DUP, TRC.
2-Anthraquinonecarboxylic acid	ACY.
N,N'-(1,5-Anthraquinone)dioxamic acid	GAF, TRC.
*1,5-Anthraquinonedisulfonic acid	ACY, AHC, DUP, GAF, TRC.
*1,5-Anthraquinonedisulfonic acid, disodium salt	DUP.
1,5(and 1,8)-Anthraquinonedisulfonic acid and salt	DUP, GAF, TRC.
1,8-Anthraquinonedisulfonic acid	DUP.
1,8-Anthraquinonedisulfonic acid, potassium salt	GAF, TRC.
*2,6-Anthraquinonedisulfonic acid and salt	ACF, ACY, AHC, DUP, GAF, KPC, TRC, VPC.
*1-Anthraquinonesulfonic acid and salt	ACF, ACY, AHC, DUP, GAF, KPC, MAY, TRC.
2-Anthraquinonesulfonic acid and salt (Silver salt)	ACF, DUP, KPC, TRC.
*N,N'-(1,5-Anthraquinonylene)dianthranilic acid	AHC, DUP, TRC.
1-(1-Anthraquinonyl)-1,2-hydrazinedisulfonic acid, disodium salt.	DUP.
*Anthrarufin (1,5-Dihydroxyanthraquinone)	ACF, ACY, CMG, DUP, GAF, TRC.
Anthrone	AHC.
Arsanilic acid and salt, tech	ABB.
4',4'''-Azobis[4-biphenylcarboxylic acid]	DUP, GAF.
*Benzaldehyde, tech	BPC, GAF, 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	DUP, GAF, TRC.
*1-Benzamido-5-chloroanthraquinone	ACF, ACY, AHC, DUP, MAY.
1-Benzamido-5-chloro-4-methoxyanthraquinone	GAF.
2-[3-(4-Benzamido-2,5-diethoxyphenyl)-1-methyltriazen-3-yl] ethanesulfonic acid.	GAF.
2-(3-(4-Benzamido-2,5-dimethoxyphenyl)-1-methyl diazoamid) ether sulfonic acid.	GAF.
[3-(4-Benzamido-6-methoxy-m-tolyl)-1-methyltriazen-3-yl]-acetic acid.	GAF.
8-Benzamido-1-naphthol-3,6-disulfonic acid	TRC.
3-Benzamido-1-naphthol-3-sulfonic acid	TRC.
1-Benzamido-5-p-toluenesulfonamidoanthraquinone	AHC.
Benzanilide	DUP.

TABLE 7B. --*Synthetic organic chemicals: Cyclic intermediates for which U.S. production or sales were reported, identified by manufacturer, 1959*--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
*7H-Benz[de]anthracen-7-one (Benzanthrone)	ACF, ACY, AHC, CMG, DUP, GAF, KPC, MAY, PCO, TRC.
Benzenearsonic acid	EK.
Benzenesulfonamide	DA, NES.
8-(4-Benzenesulfonamido-5-methoxy-o-tolylazo)-1-naphthol-3,6-disulfonic acid.	TRC.
Benzenesulfonic acid	UPF.
Benzenesulfonic acid, n-propyl ester	NES.
Benzenesulfonic acid, sodium salt	NES.
*Benzenesulfonyl chloride	DA, NES, TRC.
Benzhydrol (Diphenylmethanol)	OPC, TBK.
*Benzidine hydrochloride and sulfate	ACF, DUP, FIN, x.
Benzil (Bibenzoyl)	LEM.
Benzilic acid	BPC, LEM.
2-Benzofuranacetonitrile	EK.
Benzoic acid, tech	BPC, HK, HN, MON, TNP.
Benzoic anhydride	EK.
Benzoin	BPC, LEM.
Benzonitrile	TNP, x.
Benzophenone	KF.
1,2,3-Benzotriazin-4(1H)-one (Benzazimide)	MEE.
1H-Benzotriazole	MEE, MRT.
Benzoylacetic acid, ethyl ester	FMP.
*o-Benzoylbenzoic acid	ACF, ACY, DUP, GAF.
Benzoyl chloride	HK, TNP.
2-Benzoyl-4-sulfobenzoic acid	DUP.
2-Benzoyl-4'-(p-toluenesulfonamido)	EK.
Benzyl alcohol, tech	BPC.
Benzylamine	FBS, MLS.
Benzyl disulfide	CCW.
Benzyl ether (Dibenzyl ether)	BPC, TBK.
4-(N-Benzyl-N-ethylamino)-o-toluenesulfonic acid	ACF.
N-Benzyl-N-ethyl-m-toluidine	ACF, DUP.
2,2'-Benzylidenedi(N-benzyl-N-ethyl-p-toluidine)	TRC.
4-Benzylideneiminoantipyrine	GAF, SDW.
Benzyl polysulfide	HK.
(Benzylthio)acetic acid	OPC.
4',4'''-Bi-o-acetoacetotoluidide	SDH.
*3,3'-Bianthra[1,9]pyrrole-6,6'(2H, 2'H)-dione (Pyrazoleanthrone yellow).	ACF, DUP, GAF, TRC.
[3,3'-Bi-7H-benz[de]anthracen]-7,7'-dione	ACF, DUP.
*[4,4'-Bi-7H-benz[de]anthracen]-7,7'-dione	ACY, AHC, DUP, GAF, MAY, TRC.
endo-cis-Bicyclo[2,2,1]hept-5-ene-2,3-dicarboxylic anhydride.	ACF.
[1,1'-Binaphthalene]-8,8'-dicarboxylic acid	DUP, GAF.
Biphenyl	DOW, MON.
4-Biphenylcarboxylic acid	DUP.
2,2'-Biquinoline	EK.
4,4'-Bis(8-acetamido-3,6-disulfo-1-hydroxy naphthylazo)-3,3'-dimethoxybiphenyl.	TRC.
1,2-Bis(1-amino-2-anthraquinonylcarbonyl)hydrazine	DUP.
*1,4-Bis[1-anthraquinonylamino]anthraquinone	ACY, AHC, GAF, MAY, TRC.
1,5-Bis[1-anthraquinonylamino]anthraquinone	DUP.
α^2,α^6-Bis(5-tert-butyl-6-hydroxy-m-tolyl)mesitol	ACY.
N,N'-Bis(1-chloro-2-anthraquinonyl)-4',4''-azobis-(4-biphenylcarboxamide).	GAF.
4,4'-Bis[diethylamino]benzhydrol	GAF, TRC.
4,4'-Bis[diethylamino]benzhydrol-2,6-naphthalenedisulfonic acid.	GAF.
4,4'-Bis[diethylamino]benzophenone (Ethyl ketone base)	DSC, DUP.
1,5(and 1,8)-Bis[5,4-dihydro-5,8,14(13H)-trioxonapth-[2,3-c]acridin-1-ylamino]anthraquinone.	DUP.
2,7-Bis[dimethylamino]acridine hydrochloride	VPC.
4,4'-Bis[dimethylamino]benzhydrol (Michler's hydrol)	DSC, DUP.
*4,4'-Bis[dimethylamino]benzophenone (Michler's ketone)	ACF, DSC, DUP, GAF, SDH.
Bis(p-dimethylaminophenyl)methanesulfonic acid and salt	ACF.
4-[Bis(p-dimethylaminophenyl)methyl]-2,7-naphthalene-disulfonic acid.	TRC.
1,5-Bis[2,4-dinitrophenoxy]-4,8-dinitroanthraquinone	DUP.
1,5(and 1,8)-Bis(2,4-dinitrophenoxy)-4,8(and 4,5)-dinitroanthraquinone.	DUP.

TABLE 7B. --*Synthetic organic chemicals: Cyclic intermediates for which U.S. production or sales were reported, identified by manufacturer, 1959*--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
m-Bis[2,3-epoxypropoxy]benzene	EKT.
α,α-Bis[4′-(N-ethyl-3-sulfobenzylamino)-2-tolyl]-α-hydroxy-p-toluenesulfonic acid.	TRC.
α,α-Bis[4-(N-ethyl-N-3-sulfobenzylamino)-2-tolyl]-p-toluenesulfonic acid.	TRC.
4,4′-Bis[p-hydroxyphenylazo]-2,2′-stilbenedisulfonic acid.	TRC.
4,4′-Bis(p-hydroxyphenyl)valeric acid	JNS.
p-Bis(2,2,2-trichloroethyl)benzene	HK.
1,4-Bis(2,4,6-trimethylanilino)anthraquinone	TRC.
2-Bromoacetophenone	EK.
m-Bromoaniline	EK.
o-Bromoaniline	EK.
p-Bromoaniline	EK.
4-Bromoanisole	FBS, OPC.
*3-Bromo-7H-benz[de]anthracen-7-one (Bromobenzanthrone)	ACF, ACY, AHC, DUP, GAF, MAY, TRC.
Bromobenzene, mono-	DOW.
p-Bromobenzenesulfonyl chloride	EK.
o-Bromobenzoic acid	EK.
p-Bromobenzoic acid	EK.
4-Bromobenzophenone	FBS.
Bromochlorobenzene	EK.
2-Bromodibenzofuran	GAF.
(2-Bromoethyl)benzene	EK.
2-Bromo-3′-hydroxyacetophenone benzoate	SDH.
5-Bromoisatin	GAF.
1-Bromo-4-(N-methylacetamido)anthraquinone	GAF.
*1-Bromo-4-methylaminoanthraquinone	AHC, DUP, GAF, KPC.
2-Bromo-3-methylanthraquinone	DUP.
*6-Bromo-3-methyl-7H-dibenz[f,ij]isoquinoline-2,7(3H)-dione.	AHC, GAF, KPC.
1-Bromonaphthalene	EK.
4-Bromonaphthalic anhydride	GAF.
2-Bromo-4′-nitroacetophenone	NES.
α-Bromo-p-nitrotoluene	EK.
1-(9-Bromo-7-oxo-7H-benz[de]anthracen-3-ylamino)-anthraquinone.	DUP.
m-Bromophenol	EK.
o-Bromophenol	EK.
p-Bromophenol	EK.
p-Bromophenyl phenyl ether	EK.
4-Bromophthalic anhydride	EKT.
Bromopicrin	EK.
2-Bromopyridine	FMT.
2-Bromoquinizarin	KPC.
α-Bromotoluene	EK.
o-Bromotoluene	EK.
p-Bromotoluene	EK.
o-(3-Bromo-p-toluoyl)benzoic acid	DUP.
1-Bromo-2,4,6-triethylbenzene	DUP.
p-n-Butylaminobenzoic acid, ethyl ester	FBS.
p-Butylaniline	DUP.
2-tert-Butylanthraquinone	DUP.
n-Butylbenzene	PLC.
tert-Butylbenzene	PLC.
p-tert-Butylbenzoic acid	SHC.
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.
N^1-Butyl-4-methoxymetanilamide	ALL, GAF, VPC.
2-tert-Butyl-5-methylanisole	GIV.
o-sec-Butylphenol	DOW.
p-sec-Butylphenol	DOW.
p-tert-Butylphenol	DOW, KPT, UCP.
Butylphenols, mixed	UCP.
p-tert-Butyltoluene	SHC.
5-tert-Butyl-m-xylene	GIV.

TABLE 7B. --*Synthetic organic chemicals: Cyclic intermediates for which U.S. production or sales were reported, identified by manufacturer, 1959*--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
p-(3-Carbazolylamino)phenol	DUP.
N,N'-Carbonylbis(4-methoxymetanilic acid)	GAF.
N,N'-Carbonylbis(4-methoxy-6-nitrometanilic acid)	GAF.
6(and 2)-Carboxybenzene-2(and 4)-diazo-1-oxide	DUP.
5'-(o-Carboxybenzoyl)-2-chlorooxanilic acid	GAF.
3-Carboxy-2(and 4)-hydroxybenzenediazonium sulfate	ACF, GAF.
3-Carboxymethyl-1-(5-chloro-o-tolyl)-3-methyltriazene	DUP, GAF.
3-(Carboxymethyl-3-methyl)-1-p-tolyltriazene	GAF.
5-(o-Carboxyphenylsulfamoyl)anthranilic acid	TRC.
3-(2-Carboxy-4-sulfophenyl)-1-(2,5-dichlorophenyl)-3-ethyltriazene.	GAF.
3-(2-Carboxy-4-sulfophenyl)-3-methyl-1-(4-nitro-o-tolyl-triazene).	GAF.
Chelidamic acid	SDW.
Chlorendic acid	HK.
2'-Chloroacetoacetanilide	FMP, UCC.
4'-Chloroacetophenone	NES.
4'-(Chloroacetyl)acetanilide	DUP.
*m-Chloroaniline	DUP, GAF, MON.
*o-Chloroaniline	DUP, MON, SDH, VPC.
p-Chloroaniline	DUP, MON.
5-Chloroaniline-2,4-disulfamide	ABB.
5-Chloroaniline-2,4-disulfamide hydrochloride	ABB.
*m-Chloroaniline hydrochloride	ATL, KPC.
2-(Chloroanilino)ethanol	EKT.
3-(o-Chloroanilino)propionitrile	DUP.
5-Chloro-o-anisidine [NH_2=1] (4-Chloro-o-anisidine [OCH_3 = 1]).	ACF, DUP, SDH, VPC.
5-Chloro-o-anisidine hydrochloride	GAF.
4-Chloroanthranilic acid	DUP.
*1-Chloroanthraquinone	ACF, ACY, AHC, DUP, GAF, KPC, MAY, TRC.
*2-Chloroanthraquinone	ACF, ACY, GAF, TRC.
1-Chloro-2-anthraquinonecarboxylic acid	DUP.
*o-Chlorobenzaldehyde	ACF, HN, SDH.
p-Chlorobenzaldehyde	HN.
Chloro-7H-benz [de]anthracen-7-one (Chlorobenzanthrone)	ACY.
*Chlorobenzene, mono-	ACO, DOW, DUP, GGY, HK, HKD, MON, MTO, OMC, PPG, WYN.
4-Chlorobenzenesulfinic acid	TRC.
p-Chlorobenzenesulfonamide	ACY, MEE.
p-Chlorobenzenesulfonic acid	GAF.
4-Chlorobenzenesulfonyl chloride	DA, TRC.
p-Chlorobenzenethiol	EVN.
o-Chlorobenzoic acid	HN, SDH.
p-Chlorobenzoic acid	HN.
5-Chloro-2-benzoxazolinone	GAF, x.
*o-(p-Chlorobenzoyl)benzoic acid	ACF, ACY, AHC, DUP, GAF, TRC.
o-Chlorobenzoyl chloride	EK.
p-Chlorobenzoyl chloride	HN.
4,4'-(o-Chlorobenzylidine)di-2,5-xylidine	GAF.
p-Chlorobenzylpyridine	RIL.
5-Chloro-2-(p-chlorophenoxy)aniline	GAF.
Chloro-(p-chlorophenyl, phenyl)methane	OPC, TBK.
2-Chloro-5-(chlorosulfonyl)benzoic acid	TRC.
4-Chloro-o-cresol	OPC.
2-Chloro-N,N-diethyl-4-nitroaniline	DUP.
N-(3-Chloro-9,10-dihydroxy-2-anthryl)acetamide bis [acid sulfate].	GAF.
*5-Chloro-2,4-dimethoxyaniline	ALL, GAF, KLS, PCW.
1-Chloro-2,4-dimethoxy-5-nitrobenzene	GAF.
4-Chloro-6-N,N-dimethyl-3-nitrobenzenesulfonamide	GAF.
5-Chloro-4,7-dimethyl-3(2H)-thianaphthenone	ACF.
*1-Chloro-2,4-dinitrobenzene (Dinitrochlorobenzene)	ACF, DUP, GAF, KPC, SDC.
4-Chloro-3,5-dinitrobenzoic acid	GAF.
3-Chlorodiphenylamine	DUP, SK.
Chlorodiphenylmethane	TBK.
α-Chloro-o(and/or p)-dodecyltoluene [CH_3=1]	ORO.
2-Chloroethanol-p-toluenesulfonate	GAF.
N-(2-Chloroethyl)-N-ethylaniline	DUP.
α-Chloro-p-ethyltoluene	BPC.
5-Chloro-2-formylbenzenesulfonic acid	GAF.
N-Chloroformyldiphenylamine	FBS.

TABLE 7B. --*Synthetic organic chemicals: Cyclic intermediates for which U.S. production or sales were reported, identified by manufacturer, 1959*--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
4-Chloro-3-hydrazinobenzenesulfonic acid	GAF.
1-Chloro-4-hydroxyanthraquinone	AHC.
4'-Chloro-2-hydroxy-4-methoxybenzophenone	ACY.
5'-Chloro-3-hydroxy-2-naphtho-o-toluidide	ATL.
5-Chloro-4-isopropylmetanilic acid	SW.
4-Chloro-N-isopropyl-3-nitrobenzenesulfonamide	TRC.
4-Chlorometanilic acid	DUP, GAF.
5-Chlorometanilic acid	ACF, DUP.
*6-Chlorometanilic acid	ACF, DUP, TRC.
5-Chloro-2-methoxybenzenediazonium chloride	GAF.
N-(5-Chloro-2-methoxyphenylazo)sarcosine	DUP.
*1-Chloro-2-methylanthraquinone	ACF, ACY, AHC, CMG, DUP, GAF, KPC.
6-Chloro-4-methylbenzo-1,3-thiaza-2-thionium chloride	DUP.
5-Chloro-2-methylbenzothiazole	EK.
4-Chloro-N-methyl-3-nitrobenzenesulfonamide	TRC.
4-Chloro-3-(3-methyl-5-oxo-2-pyrazolin-1-yl)benzenesulfonic acid.	DUP, GAF.
Chloronaphthalenes	KPT, UCP.
8-Chloro-1-naphthalenesulfonic acid, sodium salt	GAF.
8-Chloro-1-naphthalenesulfonyl chloride	GAF.
9-Chloronaphtho[1,2-b]thiophen-3(2H)-one	GAF.
(8-Chloro-1-naphthylthio)acetic acid	GAF.
2-Chloro-3'-nitroacetophenone	MEE.
*2-Chloro-4-nitroaniline (o-Chloro-p-nitroaniline)	ACY, DOW, DUP, SUC.
*4-Chloro-2-nitroaniline (p-Chloro-o-nitroaniline)	DOW, DUP, KPC, SDH, VPC.
4-Chloro-2-nitroanisole	DUP, VPC.
*1-Chloro-5-nitroanthraquinone	ACF, ACY, DUP, GAF, MAY, TRC.
1-Chloro-8-nitroanthraquinone	ACF, DUP.
1-Chloro-2-nitrobenzene (Chloro-o-nitrobenzene)	DUP, KPC, MON.
*1-Chloro-2(and 4)-nitrobenzene (Chloronitrobenzenes, o- and p-).	DUP, GAF, KPC.
1-Chloro-3-nitrobenzene (Chloro-m-nitrobenzene)	DUP, MON.
1-Chloro-4-nitrobenzene (Chloro-p-nitrobenzene)	DUP, KPC, MON.
*4-Chloro-3-nitrobenzenesulfonamide	DUP, EKT, ICC.
4-Chloro-3-nitrobenzenesulfonanilide	TRC.
*2-Chloro-5-nitrobenzenesulfonic acid	ACF, CMG, KPC, TRC.
*2-Chloro-5-nitrobenzenesulfonic acid, sodium salt	DUP, GAF.
*4-Chloro-3-nitrobenzenesulfonic acid	ACF, GAF, KPC, TRC.
*4-Chloro-3-nitrobenzenesulfonyl chloride	DUP, EKT, TRC.
5-Chloro-6-nitro-2-benzoxazolinone	GAF.
*o-(4-Chloro-3-nitrobenzoyl)benzoic acid	ACF, AHC, GAF, KPC.
4-Chloro-2-nitrophenol	DUP.
4-Chloro-2-nitrophenyl-p-chlorophenyl ether	GAF.
4-Chloro-3-nitrophenyl methyl sulfone	TRC.
2-Chloro-4-nitrotoluene	DUP, GAF.
2-Chloro-6-nitrotoluene	DUP.
4-Chloro-2-nitrotoluene	ACF, DUP, KPC.
4-Chloro-3-nitrotoluene	KPC.
o-Chlorophenol	DOW, MON.
p-Chlorophenol	DOW, MON.
p-Chlorophenylacetonitrile	TBK.
1-(p-Chlorophenyl)biguanide, hydrochloride	DUP.
4-Chloro-α-phenyl-o-cresol	MON.
4-Chloro-o-phenylenediamine	FMT.
2,2'-(3-Chlorophenylimino)diethanol	KPC.
p-Chlorophenylmagnesium bromide	SFA.
1-(m-Chlorophenyl)-3-methyl-2-pyrazolin-5-one	TRC.
4-Chlorophenyl methyl sulfone	TRC.
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	ACF, HAR, TRC.
7-Chloro-4-quinolinol	SDW.
6-Chloroquinophthalone	DUP.
4-Chlororesorcinol	GAF, KPC.
2-Chloro-5-sulfamoylbenzoic acid	TRC.
2-Chloro-4-(2'-sulfophenylamino)-6-(4-sulfo-3-aminophenylamino)triazine.	TRC.

TABLE 7B.--*Synthetic organic chemicals: Cyclic intermediates for which U.S. production or sales were reported, identified by manufacturer, 1959*--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
2-Chloro-4-(4'-sulfophenylamino)-6-(4-sulfo-3-amino-phenylamino)triazine.	TRC.
8-Chlorotheophylline	MAL.
m-Chlorotoluene	HK.
o-Chlorotoluene	HN.
p-Chlorotoluene	HN.
*α-Chlorotoluene (Benzyl chloride)	BPC, GAF, HK, HN, MON, TNP.
1-Chloro-5-p-toluenesulfonamidoanthraquinone	AH?
3-Chloro-o-toluidine [NH_2=1]	ACF, DUP.
3-Chloro-p-toluidine [NH_2=1]	DUP.
*4-Chloro-o-toluidine [NH_2=1] (5-Chloro-o-toluidine [CH_3=1])	ACF, ACY, KPC, PCW.
*5-Chloro-o-toluidine [NH_2=1] (4-Chloro-o-toluidine [CH_3=1])	ACF, DUP, KPC, SDH.
*4-Chloro-o-toluidine hydrochloride [NH_2=1]	DUP.
*5-Chloro-o-toluidine hydrochloride [NH_2=1]	ATL, AUG, DUP, GAF, KLS, SDH.
5-Chloro-o-toluidine sulfate [NH_2=1]	ACF.
1-(5-Chloro-o-tolyl)-3-methyl-2-pyrazolin-5-one	TRC.
(4-Chloro-o-tolylthio)acetic acid	ACF, ACY.
Chlorotriphenylmethane	EK.
4-Chloro-α,α,α-trifluoro-3-nitrotoluene	KPC, MEE.
3-Chloro-α,α,α-trifluoro-6-nitrotoluene	MEE.
p-Chloro-α,α,α-trifluorotoluene	HK.
6-Chloro-α,α,α-trifluoro-m-toluidine	KPC.
2-Chloro-p-xylene	DUP.
*4-Chloro-2,5-xylenesulfonyl chloride	ACF, GAF, ICC.
4-Chloro-2,5-xylylthioacetic acid	ACF, GAF, ICC.
Chrysanthemummonocarboxylic acid, ethyl ester	BPC.
Chrysazin (1,8-Dihydroxyanthraquinone)	DUP, GAF.
Cinnamic acid	FBS.
Cinnamoyl chloride	TBK.
s-Collidine (2,4,6-Trimethylpyridine)	KPT, RIL.
*Cresols:[1]	
m-Cresol	KPT.
*o-Cresols:	
From coal tar	KPT, PRD, RIL.
From petroleum	MER, PRD.
*p-Cresol	HPC, SW.
*Cresols, mixed:[1]	
*(m,p)-Cresol:	
*From coal tar	ACP, KPT, PRD, REP, RIL.
*From petroleum	MER, PIT, PRD.
*(o,m,p)-Cresol:	
From coal tar	ACP, KPT, RIL.
From petroleum	MER, PIT, PRD.
Other	RIL, SW.
2,3-Cresotic acid	DOW.
*Cresylic acid, refined:[1]	
*From coal tar	ACP, ACY, KPT, PRD, RIL.
*From petroleum	MER, PIT, PRD, SHO, SM, SOC.
*Cumene	ACP, DOW, HPC, SOC.
8-Cyano-1-naphthalenesulfonic acid	DUP, GAF.
Cyanuric chloride	ACY, NIL.
*Cyclohexane	DUP, HUM, PLC, PLP, SHO.
1,2-Cyclohexanedicarboxylic anhydride	ACF.
*Cyclohexanol	ACF, CS, DOW, DUP, MON.
Cyclohexanone	ACF, CS, DUP.
Cyclohexanone oxime	ACF.
Cyclohexene	KF, PLC.
4-Cyclohexene-1,2-dicarboximide	CHO.
4-Cyclohexene-1,2-dicarboxylic anhydride	ACF.
*Cyclohexylamine	ABB, EKT, JCC, MON.
p-(Cyclohexyloxy)benzoic acid	LIL.
1-Cyclohexyl-2-propanone	GIV, TBK.
1,5-Cyclooctadiene	PLC.
Cyclopentene	PLC.
*p-Cymene	GLD, HNW, HPC.
Decylbenzene	WYN.
1,5(and 1,8)-Diacetamidoanthraquinone	KPC.
N,N-Diallylcamphoramic acid	WYT.
N^2,N^2-Diallylmelamine	ACY.

See footnote at end of table.

TABLE 7B.--*Synthetic organic chemicals: Cyclic intermediates for which U.S. production or sales were reported, identified by manufacturer, 1959*--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
1,2-Diaminoanthraquinone	DUP.
*1,4-Diaminoanthraquinone	ACF, DUP, GAF, JTC, KPC, TRC.
1,5-Diaminoanthraquinone	DUP, GAF, TRC.
1,5(and 1,8)-Diaminoanthraquinone	TRC.
*2,6-Diaminoanthraquinone	ACF, ACY, AHC, DUP, GAF, KPC, TRC, VPC.
1,4-Diamino-2,3-anthraquinonedicarbonitrile	DUP.
1,4-Diamino-2,3-anthraquinonedicarboximide	DUP.
1,4-Diamino-2,3-anthraquinonedisulfonic acid	DUP.
4,5-Diamino-2,7-anthraquinonedisulfonic acid	TRC.
*4,8-Diaminoanthrarufin	ACF, DUP, KPC.
3,4-Diaminobenzanilide	DUP.
2,4-Diaminobenzenesulfonic acid [SO_3H=1]	ACF, DUP, GAF, TRC.
2,5-Diaminobenzenesulfonic acid [SO_3H=1]	TRC.
4,4'-Diamino-2,2'-biphenyldisulfonic acid	ACY, TRC.
4,4'-Diamino-3,3'-biphenyldisulfonic acid	ACF.
3,7-Diaminodibenzothiophenedisulfonic acid, 5,5-dioxide, disodium salt.	ACY.
1,4-Diamino-2,3-dichloroanthraquinone	DUP.
1,5(and 1,8)-Diamino-4,8(and 4,5)-dihydroxyanthraquinone	DUP.
4,8-Diamino-1,5-dihydroxy-2,6-anthraquinonedisulfonic acid	TRC.
3,6-Diamino-2,7-dimethylacridine	ACF, DUP.
3,6-Diamino-2,7-dimethylacridine sulfate	DUP.
4,4'-Diamino-5,5'-dimethyl-2,2'-biphenyldisulfonic acid	TRC.
4,4'-Diamino-3,3'-dimethyltriphenylmethane	ACY.
4,4'-Diaminodiphenylamine-2-sulfonic acid	YAW.
4,4'-Diaminodiphenylsulfone	MRK.
5,6-Diamino-1-naphthalenesulfonic acid	GAF.
1,4-Diamino-5-nitroanthraquinone	GAF.
2,4-Diamino-6-phenyltriazine	TNP.
2,4-Diamino-6-phenyl-s-triazine	RH.
2,6-Diaminopyridine	NEP, RIL.
*4,4'-Diamino-2,2'-stilbenedisulfonic acid	ACF, ACY, DUP, GAF, SDH, TRC.
*4,6-Diamino-m-toluenesulfonic acid [SO_3H=1]	ACF, DUP, KPC.
1,5-Dianilino-2,6-anthraquinonedicarboxylic acid	ACF, GAF.
2,4-Dianilino-1-hydroxyanthraquinone	AHC, GAF, TRC.
6,8-Dianilino-1-naphthalenesulfonic acid	GAF.
1,2-Dianthronyl-1,2-ethanediol	AHC.
Diarylguanidine	DUP.
1,5-Dibenzamidoanthraquinone	DUP, GAF, TRC.
4,9-Dibenzamido-3',4',6',7'-diphthaloylcarbazole	AHC.
*4,5'-Dibenzamido-1,1'-iminodianthraquinone	ACF, ACY, AHC, DUP, GAF, MAY, TRC.
5,5'-Dibenzamido-1,1'-iminodianthraquinone	ACY.
4,5'-Dibenzamido-4'-methoxy-1,1'-iminodianthraquinone	GAF.
5',5''-Dibenzamido-1,1',4,1''-trianthrimide	AHC.
2-Dibenzofuranol	GAF.
1',2',6',7'-Dibenzopyrene-7,14-quinone	AHC.
*1,5-Dibenzoylnaphthalene	ACY, AHC, DUP, GAF, HST, TRC.
N,N'-Dibenzylethylenediamine	WYT.
N,N'-Dibenzylethylenediamine diacetate	OPC, WYT.
2,4'-Dibromoacetophenone	EK.
*3,9-Dibromo-7H-benz[de]anthracen-7-one	ACY, AHC, DUP, GAF, KPC, MAY.
m-Dibromobenzene	EK.
p-Dibromobenzene	DOW.
Dibromo-diamino-di-p-toluidinoanthraquinone	AHC.
5,5'-Dibromoindigotin	GAF.
2,6-Dibromo-1,5-naphthalenediol	EK.
Dibromo-8,16-pyranthrenedione	DUP.
Dibromoviolanthrone	GAF.
1,4-Dibutoxy-2-nitrobenzene	EKT.
*2,5-Dichloroaniline and hydrochloride [NH_2=1]	ACF, DUP, VPC.
3,4-Dichloroaniline	DUP, MON.
*1,5-Dichloroanthraquinone	ACF, AHC, DUP, GAF, TRC.
*1,5(and 1,8)-Dichloroanthraquinone	ACF, DUP, GAF.
*1,8-Dichloroanthraquinone	AHC, DUP, GAF, TRC.
4,8(and 4,5)-Dichloro-1,5(and 1,8)-anthraquinonedisulfonic acid.	GAF.
3-(3,4-Dichlorobenzamido)-1-phenyl-2-pyrazolin-5-one	EK.
m-Dichlorobenzene	EK.
*o-Dichlorobenzene	ACO, CPD, DOW, DUP, HK, MON, OMC, PPG, SCC, SVT, UWS.

TABLE 7B.--*Synthetic organic chemicals: Cyclic intermediates for which U.S. production or sales were reported, identified by manufacturer, 1959*--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
*o(and p)-Dichlorobenzene	GGY, HKD, PPG, MTO.
*p-Dichlorobenzene	ACO, CPD, DOW, DUP, HK, MON, SCC, SVT, UWS.
Dichlorobenzenesulfonic acid	SDH.
*3,3'-Dichlorobenzidine base and salts	ACF, ALL, TRC, x, x.
2,4-Dichlorobenzoic acid	HN.
Dichlorobenzoquinone, barium salt	EK.
2,4-Dichlorobenzoyl chloride	HN.
2,5-Dichloro-3,6-dihydroxy-p-benzoquinone	EK.
Dichlorodiphenylsilane	DCC, UCS.
2',7'-Dichlorofluorescein	EK.
2,5-Dichloro-4-hydrazinobenzenesulfonic acid	GAF.
7,16-Dichloroindanthrone	AHC.
Dichloroisoviolanthrone	AHC.
*2,5-Dichloro-4-(3-methyl-5-oxo-2-pyrazolin-1-yl)-benzenesulfonic acid.	ACY, CMG, DUP, GAF, TRC, VPC.
Dichloromethylphenylsilane	DCC.
*2,6-Dichloro-4-nitroaniline	DUP, EKT, GAF, KPC.
4,5-Dichloro-1-nitroanthraquinone	GAF.
1,2-Dichloro-4-nitrobenzene	DUP, MON.
1,4-Dichloro-2-nitrobenzene (Nitro-p-dichlorobenzene)	ACF, DUP, GAF, KPC, VPC.
2,4-Dichlorophenol	DA, DOW, MON.
2,5-Dichlorophenylhydrazine	VPC.
3,6-Dichloropyridazine	ACY.
4,7-Dichloroquinoline	PD, SDW.
*2,5-Dichlorosulfanilic acid [SO_3H=1]	DUP, GAF, VPC.
2,5-Dichloro-4-sulfobenzenediazonium chloride	TRC.
p,α-Dichlorotoluene	HN.
2,6-Dichlorotoluene	GAF.
2,4-Dichloro-5-(p-toluenesulfonamide)-1-naphthol	EK.
Dicyclohexylamine	MON.
Dicyclopentadiene	ESL, UCC.
4-Diethylamino-o-tolualdehyde	DUP.
2,4-Di(1,1-dimethylpropyl)phenol (Di-tert-amylphenol)	PAS.
2,4-Diethoxyaniline	KPC.
2,5-Diethoxyaniline	GAF.
2',5'-Diethoxybenzanilide	GAF, KPC.
p-Diethoxybenzene	GAF.
2',5'-Diethoxy-4'-nitrobenzanilide	GAF.
1,4-Diethoxy-2-nitrobenzene	GAF.
p-Diethylaminobenzaldehyde	ACF, GAF.
α-(2-Diethylaminoethyl)-2-phenylcyclohexane methanol, hydrochloride.	ACY.
α-Diethylamino-4'-hydroxy-m-acetotoluidide	PD.
*m-Diethylaminophenol (N,N-Diethyl-3-aminophenol)	ACY, DUP, GAF.
3-Diethylaminopropiophenone	ACY.
*N,N-Diethylaniline	ACF, ACY, DUP, SDH.
N,N-Diethyl-m-anisidine	DUP.
Diethylbenzene	DOW, KPP.
Diethylcyclohexane	UCC.
N,N-Diethylcyclohexylamine	DUP.
N,N-Diethylmetanilic acid	DUP, GAF.
N^1,N^1-Diethyl-4-methoxymetanilamide	GAF, PCW, VPC.
N^1,N^1-Diethyl-5-methoxysulfanilamide	ICC.
N,N-Diethyl-p-nitrosoaniline	GAF.
N,N-Diethyl-4-nitroso-m-anisidine hydrochloride	DUP.
Diethyl terephthaloyldiacetate	GAF.
N,N-Diethyl-m-toluidine	DUP.
3,3'-Diformamidocarbanilide	GAF.
3,4-Dihydro-3,4-dioxo-1-napthalenesulfonic acid, sodium salt.	EK.
2,3-Dihydro-4H-pyran	DUP, QKO.
1,5(and 1,8)-Dihydroxyanthraquinone	DUP.
Dihydroxydinitroanthraquinone	DUP.
1,5-Dihydroxy-4,8-dinitroanthraquinone	AHC.
1,8-Dihydroxy-4,5-dinitro-2,6-anthraquinonedisulfonic acid	DUP.
2,2'-Dihydroxy-4-methoxybenzophenone	ACY.
2,6-Dihydroxymethyl-p-cresol	ACY.
*4,5-Dihydroxy-2,7-naphthalenedisulfonic acid (Chromotropic acid).	ACF, HAR, TRC.
*6,7-Dihydroxy-2-naphthalenesulfonic acid	ACF, FMT, GAF, IDC, WOC.

TABLE 7B.--*Synthetic organic chemicals: Cyclic intermediates for which U.S. production or sales were reported, identified by manufacturer, 1959*--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
3,5-Dihydroxy-2-naphthoic acid	GAF, POW.
*16,17-Dihydroxyvioianthrone (Dihydroxydibenzanthrone)	ACF, ACY, AHC, DUP, GAF, MAY, TRC.
2',4'-Dimethoxyacetophenone	DUP.
2,5-Dimethoxyaniline	GAF.
2,5-Dimethoxybenzaldehyde	CWN.
m-Dimethoxybenzene	ACY, DUP, GAF.
p-Dimethoxybenzene	ASL, GAF.
*3,3'-Dimethoxybenzidine	ACF, ALL, DUP, SDH, x.
2,4-Dimethoxybenzoic acid	ACY, DUP.
1,1-(3,3'-Dimethoxy-4,4'-biphenylene bis[3-methyl-3-(2-sulfoethyl)] triazene.	GAF.
3,3'-Dimethoxy-4,4'-bis(3-methyl-3-sulfoethyltriazen-1-yl)biphenyl.	DUP.
1,4-Dimethoxy-2-nitrobenzene	EKT, GAF.
3,4-Dimethoxyphenethylamine (Homoveratrylamine)	LIL.
(3,4-Dimethoxyphenyl)acetic acid	LIL.
(3,4-Dimethoxyphenyl)acetonitrile	LIL.
16,17-Dimethoxyvioianthrone	AHC, MAY.
p-Dimethylaminobenzaldehyde	FIN.
o-(Dimethylaminomethyl -p-butylphenol	RH.
α-dl-4-Dimethylamino-3-methyl-1,2-diphenylbutanol hydrochloride.	LIL.
α-d-4-Dimethylamino-3-methyl-1,2-diphenyl-2-butanol, camphor sulfonate.	LIL.
α-d-4-Dimethylamino-3-methyl-1,2-diphenyl-2-butanol hydrochloride.	LIL.
o-Dimethylaminomethylphenol	RH.
3-Dimethylamino-2-methylpropiophenone	LIL.
m-Dimethylaminophenol	ACY.
N-(p-Dimethylaminophenyl)-1,4-naphthoquinone imine	ACF.
*N,N-Dimethylaniline	ACF, ACY, DSC, DUP.
2,5-Dimethyl-p-benzoquinone	EK.
*N,N-Dimethylbenzylamine	FBS, MLS, SFA, x.
3,4-Dimethylbenzyl chloride	EPC.
*2,2'-Dimethyl-1,1'-bianthraquinone	ACF, ACY, AHC, CMG, DUP, GAF, KPC.
2,4-Di(1-methylbutyl)phenol	PAS.
5,5-Dimethyl-1,3-cyclohexanedione	EKT.
2',7'-Dimethylfluoran	WLM.
Dimethylhydantoin	GLY.
2,8-Dimethyl-13β-hydroxy-9(13β)-ceroxenone	WLM.
2,3-Dimethylindole	DUP.
N,N-Dimethyl-p-nitrosoaniline	ACF, ACY, FMT.
N,N-Dimethyl-p-phenylenediamine	ACF.
N,N-Dimethyl-p-phenylenediamine monohydrochloride	EK.
1,4-Dimethylpiperazine	JCC.
p-(1,1-Dimethylpropyl)phenol	PAS.
4'-(4,6-Dimethyl-2-pyrimidinylsulfamoyl)acetanilide	ACY.
N,N-Dimethylsulfanilic acid	GAF.
2,4-Dinitroaniline	ACY, KPC.
*p-(2,4-Dinitroanilino)phenol	ACF, DUP, GAF.
2,4-Dinitroanisole	ALL.
1,5(and 1,8)-Dinitroanthraquinone	CMG, KPC, TRC.
2,4-Dinitro-N,N'-(1,5-anthraquinone)dioxamic acid	TRC.
3,4'-Dinitrobenzanilide	DUP.
m-Dinitrobenzene	ACF, DUP, GAF.
2,4-Dinitrobenzenesulfonic acid	GAF, TRC.
3,5-Dinitrobenzoic acid	DUP, GAM, KPC.
3,5-Dinitrobenzoyl chloride	EK.
Dinitro(3,3'-bi-7H-benz[de]anthracen -7,7'-dione	DUP, MAY.
4,5-Dinitrochrysazin	DUP, EKT, GAF.
4,4'-Dinitrodibenzyl-2,2'-disulfonic acid, disodium salt	DUP.
*2,4-Dinitrophenol, tech	ACF, DUP, KPC.
2,4-Dinitrophenylhydrazine	EK.
*4,4'-Dinitro-2,2'-stilbenedisulfonic acid	ACF, ACY, DUP, GAF, SDH, TRC.
2,4-Dinitrotoluene	ACF, DUP.
2,4(and 2,6)-Dinitrotoluene	DUP.
Dinitrotoluene, mixed	ACF.
3,4-Dinitro-p-toluenesulfonic acid	GAF.
Dipentene	GLD, HNW.
(2,4-Di(tert-pentyl)phenoxy)acetyl chloride	GAF.
1,5-Diphenoxyanthraquinone	DUP, KPC.

TABLE 7B.--*Synthetic organic chemicals: Cyclic intermediates for which U.S. production or sales were reported, identified by manufacturer, 1959*--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
1,5(and 1,8)-Diphenoxyanthraquinone	DUP.
1,8-Diphenoxyanthraquinone	EKT.
m-Diphenoxybenzene	x.
Diphenylacetic acid	BPC.
Diphenylacetonitrile	FBS, KF.
Diphenylamine	ACY, DOW, DUP.
6,8-Diphenylamino-1-naphthalenesulfonic acid	ACF, TRC.
Diphenylanthraquinone-1'(S)-2',5'(S)-6'-dithiazole	AHC.
1,1-Diphenylethylene	CWN.
N,N'-Diphenylethylenediamine	TEK.
1,1-Diphenylhydrazine hydrochloride	EK.
2,5-Diphenyloxazole	EK.
Diphenylphenylphosphonite	VIC.
1,3-Diphenyl-1,3-propanedione	EK.
N,N-Diphenyl-N'-(m-propyl)urea	FBS.
Diphenyl-4-pyridylcarbinol	RIL.
1,3-Diphenyltriazene	ACF.
2,5-Dithiobiurea	ACY.
Dithiodibenzoic acid	MEE.
*1,4-Di(p-toluidino)anthraquinone	ACF, AHC, GAF, TRC.
1,8-Di(p-toluidino)anthraquinone	AHC.
Divinylbenzene	DOW, KPP.
Dodecylaniline	MON.
*Dodecylbenzene (includes keryl-type benzenes)	ACF, ATR, CO, MON, SOC, SOI.
Dodecylnitrobenzene	MON.
Dodecylphenol	RH, UCP, x.
p-Dodecylphenol	GAF.
o-Ethoxybenzoic acid	ACY.
(o-Ethoxybenzoyl)acetonitrile	ACY.
6-Ethoxy-2-mercaptobenzothiazole	DUP.
2-Ethoxynaphthalene	ACF.
N-(2-Ethoxy-1-naphthyl)acetamide	TRC.
o-Ethoxyphenol (2-Hydroxyphenetole)	MON.
3-Ethylamino-p-cresol	DUP.
3-Ethylamino-p-toluenesulfonic acid [SO_3H=1]	DUP.
*N-Ethylaniline, refined	ACF, ACY, DUP, UCC.
*2-(N-Ethylanilino)ethanol	DUP, EKT, TRC.
[2-(N-Ethylanilino)ethyl]trimethylammonium chloride	DUP.
(N-Ethylanilino)propionitrile	EKT.
α-(N-Ethylanilino)-m-toluenesulfonic acid	DUP.
*α-(N-Ethylanilino)-p-toluenesulfonic acid	ACF, ACY, GAF, ICC, SDH, TRC, VPC, WRN.
N-Ethyl-p-anisidine	EKT.
N-Ethylanthranilic acid	GAF.
2-Ethylanthraquinone	ACF.
*Ethylbenzene	ACP, DOW, KPP, MTC, UCC.
9-Ethylcarbazole	GAF.
N-Ethylcyclohexen-1-ylamine	MLS.
3-(N-Ethyl-4-formyl-m-toluidino)propionitrile	DUP.
2-[1-Ethyl-3-(2-methoxy-5-nitrophenyl)triazen-3-yl]-5-sulfobenzoic acid.	GAF.
N-Ethyl-1-naphthylamine	DSC, DUP.
9-Ethyl-3-nitrocarbazole	GAF.
p-Ethylphenol	ACY.
N-Ethyl-N-phenylbenzylamine	ACF, DUP, SDH.
2-Ethyl-2-phenylmalonic acid, diethyl ester	BPC, MAL.
5-Ethyl-2-picoline (2-Methyl-5-ethylpyridine) (MEP)	UCC.
2-Ethylpyridine	RIL.
N-Ethyl-5-sulfoanthranilic acid	GAF.
6-Ethyl-1,2,3,4-tetrahydro-1,1,4,4-tetramethylnaphthalene	GIV.
N-Ethyl-m-toluidine	DUP.
N-Ethyl-o-toluidine	ACF, DUP.
3-(N-Ethyl-m-toluidino)-1,2-propanediol	EKT.
3-(N-Ethyl-m-toluidino)propionitrile	DUP, EKT.
(N-Ethyl-m-toluidino)-m-toluenesulfonic acid	DUP.
1-Ethynylcyclohexanol	AIR.
Fluorobenzene	EK.
1-Fluoro-2,4-dinitrobenzene	EK.
o-Fluorotoluene	EK.
4-Formyl-m-benzenedisulfonic acid	GAF.
m'-Formylbenzenesulfonic acid	GAF.
*o-Formylbenzenesulfonic acid (o-Sulfobenzaldehyde)	ACF, GAF, ICC, SDH, VPC.

TABLE 7B. --*Synthetic organic chemicals: Cyclic intermediates for which U.S. production or sales were reported, identified by manufacturer, 1959*--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
3-(4-Formyl-N-methylanilino)propionitrile	DUP.
Furan	DUP.
Furfuryl alcohol	QKO.
*Hexachlorobenzene	DA, DOW, SCC, UCP.
Hexachlorocyclopentadiene	HK.
Hexachlorophenyl ether	DOW.
Hexamethylbenzene	EK.
2,2',4,4',6,6'-Hexanitrodiphenylamine	EK.
Homophthalic acid	DUP.
*p-Hydrazinobenzenesulfonic acid	ACY, DUP, GAF, STG, VPC.
3-Hydrazino-5-nitro-p-toluenesulfonic acid [SO_3H=1]	WRN.
4-Hydrazino-m-toluenesulfonic acid	GAF.
Hydroquinone, tech	CRS, EKT.
2'-Hydroxyacetophenone	KF.
4'-Hydroxyacetophenone	KF.
1-Hydroxyanthraquinone	TRC.
N-(3-Hydroxy-2-anthraquinonyl)-1-nitro-2-anthraquinone carboxamide.	GAF.
3-Hydroxy-2-anthroic acid	GAF.
2-Hydroxy-11H-benzo[a]carbazole-3-carboxylic acid	GAF.
p-Hydroxybenzoic acid	HN.
p-Hydroxybenzoic acid, butyl ester	FBS, HN.
p-Hydroxybenzoic acid, ethyl ester	HN.
p-Hydroxybenzoic acid, methyl ester	FBS, HN.
p-Hydroxybenzoic acid, propyl ester	FBS, HN.
4-Hydroxycoumarin	ABB.
3-(N-2-Hydroxyethylanilino)propionitrile	DUP, ICC.
[3-(N-2-Hydroxyethylanilino)propionitrile]acetate	EKT.
N-2-Hydroxyethyl-β-resorcylamide	FMT.
N-(4-Hydroxymethanilyl)anthranilic acid	TRC.
2-Hydroxy-4-methoxybenzophenone	ACY.
4-Hydroxy-4'-methylbenzophenone	BKC.
3-Hydroxy-2-methylcinchoninic acid	DUP.
2-Hydroxymethyl-4-isooctylphenoxy-3,6,9,12-tetraoxo-1-tetradecanol.	USR.
N-Hydroxymethylphthalamide	ACY.
7-Hydroxy-1-naphthalenecarbamic acid, methyl ester	TRC.
3-Hydroxy-2-naphtho-o-anisidine	ATL.
3-Hydroxy-2-naphtho-o-toluidide	KPC.
1-Hydroxy-2-naphthoic acid	ACF, GAF.
2-Hydroxy-1-naphthoic acid	BL.
*3-Hydroxy-2-naphthoic acid (B.O.N.)	ACF, AUG, DUP, HN, PCW, SW.
1-Hydroxy-2-naphthoic acid, phenyl ester	EK.
3-Hydroxy-2-naphtho-o-phenetidide	ATL.
3-Hydroxy-2-naphtho-o-toluidide	ATL.
N-(2-Hydroxy-1-naphthyl)acetamide	TRC.
N-(7-Hydroxy-1-naphthyl)acetamide	GAF, TRC.
1-Hydroxy-4-nitroanthraquinone	TRC.
Hydroxynitroviolanthrone	ACY.
1-[4'-(p-Hydroxyphenylazo)-1,1'-biphenyl-4-azo]-2-naphthol-6,8-disulfonic acid.	TRC.
1-[4'-(p-Hydroxyphenylazo)-3,3-dimethyl-1'-biphenyl-4-azo]-2-naphthol-6,8-disulfonic acid.	TRC.
2-Hydroxy-4-sulfo-1-naphthalenediazonium hydroxide, inner salt.	ACY.
p-[(5-Hydroxy-7-sulfo-2-naphthyl)amino]benzoic acid	GAF.
Imidazole	EK.
2-Imidazolidinone	MRA.
*1,1'-Iminobis[4-aminoanthraquinone]	ACF, ACY, AHC, CMG, DUP, GAF, MAY, TRC.
1,1'-Iminobis[4-benzamidoanthraquinone]	ACY, AHC, MAY.
*1,1'-Iminobis[5-benzamidoanthraquinone]	AHC, DUP, GAF, MAY, TRC.
*6,6'-Iminobis[1-naphthol-3-sulfonic acid]	DUP, GAF, TRC.
*1,1'-Iminobis[4-nitroanthraquinone]	ACY, DUP, MAY, TRC.
*1,1'-Iminodianthraquinone (Dianthrimide)	ACF, ACY, AHC, DUP, GAF, MAY, TRC.
Indanthrene	TRC.
o-Iodobenzoic acid	MAL.
Isatin	ACF.
Isatoic anhydride	MEE.
Isocyanic acid, m-chlorophenyl ester	GAF.
Isocyanic acid, 3,3'-dimethoxy-4,4'-biphenylene ester	CWN.
Isocyanic acid, 3,3'-dimethyl-4,4'-biphenylene ester	ACF, CWN.

TABLE 7B. --*Synthetic organic chemicals: Cyclic intermediates for which U.S. production or sales were reported, identified by manufacturer, 1959*--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
Isocyanic acid, 4-(p-isocyanatophenoxy)-m-phenylene ester--	DUP.
Isocyanic acid, methylenebis(2-methyl-p-phenylene) ester---	DUP.
Isocyanic acid, methylenedi-(m-methyl-p-phenylene) ester---	ACF.
Isocyanic acid, methylenedi-p-phenylene ester-----------	ACF, MOB.
*Isocyanic acid, 4-methyl-m-phenylene ester-------------	ACF, DUP, MOB.
Isocyanic acid, 1-naphthyl ester------------------------	EK.
Isocyanic acid, 1,4-phenylene ester---------------------	CWN.
Isocyanic acid, polymethylene-polyphenylene ester-------	CWN.
Isonicotinic acid, methyl ester------------------------	RIL.
Isonitrosopropiophenone---------------------------------	FBS.
Isophorone--	UCC.
Isophthalic acid (1,3-Benzenedicarboxylic acid)---------	SOC.
Isophthaloyl chloride-----------------------------------	HK.
Isopropylbenzene--	PLC.
*4,4'-Isopropylidenediphenol (Bisphenol A)--------------	DOW, MON, SHC.
N-Isopropyl-2-nitro-1-phenol-4-sulfonamide--------------	TRC.
1,3-Isoquinolinediol------------------------------------	DUP.
Isothiocyanic acid, phenyl ester------------------------	EK.
*Isoviolanthrone (Isodibenzanthrone)--------------------	ACY, AHC, DUP, GAF, MAY, TRC.
Leuco-1,4-bis(methylamino)anthraquinone-----------------	DUP.
*Leuco-1,4-diaminoanthraquinone-------------------------	ACY, AHC, DUP, GAF, ICC, MAY, TRC.
*Leuco quinizarin (1,4,9,10-Anthratetrol)---------------	ACF, DUP, HAR, KPC, TRC.
*Leuco tetrahydroxyanthraquinone------------------------	AHC, GAF, ICC, TRC.
2,4-Lutidine--	ACP, KPT.
2,6-Lutidine--	RIL.
Melamine--	ACY.
o-Mercaptobenzoic acid----------------------------------	MED, MEE.
Metanilamide--	TRC.
Metanilanilide--	GAF.
*Metanilic acid (m-Aminobenzenesulfonic acid)-----------	ACF, ACY, CMG, DUP, GAF, TRC, WOC.
Methacrylonitrile---------------------------------------	EKT.
Methapyrilene---	ABB.
1-Methoxyanthraquinone----------------------------------	GAF.
*4-Methoxymetanilic acid--------------------------------	CMG, GAF, VPC.
N-(2-Methoxy-1-naphthyl)acetamide-----------------------	TRC.
4-Methoxy-6-nitrometanilic acid-------------------------	DUP.
p-Methoxyphenylacetic acid------------------------------	TBK.
4'-Methoxypropiophenone---------------------------------	LIL.
N^1-(6-Methoxy-3-pyridazinyl)sulfanilamide------------	ACY.
1-(6-Methoxy-m-tolyl)-3-methyl-3-(D-gluco-2,3,4,5,6-pentahydroxyphenyl)triazene.	DUP.
1-Methylaminoanthraquinone------------------------------	ACY, AHC, DUP, GAF.
1-Methylamino-4-(p-toluidino)anthraquinone--------------	GAF.
N-Methylaniline---	ACY, DUP.
2-(N-Methylanilino)ethanol------------------------------	GAF.
3-(N-Methylanilino)propionitrile------------------------	DUP, EKT.
5-Methyl-o-anisidine [NH_2=1]-------------------------	DUP, TRC.
N-Methylanthranilic acid--------------------------------	GAF.
2-Methylanthraquinone-----------------------------------	ACF, ACY.
1-(3-Methyl-2-anthraquinonylamino)-5-(7-oxo-7H-benz[de]-anthracen-3-ylamino)anthraquinone.	DUP.
3-Methylbenzo[f]quinoline-------------------------------	ACY, GAF.
2-Methylbenzo[h]quinoline-------------------------------	ACY.
2-Methylbenzothiazole-----------------------------------	GAF.
N-Methylbenzylamine-------------------------------------	MLS.
Methylcyclohexane---------------------------------------	DOW, PLC.
N-Methylcyclohexylamine---------------------------------	DUP.
N-Methyleneaniline--------------------------------------	DUP.
4,4'-Methylenebis[2-chloroaniline]----------------------	DUP.
4,4'-Methylenebis[N,N-diethylaniline] (Methane base)-----	ACY, GAF, TRC.
4,4'-Methylenebis[N,N-dimethylaniline]------------------	ACF, DUP.
4,4'-Methylenebis[N,N-dimethyl-2-nitroaniline]----------	GAF.
5,5'-Methylenebis[toluene-2,4-diamine]------------------	ACF, DUP.
Methylenedianiline--------------------------------------	ACY.
Methylenedisalicylic acid-------------------------------	HN.
2-Methylfuran---	QKO.
2-Methylindole--	GAF.
Methylnaphthalene, crude--------------------------------	KPT, VEL.
N-Methyl-4'-nitroacetanilide----------------------------	ACF, GAF.
N-Methyl-p-nitroaniline---------------------------------	EK, GAF.
4-Methyl-2-nitroanisole---------------------------------	DUP.

TABLE 7B.--*Synthetic organic chemicals: Cyclic intermediates for which U.S. production or sales were reported, identified by manufacturer, 1959*--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
*2-Methyl-1-nitroanthraquinone	ACF, AHC, DUP, GAF.
N-Methyl-2-nitro-1-phenol-4-sulfonamide	TRC.
N-Methyl-N-nitroso-p-toluenesulfonamide	EK.
2-Methyl-5-norbornene-2,3-dicarboxylic anhydride	ACF.
m-(3-Methyl-5-oxo-2-pyrazolin-1-yl)benzenesulfonamide	TRC.
m-(3-Methyl-5-oxo-2-pyrazolin-1-yl)benzenesulfonic acid	GAF.
*p-(3-Methyl-5-oxo-2-pyrazolin-1-yl)benzenesulfonic acid	ACY, CMG, DUP, GAF, TRC, VPC.
3-(3-Methyl-5-oxo-2-pyrazolin-1-yl)-5-nitro-p-toluenesulfonic acid [SO_3H=1].	GAF.
4-(3-Methyl-5-oxo-2-pyrazolin-1-yl)-m-toluenesulfonic acid [SO_3H=1].	GAF.
N-Methyl-N-phenylbenzylamine	EK.
*3-Methyl-1-phenyl-2-pyrazolin-5-one (Developer Z)	ACF, DOW, DUP, SDW, TRC, VPC.
Methyl phenyl sulfide	EVN.
Methylpropylcarbinylbarbituric acid	LIL.
1-Methylpyrrole	ASL, x.
*α-Methylstyrene	ACP, ACY, DOW, HPC, SOC.
N-Methyl-5-sulfoanthranilic acid	GAF.
2-Methylsulfonyl-4-nitroaniline	EKT.
4-(Methylsulfonyl)-2-nitrophenol	TRC.
2-Methyl-6-(p-toluidino)-7H-dibenz[f,ij]isoquinoline-2,7(3H)-dione.	AHC.
3-Methyl-6-(p-toluidino)-7H-dibenz[f,ij]isoquinoline-2,7(3H)-dione.	GAF.
3-Methyl-1-p-tolyl-2-pyrazolin-5-one	ICC, VPC.
6'-Methyl-4'-p-tolylsulfonamido-m-benzanisidide	GAF.
*Naphthalene, solidifying at 79° C. or above (refined flake):	
*From domestic crude naphthalene	ACP, ACY, DUP, KPT, RIL, SW.
*From imported crude naphthalene	ACP, ACY, KPT, STN, SW.
1,5-Naphthalenediol (1,5-Dihydroxynaphthalene)	ACF.
2,3-Naphthalenediol	GAF.
2,7-Naphthalenediol	EK.
*1,5-Naphthalenedisulfonic acid	ACF, DUP, GAF, TRC.
*2,7-Naphthalenedisulfonic acid	ACF, DUP, TRC.
1-Naphthalenesulfonic acid, sodium salt	TRC.
2-Naphthalenesulfonic acid	ACF, ACY.
2-Naphthalenesulfonic acid, sodium salt	ACY.
2-Naphthalenesulfonyl chloride	DUP, EK, GAF.
1,4,5,8-Naphthalenetetracarboxylic acid	TRC.
1,4,5,8-Naphthalenetetracarboxylic dianhydride	GAF.
1,3,6-Naphthalenetrisulfonic acid	GAF.
Naphthalic anhydride	ACF, DUP, GAF.
Naphthalimide	ACF, DUP, GAF.
Naphthionic acid (4-Amino-1-naphthalenesulfonic acid)	ACY, DUP.
Naphthionic acid, sodium salt	ACF, ACY, DUP, TRC.
1-Naphthol (α-Naphthol)	ACF, DUP.
2-Naphthol, tech. (β-Naphthol)	ACF, ACY, SW.
p-Naphtholbenzein	EK.
1-Naphthol-3-benzenesulfonic acid, sodium salt	GAF.
1-Naphthol-3,6-disulfonic acid, monosodium salt	ACF.
1-Naphthol-3,8-disulfonic acid	ACF.
*2-Naphthol-3,6-disulfonic acid (R acid)	ACF, TRC.
*2-Naphthol-3,6-disulfonic acid, disodium salt	ACY, GAF, WRN.
*2-Naphthol-6,8-disulfonic acid (G acid)	ACF, DUP, TRC.
2-Naphthol-6,8-disulfonic acid, dipotassium salt	GAF.
*2-Naphthol-6,8-disulfonic acid, disodium salt	ACY.
1-Naphthol-3-sulfonamide	GAF.
*1-Naphthol-4-sulfonic acid (Nevile & Winther's acid)	ACF, DUP, TRC.
1-Naphthol-5-sulfonic acid	ACF, GAF, TRC.
1-Naphthol-8-sulfonic acid	VPC.
*2-Naphthol-6-sulfonic acid (Schaeffer's acid)	ACF, ACY, TRC.
2-Naphthol-6-sulfonic acid, sodium salt	TMC, WRN.
2-Naphthol-6-sulfonic acid, sodium salt, p-toluene sulfonate.	DUP.
2-Naphthol-7-sulfonic acid	DUP.
2-Naphthol-8-sulfonic acid	TRC.
*1-Naphthol-8-sulfonic acid sultone (1,8-Naphthosultone)	ACY, CMG, DUP, TRC.
1,4-Naphthoquinone	ACF, ACY.
Naphthostyril	ACF, DUP.
Naphth[1,2-d][1,2,3]oxadiazole-5,9-disulfonic acid	TRC.
*Naphth[1,2]oxadiazole-5-sulfonic acid	ACF, CMG, DUP, GAF, TRC.

TABLE 7B. --*Synthetic organic chemicals: Cyclic intermediates for which U.S. production or sales were reported, identified by manufacturer, 1959*--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
1-Naphthylamine (α-Naphthylamine)	ACF, DUP, GAF.
2-Naphthylamine (β-Naphthylamine)	KLS.
1-(2-Naphthylamino)-2-anthraquinonecarboxylic acid	ACF.
p-2-Naphthylaminophenol (N-(p-Hydroxyphenyl)-2-naphthylamine).	GAF.
*2-(Naphthylthio)acetic acid	ACY, DUP, GAF, KPC, VPC.
Nicotinic acid, n-butyl ester	ABB.
Nicotinonitrile (3-Cyanopyridine)	NEP, RIL.
Nitro-aceanthra[2,1-a]aceanthrylene-5,13-dione	AHC.
3'-Nitroacetanilide	TRC.
4'-Nitroacetanilide	ACY, EKT, GAF, TRC.
2-Nitro-p-acetanisidide	DUP, GAF.
4,(and 5')-Nitro-o-acetanisidide	GAF.
3,-Nitroacetophenone	ACY.
4'-Nitroacetophenone	NES.
*m-Nitroaniline	ACY, DUP, TRC.
o-Nitroaniline	KPC, MON, SDH.
p-Nitroaniline	KPC, MON.
3-Nitro-p-anisic acid	GAF.
2-Nitro-p-anisidine [NH_2=1]	DUP, SDH.
*4-Nitro-o-anisidine [NH_2=1]	DUP, GAF, KPC, SDH.
*5-Nitro-o-anisidine [NH_2=1]	ACY, ALL, AUG, DUP, GAF, KLS, KPC, SDH.
o-Nitroanisole	DUP, MON.
p-Nitroanisole	DUP.
1-Nitroanthraquinone	KPC.
1'-Nitroanthraquinone-2'-carboxyaminoaceanthra[2,1-a]-aceanthrylene-5,13-dione.	AHC.
*1-Nitro-2-anthraquinonecarboxylic acid	ACF, AHC, DUP, GAF, TRC.
*5-Nitro-1-anthraquinonesulfonic acid	ACF, DUP, GAF, MAY, TRC.
5(and 8)-Nitro-1-anthraquinonesulfonic acid	ACF, DUP.
8-Nitro-1-anthraquinonesulfonic acid	TRC.
8-Nitro-1-anthraquinonesulfonic acid, sodium salt	DUP.
2-(1-Nitro-2-anthraquinonyl)anthra[2,3]oxazole-5,10-dione	GAF.
m-Nitrobenzaldehyde	ACF, SDH.
6-[p-(p-Nitrobenzamido)benzamido]-1-naphthol-3-sulfonic acid	DUP.
6-(p-Nitrobenzamido)-1-naphthol-3-sulfonic acid	DUP, GAF.
*Nitrobenzene	ACF, ACY, DUP, GAF, MON.
2-Nitro-p-benzenedisulfonic acid	TRC.
m-Nitrobenzenesulfonamide	TRC.
3'-Nitrobenzenesulfonanilide	GAF, TRC.
*m-Nitrobenzenesulfonic acid	ACF, CMG, DUP, GAF, KPC, MAY, TRC.
*m-Nitrobenzenesulfonic acid, sodium salt	MON.
p-Nitrobenzenesulfonic acid	ACY.
5'-Nitro-o-benzenesulfonotoluidide	DUP.
m-Nitrobenzenesulfonyl chloride	GAF.
p-Nitrobenzenesulfonyl chloride	EK.
*m-Nitrobenzoic acid	HK.
*p-Nitrobenzoic acid	CWL, DUP.
p-Nitrobenzoic acid, ethyl ester	FBS.
p-Nitrobenzoic acid, isobutyl ester	FBS.
p-Nitrobenzoic acid, propyl ester	FBS.
m-Nitrobenzoyl chloride	GAF, HK.
p-Nitrobenzoyl chloride	DUP, HK.
4'-Nitro-4-biphenylcarboxylic acid, sodium salt	DUP, GAF.
2-Nitro-p-cresol	DUP, TRC.
Nitrodiphenylamine	ACY.
1-Nitronaphthalene	ACF, DUP, GAF.
3-Nitro-1,5-naphthalenedisulfonic acid	GAF, TRC.
8-Nitro-1-naphthalenesulfonic acid	GAF.
8(and 5)-Nitro-1(and 2)-naphthalenesulfonic acid	GAF.
7(and 8)-Nitronaphth[1,2]oxadiazole-5-sulfonic acid	ACF, GAF, TRC.
4'-Nitrooxanilic acid	DUP.
p-Nitrophenethyl acetate	EKT.
Nitrophenethyl alcohol	EKT.
p-Nitrophenetole	DUP.
o-Nitrophenol	DUP, VPC.
p-Nitrophenol	DUP, GAF, MON.
p-Nitrophenol, sodium salt	MON.
2-Nitro-1-phenol-4-sulfonanilide	TRC.
o-Nitrophenylacetic acid	EK.

TABLE 7B. --*Synthetic organic chemicals: Cyclic intermediates for which U.S. production or sales were reported, identified by manufacturer, 1959*--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
p-Nitrophenylacetic acid	EK.
N,N'-(4-Nitro-m-phenylene)bisacetamide	GAF.
p-Nitrophenylhydrazine	EK.
2-(o-Nitrophenyl)-2H-naphtho[1,2]triazole-6,8-disulfonic acid.	TRC.
1-(m-Nitrophenyl)-5-oxo-2-pyrazoline-3-carboxylic acid	DUP.
4-Nitrophthalic acid	EK.
4-Nitrophthalimide	DUP.
3(and 5)-Nitrosalicylic acid	EK, GAF.
4-Nitrosodiphenylamine	MON, USR.
1-Nitroso-2-naphthol	EK.
2-Nitroso-1-naphthol	EK.
p-Nitrosophenol	ACF, ACY, DUP.
p-Nitrostyrene	CWN.
2-[4-(4-Nitro-2-sulfostyryl)-5-sulfophenyl]-2H-naphtho-[1,2]triazole-5-sulfonic acid.	TRC.
m-Nitrotoluene	DUP.
o-Nitrotoluene	ACF, DUP.
p-Nitrotoluene	ACF, DUP.
Nitrotoluene mixtures	ACF, DUP.
5-Nitro-o-toluenesulfonanilide	GAF.
*3-Nitro-p-toluenesulfonic acid [SO_3H=1]	ACY, CMG, GAF, TRC.
*5-Nitro-o-toluenesulfonic acid [SO_3H=1]	ACF, ACY, DUP, GAF, KPC, TRC.
4'-Nitro-p-toluenesulfono-o-toluidide	GAF.
5-Nitro-o-toluenesulfonylchloride	GAF.
4-Nitro-o-toluidine [NH_2=1]	DUP, GAF.
*5-Nitro-o-toluidine [NH_2=1]	DUP, GAF, KLS, KPC, SDH.
*2-Nitro-p-toluidine [NH_2=1]	ACF, ACY, DUP, SDH, SW.
*16-Nitroviolanthrone	ACY, GAF, MAY, PCO.
2-Nitro-p-xylene	DUP.
4-Nitro-m-xylene	DUP.
*Nitroxylenes, mixed	ACF, ACY, DUP.
2-tert-Nonyl-p-cresol	USR.
Nonyl-dinonylphenol, mixture	JCC.
Nonyl- and dodecylbenzenes, mixed	ATR.
*Nonylphenol	GAF, JCC, RH, UCC, UCP, USR.
2-(p-Nonylphenoxy)ethanol	GAF.
Octylphenol	RH.
Oxalacetic acid, diethyl ester, p-sulfophenylhydrazone	TRC.
6-Oxo-6H-anthra[9,1]isothiazole-3-carbonyl chloride	DUP.
6-Oxo-6H-anthra[9,1]isothiazole-3-carboxylic acid	DUP.
*1-(7-Oxo-7H-benz[de]anthracen-3-ylamino)anthraquinone	ACY, AHC, DUP, GAF, TRC.
*1,1'-(7-Oxo-7H-benz[de]anthracen-3,9-ylenediimino)-dianthraquinone.	ACF, ACY, AHC, DUP, GAF, MAY, TRC.
5-Oxo-1-phenyl-2-pyrazoline-3-carboxylic acid	VPC.
5-Oxo-1-phenyl-2-pyrazoline-3-carboxylic acid ester	SDW.
5-Oxo-1-phenyl-2-pyrazoline-3-carboxylic acid, ethyl ester-	GAF.
*5-Oxo-1-(p-sulfophenyl)-2-pyrazoline-3-carboxylic acid (Pyrazolone T).	GAF, KPC, VPC.
4,4-Oxydianiline	EK.
3-[2-(m-Pentadecylphenoxy)butyramido]-1-(2,4,6-trichlorophenyl)-2-pyrazolin-5-one.	GAF.
Pentadecyltoluene	CO.
1,1,3,3,5-Pentamethylindan	GIV.
Pentylnaphthalenes (Amylnaphthalenes)	PAS.
o-Pentylphenol (o-Amylphenol)	PAS.
3,4,9,10-Perylenetetracarboxylic acid	GAF.
3,4,9,10-Perylenetetracarboxylic diimide	GAF.
Phenethylamine	MLS.
Phenethylamine sulfate	MLS.
4-Phenethylresorcinol	KPC.
o-Phenetidine	DUP, MON.
p-Phenetidine	DUP, MON.
*Phenol:	
*Natural:	
*From coal tar:[1]	
39° C., m.p	ACP, KPT, RIL.
*82% 84%	ACP, KPT, RIL.
All other	ACP, ACY, KPT, PRD, REP, RIL.
*From petroleum	MER, PIT, PRD.

See footnote at end of table.

TABLE 7B.--*Synthetic organic chemicals: Cyclic intermediates for which U.S. production or sales were reported, identified by manufacturer, 1959*--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
*Phenol--Continued	
*Synthetic:	
By caustic fusion:	
U.S.P.	MAL, MON, 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, SHC, SOC.
*1-Phenol-4-sulfonic acid	DOW, MON, UPF.
Phenoxyacetic acid	DA, DOW.
α-Phenoxypropionyl chloride	FBS, NES.
*Phenylacetic acid (α-Toluic acid)	BPC, GIV, TBK.
Phenylacetic acid, ethyl ester, tech	BPC, MAL, TBK.
Phenylacetic acid, methyl ester, tech	BPC.
*Phenylacetic acid, potassium salt	BPC, MON, OPC, TBK.
Phenylacetic acid, sodium salt	BPC.
*Phenylacetonitrile (α-Tolunitrile)	BPC, KF, OPC, SDW, TBK.
4'-Phenylacetophenone	GAF.
2-Phenylanthr[2,3]oxazole-5,10-dione	GAF.
*p-Phenylazoaniline (p-Aminoazobenzene) and hydrochloride	ACF, ACY, DUP, GAF, KPC, TRC.
p-Phenylazobenzoyl chloride	EK.
4-Phenylazo-1-naphthylamine	DUP.
4-Phenylazo-2,5-xylidine hydrochloride	DUP.
2-Phenylbutyric acid	BPC.
trans-2-Phenylcyclopropanecarboxylic acid	BPC.
N,N'-p-Phenylenebis[acetamide]	ACY.
2,2-p-Phenylenebis[5-(1-nitro-2-anthraquinoryl)-1,3,4-oxadiazole].	DUP.
*m-Phenylenediamine	ACF, ACY, DUP, GAF, PDC.
*o-Phenylenediamine	FMT, MEE, MRT, TRC.
*p-Phenylenediamine	ACF, ACY, SW.
1,1'-(p-Phenylenedicarbonyl)bis[2-(1-nitro-2-anthraquinonylcarbonyl)hydrazine].	DUP.
Phenyl ether (Diphenyl oxide)	DOW.
Phenylglycine, sodium salt	ACF, DUP.
Phenylhydrazine	DOW.
Phenylhydrazine dihydrogen sulfate	NEP.
Phenylhydrazine hydrochloride	DUP, EK, FIN, GAF.
*2,2'-(Phenylimino)diethanol (Phenyldiethanolamine)	DUP, EKT, GAF, KPC, TRC, UCC.
Phenylmalonic acid, diethyl ester	BPC.
o-Phenylphenol	DOW, RCI.
o-Phenylphenol, chlorinated	DOW.
o-Phenylphenol, sodium salt	DOW.
p-Phenylphenol	DOW.
N-Phenyl-p-phenylenediamine	DUP.
Phenylphosphonous acid	VIC.
Phenylphosphonous acid, sodium salt	VIC.
Phenyl-2-propanone	ORT, SK.
Phenyl-2-pyridyl ketone	RIL.
Phenyltetramer	SPD.
Phloroglucinol	MRT.
Phthalic acid	KF, MEE.
*Phthalic anhydride	ACF, ACP, ACY, KPT, MON, PCC, RCI, SOC, SW, WTC.
*Phthalic anhydride residue	ACP, SOC, SW.
Phthalide	ACF.
*Phthalimide	ACF, DOW, DUP, MEE, SFA.
Phthalimide, potassium salt	EK.
Phthalocyanine, iron derivative	DUP.
Phthalocyaninedisulfonic acid, copper derivative	TRC.
Phthalonitrile	ACP.
Phthaloyl chloride (Phthalyl chloride)	MON.
*Picolines:[1]	
*2-Picoline (α-Picoline)	ACP, KPT, UCC.
3-Picoline (β-Picoline)	RIL.
4-Picoline (γ-Picoline)	RIL, UCC.
Picoline (3,4-mixture)	ACP, KPT.
Picramic acid and salt	ACF, DUP.
Picric acid (Trinitrophenol)	ACF, DUP, SDC.
Picryl chloride	EK.
1-Piperazineethanol	JCC.
Piperazine mixture, crude	JCC.

See footnote at end of table.

TABLE 7B.--*Synthetic organic chemicals: Cyclic intermediates for which U.S. production or sales were reported, identified by manufacturer, 1959*--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
*Piperidine	DUP, HK, RIL.
Polychlorobiphenyl	MON.
Polydodecylbenzene	CO.
Polypentadecyltoluene	CO.
Potassium phenoxide	DUP.
Primuline base	ACF, DUP.
Primulinesulfonic acid	PCO.
Propiophenone	KPC, LIL, TBK.
Purpurin (1,2,4-Trihydroxyanthraquinone)	GAF.
Pyranthrone	AHC.
Pyrene	GAF.
Pyridine, refined:[1]	
*2° Pyridine	ACP, KPT, RIL.
Other grades	KPT.
2,5-Pyridinedicarboxylic acid, di-n-propyl ester	ASL.
2-Pyridineethanol	RIL.
Pyridine hydrochloride	EK.
3-Pyridinol	NEP.
2(1H)-Pyridone	FMT.
2-Pyrimidinol	GGY.
4'-(Pyrimidinylsulfamoyl)acetanilide	ACY.
Pyrrole	ASL.
Pyrrolidine	ASL.
2-Pyrrolidinone	GAF.
*Quinaldine	ACF, ACY, DUP, KPT.
*Quinizarin	ACF, ACY, AHC, CMG, CWN, DUP, EKT, GAF, HAR, ICC, KPC, MAY, TRC.
2-Quinizarinsulfonic acid	ACF, PAT.
Quinoline:	
1° and 2° Quinoline	ACP, KPT.
Other grades	ACP, EK.
2,4-Quinolinediol	DUP.
Quinoline yellow, base	ACF.
Quinophthalone	DUP.
Resorcinol, tech	KPC, LEM.
Resorcinol, monoacetate	KPC.
β-Resorcylaldehyde	GAF.
β-Resorcylic acid	ACY, KPC, MEE.
Salicylaldehyde	HN.
Salicylanilide	MEE.
*Salicylic acid, tech	DOW, DUP, HN, MON.
Salicylic acid, ammonium chromium complex	TRC.
Salicylic acid, ethyl ester	FBS.
Salicylideneaminoguanidine oleate	DUP.
Sodium phenoxide	DUP, FIN.
Styphnic acid, lead salt	REM.
*Styrene, all grades	CSD, DOW, FG, KPP, MTC, ODS, SHC, UCC.
4'-Sulfamoylacetanilide	ACY.
5-Sulfamoylanthranilic acid	TRC.
Sulfanilic acid (p-Aminobenzenesulfonic acid) and salt	ACF, ACY.
*4-Sulfoanthranilic acid	CMG, GAF, TRC.
o-Sulfobenzoic anhydride	EK.
5-Sulfoisophthalic acid, dimethyl ester	DUP.
p,p'-Sulfonyldianiline	DUP.
4,4'-Sulfonyldiphenol (4,4'-Dihydroxydiphenylsulfone)	GAF, MON, UPF.
4-Sulfophthalic acid	CWN.
Terephthalic acid	DUP, SOC.
Terephthalic acid dihydrazide	DUP.
Terephthalic acid, dimethyl ester	ACC, DUP, HPC.
1,1'-Terephthaloylbis[2-(1-amino-2-anthraquinone-carbonyl)hydrazine].	DUP.
Terephthaloyl chloride	HK.
Terphenyl (Phenylbiphenyl)	ARA, MON.
Tetrabromo-8,16-pyranthrenedione	ACF, GAF.
1,3,6,8-Tetrabromopyrene	GAF.
*1,4,5,8-Tetrachloroanthraquinone	ACF, AHC, DUP, GAF.
Tetrachloro-7H-benz-[de]-anthracen-7-one	AHC.
1,2,4,5-Tetrachlorobenzene	DOW, HK.
Tetrachloro- and trichlorobenzene, mixed	UCP.
2,2',6,6'-Tetrachloro-4,4'-isopropylidenediphenol	MON.

See footnote at end of table.

TABLE 7B.--*Synthetic organic chemicals: Cyclic intermediates for which U.S. production or sales were reported, identified by manufacturer, 1959*--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
1,3,6,8-Tetrachloropyrene	TRC.
α,α,2,6-Tetrachlorotoluene	DUP.
Tetrahydrofuran	DUP.
Tetrahydro-2-methylfuran	QKO.
Tetrakisaminophthalocyanine, copper salt	DUP.
*1,4,5,8-Tetrakis[1',1'',1''',1''''-anthraquinonylamino]-anthraquinone (Pentanthramide).	ACF, AHC, DUP, TRC.
1,2,4,5-Tetramethylbenzene (Durene)	SHC.
p-(1,1,3,3-Tetramethylbutyl)phenol	GAF.
N,N,N',N'-Tetramethyl-p-phenylenediamine dihydrochloride	EK.
Tetranitrophthalocyanine, copper salt	DUP.
2-(2-Thenylideneamino)pyridene	ABB.
Thianthrenedicarboxylic acid	TRC.
Thianthrenedinitrile	TRC.
*3,3'-Thiobis[7H-benz[de]anthracen-7-one]	ACY, AHC, DUP, GAF, TRC.
4,4'-Thiodianiline	ACY, DUP.
6,6'-Thiodimetanilic acid	ACF.
2-Thiophenecarboxaldehyde	ABB.
o-Tolidine	ACF, CWN, DUP.
o-Tolidine hydrochloride	DUP, EK.
Toluene-2,4-diamine (4-m-Tolylenediamine)	ACF, ACY, BL, DUP, GAF, SDC, TRC.
Toluene-2,4-disulfonic acid	GAF, KPC.
o-Toluenesulfonamide	MON.
p-Toluenesulfonamide	ACY, MON.
o(and p)-Toluenesulfonic acid	GAF, MON, SW, UPF.
o(and p)-Toluenesulfonic acid, potassium salt	NES.
p-Toluenesulfonic acid, anhydrous	TN.
p-Toluenesulfonic acid, ethyl ester	ACY, VPC.
p-Toluenesulfonic acid, methyl ester	AHC, MON, VPC.
p-Toluenesulfonic acid monohydrate	UPF.
p-Toluenesulfono-o-toluidide	DUP, GAF.
o-Toluenesulfonyl chloride	MON.
p-Toluenesulfonyl chloride	MON.
α-Toluenethiol	RBC.
p-Toluhydroquinone (Methylhydroquinone)	EKT.
m-Toluic acid	CWL.
o-Toluic acid	CWL.
p-Toluic acid	CWL, EK.
m-Toluidine	ACF, DUP.
o-Toluidine	ACF, DUP, KPC.
o-Toluidine hydrochloride	ACY.
p-Toluidine	ACF, DUP.
p-Toluidine hydrochloride	EK.
Toluidines, mixed	ACY, KPT.
m-Toluidinomethanesulfonic acid	TRC, VPC.
o-Toluidinomethanesulfonic acid	DUP.
8-(p-Toluidino)-1-naphthalenesulfonic acid	ACF, GAF.
2-(p-Toluidino)-5-nitrobenzenesulfonic acid	TRC.
1-(o-Toluidino)-2-propanol	EKT.
o-(p-Toluoyl)benzoic acid	DUP.
4-(o-Tolylazo)-o-anisidine hydrochloride	GAF.
*4-(o-Tolylazo)-o-toluidine (o-Aminoazotoluene)	ACF, ACY, DUP, GAF, KPC, SDH, TRC.
o-(p-Tolyl)benzoic acid	ACF, ACY.
*2,2'-(m-Tolylimino)diethanol	EKT, GAF, KPC.
3,4',5-Tribromosalicylanilide	x.
1,2,4-Trichlorobenzene	DOW, HK.
N,2,6-Trichloro-p-benzoquinone imine	EK.
1,2,4-Trichloro-5-nitrobenzene	GAF, KPC.
Trichlorophenylsilane	UCS.
α,α,α-Trichlorotoluene (Benzotrichloride)	HK, HN, TNP.
α',2,4-Trichlorotoluene	HN.
α,2,4(and α,2,6)-Trichlorotoluene	BPC.
α,3,4-Trichlorotoluene	HN.
1,3,5-Trichloro-s-triazine-2,4,6(1H,3H,5H)-trione	MON.
1,3,5-Triethylbenzene	DUP.
α,α,α-Trifluoro-5-chloro-1-nitrotoluene	HST.
α,α,α-Trifluoro-4-nitro-m-cresol	MEE.
α,α,α-Trifluoro-m-nitrotoluene	MEE.
α,α,α-Trifluorotoluene	HK.
α,α,α-Trifluoro-m-toluidine	MEE, NES.
3,4,5-Trimethoxybenzoic acid	KF.

TABLE 7B. --*Synthetic organic chemicals: Cyclic intermediates for which U.S. production or sales were reported, identified by manufacturer, 1959*--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
2,4,5-Trimethylaniline (Pseudocumidine)	ACF, BAT.
Trimethylbenzene	PLC.
1,2,4-Trimethylbenzene (Pseudocumene)	HUM.
1,3,3-Trimethyl-$\Delta^{2,\alpha}$-indolineacetaldehyde	DUP.
1,3,3-Trimethyl-2-methyleneindoline	DUP, x.
Trimethylphenylammonium iodide	EK.
2,3,3-Trimethyl-3H-pseudoindole	x.
1,3,5-Trinitrobenzene	EK.
2,4,6-Trinitrobenzoic acid	MRT.
Triphenylamine	EK.
Triphenylmethanol	EK.
2,4,6-Tris(dimethylaminomethyl)phenol	RH.
3,3'-Ureylenebis(4-methoxybenzenesulfonic acid)	DUP.
*6,6'-Ureylenebis[1-naphthol-3-sulfonic acid] (J acid urea)-	ACF, ACY, BL, CMG, DUP, GAF, PCO, TRC, VPC, WOC.
*Veratraldehyde (3,4-Dimethoxybenzaldehyde)	GIV, MON, SLV.
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, GAF, KPC, MAY, PCO, TRC.
9-Xanthenecarboxylic acid	MAL.
m-Xylene	SOC.
*o-Xylene	CSD, SNT, SOC.
o-(and p)-Xylene	HUM.
*p-Xylene	CSD, HUM, SIN, SOC.
2,4-Xylenol	EK.
Xylenol crystals	ACP, KPT.
Xylenols:	
Low b.p	PIT, PRD.
Medium b.p	PCC, PIT, PRD.
*Not classified as to b.p	ACY, PRD, RIL.
Xylidines:	
2,4-Xylidine (m-4-Xylidine)	DUP.
2,5-Xylidine (p-Xylidine)	ACF, DUP.
*Original mixture	ACF, ACY, DUP.
2,4-Xylidine acetate	ACY.
4-(2,4-Xylylazo)-o-toluidine	ACF.
4-(2,5-Xylylazo)-o-toluidine	ACY.
4-(Xylylazo)xylidine, mixed	GAF.
4-(2,4-Xylylazo)-2,5-xylidine	ACF.
All other intermediates	ICC, KF, UCP, WYT.

[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 Information Circular No. 7996, *Coke Plants in the United States on December 31, 1959.*

Dyes

TABLE 8B.--*Synthetic organic chemicals: Coal-tar dyes for which U.S. production or sales were reported, identified by manufacturer, 1959*

[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	ACF, ACY.
Acid yellow 2	DUP.
*Acid yellow 3	ACF, ACY, DUP, GAF.
Acid yellow 7	ACF.
Acid yellow 9	ACY.
*Acid yellow 11	CMG, DUP, GAF, VPC.
Acid yellow 14	TRC.
*Acid yellow 17	ACF, ACY, CMG, DUP, GAF, TRC, VPC.
*Acid yellow 23	ACF, ACY, GAF, KPC, TRC, VPC.
Acid yellow 25	GAF, VPC.
Acid yellow 29	GAF.
Acid yellow 34	ACF.
*Acid yellow 36	ACF, DUP, GAF, TRC.
Acid yellow 38	ACF, GAF.
*Acid yellow 40	ACF, GAF, TRC, VPC.
*Acid yellow 42	ACY, GAF, KPC, TRC, VPC.
*Acid yellow 44	ACF, GAF, KPC, TRC, VPC.
Acid yellow 48	TRC.
*Acid yellow 54	ACF, ACY, CMG, GAF, TRC, VPC.
Acid yellow 60	ACF.
Acid yellow 63	ACF, KPC.
Acid yellow 65	TRC.
*Acid yellow 73	ACF, NYC, SDH, SNA.
Acid yellow 76	TRC.
Acid yellow 77	ACY.
Acid yellow 90	ACF.
Acid yellow 95	CMG.
*Acid yellow 99	ACF, CMG, GAF, TRC, VPC.
Acid yellow 114	TRC.
Other acid yellow dyes: Acid yellow, FGL, G, 3GG, GW, NR, NW, R, RN.	ACY, ALT, DUP, GAF, TRC, VPC.
*Acid orange dyes:	
Acid orange 1	ACF, GAF.
Acid orange 2	ACF.
Acid orange 6	ACF.
*Acid orange 7	ACF, ACY, ATL, GAF, KPC, TRC, YAW.
*Acid orange 8	ACF, ACY, DUP, GAF, TRC.
*Acid orange 10	ACF, ACY, DUP, GAF, SDH, TRC.
Acid orange 12	ACF.
Acid orange 19	GAF.
Acid orange 20	ACF.
*Acid orange 24	ACF, ACY, DUP, GAF, KPC, TRC, YAW.
Acid orange 28	ACF.
Acid orange 31	KPC.
Acid orange 32	VPC.
Acid orange 34	ACY.
Acid orange 45	ACF, TRC.
Acid orange 49	TRC.
Acid orange 50	KPC.
Acid orange 51	ACF, CMG, TRC, VPC.
Acid orange 56	GAF.
Acid orange 60	DUP, GAF.
Acid orange 62	TRC.
Acid orange 63	GAF.
Acid orange 64	ACF, DUP.
Acid orange 69	ACY.
Acid orange 72	GAF.
*Acid orange 74	ACF, CMG, GAF, TRC, VPC.
Acid orange 76	ACF, TRC.
Acid orange 86	TRC.
Other acid orange dyes: Acid orange, G, 2G, NST, RW	ACF, ACY, ALT, DUP, TRC, VPC.

TABLE 8B.--*Synthetic organic chemicals: Coal-tar dyes for which U.S. production or sales were reported, identified by manufacturer, 1959*--Continued

Dye	Manufacturers' identification codes (according to list in table 23)
ACID DYES--Continued	
*Acid red dyes:	
*Acid red 1	ACF, ACY, DUP, GAF, KPC, TRC, VPC, YAW.
*Acid red 4	ATL, CMG, DUP, GAF, TRC, VPC, YAW.
*Acid red 12	ACF, GAF, TRC.
*Acid red 14	ACF, ATL, DUP, GAF, TRC.
*Acid red 17	ACF, ATL, GAF, TRC.
*Acid red 18	ACF, ACY, DUP, GAF, TRC.
Acid red 25	TRC.
*Acid red 26	ACF, ACY, ATL, GAF.
Acid red 27	ACF, TRC.
Acid red 29	ACF.
Acid red 32	ACF, GAF.
Acid red 33	ACF, YAW.
Acid red 34	ACF, DUP.
Acid red 35	GAF, KPC.
*Acid red 37	ACF, CMG, DUP, GAF, TRC.
Acid red 51	GAF, NYC.
Acid red 52	GAF.
Acid red 64	ACF.
Acid red 66	ACF, KPC.
*Acid red 73	ACF, ACY, ATL, DUP, GAF, TRC.
Acid red 76	ACF.
Acid red 80	GAF.
*Acid red 85	ACF, ACY, ATL, CMG, DUP, GAF, TRC, VPC, YAW.
*Acid red 87	ACF, AMS, NYC, SDH.
*Acid red 88	ACF, ACY, DUP, GAF, SDH, TRC.
*Acid red 89	GAF, KPC, TRC, VPC.
Acid red 92	ACF, NYC, SDH.
Acid red 94	NYC, TRC.
Acid red 97	GAF, TRC.
Acid red 99	ACF, CMG, VPC.
Acid red 100	VPC.
Acid red 106	YAW.
Acid red 109	VPC.
Acid red 113	DUP.
Acid red 114	DUP.
*Acid red 115	ACF, GAF, TRC.
Acid red 119	ACF.
Acid red 133	GAF.
*Acid red 137	ACF, ACY, DUP, GAF, TRC.
Acid red 150	ACF.
*Acid red 151	ACY, KPC, TRC, YAW.
Acid red 155	VPC.
Acid red 162	VPC.
*Acid red 167	ACF, ATL, GAF.
Acid red 175	DUP.
Acid red 178	DUP.
Acid red 179	CMG, TRC.
*Acid red 182	ACF, ACY, DUP, GAF.
*Acid red 183	CMG, TRC, VPC.
Acid red 184	TRC.
*Acid red 186	ACY, CMG, DUP, GAF, TRC, VPC.
Acid red 190	ACY.
Acid red 191	ACF, TRC.
Acid red 192	TRC.
Acid red 194	TRC.
Acid red 197	DUP.
Acid red 207	ACF.
Acid red 212	TRC.
Acid red 213	TRC.
Other acid red dyes: Acid red, B, 3B, Y	ACF, ALT, DUP, HSH, TRC, VPC.
*Acid violet dyes:	
*Acid violet 1	ACF, GAF, TRC.
Acid violet 3	ACF, DUP, TRC.
Acid violet 6	ACF.
*Acid violet 7	ACF, CMG, DUP, GAF, KPC, TRC, VPC.
Acid violet 9	GUY.
Acid violet 11	GAF, TRC.
*Acid violet 12	DUP, GAF, TRC.

TABLE 8B.--*Synthetic organic chemicals: Coal-tar dyes for which U.S. production or sales were reported, identified by manufacturer, 1959*--Continued

Dye	Manufacturers' identification codes (according to list in table 23)
ACID DYES--Continued	
*Acid violet dyes--Continued	
Acid violet 13	DUP.
Acid violet 14	TRC.
Acid violet 17	DUP, GAF, SDH.
Acid violet 21	DUP.
Acid violet 29	HSH.
Acid violet 34	ACF, AHC.
*Acid violet 43	ACF, AHC, DUP, HSH.
*Acid violet 49	ACF, ACY, TRC.
Acid violet 56	GAF.
Acid violet 58	GAF.
Acid violet 76	ACF.
Other acid violet dyes: Acid violet BD	DUP.
*Acid blue dyes:	
Acid blue 1	ACF, GAF.
*Acid blue 7	ACF, ACY, GAF.
*Acid blue 9	ACF, ACY, GAF, SDH, VPC.
Acid blue 10	ACF, KPC.
Acid blue 13	DUP.
Acid blue 15	DUP, GAF.
Acid blue 18	ACF, GAF.
Acid blue 20	ACF, ACY.
*Acid blue 22	ACY, GAF, NYC.
Acid blue 23	ACF, TRC.
*Acid blue 25	ACF, CMG, DUP, GAF, TRC.
Acid blue 26	ACF.
Acid blue 27	GAF.
Acid blue 34	ACF.
Acid blue 35	ACF.
*Acid blue 40	ACF, ACY, GAF, TRC.
Acid blue 41	ACF, GAF.
*Acid blue 43	ACF, ACY, GAF, TRC.
*Acid blue 45	ACF, ACY, CMG, DUP, GAF, TRC.
Acid blue 47	AHC, DUP.
Acid blue 48	SUC.
Acid blue 58	DUP.
*Acid blue 59	ACF, GAF, TRC.
Acid blue 62	VPC.
Acid blue 63	ACF.
Acid blue 67	ACF, GAF.
Acid blue 69	DUP, GAF.
Acid blue 74	ACF, DUP.
*Acid blue 78	ACF, AHC, DUP, GAF, ICC.
Acid blue 79	DUP.
Acid blue 80	ACF, TRC.
Acid blue 81	AHC.
Acid blue 83	GAF.
Acid blue 89	ACF.
*Acid blue 90	ACF, GAF, TRC.
Acid blue 92	ACF.
Acid blue 93	SUC.
Acid blue 99	ACF.
Acid blue 102	ACF, GAF, TRC.
Acid blue 104	ACF, DUP, GAF.
Acid blue 109	ACF.
*Acid blue 113	ACF, CMG, DUP, GAF.
Acid blue 118	ACF, GAF.
*Acid blue 120	ACF, GAF, KPC.
Acid blue 122	DUP.
Acid blue 137	ACF.
Acid blue 145	DUP.
Acid blue 154	ACF, TRC.
*Acid blue 158 and 158A	ACF, ACY, CMG, DUP, GAF, TRC, VPC.
Acid blue 159	GAF.
Acid blue 161	VPC.
Acid blue 165	DUP.
Other acid blue dyes: Acid blue, ASB	ALT, GAF, VPC, YAW.
*Acid green dyes:	
Acid green 1	ACF, ACY.

TABLE 8B. --*Synthetic organic chemicals: Coal-tar dyes for which U.S. production or sales were reported, identified by manufacturer, 1959*--Continued

Dye	Manufacturers' identification codes (according to list in table 23)
ACID DYES--Continued	
*Acid green dyes--Continued	
*Acid green 3	ACF, ACY, DUP, GAF, TRC, VPC.
Acid green 5	GAF.
*Acid green 9	ACF, ACY, DUP, GAF, VPC.
Acid green 12	GAF, TRC.
*Acid green 16	ACF, DUP, GAF, TRC.
*Acid green 20	ACF, ATL, DUP, TRC.
Acid green 22	ACF, GAF.
*Acid green 25	ACF, ACY, AHC, CMG, GAF, HSH, KPC, TRC, VPC.
Acid green 35	TRC.
Acid green 41	AHC.
*Acid green 50	ACY, GAF, VPC.
Other acid green dyes: Acid green, 2Y	ALT, DUP, VPC.
*Acid brown dyes:	
Acid brown 1	GAF.
Acid brown 2	KPC.
Acid brown 6	GAF.
Acid brown 9	GAF.
*Acid brown 14	ACF, ACY, DUP, GAF, KPC, TRC.
Acid brown 19	TRC.
Acid brown 22	DUP.
Acid brown 29	DUP.
Acid brown 31	GAF.
Acid brown 45	TRC.
Acid brown 93	TRC.
Acid brown 94	ACY.
Acid brown 96	ACY.
Acid brown 97	ACY.
Acid brown 98	ACY.
Acid brown 127	TRC.
Acid brown 129	TRC.
Acid brown 152	GAF.
Acid brown 158	GAF.
Other acid brown dyes: Acid brown, B, HR, NY, PRMA, 5R	ACY, DUP, GAF, VPC.
*Acid black dyes:	
*Acid black 1	ACF, ACY, ATL, CMG, DUP, GAF, KPC, TRC, YAW.
Acid black 2	ACF, ACY.
Acid black 12	ACF.
Acid black 15	ACF.
Acid black 16	ACF.
Acid black 18	ACF.
*Acid black 24	ACF, CMG, DUP, GAF.
*Acid black 26, 26A, and 26B	ACF, DUP, TRC.
Acid black 31	GAF.
Acid black 41	ACF.
*Acid black 48	ACF, ACY, AHC, CMG, DUP, GAF, TRC.
Acid black 52	ACF, GAF, TRC.
Acid black 53	ACF.
Acid black 58	TRC.
Acid black 60	TRC.
Acid black 92	ACY.
Other acid black dyes: Acid black, 8B, BAW, BRLS, J, N, NB, RYAW.	ACF, ALT, DUP, GAF, TRC, VPC, YAW.
AZOIC DYES AND COMPONENTS	
Azoic Compositions	
Azoic yellow dyes:	
Azoic yellow 1	ATL, HST, VPC.
*Azoic yellow 2	ACY, GAF, HST, x.
Azoic yellow 3	GAF.
Azoic yellow 10	DUP.
Azoic orange dyes:	
*Azoic orange 3	ATL, GAF, HST, SNA, VPC.
Azoic orange 4	GAF.
Azoic orange 8	ACY.
*Azoic red dyes:	
*Azoic red 1	ACF, ACY, ATL, AUG, DUP, GAF, SNA, VPC, x.

TABLE 8B.--*Synthetic organic chemicals: Coal-tar dyes for which U.S. production or sales were reported, identified by manufacturer, 1959*--Continued

Dye	Manufacturers' identification codes (according to list in table 23)
AZOIC DYES AND COMPONENTS--Continued	
Azoic Compositions--Continued	
*Azoic red dyes--Continued	
*Azoic red 2	ACY, ATL, AUG, DUP, GAF, ICC, VPC.
*Azoic red 6	ACY, ATL, DUP, GAF, HST, VPC, x.
Azoic red 12	GAF.
Azoic red 13	GAF.
Azoic red 14	GAF.
*Azoic red 15	ATL, GAF, VPC.
*Azoic red 16	ATL, AUG, GAF, VPC.
Other azoic red dyes: Azoic red, AF, 2B, BN, GFC, GP, IS, LBB.	ACY, ATL, GAF, VPC.
Azoic violet dyes:	
*Azoic violet 1	ATL, GAF, HST, VPC, x.
Other azoic violet dyes: Azoic violet B	GAF.
*Azoic blue dyes:	
*Azoic blue 2	ATL, GAF, VPC.
*Azoic blue 3	ACY, DUP, GAF, VPC.
Azoic blue 4	GAF.
Azoic blue 5	GAF, HST.
Azoic blue 6	ATL, GAF.
Azoic blue 7	GAF.
Other azoic blue dyes: Azoic blue RH	VPC.
Azoic green dyes:	
Azoic green 1	ATL, GAF.
Other azoic green dyes: Azoic green, GL	VPC.
*Azoic brown dyes:	
Azoic brown 1	DUP.
Azoic brown 7	ATL.
*Azoic brown 9	ATL, GAF, HST, VPC, x.
Azoic brown 10	ATL, GAF.
Other azoic brown dyes: Azoic brown, #828, D, 2GA, GGN, LL, R, RA.	ATL, GAF, VPC.
*Azoic black dyes:	
Azoic black 1	GAF, HST.
Azoic black 2	DUP.
Azoic black 3	ATL, GAF.
Azoic black 4	ATL, GAF.
Other azoic black dyes: Azoic black, #1, 2B, FOR, GF-167, GRW, J, JA, JN, MR, N-2GF, PGF, PJNS, PN, PNF, PRF, R.	ALL, ATL, GAF, VPC.
Azoic Diazo Components, Bases (Fast Color Bases)	
Azoic diazo component 1, base	GAF, SDH.
Azoic diazo component 2, base	ATL, KPC.
Azoic diazo component 3, base	DUP.
*Azoic diazo component 4, base	ALL, GAF, KPC, SDH.
*Azoic diazo component 5, base	DUP, GAF, SDH.
Azoic diazo component 8, base	DUP, KPC, SDH.
Azoic diazo component 9, base	DUP, KPC, VPC.
Azoic diazo component 10, base	GAF, KPC, SNA.
Azoic diazo component 11, base	ACF, KPC, MAY.
Azoic diazo component 12, base	DUP, KPC, SDH.
*Azoic diazo component 13, base	ACF, ALL, AUG, DUP, GAF, KPC, SDH.
*Azoic diazo component 20, base	ALL, GAF, KPC, SDH.
*Azoic diazo component 28, base	ALL, GAF, KPC, VPC.
*Azoic diazo component 32, base	ACF, ALL, ATL, AUG, DUP, GAF, KPC, MAY, SDH.
Azoic diazo component 34, base	GAF.
Azoic diazo component 38, base	VPC.
Azoic diazo component 41, base	GAF.
Azoic diazo component 42, base	ALL, PCW.
Azoic diazo component 46, base	GAF.
Azoic diazo component 48, base	CWN, DUP, GAF.
Other azoic diazo components: Azoic diazo component KBO, base.	DUP.

TABLE 8B.--*Synthetic organic chemicals: Coal-tar dyes for which U.S. production or sales were reported, identified by manufacturer, 1959*--Continued

Dye	Manufacturers' identification codes (according to list in table 23)
AZOIC DYES AND COMPONENTS--Continued	
Azoic Diazo Components, Salts (Fast Color Salts)	
*Azoic diazo component 1, salt	AUG, GAF, KPC.
Azoic diazo component 2, salt	ALL, GAF.
*Azoic diazo component 3, salt	ACF, ALL, AUG, GAF, KPC, SDH, VPC.
Azoic diazo component 4, salt	ALL, DUP, KPC.
*Azoic diazo component 5, salt	ACF, AUG, GAF, KPC, VPC.
Azoic diazo component 6, salt	GAF, KPC.
*Azoic diazo component 8, salt	ACF, ALL, AUG, GAF, KPC, VPC.
*Azoic diazo component 9, salt	ACF, ALL, AUG, GAF, SDH, VPC.
Azoic diazo component 10, salt	GAF, SDH.
*Azoic diazo component 11, salt	ALL, GAF, KPC, VPC.
*Azoic diazo component 12, salt	AUG, GAF, KPC, SDH, VPC.
*Azoic diazo component 13, salt	ACF, ALL, GAF, SDH, VPC.
*Azoic diazo component 20, salt	ALL, GAF, SDH, VPC.
Azoic diazo component 22, salt	GAF.
*Azoic diazo component 28, salt	ALL, AUG, GAF, KPC, VPC.
Azoic diazo component 32, salt	ALL, KPC, SDH, SNA.
Azoic diazo component 33, salt	GAF.
Azoic diazo component 34, salt	GAF.
Azoic diazo component 35, salt	ALL, GAF.
*Azoic diazo component 36, salt	ACF, ALL, GAF, KPC.
Azoic diazo component 37, salt	GAF.
Azoic diazo component 40, salt	GAF.
Azoic diazo component 41, salt	ALL, GAF.
*Azoic diazo component 42, salt	ALL, GAF, VPC.
Azoic diazo component 44, salt	GAF, SDH.
Azoic diazo component 47, salt	GAF.
*Azoic diazo component 48, salt	ALL, GAF, KPC, SDH, SNA, VPC.
Azoic diazo component 49, salt	GAF, KPC, SDH.
Other azoic diazo components: Azoic diazo component KL, RM, salt.	GAF.
Azoic Coupling Components (Naphthol AS and Derivatives)	
Azoic coupling component 1	AUG.
*Azoic coupling component 2	ACF, ACY, AUG, DUP, GAF, KPC, PCW.
*Azoic coupling component 3	AUG, GAF, KPC, PCW.
*Azoic coupling component 4	ACF, AUG, GAF, KPC, PCW, SDH.
*Azoic coupling component 5	GAF, KPC, PCW, SDH.
*Azoic coupling component 7	ACF, AUG, GAF, KPC, PCW.
Azoic coupling component 8	ACF, ATL, GAF, PCW.
Azoic coupling component 10	ATL, PCW.
*Azoic coupling component 11	DUP, GAF, KPC, PCW.
Azoic coupling component 12	ALL, AUG, GAF, KPC, PCW.
*Azoic coupling component 13	GAF, KPC, PCW, SDH.
*Azoic coupling component 14	ACY, ATL, AUG, GAF, KPC, PCW, SDH.
Azoic coupling component 15	GAF.
Azoic coupling component 16	GAF, SDH.
*Azoic coupling component 17	ACF, ACY, ALL, ATL, AUG, DUP, GAF, KPC, PCW, SDH.
*Azoic coupling component 18	ACF, ACY, ATL, AUG, DUP, GAF, KPC, PCW, SDH.
Azoic coupling component 19	GAF, KPC, PCW, SDH.
*Azoic coupling component 20	ACF, ACY, ATL, AUG, DUP, GAF, KPC, PCW, SDH.
*Azoic coupling component 21	AUG, KPC, PCW, SDH.
Azoic coupling component 23	GAF.
Azoic coupling component 24	GAF, PCW.
*Azoic coupling component 29	ATL, AUG, GAF, PCW.
Azoic coupling component 33	GAF.
*Azoic coupling component 34	ATL, GAF, PCW, SDH.
*Azoic coupling component 35	ALL, GAF, KPC, PCW.
Azoic coupling component 36	GAF.
Azoic coupling component 43	GAF.
Other azoic coupling components: Naphthol, AS-BB, AS-BC, AS-RR.	ATL, GAF, PCO, x.

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TABLE 8B. --*Synthetic organic chemicals: Coal-tar dyes for which U.S. production or sales were reported, identified by manufacturer, 1959*--Continued

Dye	Manufacturers' identification codes (according to list in table 23)
BASIC DYES	
Basic yellow dyes:	
Basic yellow 1	DUP.
*Basic yellow 2	ACF, ACY, DUP.
Basic yellow 5	ACF.
Basic yellow 9	VPC.
Basic yellow 10	GAF.
Basic yellow 11	DUP.
Basic yellow 13	DUP, GAF.
Other basic yellow dyes: Basic yellow, 4G, GL, 3GL, 3RL--	DUP, GAF.
*Basic orange dyes:	
*Basic orange 1	ACF, ACY, GAF.
*Basic orange 2	ACF, ACY, DUP, GAF, TRC.
Basic orange 10	VPC.
Basic orange 14	GAF, VPC.
Basic orange 17	ACF.
Basic orange 21	DUP, GAF.
Other basic orange dyes: Basic orange CL, L	DUP.
Basic red dyes:	
Basic red 1	DUP, GAF.
*Basic red 2	ACF, DUP, GAF.
Basic red 9	NYC, SUC.
Basic red 14	DUP, GAF.
Other basic red dyes: Basic red B, 3B, 6B, G, GL, L------	DUP, GAF.
Basic violet dyes:	
*Basic violet 1	ACF, ACY, DSC, GAF, SUC.
Basic violet 2	ACY.
*Basic violet 3	ACF, DSC, DUP, GAF, SDH.
*Basic violet 4	ACF, DSC, DUP, GAF.
Basic violet 5	ACF.
*Basic violet 10	ACF, ACY, DUP, GAF.
Basic violet 13	DSC.
Basic violet 14	ACY, NYC, SW.
*Basic blue dyes:	
*Basic blue 1	ACF, DSC, GAF, SDH.
Basic blue 4	DUP.
*Basic blue 5	ACF, DSC, SDH.
Basic blue 6	ACF, ACY.
*Basic blue 7	DSC, DUP, GAF, SDH.
*Basic blue 9	ACF, ACY, GAF, SDH.
Basic blue 11	DSC, DUP.
Basic blue 12	GAF.
Basic blue 21	DUP.
Basic blue 22	DUP.
*Basic blue 26	ACF, DSC, DUP, GAF, SDH.
Other basic blue dyes: Basic blue BGL, BR, 7G	DUP, x.
Basic green dyes:	
*Basic green 1	ACF, ACY, DSC, DUP, GAF, SDH.
Basic green 3	DUP.
*Basic green 4	ACF, ACY, DSC, GAF, SDH.
Basic green 5	ACY.
Basic brown dyes:	
*Basic brown 1	ACF, ACY, DUP, GAF, TRC.
Basic brown 2	ACF, GAF.
*Basic brown 4	ACF, ACY, DUP, GAF, TRC.
Other basic brown dyes: Basic brown YL	DUP.
Basic black dyes: Basic black 3	GAF.
DIRECT DYES	
*Direct yellow dyes:	
*Direct yellow 4	ACF, ACY, DUP, GAF, TRC.
*Direct yellow 5	ACF, ACY, GAF.
*Direct yellow 6	ACF, ACY, DUP, GAF, TRC.
Direct yellow 7	PCO.
Direct yellow 8	ACF, GAF, TRC.
Direct yellow 9	DUP.
*Direct yellow 11	ACF, ACY, DUP, GAF, TRC.
*Direct yellow 12	ACF, DUP, GAF, TRC.
Direct yellow 19	TRC.

TABLE 8B.--*Synthetic organic chemicals: Coal-tar dyes for which U.S. production or sales were reported, identified by manufacturer, 1959*--Continued

Dye	Manufacturers' identification codes (according to list in table 23)
DIRECT DYES--Continued	
*Direct yellow dyes--Continued	
Direct yellow 20	TRC.
Direct yellow 23	DUP.
Direct yellow 26	DUP, GAF.
Direct yellow 27	ACF, GAF.
*Direct yellow 28	ACF, DUP, GAF, PCO, TRC.
*Direct yellow 29	DUP, GAF, PCO.
Direct yellow 39	TRC.
Direct yellow 42	TRC.
*Direct yellow 44	ACF, CMG, DUP, GAF, PCO, TRC, VPC.
*Direct yellow 50	ACF, ATL, BL, DUP, GAF, TRC, VPC.
*Direct yellow 59	ACF, DUP, PCO.
Direct yellow 61	GAF.
Direct yellow 62	ACF, GAF.
Direct yellow 63	DUP.
Direct yellow 64	TRC.
Direct yellow 81	TRC.
Other direct yellow dyes: Direct yellow, CD, CS, EFC, G, 3G, 5G, 8G, RG, RGL, RP.	ACY, ALT, DUP, GAF, PCO, TRC, VPC.
*Direct orange dyes:	
*Direct orange 1	ACF, CMG, KPC, TRC, VPC.
Direct orange 6	ACF, KPC.
*Direct orange 8	ACF, DUP, GAF, TRC.
Direct orange 10	ACF, KPC.
Direct orange 11	GAF.
*Direct orange 15	ACF, ACY, DUP, GAF, TRC.
*Direct orange 26	ACY, DUP, GAF, TRC, VPC.
*Direct orange 29	ACF, GAF, PCO, WOC.
*Direct orange 34	ACF, ACY, CMG, DUP, GAF, TRC.
*Direct orange 37	ACY, CMG, DUP, GAF, TRC.
Direct orange 38	ACF.
Direct orange 39	CMG, DUP, GAF.
Direct orange 40	DUP.
Direct orange 41	GAF.
Direct orange 42	TRC.
Direct orange 48	DUP.
Direct orange 49	TRC.
Direct orange 55	ACF, DUP.
Direct orange 59	DUP.
Direct orange 61	TRC.
Direct orange 62	ACF.
Direct orange 64	VPC.
Direct orange 67	ACF, VPC.
Direct orange 70	TRC.
*Direct orange 72	ACF, ACY, BL, PCO, VPC.
*Direct orange 73	ACF, DUP, GAF, TRC, VPC.
Direct orange 74	DUP, GAF.
Direct orange 76	DUP, TRC.
Direct orange 78	DUP, VPC.
Direct orange 79	DUP.
Direct orange 80	DUP, VPC.
*Direct orange 81	ACF, ATL, DUP, GAF.
Direct orange 83	ACF, GAF.
Direct orange 88	DUP.
Direct orange 102	ACY, DUP.
Other direct orange dyes: Direct orange, DL, G, 2GLL, 3GU, L8GL, 3LWF, NAR, SCW, S4G.	ALT, ATL, BL, DUP, GAF, PCO, TRC, VPC.
*Direct red dyes:	
*Direct red 1	ACF, ATL, BL, DUP, GAF, KPC, TRC, YAW.
*Direct red 2	ACF, DUP, PCO, TRC.
Direct red 4	ACF, GAF, TRC, VPC.
Direct red 5	ACF.
Direct red 7	DUP, YAW.
*Direct red 10	ACF, ACY, KPC, TRC.
*Direct red 13	ACF, ATL, DUP, GAF, KPC, TRC, YAW.
Direct red 14	TRC.
*Direct red 16	ACF, ATL, GAF, KPC, TRC.
Direct red 17	TRC.
Direct red 20	ACF, GAF.

TABLE 8B.--*Synthetic organic chemicals: Coal-tar dyes for which U.S. production or sales were reported, identified by manufacturer, 1959*--Continued

Dye	Manufacturers' identification codes (according to list in table 23)
DIRECT DYES--Continued	
*Direct red dyes--Continued	
*Direct red 23	ACY, CMG, DUP, GAF, KPC, TRC, VPC.
*Direct red 24	ACF, ACY, ATL, GAF, PCO, VPC.
*Direct red 26	ACF, ACY, DUP, GAF, PCO, TRC, VPC.
*Direct red 28	ACF, ATL, DUP, PCO, TRC.
Direct red 30	VPC.
*Direct red 31	ACF, ATL, DUP, GAF, TRC.
Direct red 32	ACF, DUP.
*Direct red 37	ACF, ACY, GAF, KPC, TRC, YAW.
*Direct red 39	ACF, ACY, GAF, TRC, YAW.
Direct red 46	ATL, TRC.
Direct red 53	ACF.
Direct red 62	TRC.
Direct red 72	TRC.
Direct red 73	DUP, TRC.
*Direct red 75	ACF, ACY, CMG, DUP, GAF, VPC.
Direct red 76	ACF.
*Direct red 79	ACF, CMG, GAF, KPC, PCO, TRC, VPC.
*Direct red 80	ACF, BL, CMG, DUP, GAF, KPC, PCO, TRC, VPC.
*Direct red 81	ACF, ACY, BL, CMG, DUP, GAF, KPC, PCO, SDH, TRC, VPC, YAW.
*Direct red 83	ATL, CMG, DUP, GAF, KPC, TRC, VPC.
*Direct red 84	ACF, GAF, TRC.
Direct red 93	VPC.
Direct red 94	ACF, DUP.
Direct red 99	ACF.
Direct red 100	TRC.
Direct red 111	GAF.
Direct red 117	DUP.
Direct red 118	VPC.
Direct red 120	GAF.
*Direct red 122	ACF, CMG, DUP, GAF, TRC, VPC.
*Direct red 123	ACF, GAF, KPC, VPC.
*Direct red 127 and 127A	ACF, CMG, DUP, GAF, KPC, TRC, VPC.
Direct red 128	ACF.
Direct red 139	VPC.
Direct red 148	DUP, GAF.
*Direct red 149	ACF, CMG, DUP, GAF, KPC, TRC, VPC.
Direct red 152	ACF, DUP.
*Direct red 153	ACF, CMG, VPC.
Direct red 155	GAF, VPC.
Other direct red dyes: Direct red, BN, 8BNL, GLJ, LBG, RLL, RP, RPC, WL, WLKS.	ALT, BL, DUP, GAF, TRC, YAW.
*Direct violet dyes:	
*Direct violet 1	ACF, DUP, KPC, TRC.
Direct violet 7	ACF, GAF.
*Direct violet 9	ACF, ATL, DUP, GAF, KPC. PCO, TRC.
Direct violet 12	GAF.
Direct violet 14	ACF, TRC.
Direct violet 22	ACF.
Direct violet 30	KPC.
Direct violet 47	DUP, GAF.
Direct violet 48	ACF, DUP, TRC.
Direct violet 51	ACF, DUP.
Direct violet 60	ACF.
Direct violet 67	ACF, DUP.
Direct violet 68	DUP.
Other direct violet dyes: Direct violet	ALT.
Direct blue dyes:	
*Direct blue 1	ACF, ACY, ATL, BL, CMG, DUP, GAF, KPC, TRC, VPC.
*Direct blue 2	ACF, ACY, ATL, DUP, GAF, KPC, TRC, VPC, YAW.
Direct blue 3	ACF, TRC.
*Direct blue 6	ACF, ACY, ATL, BL, DUP, GAF, KPC, TRC, YAW.
*Direct blue 8	ACF, AGY, ATL, DUP, GAF, KPC, TRC, YAW.
Direct blue 10	DUP, VPC.
*Direct blue 14	ACF, ATL, DUP, TRC.
*Direct blue 15	ACF, ATL, DUP, GAF, TRC.
Direct blue 21	TRC.
*Direct blue 22	ACF, ATL, CMG, DUP, GAF, KPC, TRC.

TABLE 8B.--*Synthetic organic chemicals: Coal-tar dyes for which U.S. production or sales were reported, identified by manufacturer, 1959*--Continued

Dye	Manufacturers' identification codes (according to list in table 23)
DIRECT DYES--Continued	
Direct blue dyes--Continued	
*Direct blue 24	ACF, DUP, GAF, KPC, TRC, YAW.
*Direct blue 25	ACF, DUP, GAF, TRC.
*Direct blue 26	ACF, ATL, DUP, GAF, TRC, YAW.
Direct blue 27	DUP.
Direct blue 47	ACY.
Direct blue 55	ACF.
Direct blue 61	YAW.
Direct blue 66	DUP, VPC.
*Direct blue 67	ACF, ATL, DUP, TRC, VPC.
*Direct blue 71	ACF, DUP, GAF, TRC, VPC.
Direct blue 74	DUP.
Direct blue 75	TRC.
*Direct blue 76	ACF, ACY, ATL, BL, DUP, GAF, KPC, TRC, VPC.
*Direct blue 78	ACF, ATL, CMG, DUP, GAF, KPC, TRC, VPC.
*Direct blue 80	ACF, ACY, ATL, DUP, GAF.
Direct blue 81	ACF.
Direct blue 84	DUP.
*Direct blue 86	ACF, BL, CMG, DUP, GAF, ICC, KPC, TMS, TRC, VPC, WOC.
*Direct blue 98	ACF, ACY, ATL, BL, GAF, ICC, STD, TRC, WOC.
Direct blue 99	GAF.
Direct blue 100	ACF.
Direct blue 101	CMG.
Direct blue 102	CMG.
Direct blue 104	DUP.
*Direct blue 120 and 120A	DUP, GAF, PCO, TRC, VPC.
*Direct blue 126	ACF, DUP, GAF, TRC, VPC.
Direct blue 127	GAF.
Direct blue 130	ACF, GAF.
Direct blue 133	GAF.
Direct blue 136	GAF.
Direct blue 138	GAF.
Direct blue 143	DUP.
*Direct blue 151	ACF, ATL, DUP, GAF, TRC.
Direct blue 176	TRC.
Direct blue 180	CMG.
Other direct blue dyes: Direct blue, B, BFL, BG, BL, BRN, F, 2GFL, 3GFL, 6GL, 7GL, 8GLN, 4GLR, GLS, 7GUL, LLG, LWN, ML, RL, 6RL, UGLL, VG.	ACY, ALT, ATL, BL, DUP, TRC, VPC.
*Direct green dyes:	
*Direct green 1	ACF, ACY, ATL, DUP, GAF, KPC, TRC, YAW.
*Direct green 6	ACF, ACY, DUP, GAF, KPC, TRC, YAW.
Direct green 8	ACF, ATL, TRC, YAW.
Direct green 11	ACF.
Direct green 12	ACF, DUP, TRC.
Direct green 14	ACF.
Direct green 15	DUP.
Direct green 26	ACF, GAF, TRC.
Direct green 27	ACF, ATL, TRC.
Direct green 28	TRC.
*Direct green 38	DUP, GAF, TRC, VPC.
Direct green 39	GAF.
Direct green 41	DUP.
Direct green 45	VPC.
Direct green 46	VPC.
Direct green 47	DUP, GAF.
Other direct green dyes: Direct green, F3L, 5GSC, LFB, PG.	ACY, ALT, ATL, BL, DUP, TRC.
*Direct brown dyes:	
*Direct brown 1	ACF, ACY, DUP, GAF, TRC.
*Direct brown 2	ACF, ACY, ATL, DUP, GAF, KPC, TRC, YAW.
*Direct brown 6	ACF, ATL, DUP, GAF, KPC, TRC.
Direct brown 11	ACF.
Direct brown 21	DUP.
Direct brown 25	ACF, DUP.
Direct brown 27	GAF.
Direct brown 29	ACF.
Direct brown 30	GAF.
*Direct brown 31	ACF, DUP, GAF, KPC, PCO, YAW.

TABLE 8B. --*Synthetic organic chemicals: Coal-tar dyes for which U.S. production or sales were reported, identified by manufacturer, 1959*--Continued

Dye	Manufacturers' identification codes (according to list in table 23)
DIRECT DYES--Continued	
*Direct brown dyes--Continued	
Direct brown 32	GAF.
Direct brown 33	ACF, DUP.
Direct brown 35	ACF.
Direct brown 40	DUP, KPC.
Direct brown 44	GAF, YAW.
Direct brown 48	KPC.
Direct brown 49	ACY.
Direct brown 59	ACY, TRC.
*Direct brown 74	ACF, DUP, GAF, KPC.
*Direct brown 95	ACF, BL, DUP, GAF, KPC, PCO, TRC, YAW.
Direct brown 101	GAF.
Direct brown 105	DUP.
Direct brown 106	ACF, GAF.
*Direct brown 111	DUP, GAF, TRC, VPC.
Direct brown 112	ACF, ATL, DUP.
Direct brown 125	GAF.
Direct brown 151	GAF.
*Direct brown 154	DUP, TRC, YAW.
Other direct brown dyes: Direct brown, CWR, DS, 6G, GR, IA, LBT, M, SGLL.	ACF, ALT, BL, DUP, PCO, TRC, YAW.
*Direct black dyes:	
Direct black 3	DUP.
*Direct black 4	ACF, ACY, ATL, DUP, GAF, TRC, YAW.
Direct black 9	ACF, DUP, GAF.
Direct black 17	ACF, GAF, TRC.
Direct black 19	ACF, GAF, TRC.
*Direct black 22	ACF, ATL, CMG, DUP, GAF, KPC, TRC, VPC, YAW.
Direct black 29	ATL.
Direct black 36	KPC.
*Direct black 37	ACF, DUP, KPC.
*Direct black 38	ACF, ACY, ATL, BL, DUP, GAF, KPC, PCO, TRC, YAW.
Direct black 41	GAF.
*Direct black 51	ACF, ATL, DUP, GAF, KPC, TRC.
Direct black 55	DUP.
Direct black 56	ACF, TRC.
Direct black 67	ACF, DUP, VPC.
Direct black 71	ACF, CMG.
Direct black 75	GAF.
*Direct black 78	ACF, DUP, TRC.
*Direct black 80	ACF, BL, GAF, KPC, PCO, TRC, VPC, YAW.
Other direct black dyes: Direct black, #667, BBA, BH, 4BL, G, 5G, 2GFL, RCW, RWL, VBE.	ACF, ACY, ALT, BL, DUP, GAF, TRC, YAW.
DISPERSE DYES	
*Disperse yellow dyes:	
Disperse yellow 1	GAF.
Disperse yellow 2	DUP.
*Disperse yellow 3	ACF, DUP, EKT, GAF, HSH, ICC, KPC, STD, TRC.
Disperse yellow 5	EKT, GAF, ICC.
Disperse yellow 8	TRC.
Disperse yellow 17	KPC.
Disperse yellow 23	DUP, GAF.
Disperse yellow 28	KPC.
Disperse yellow 31	GAF.
Disperse yellow 32	DUP.
*Disperse yellow 33	EKT, ICC, KPC.
Disperse yellow 34	EKT.
Disperse yellow 37	KPC, TRC.
Other disperse yellow dyes: Disperse yellow 6D, 3G, 8-GLF, GSF, GSFD, M, 5R, R-GFD, 2R-GLF, RL, 4RL, 4RLD, W-GLF, YL.	DUP, EKT, GAF, ICC.
*Disperse orange dyes:	
Disperse orange 2	KPC.
*Disperse orange 3	DUP, GAF, ICC, KPC, STD, TRC.
*Disperse orange 5	EKT, GAF, KPC.
Disperse orange 6	KPC.
*Disperse orange 17	EKT, HSH, ICC, STD.

TABLE 8B. --*Synthetic organic chemicals: Coal-tar dyes for which U.S. production or sales were reported, identified by manufacturer, 1959*--Continued

Dye	Manufacturers' identification codes (according to list in table 23)
DISPERSE DYES--Continued	
*Disperse orange dyes--Continued	
Disperse orange 21	TRC.
Other disperse orange dyes: Disperse orange, GRN, O, 2R, 3R, 3RL, 3RLN.	DUP, EKT, ICC, KPC.
*Disperse red dyes:	
*Disperse red 1	DUP, EKT, GAF, ICC, KPC, STD, TRC.
Disperse red 4	GAF.
*Disperse red 5	DUP, EKT, GAF, HSH, ICC, KPC, STD, TRC.
Disperse red 6	KPC.
Disperse red 7	KPC.
Disperse red 9	DUP, KPC.
Disperse red 11	DUP, GAF, KPC.
*Disperse red 13	DUP, GAF, ICC, KPC, TRC.
*Disperse red 15	ACF, HSH, ICC, KPC, TRC.
*Disperse red 17	DUP, GAF, HSH, ICC, KPC, STD, TRC.
Disperse red 19	TRC.
Disperse red 20	ACF, EKT.
Disperse red 21	EKT.
Disperse red 28	KPC.
Disperse red 30	EKT.
Disperse red 32	GAF.
Disperse red 35	EKT.
Other disperse red dyes: Disperse red, B, BC, 2B-GLF, 3B-GLF, FL, FS, 2G, LB, MG, N, R-GLF, RL.	DUP, EKT, ICC, KPC.
*Disperse violet dyes:	
*Disperse violet 1	DUP, GAF, ICC, KPC, STD, TRC.
*Disperse violet 4	DUP, GAF, ICC, KPC.
Disperse violet 6	KPC.
Disperse violet 8	GAF.
Disperse violet 11	EKT.
Other disperse violet dyes: Disperse violet, #303, B, BN, DAC, R, 2R, 3R-GLF.	DUP, EKT, GAF, ICC.
*Disperse blue dyes:	
*Disperse blue 1	GAF, KPC, TRC.
*Disperse blue 3	ACF, EKT, GAF, HSH, ICC, KPC, STD, TRC.
*Disperse blue 7	ACF, GAF, ICC, KPC, TRC.
Disperse blue 8	DUP.
Disperse blue 9	GAF, ICC.
Disperse blue 19	KPC.
Disperse blue 27	EKT.
Other disperse blue dyes: Disperse blue, A3-7, A3-45, B, BCN, BG, BGF, B-GLF, BLF, CR, FGS, 2G, GB, GBN, GFD, 3G-GFD, 5G-GFD, GNA, GP, GR, GSFR, GSS, JB, LS, LTD, MJ, NBNJ, NSP, NVY, 2R, 4R, RB, RG, 3RL.	ACF, DUP, EKT, GAF, ICC, TRC, VPC.
Disperse brown dyes: Disperse brown JG, MS, R	DUP, ICC.
Disperse black dyes:	
Disperse black 1	DUP, TRC.
Disperse black 2	DUP, TRC.
Disperse black 6	ACF, DUP, KPC.
Disperse black 7	GAF, KPC, YAW.
*Disperse black 9	ACF, DUP, EKT, GAF, KPC.
Other disperse black dyes: Disperse black, GGN, GY, JN, NC.	ICC, YAW.
FIBER-REACTIVE DYES	
*Fiber-reactive dyes:	
Black #1, B, G	DUP, HST.
Blue, R	AHC, HST.
Orange, #2	AHC, DUP.
Red, 3B, 2G	AHC, DUP.
Red violet R	HST.
Yellow, #2, #3, G, RT	AHC, DUP, HST.
FLUORESCENT BRIGHTENING AGENTS	
Fluorescent brightening agent 1	GGY.
Fluorescent brightening agent 2	FBC, VPC.
Fluorescent brightening agent 4	ACY.

TABLE 8B.--*Synthetic organic chemicals: Coal-tar dyes for which U.S. production or sales were reported, identified by manufacturer, 1959*--Continued

Dye	Manufacturers' identification codes (according to list in table 23)
FLUORESCENT BRIGHTENING AGENTS--Continued	
Fluorescent brightening agent 6	ACY.
Fluorescent brightening agent 8	ACY.
Fluorescent brightening agent 9	ACY.
Fluorescent brightening agent 22	GGY.
Fluorescent brightening agent 24	GGY.
Fluorescent brightening agent 25	GAF.
Fluorescent brightening agent 28	ACY, DUP.
Fluorescent brightening agent 30	DUP, GAF.
Fluorescent brightening agent 33	GAF.
Fluorescent brightening agent 34	DUP.
Fluorescent brightening agent 45	TRC.
Fluorescent brightening agent 46	GGY.
Fluorescent brightening agent 49	SAN.
Fluorescent brightening agent 54	GGY.
Fluorescent brightening agent 66	SDH.
Fluorescent brightening agent 67	FBC, GAF.
*Fluorescent brightening agent 68	ACY, CCW, GAF, SDH.
Fluorescent brightening agent 71	GAF.
Other fluorescent brightening agents: Fluorescent brightening agent, AHF, AT, 3BSA, BUP, DPS, EDT, LP, NAR, TAS, WANS, WCN.	ACY, CCW, DUP, GGY, VPC.
FOOD, DRUG, AND COSMETIC DYES	
Food, Drug, and Cosmetic Colors	
*Blue No. 1	ACF, BAT, KON, SDH, WRN.
Blue No. 2	ACF, BAT, KON.
Green No. 1	ACF, KON, WRN.
Green No. 2	ACF, WRN.
Green No. 3	WRN.
Orange No. 1	ACF.
*Red No. 1	ACF, BAT, KON, SDH.
*Red No. 2	BAT, KON, SDH, STG, WRN.
*Red No. 3	BAT, KON, SDH, STG.
Red No. 4	BAT, KON, SDH, STG, WRN.
Red No. 6	ACF.
Red No. 9	ACF.
Red No. 14	ACF.
Violet No. 1	ACF, KON.
Violet No. 2	ACF.
Yellow No. 1	KON.
Yellow No. 3	ACF, DYK, SDH.
Yellow No. 4	ACF, DYK, KON, SDH.
*Yellow No. 5	ACF, BAT, KON, SDH, STG, WRN.
*Yellow No. 6	ACF, BAT, KON, SDH, STG, WRN.
Yellow No. 10	ACF.
Yellow No. 11	ACF.
Drug and Cosmetic Colors	
Black No. 1	ACF, KON.
Blue No. 1	KON.
Blue No. 6	KON.
Green No. 1	KON.
Green No. 5	HSH, KON.
Green No. 8	KON, SDH.
Orange No. 3	KON.
*Orange No. 4	KON, SNA, TMS.
Orange No. 5	KON, TMS.
Orange No. 15	SNA.
Orange No. 17	SNA.
Red No. 1	KON.
Red No. 2	KON, SNA.
Red No. 3	KON, TMS.
Red No. 5	KON.
Red No. 6	SNA, TMS.
*Red No. 7	KON, SNA, TMS.
Red No. 8	KON, SNA.

TABLE 8B.--*Synthetic organic chemicals: Coal-tar dyes for which U.S. production or sales were reported, identified by manufacturer, 1959*-- Continued

Dye	Manufacturers' identification codes (according to list in table 23)
FOOD, DRUG, AND COSMETIC DYES--Continued	
Drug and Cosmetic Colors--Continued	
Red No. 9	KON, SNA, TMS.
Red No. 10	KON, SNA.
*Red No. 11	KON, SNA, TMS.
Red No. 12	SNA, TMS.
Red No. 13	KON, SNA.
*Red No. 19	KON, SNA, TMS.
*Red No. 21	KON, SNA, TMS.
Red No. 27	SNA, TMS.
Red No. 28	KON.
Red No. 30	KON.
Red No. 31	KON, SNA.
Red No. 33	KON.
Red No. 34	KON, SNA.
Red No. 35	SNA.
Red No. 36	KON, SNA, TMS.
Red No. 39	SDH.
Violet No. 2	HSH.
Yellow No. 1	KON.
Yellow No. 5	KON, TMS.
Yellow No. 6	KON.
Yellow No. 7	KON, TMS.
Yellow No. 8	TMS.
Yellow No. 10	KON.
Yellow No. 11	KON.
Drug and Cosmetic Colors, External	
Orange No. 3	KON.
Red No. 2	ACY, TMS.
Red No. 13	KON.
Red No. 14	ACY.
Violet No. 2	HSH, KON.
Yellow No. 1	KON.
Yellow No. 5	KON.
INGRAIN DYES	
Ingrain blue 2	VPC.
MORDANT DYES	
*Mordant yellow dyes:	
*Mordant yellow 1	ACY, GAF, KPC, PDC, TRC.
Mordant yellow 3	ACF.
*Mordant yellow 5	ACF, DUP, GAF, TRC.
*Mordant yellow 8	ACF, DUP, GAF, TRC, VPC.
*Mordant yellow 10	ACF, DUP, TRC.
Mordant yellow 14	ACF, TRC.
*Mordant yellow 16	ACF, ACY, DUP.
Mordant yellow 18	PDC.
*Mordant yellow 20	ACF, GAF, TRC.
Mordant yellow 26	ACF, VPC.
Mordant yellow 29	GAF.
Mordant yellow 30	TRC.
Mordant yellow 36	GAF, PDC.
*Mordant orange dyes:	
*Mordant orange 1	ACY, GAF, KPC, TRC.
Mordant orange 3	TRC.
Mordant orange 4	GAF, VPC.
*Mordant orange 6	ACY, GAF, TRC.
Mordant orange 8	ACF, TRC.
Mordant orange 30	ACF.
*Mordant red dyes:	
*Mordant red 3	ACF, ACY, AHC, GAF, KPC.
Mordant red 5	ACF, GAF.
Mordant red 6	GAF.
*Mordant red 7	ACF, ACY, CMG, DUP, GAF, PDC, TRC, VPC.

TABLE 8B.--*Synthetic organic chemicals: Coal-tar dyes for which U.S. production or sales were reported, identified by manufacturer, 1959*--Continued

Dye	Manufacturers' identification codes (according to list in table 23)
MORDANT DYES--Continued	
*Mordant red dyes--Continued	
*Mordant red 9	ACF, GAF, TRC.
Mordant red 11	ACF, ACY, KPC.
Mordant red 59	TRC.
Mordant red 64	PDC.
Mordant violet dyes:	
Mordant violet 1	ACF.
*Mordant violet 5	ACF, HSH, PDC.
Mordant violet 11	GAF.
Mordant violet 20	GAF.
Mordant blue dyes:	
*Mordant blue 1	ACF, DUP, GAF, KPC, TRC.
Mordant blue 3	ACF, GAF.
*Mordant blue 9	ACF, GAF, TRC.
Mordant blue 13	ACF, HSH.
Mordant blue 32	CMG.
Mordant blue 51	GAF.
*Mordant green dyes:	
Mordant green 9	ACF.
Mordant green 12	ACY.
Mordant green 17	GAF.
Mordant green 27	ACF.
*Mordant green 36	DUP, PDC, TRC.
Mordant green 39	ACF.
Other mordant green dyes: Mordant green	TRC.
*Mordant brown dyes:	
*Mordant brown 1	ACF, ACY, CMG, DUP, GAF, TRC, YAW.
Mordant brown 4	PDC.
Mordant brown 13	ACF.
Mordant brown 15	GAF.
Mordant brown 17	GAF.
Mordant brown 18	ACF, DUP.
*Mordant brown 19	ACF, GAF, TRC.
Mordant brown 21	GAF.
*Mordant brown 33	ACF, DUP, GAF, TRC.
*Mordant brown 40	ACF, CMG, DUP, GAF, PDC, TRC, VPC, YAW.
Mordant brown 42	HSH.
Mordant brown 50	TRC.
Mordant brown 60	TRC.
Mordant brown 63	TRC.
Mordant brown 70	DUP, PDC.
Mordant brown 78	CMG.
*Mordant black dyes:	
*Mordant black 1	ACF, GAF, TRC.
Mordant black 3	ACF, GAF, TRC.
*Mordant black 5	ACF, GAF, TRC.
Mordant black 7	GAF.
Mordant black 8	VPC.
*Mordant black 9	ACF, GAF, VPC.
*Mordant black 11	ACF, ATL, CMG, DUP, GAF, KPC, TRC, VPC.
*Mordant black 13	ACF, AHC, GAF, HSH, KPC, TRC.
Mordant black 16	ACF.
*Mordant black 17	ACF, ACY, CMG, DUP, GAF, TRC.
Mordant black 19	PDC.
Mordant black 33	HSH, TRC.
*Mordant black 38	ACF, DUP, GAF, VPC.
OXIDATION BASES	
Oxidation base 3	AHC.
Oxidation base 8 and 8A	ACY.
Oxidation base 10 and 10A	ACY.
Other oxidation bases: Oxidation base BCA, NZA	CMG.
SOLVENT DYES	
*Solvent yellow dyes:	
Solvent yellow 1	ACY, KPC.
*Solvent yellow 2	ACF, ACY, DUP, FH, GAF, KPC, PAT.

TABLE 8B.--*Synthetic organic chemicals: Coal-tar dyes for which U.S. production or sales were reported, identified by manufacturer, 1959*--Continued

Dye	Manufacturers' identification codes (according to list in table 23)
SOLVENT DYES--Continued	
*Solvent yellow dyes--Continued	
*Solvent yellow 3	ACF, DUP, FH, GAF.
Solvent yellow 13	ACY, GAF.
*Solvent yellow 14	ACF, ACY, DUP, GAF, KPC, PAT, SDH, TRC.
Solvent yellow 16	PAT.
Solvent yellow 19	GAF.
Solvent yellow 29	ACF, GAF.
Solvent yellow 30	GAF.
Solvent yellow 33	ACF, ACY.
Solvent yellow 34	ACY, DUP.
Solvent yellow 40	ACF.
Solvent yellow 42	ACF.
Solvent yellow 44	ACF, GAF.
Solvent yellow 45	ACF, DUP.
Solvent yellow 46	ACY.
Solvent yellow 47	DUP, GAF.
Other solvent yellow dyes: Solvent yellow, 7G, LN, R	ACY, DSC, DUP, FH, GAF.
*Solvent orange dyes:	
Solvent orange 2	ACF.
*Solvent orange 3	ACF, ACY, GAF.
Solvent orange 5	TRC.
*Solvent orange 7	ACF, ACY, GAF.
Solvent orange 18	ACF.
Solvent orange 20	ACF, ACY, GAF.
Solvent orange 22	ACF.
Solvent orange 23	ACF.
Solvent orange 24	DUP.
Solvent orange 25	DUP.
Solvent orange 30	FH.
Solvent orange 31	ACF, FH.
Other solvent orange dyes: Solvent orange, #47, DP, PEL, R, Y-293.	ACF, ACY, DUP, FH, PAT.
*Solvent red dyes:	
Solvent red 8	GAF.
Solvent red 22	GAF.
Solvent red 23	ACF.
*Solvent red 24	ACF, ACY, DUP, GAF, PAT, SDH.
*Solvent red 26	ACF, ACY, KPC.
Solvent red 27	ACF.
Solvent red 33	DUP.
Solvent red 34	DUP.
Solvent red 35	GAF.
Solvent red 40	GAF.
*Solvent red 49	ACF, ACY, DUP, GAF.
Solvent red 60	ACF.
Solvent red 63	ACF.
Solvent red 65	ACF.
Solvent red 68	ACF.
Solvent red 69	ACF, DUP.
Other solvent red dyes: Solvent red, #289, #322, #371, #390, G, SN, XO, Y.	ACY, DSC, DUP, FH, PAT, VPC.
*Solvent violet dyes:	
Solvent violet 8	ACF, ACY, GAF.
Solvent violet 13	HSH, KPC.
Solvent violet 16	ACF.
Other solvent violet dyes: Solvent violet	DSC, PAT.
Solvent blue dyes:	
*Solvent blue 4	ACF, DSC, DUP, GAF, NYC, SDH.
Solvent blue 5	DSC.
Solvent blue 7	ACF, ACY.
Solvent blue 9	GAF.
Solvent blue 12	ACF.
Solvent blue 13	AHC.
Solvent blue 16	ACF.
Solvent blue 30	ACF.
Solvent blue 31	ACF.
Solvent blue 32	KPC.
Solvent blue 34	DUP.
Solvent blue 36	DUP.

TABLE 8B.--*Synthetic organic chemicals: Coal-tar dyes for which U.S. production or sales were reported, identified by manufacturer, 1959*--Continued

Dye	Manufacturers' identification codes (according to list in table 23)
SOLVENT DYES--Continued	
Solvent blue dyes--Continued	
Solvent blue 37	DUP.
Solvent blue 38	ACF, ACY, CMG, DUP.
Other solvent blue dyes: Solvent blue, AP, HLR, RA, THS, ZN.	ACY, DSC, GAF, KPC, PAT.
*Solvent green dyes:	
*Solvent green 1	ACF, DSC, SDH.
Solvent green 2	GAF.
*Solvent green 3	ACY, HSH, KPC.
Solvent green 10	DUP.
Solvent green 11	DUP.
Other solvent green dyes: Solvent green	DSC.
*Solvent brown dyes:	
Solvent brown 11	GAF.
Solvent brown 12	GAF.
Solvent brown 17	DUP.
Solvent brown 19	DUP.
Solvent brown 20	DUP.
Solvent brown 21	ACF.
Other solvent brown dyes: Solvent brown, #54, GN	ACY, FH, PAT.
Solvent black dyes:	
Solvent black 3	ACF.
Solvent black 5	ACF, ACY.
Solvent black 7	ACF, ACY.
Solvent black 12	ACF.
Solvent black 13	ACF.
Solvent black 17	DUP.
Solvent black 19	GAF.
Other solvent black dyes: Solvent black, #204, BN, RB	ACY, DSC, DUP, FH.
All other solvent dyes	PAT.
SULFUR DYES	
Sulfur yellow dyes:	
Sulfur yellow 1	ACF.
Sulfur yellow 2	ACY, DUP.
Solubilized sulfur yellow 2	ACY.
Sulfur yellow 4	ACF, DUP, SDC.
Sulfur yellow 10	GAF.
Sulfur yellow 11	ACF.
Sulfur red dyes:	
*Sulfur red 1	ACF, ACY, DUP, GAF.
Solubilized sulfur red 1	ACF.
Sulfur red 5	ACF.
*Sulfur red 6	ACF, ACY, DUP, GAF.
Sulfur red 8	DUP.
Sulfur blue dyes:	
*Sulfur blue 5	ACY, DUP, GAF.
*Sulfur blue 7	ACF, ACY, DUP, SDC.
Solubilized sulfur blue 7	ACF, ACY, SDC.
Sulfur blue 9	ACF.
Sulfur blue 10	TRC.
Sulfur blue 11	ACF, DUP.
Sulfur blue 13	ACY.
Solubilized sulfur blue 13	ACY.
Sulfur blue 15	ACF, ACY, DUP.
Other sulfur blue dyes: Sulfur blue, CG	ACF.
Sulfur green dyes:	
Sulfur green 1	ACF.
*Sulfur green 2	ACF, DUP, SDC.
Solubilized sulfur green 2	SDC.
Sulfur green 3	ACF, ACY.
Sulfur green 11	DUP.
Sulfur green 14	DUP.
Other sulfur green dyes: Sulfur green 2BFEX, GCF	ACY, GAF.
Sulfur brown dyes:	
Solubilized sulfur brown 3	SDC.
Sulfur brown 10	ACF, DUP.
Solubilized sulfur brown 10	SDC.

TABLE 8B. --*Synthetic organic chemicals: Coal-tar dyes for which U.S. production or sales were reported, identified by manufacturer, 1959*--Continued

Dye	Manufacturers' identification codes (according to list in table 23)
SULFUR DYES--Continued	
Sulfur brown dyes--Continued	
Sulfur brown 14	ACY, GAF.
Sulfur brown 20	DUP.
Sulfur brown 26	GAF.
Sulfur brown 30	ACY.
Sulfur brown 33	ACY.
Sulfur brown 37	SDC.
Solubilized sulfur brown 37	SDC.
Sulfur brown 39	DUP.
Sulfur brown 40	DUP.
Sulfur brown 43	ACF.
Solubilized sulfur brown 43	ACF.
Sulfur brown 44	ACF.
Solubilized sulfur brown 44	ACF.
Sulfur brown 45	ACF.
Sulfur brown 50	ACF.
Other sulfur brown dyes: Sulfur brown GR, RCF, 3RL	ACY, GAF.
Sulfur black dyes:	
*Sulfur black 1	ACF, ACY, DUP, SDC.
Solubilized sulfur black 1	ACF, ACY, SDC.
Sulfur black 2	ACF, ACY, DUP.
Solubilized sulfur black 2	ACF, ACY.
Sulfur black 6	GAF.
Solubilized sulfur black 6	ACF.
Sulfur black 10	ACY, DUP.
Solubilized sulfur black 10	ACF, ACY.
Sulfur black 11	SDC.
Solubilized sulfur black 11	SDC.
VAT DYES	
*Vat yellow dyes:	
Vat yellow 1, 12-1/2%	ACF.
*Vat yellow 2, 8-1/2%	ACF, ACY, AHC, DUP, GAF, HST, KPC, TRC, VPC.
Solubilized vat yellow 2, 25%	AHC, GAF.
Vat yellow 3, 12-1/2%	DUP.
*Vat yellow 4, 12-1/2%	ACF, ACY, AHC, CMG, DUP, GAF, HST, TRC, VPC.
*Solubilized vat yellow 4, 37-1/2%	AHC, GAF, HST.
Vat yellow 10, 10%	GAF.
Vat yellow 13, 6-1/2%	AHC.
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%	DUP, PCO.
Vat yellow 22, 10%	DUP.
Other vat yellow dyes: Vat yellow, 5G, GL, 6GL	ACF, ACY, DUP, GAF.
Vat orange dyes:	
*Vat orange 1, 20%	ACF, AHC, DUP, GAF, HST, TRC.
*Solubilized vat orange 1, 26%	AHC, GAF, HST.
*Vat orange 2, 12%	ACF, ACY, AHC, CMG, DUP, GAF, KPC, TRC.
Vat orange 3, 13-1/2%	ACF, ACY, AHC, DUP, MAY, TRC.
Vat orange 4, 6%	ACF, ACY, CMG, DUP, GAF.
*Vat orange 5, 10%	ACY, DUP, HST, KPC.
Solubilized vat orange 5, 30%	AHC, GAF.
Vat orange 7, 11%	HST, TRC.
*Vat orange 9, 12%	ACF, ACY, AHC, CMG, DUP, GAF, KPC, TRC.
Vat orange 11, 6%	ACF, DUP.
*Vat orange 15, 10%	ACF, ACY, AHC, DUP, GAF, KPC, MAY, TRC.
Other vat orange dyes: Vat orange 2BG	DUP.
Vat red dyes:	
*Vat red 1, 13%	ACF, ACY, DUP, GAF, HST, KPC.
Solubilized vat red 1, 37%	AHC, GAF, HST.
*Vat red 10, 18%	ACF, GAF, TRC.
Solubilized vat red 10, 31%	GAF.
Vat red 12, 8-1/2%	DUP.
*Vat red 13, 11%	ACF, DUP, GAF, MAY, TRC.
Vat red 14, 10%	HST.
Vat red 15, 10%	HST, TRC.
Vat red 16, 11%	DUP.

TABLE 8B.--*Synthetic organic chemicals: Coal-tar dyes for which U.S. production or sales were reported, identified by manufacturer, 1959*--Continued

Dye	Manufacturers' identification codes (according to list in table 23)
VAT DYES--Continued	
Vat red dyes--Continued	
Vat red 17, 10%--	GAF.
Vat red 27, 7-1/2%--	DUP.
Vat red 29, 18%--	ACF, GAF.
Vat red 32, 20%--	ACF, GAF.
*Vat red 35, 12-1/2%--	ACF, GAF, TRC.
Vat red 40--	DUP.
Vat red 41, 20%--	HST.
Vat red 44, 17%--	TRC.
Other vat red dyes: Vat red, EKN, FG, GL, 3N, 2R--	DUP, GAF.
*Vat violet dyes:	
*Vat violet 1, 11%--	ACF, ACY, AHC, DUP, GAF, MAY, TRC.
Solubilized vat violet 1, 26%--	AHC, GAF.
*Vat violet 2, 20%--	ACF, ACY, DUP, GAF, HST, VPC.
*Vat violet 3, 15%--	ACF, DUP, GAF, HST.
Solubilized vat violet 3, 43%--	GAF.
*Vat violet 9, 12%--	AHC, DUP, GAF, TRC.
Vat violet 12, 10%--	DUP.
*Vat violet 13, 6-1/4%--	ACF, ACY, AHC, DUP, GAF, TRC.
Vat violet 14, 12-1/2%--	ACF, DUP.
*Vat violet 17, 12-1/2%--	ACF, DUP, GAF.
Other vat violet dyes: Vat violet P, R--	ACF, DUP.
*Vat blue dyes:	
*Vat blue 1, 20%--	ACF, DOW, DUP.
Solubilized vat blue 1, 25%--	GAF.
Vat blue 3, 16%--	HST.
*Vat blue 4, 10%--	ACY, DUP, GAF.
*Vat blue 5, 16%--	ACF, DUP, HST, VPC.
Solubilized vat blue 5, 38%--	AHC, GAF, HST.
*Vat blue 6, 8-1/3%--	ACF, ACY, AHC, DUP, GAF, KPC, TRC, VPC.
*Solubilized vat blue 6, 17-1/2%--	AHC, GAF, HST.
Vat blue 7, 12-1/2%--	ACF.
Solubilized vat blue 9, 35%--	GAF.
*Vat blue 14, 8-1/3%--	ACF, DUP, GAF, TRC.
Vat blue 16, 16%--	ACF, ACY, DUP.
*Vat blue 18, 13%--	ACY, AHC, DUP, GAF, KPC, MAY, TRC.
Vat blue 19, 16-7/10%--	TRC.
*Vat blue 20, 14%--	ACF, ACY, AHC, DUP, GAF, KPC, MAY, PCO, TRC.
Vat blue 35, 20%--	DUP.
Vat blue 43, 40%--	DUP, SDC.
Other vat blue dyes: Vat blue B, 3B, BCL, HG, RA, VH--	ACF, DUP, GAF, x.
Vat green dyes:	
*Vat green 1, 6%--	ACF, ACY, AHC, DUP, GAF, KPC, MAY, TRC.
*Solubilized vat green 1, 12-1/2%--	AHC, GAF, HST.
*Vat green 3, 10%--	ACF, ACY, AHC, DUP, GAF, KPC, MAY, TRC.
*Solubilized vat green 3, 26%--	AHC, GAF, HST.
*Vat green 8, 8-1/2%--	ACF, AHC, DUP, GAF.
*Vat green 9, 12-1/2%--	ACF, ACY, DUP, GAF, KPC, MAY, PCO, SDC, TRC.
Vat green 18, 8%--	DUP.
Vat green 19, 13%--	DUP.
Vat green 20, 6%--	DUP.
*Vat brown dyes:	
*Vat brown 1, 11%--	ACF, ACY, AHC, DUP, GAF, KPC, MAY, TRC, VPC.
Solubilized vat brown 1, 17%--	AHC, GAF.
*Vat brown 3, 11%--	ACF, ACY, AHC, DUP, GAF, KPC, MAY, TRC, VPC.
Solubilized vat brown 3, 17%--	AHC.
*Vat brown 5, 13%--	ACY, DUP, GAF, HST, KPC, VPC.
Solubilized vat brown 5, 17%--	GAF.
Vat brown 11, 12%--	MAY.
Vat brown 12, 12-1/2%--	ACF, DUP.
Vat brown 13, 17%--	MAY.
Vat brown 14, 12%--	HST.
*Vat brown 20, 10-1/2%--	ACF, CMG, DUP, GAF, KPC.
Vat brown 25, 11-1/2%--	GAF.
Vat brown 29, 13%--	ACY.
Vat brown 31, 28%--	KPC.
Vat brown 38, 20%--	AHC.

TABLE 8B. -- *Synthetic organic chemicals: Coal-tar dyes for which U.S. production or sales were reported, identified by manufacturer, 1959* -- Continued

Dye	Manufacturers' identification codes (according to list in table 23)
VAT DYES--Continued	
*Vat brown dyes--Continued	
Vat brown 40, 14%	DUP.
Other vat brown dyes: Vat brown, AG, 3B, G, N, 2RF	ACF, DUP, MAY, SDC, TRC.
*Vat black dyes:	
Vat black 1	ACF, GAF.
Solubilized vat black 1, 27-1/2%	GAF, HST.
*Vat black 9, 16%	ACF, ACY, GAF, TRC.
Vat black 11, 17-1/2%	ACY.
Vat black 13, 14%	ACF, DUP.
Vat black 14, 11-1/2%	DUP.
Vat black 15, 18%	KPC.
Vat black 17, 16%	ACY.
Vat black 18, 15-1/2%	ACF, GAF.
Vat black 21, 18-1/2%	ACY.
Vat black 22, 19%	ACY.
*Vat black 25, 12-1/2%	ACF, ACY, AHC, CMG, DUP, GAF, KPC, MAY, TRC.
Vat black 26, 24%	ACF.
*Vat black 27, 12-1/2%	ACF, ACY, AHC, CMG, DUP, GAF, KPC, MAY, TRC.
Vat black 30, 15-9/10%	TRC.
Other vat black dyes: Vat black, BBD, BJ, 2G, 3GA, GR, PBC.	ACF, ACY, AHC, GAF, SDC, TRC.
All other dyes	DUP, HST, TRC, WLM.

Toners and Lakes

TABLE 11B. --*Synthetic organic chemicals: Toners and lakes for which U.S. production or sales were reported, identified by manufacturer, 1959*

[Toners and lakes 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]

Product	Manufacturers' identification codes (according to list in table 23)
TONERS OR FULL-STRENGTH COLORS	
Black toners:	
Pigment Black 1, C.I. 50 440	SNA.
All other	UHL.
*Blue toners:	
*Pigment Blue 1, C.I. 42 595, PMA	ADC, BLN, CC, DUP, EAK, HCC, IMP, LVY, MGR, MRX, NYC, SDH, SNA, SNP, UHL.
*Pigment Blue 1, C.I. 42 595, PTA	ACF, AMS, BLN, CC, IMP, KON, MGR, MRX, SAN, SNA, SNP, SW, UHL.
Pigment Blue 2, C.I. 44 045, PMA	SW.
Pigment Blue 2, C.I. 44 045, PTA	WOC.
Pigment Blue 3, C.I. 42 140, PTA	CC, MRX.
*Pigment Blue 9, C.I. 42 025, PMA	BLN, MGR, MRX.
*Pigment Blue 9, C.I. 42 025, PTA	IMP, MGR, MRX, SDH.
Pigment Blue 10, C.I. 44 040, PMA	SDH.
*Pigment Blue 15, C.I. 74 160, alpha modification	ACF, ACY, AHC, DUP, GAF, ICC, IMP, PCC, SDH, SNA, SUC, SW, TMS, TRC.
*Pigment Blue 15, C.I. 74 160, beta modification	ACY, DUP, GAF, IMP, KON, LVY, SDH, SNA, SW, TMS.
Pigment Blue 15, C.I. 74 160, crude	ACY, AHC, PCC, SNA, TRC, WOC.
*Pigment Blue 19, C.I. 42 750A	ACY, ERD, NYC, SUC, SW.
Pigment Blue 22, C.I. 69 810	ACF, DUP.
*Pigment Blue 25, C.I. 21 180	ACF, DUP, GAF, ICC, SAN.
All other	ACF, LVR, SDH, TRC, x.
*Brown toners:	
Pigment Brown 1, C.I. 12 480	AHC.
Pigment Brown 2, C.I. 12 071	SDH.
Pigment Brown 3, C.I. 21 010, PMA	BLN, KCW.
All other	ACF, HAR, SNA, SW.
Green toners:	
*Pigment Green 1, C.I. 42 040, PMA	CC, CIK, IMP, MGR.
*Pigment Green 1, C.I. 42 040, PTA	BLN, IMP, MRX, SAN, SDH.
*Pigment Green 2, C.I. 42 040 and C.I. 49 005, PMA	ADC, BLN, CC, IMP, LVY, MGR, SAN, SDA, SNA, UHL.
*Pigment Green 2, C.I. 42 040 and C.I. 49 005, PTA	ACY, ADC, AMS, BLN, CC, EAK, IMP, KON, MGR, SAN, SDH, SNA, SNP.
Pigment Green 4, C.I. 42 000, PMA	ADC, BLN, CC.
*Pigment Green 4, C.I. 42 000, PTA	ACY, ADC, AMS, CC, IMP, KON, SNA.
*Pigment Green 7, C.I. 74 260	ACF, ACY, DUP, GAF, PCC, SNA, SW, TMS, WOC.
*Pigment Green 8, C.I. 10 006	ACF, DUP, EAK, GAF, HAR, IMP, KCW, SNA, SW.
Pigment Green 10, C.I. 12 775	DUP.
All other	CC, HAR, MGR.
*Orange toners:	
Pigment Orange 1, C.I. 11 725	ACF, KON, SNA.
*Pigment Orange 2, C.I. 12 060	CC, FCL, IMP, SDH, SUC, SW.
*Pigment Orange 5, C.I. 12 075	ACY, EAK, HAR, IMP, SNA, SUC, SW.
Pigment Orange 9	DUP.
*Pigment Orange 13, C.I. 21 110	ACF, ACY, AMS, CC, GAF, ICC, IMP, KON, SAN, SDH, SNP, SW.
*Pigment Orange 16, C.I. 21 160	ACF, CC, DUP, GAF, ICC, IMP, ROM, SAN, SNA, SW.
All other	ACF, ICC, KON, SDH, SW, TRC, x.
*Red toners:	
*Naphthol reds:	
*Pigment Red 2, C.I. 12 310	ACF, EAK, HCC, IMP, KCW, KON, SAN, SNA, SW.
*Pigment Red 5, C.I. 12 490	ACF, AHC, DUP, GAF, HST, ICC, IMP, SAN, SNA, SNP, SW.
Pigment Red 9, C.I. 12 460	IMP, SAN.
Pigment Red 13, C.I. 12 395	ACF, IMP.
Pigment Red 14, C.I. 12 380	ACF, DUP.
*Pigment Red 17, C.I. 12 390	ACY, BLN, FCL, ICC, IMP, SAN, SNA, SNP, SW.
*Pigment Red 18, C.I. 12 350	ACF, HAR, IMP, SW.
*Pigment Red 22, C.I. 12 315	ACF, ACY, AMS, DUP, FCL, IMP, MRX, SNA, SW.
*Pigment Red 23, C.I. 12 355	ACF, ACY, DUP, FCL, HCC, ICC, IMP, SAN, SW.
Pigment Red 31, C.I. 12 360	SNA.
All other naphthol reds	AHC, DUP, GAF, HCC, ICC, LVR, SDH, SNA, SW.

See note at end of table for definition of abbreviations.

TABLE 11B.--*Synthetic organic chemicals: Toners and lakes for which U.S. production or sales were reported, identified by manufacturer, 1959*--Continued

Product	Manufacturers' identification codes (according to list in table 23)
TONERS OR FULL-STRENGTH COLORS--Continued	
*Red Toners--Continued	
*Pigment Red 1, C.I. 12 070, dark	ACF, ACY, AMS, APC, EAK, FCL, HAR, HCC, IMP, KON, LVY, PPG, SDH, SNA, SUC, SW, WDC.
*Pigment Red 1, C.I. 12 070, light	ACY, CIK, EAK, FCL, HAR, HCC, IMP, KON, PPG, SDH, SNA, SUC, SW.
*Pigment Red 3, C.I. 12 120	ACF, ACY, APC, CIK, DUP, EAK, FCL, HAR, HCC, IMP, KCW, KON, MRX, PPG, SAN, SDH, SNA, SUC, SW, WDC.
*Pigment Red 4, C.I. 12 085	ACF, ACY, AMS, FCL, HAR, HCC, IMP, KON, SAN, SNA, SNP, SUC, SW, WDC.
Pigment Red 6, C.I. 12 090	DUP, HAR, SDH, SW.
*Pigment Red 38, C.I. 21 120	ACF, GAF, HAR, SAN, SNA, SW.
Pigment Red 40, C.I. 12 170	IMP.
*Pigment Red 41, C.I. 21 200	ACF, DUP, GAF, SAN.
*Pigment Red 48, C.I. 15 865	ACF, ACY, AMS, BLN, DUP, FCL, GAF, HAR, HCC, IMP, KON, LVY, SDH, SNA, SW.
*Pigment Red 49, C.I. 15 630:	
*Barium toner	ACY, AMS, CIK, FCL, HCC, IMP, KON, LVY, SDH, SNA, SNP, SUC, SW.
*Calcium toner	ACY, AMS, CC, CIK, EAK, FCL, HCC, IMP, LVY, KON, PPG, SDH, SNA, SUC, SW.
Sodium salt	ACY, AMS, CC, FCL, HCC, KON, SDH, SUC, SW.
All other Pigment Red 49 toners	KON.
Pigment Red 51, C.I. 15 580	SUC.
*Pigment Red 52, C.I. 15 860	ACF, AMS, HAR, HCC, IMP, SUC, SW.
*Pigment Red 53, C.I. 15 585:	
*Barium toner	ACY, ADC, AMS, BLN, FCL, HCC, IMP, LVY, KON, SAN, SDH, SNA, SNP, SUC, SW.
Sodium salt	ACF, ADC, SW.
Pigment Red 54, C.I. 14 830:	
Calcium toner	IMP, MRX.
Sodium salt	GAF, IMP, MRX.
*Pigment Red 57, C.I. 15 850, calcium toner	ACF, ADC, AMS, BLN, DUP, FCL, HAR, HCC, IMP, LVY, SAN, SDH, SNA, SNP, SUC, SW.
Pigment Red 58, C.I. 15 825	BLN, DUP, IMP.
*Pigment Red 63, C.I. 15 880	ACF, FCL, HAR, IMP, KON, SNA, SW.
Pigment Red 64, C.I. 15 800	ACF.
*Pigment Red 81, C.I. 45 160, PMA	BLN, CC, IMP, KON, MGR, MRX, SAN, SNA.
*Pigment Red 81, C.I. 45 160, PTA	ACY, AMS, CC, DUP, EAK, FCL, HCC, IMP, KON, MGR, MRX, SAN, SDH, SNA, SNP.
*Pigment Red 90, C.I. 45 380	AMS, FCL, ICC, LVY, NYC, SDH, SNA, SNP.
(Vat red 13)	KCW.
All other	ACF, DUP, ICC, SDH, SW, x.
Violet toners:	
*Pigment Violet 1, C.I. 45 170, PMA	BLN, CC, CIK, IMP, LVY, MGR, MRX, SNA.
*Pigment Violet 1, C.I. 45 170, PTA	ACY, AMS, BLN, CC, DUP, EAK, FCL, HCC, IMP, KON, MGR, MRX, SAN, SNA.
*Pigment Violet 3, C.I. 42 535, fugitive	ACY, ADC, AMS, BLN, HCC, IMP, LVY, NYC, SDH, SUC, UHL.
*Pigment Violet 3, C.I. 42 535, PMA	ADC, AMS, BLN, CC, EAK, HCC, IMP, KON, LVY, MGR, MRX, NYC, PPG, SDH, SNA, SNP, SUC, SW, UHL.
*Pigment Violet 3, C.I. 42 535, PTA	ACY, AMS, BLN, HCC, IMP, KON, MRX, SAN, SNA, SNP, SW.
(Vat Violet 3), C.I. 73 395	ACF.
All other	ACF, GAF, ICC.
*Yellow toners:	
Benzidine yellows:	
*Pigment Yellow 12, C.I. 21 090	ACF, ACY, AMS, DUP, FCL, GAF, HAR, HCC, ICC, IMP, KON, LVY, MRX, SAN, SDH, SNA, SNP, SW, WDC.
*Pigment Yellow 13, C.I. 21 100	ACF, GAF, HST, IMP, ROM, SAN, SNA, SNP, SW.
*Pigment Yellow 14, C.I. 21 095	ACF, ACY, AMS, DUP, GAF, HAR, HST, ICC, IMP, KON, MRX, ROM, SAN, SDH, SNA, SNP, SW, x.
*Acetoacetanisidide Yellow (dcb → aaoa)	ACY, AMS, ICC, IMP, SAN, SNA, SW.
Other benzidine yellows	HAR, ICC, LVR, SW, x.
Hansa yellows:	
*Pigment Yellow 1, C.I. 11 680	ACF, ACY, AHC, AMS, DUP, EAK, FCL, GAF, HAR, HCC, IMP, KON, PPG, SAN, SDH, SNA, SW, WDC.
*Pigment Yellow 3, C.I. 11 710	ACF, HAR, HCC, IMP, KON, SAN, SNA, SW.
Pigment Yellow 4, C.I. 11 665	ACF, SNA.
Pigment Yellow 5, C.I. 11 660	IMP.
Pigment Yellow 6, C.I. 11 670	CIK, IMP.
All other hansa yellows	AHC, HAR, IMP, SNA, SW, WDC, x.

See note at end of table for definition of abbreviations.

TABLE 11B. --*Synthetic organic chemicals: Toners and lakes for which U.S. production or sales were reported, identified by manufacturer, 1959*--Continued

Product	Manufacturers' identification codes (according to list in table 23)
TONERS OR FULL-STRENGTH COLORS--Continued	
*Yellow toners--Continued	
(Vat yellow 1) C.I. 70 600	TRC.
All other	HAR, HST, SW.
REDUCED OR EXTENDED TONERS	
*Black toners, reduced	BLN, CC, HAM, MRX, SNA.
*Blue toners, reduced:	
*Pigment Blue 1, C.I. 42 595, PMA	BLN, CC, DUP, HCC, IMP, MGR, NYC.
Pigment Blue 2, C.I. 44 045, fugitive	MGR, MRX.
Pigment Blue 2, C.I. 44 045, PMA	CC.
Pigment Blue 2, C.I. 44 045, PTA	CC.
Pigment Blue 3, C.I. 42 140, PMA	MRX.
*Pigment Blue 9, C.I. 42 025, PMA	CC, IMP, MRX, NYC.
Pigment Blue 9, C.I. 42 025, PTA	BLN, IMP.
Pigment Blue 10, C.I. 44 040, PMA	IMP.
Pigment Blue 10, C.I. 44 040, PTA	IMP.
*Pigment Blue 14, C.I. 42 600, PMA	CC, DUP, IMP, NYC.
Pigment Blue 14, C.I. 42 600, PTA	DUP, NYC.
*Pigment Blue 15, C.I. 74 160, alpha modification	ACF, BLN, CC, DUP, GAF, IMP, KCW, SNA, SUC, SW, TMS.
*Pigment Blue 15, C.I. 74 160, beta modification	ACY, DUP, IMP, KCW, KON, SW.
Pigment Blue 19, C.I. 42 750A	SUC.
Pigment Blue 22, C.I. 69 810	ACF, DUP, IMP.
(Basic Blue 9), C.I. 52 015	BLN, CC.
(Vat Blue 4), C.I. 69 800	DUP.
Blue BXM	DUP.
All other	CC, MRX, x.
*Brown toners, reduced:	
Pigment Brown 3, C.I. 21 010, fugitive	CC, SNA.
(Vat Brown 3), C.I. 69 015	CC.
All other	HAM, ICC.
*Green toners, reduced:	
*Pigment Green 1, C.I. 42 040, PMA	BLN, CC, IMP, MRX, NYC.
Pigment Green 1, C.I. 42 040, PTA	SNP.
*Pigment Green 2, C.I. 42 040 and C.I. 49 005, PMA	BLN, CC, MRX, SNA, UHL.
*Pigment Green 2, C.I. 42 040 and C.I. 49 005, PTA	BLN, DUP, MRX.
Pigment Green 4, C.I. 42 000, fugitive	BLN.
Pigment Green 4, C.I. 42 000, PMA	HAM, HCC.
*Pigment Green 7, C.I. 74 260	ACF, BLN, DUP, GAF, KCW, SUC, SW, TMS.
*Pigment Green 8, C.I. 10 006	CC, DUP, KCW.
Pigment Green 10, C.I. 12 775	DUP.
All other	BLN, CC, HAM, MGR, SW.
*Orange toners, reduced:	
Pigment Orange 2, C.I. 12 060	IMP, SW.
Pigment Orange 5, C.I. 12 075	CC.
Pigment Orange 13, C.I. 21 110	CC.
Pigment Orange 16, C.I. 21 160	DUP.
All other	ACF, HAM.
*Red toners, reduced:	
Naphthol reds, reduced:	
Pigment Red 2, C.I. 12 310	KCW.
Pigment Red 10, C.I. 12 440	KCW.
Pigment Red 13, C.I. 12 395	KCW.
Pigment Red 17, C.I. 12 390	ACY.
Pigment Red 22, C.I. 12 315	ACY, DUP.
*Pigment Red 23, C.I. 12 355	ACY, DUP, SNA, SUC, SW.
All other reduced naphthol reds	CC, HAR, SNA, SW.
*Pigment Red 1, C.I. 12 070, dark	BLN, IMP, UHL, WDC.
Pigment Red 1, C.I. 12 070, light	IMP.
*Pigment Red 3, C.I. 12 120	BLN, DUP, HAM, IMP, SW.
Pigment Red 4, C.I. 12 085	SAN.
Pigment Red 38, C.I. 21 120	ACF.
*Pigment Red 48, C.I. 15 865	ACF, BLN, DUP, HCC, IMP, KON, SAN, SNA, UHL, WDC.
Pigment Red 49, C.I. 15 630:	
*Barium toner	BLN, CC, FCL, KON, SNA, UHL.
Calcium toner	CC.
Pigment Red 52, C.I. 15 860	HCC, SW.

See note at end of table for definition of abbreviations.

TABLE 11B. --*Synthetic organic chemicals: Toners and lakes for which U.S. production or sales were reported, identified by manufacturer, 1959*--Continued

Product	Manufacturers' identification codes (according to list in table 23)
REDUCED OR EXTENDED TONERS--Continued	
*Red toners, reduced--Continued	
*Pigment Red 57, C.I. 15 850	BLN, IMP, KON, SAN, SNA.
Pigment Red 78	DUP.
Pigment Red 81, C.I. 45 160, fugitive	BLN.
*Pigment Red 81, C.I. 45 160, PMA	BLN, CC, DUP, NYC.
*Pigment Red 81, C.I. 45 160, PTA	BLN, DUP, HCC, SNA.
Pigment Red 87, C.I. 73 310	ACF.
Pigment Red 88	ACF.
Pigment Red 90, C.I. 45 380	IMP.
(Basic Red 2), C.I. 50 240	MRX.
All other	ACF, CC, KCW.
*Violet toners, reduced:	
Pigment Violet 1, C.I. 45 170, fugitive	BLN, CC, UHL.
*Pigment Violet 1, C.I. 45 170, PMA	BLN, CC, MRX, NYC.
Pigment Violet 1, C.I. 45 170, PTA	DUP, SNA.
Pigment Violet 3, C.I. 42 535, fugitive	BLN, CC, HAM, HCC, KON, MGR, UHL.
*Pigment Violet 3, C.I. 42 535, PMA	BLN, CC, DUP, HCC, IMP, NYC.
Pigment Violet 3, C.I. 42 535, PTA	CC, KON.
(Vat Violet 1), C.I. 60 010	ACF, DUP.
(Vat Violet 3), C.I. 73 395	ACF.
*Yellow toners, reduced:	
Benzidine yellows:	
Pigment Yellow 12, C.I. 21 090	ACF, DUP, IMP.
*Pigment Yellow 14, C.I. 21 095	ACF, ACY, CC, DUP, IMP, SW.
Hansa yellows:	
*Pigment Yellow 1, C.I. 11 680	DUP, HAR, IMP, MRX, WDC.
Pigment Yellow 3, C.I. 11 710	DUP, HAR, KCW.
Pigment Yellow 18, C.I. 49 005	IMP.
*(Basic Yellow 2), C.I. 41 000, fugitive	CC, MRX, SAN.
(Vat Yellow 1), C.I. 70 600	ACF.
All other yellows	ACF, KCW.
LAKES	
*Black lakes: (Natural Black 3), C.I. 75 291	CPC, KON, NYC.
Blue lakes:	
Pigment Blue 17, C.I. 74 180	BLN, CPC, KCW.
*Pigment Blue 24, C.I. 42 090	ACY, ADC, AMS, BLN, EAK, ICC, IMP, KON, LVY, MGR, SDH, SNA, SNP.
(Acid Blue 104), C.I. 42 735	CPC, KCW.
All other	GAF, ICC.
Brown lakes	KON.
*Green lakes:	
(Acid Green 3), C.I. 42 085	BLN, CPC, SAN.
All other	GAF, x.
*Orange lakes:	
Pigment Orange 17, C.I. 15 510	AMS, CPC, IMP, KCW, LVY, MGR SNA.
All other	APC, GAF, x.
*Red lakes:	
*Pigment Red 60, C.I. 16 105	BLN, DUP, HAR, HCC, KON, MRX, SAN, SNA.
*Pigment Red 83, C.I. 58 000	HAR, IMP, KCW, KON, MRX, SNA, SW, UHL.
(Acid Red 17), C.I. 16 180	IMP, PPG, WDC.
*(Acid Red 26), C.I. 16 150	EAK, GAF, HAM, IMP, KCW, KON, SNA, UHL, x.
(Acid Red 27), C.I. 16 185	KON.
(Natural Red 4), C.I. 75 470	GNC, KON.
(Natural Red 24), C.I. 75 280	IMP.
All other	APC, BLN, SAN, SNP, SW, x.
*Violet lakes:	
*Pigment Violet 5, C.I. 58 055	ACF, BLN, DUP, GAF, HAR, IMP, SNA, TRC.
Pigment Violet 12, C.I. 58 050	HAR.
(Acid Violet 17), C.I. 42 650	BLN, HCC.
Yellow lakes:	
(Acid Yellow 1), C.I. 10 316	IMP.
(Acid Yellow 3), C.I. 47 005	IMP.
(Acid Yellow 11), C.I. 18 820	MGR.
*(Acid Yellow 23), C.I. 19 140	ACY, IMP, KON, MGR, MRX.
(Natural Yellow 10), C.I. 75 720	IMP.
All other	x.

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. The abbreviation dcb stands for dichlorobenzene, and the abbreviation aaoa, for o-acetoacetanisidide.

Medicinals

TABLE 13B.--*Synthetic organic chemicals: Medicinals for which U.S. production or sales were reported, identified by manufacturer, 1959*

[Medicinals for which separate statistics are given in table 13A in pt. II are marked below with an asterisk (*); medicinals 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)
MEDICINALS, CYCLIC	
Benzenoid	
3-Acetamido-2,4,6-triiodobenzoic acid and sodium salt	MAL.
Acetarsone (N-Acetyl-4-hydroxy-m-arsanilic acid) (Stovarsol).	SDW.
Acetylglycol salicylate	FBS.
Acetylphenylurea	ABB.
*Acetylsalicylic acid (Aspirin)	DOW, ML, MON, NOR, SDG.
Acetylsalicylic acid, aluminum basic salt	ABB, PYL, SFA.
Adrenaline (Epinephrine)	SDW, STS.
*Amino acids:	
3,5-Diiodotyrosine	EK.
dl-Phenylalanine	SDW.
l-Tyrosine	STA.
*p-Aminobenzoic acid and derivatives:	
p-Aminobenzoic acid	LEM, PYL.
Benzocaine (Ethyl p-aminobenzoate)	ABB, MTL.
Benzocaine, ethoxylated	BPC.
Butacaine base	ABB.
Butacaine sulfate	ABB.
Butesin (n-Butyl p-aminobenzoate)	FBS.
2-Diethylaminoethyl 4-amino-2-propoxybenzoate (Ravocaine) hydrochloride.	SDW.
Isobutyl p-aminobenzoate (Cycloform)	FBS.
Procaine base and salts:	
Procaine acetate	RIK.
Procaine base (2-Diethylaminoethyl p-aminobenzoate) (Novacaine base).	LEM.
*Procaine hydrochloride	ABB, CLC, LEM, MTL.
Procaine isobutyrate	LEM.
Propyl p-aminobenzoate	FBS.
Tetracaine (2-Dimethylaminoethyl p-butylaminobenzoate) base.	FBS.
Tetracaine hydrochloride	FBS, SDW.
All other	CBP.
p-Aminobenzoic acid salts:	
Calcium p-aminobenzoate	LEM.
Potassium p-aminobenzoate	GAN, LEM, PYL.
Sodium p-aminobenzoate	GAN, LEM, PYL.
4-Aminosalicylic acid	MLS, PD.
4-Aminosalicylic acid salts:	
Calcium 4-aminosalicylate	MLS.
Potassium 4-aminosalicylate	HEX, MLS.
Sodium 4-aminosalicylate	MLS, PD.
3-Amino-2,4,6-triiodophenyl-2-ethylpropionic acid	SDW.
p-Anisoin (4,4'-Dimethoxybenzoin)	SPC.
Anthranilic acid, cadmium salt	MAL.
*Antihistamines:	
2-(Benzhydryloxy)-N,N-dimethylethylamine hydrochloride	PD.
Bromodiphenhydramine hydrochloride	PD.
p-Chlorobenzhydryl-m-methylbenzyldiethylenediamine (Meclizine) dihydrochloride.	PFZ.
N,N-Dimethyl-2-(α-phenyl-o-toloxy)ethylamine dihydrogen citrate.	BRS.
2-(Methylbenzhydryloxy)-N,N-dimethylethylamine hydrochloride.	RIK.
All other	RIK.
Benzaldehyde	HN.
Benzoic acid	MON.

TABLE 13B.--*Synthetic organic chemicals: Medicinals for which U.S. production or sales were reported, identified by manufacturer, 1959*--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
MEDICINALS, CYCLIC--Continued	
Benzenoid--Continued	
*Benzoic acid salts:	
Ammonium benzoate	PEN.
Lithium benzoate	MYW.
Benzyl succinate, mono-	LEM.
3,4-Bis(p-hydroxyphenyl)-2,3-hexadienediacetate	MLS.
*Bismuth subgallate	BKC, MAL, PEN, PFZ.
Bismuth subsalicylate	MAL, NOR, PEN.
N,N′-Bis(3-nitrobenzenesulfonyl)ethylenediamine	SAL.
Bis(4-nitrophenyl) disulfide	ACY.
1-Butyl-3-p-tolylsulfonylurea	HST, x.
*Carbasone (p-Carbamidobenzenearsonic acid)	LIL, PYL, RSA.
Chloramine T (Sodium p-toluenesulfonchloramide)	MON.
6-Chloro-2H-1,2,4-benzothiadiazine-7-sulfonamide 1,1-dioxide.	MRK.
3(p-Chlorophenylsulfonyl)-1-propylurea	PFZ.
Chlorothymol	OPC.
Chlorotrianisene	BKC.
1-Cyclohexyl-3-diethylamino-1-phenyl-1-propanol ethiodide	ACY.
Desoxyanisoin	SPC.
3,5-Diacetamido-2,4,6-triiodobenzoic acid, sodium salt	SDW.
2,5-Diaminotoluene sulfate	EK.
4-Diethylamino-2,5-acetoxylidide	AST.
1-[p-(β-Diethylaminoethoxy)phenyl]-1-p-tolyl-2-(p-chlorophenyl)ethanol.	BKC.
Diethylaminopropiophenone	BKC.
p,p′-(1,2-Diethylethylene)diphenol (Hexestrol)	SPC, x.
4,4′-Diethyl-4,4′-stilbenediol (Diethylstilbestrol)	ABB, LIL, SPC.
3,4-Dihydroxynorephedrine (3,4-Dihydroxyphenylpropanolamine) hydrochloride.	SDW.
β-(3,5-Diiodo-4-hydroxyphenyl)-α-hydratropic acid	SCH.
d-d-4-Dimethylamino-1,2-diphenyl-3-methyl-2-propoxybutane hydrochloride.	LIL.
4-Dimethylamino-2,2-diphenylvaleramide	BRS.
4-(2-Dimethylaminoethoxy)-N-(3,4,5-trimethoxybenzoyl)-benzylamine hydrochloride.	HOF.
Dimethylethyl(γ-carbamyl-γ,γ-diphenylpropyl)ammonium bromide.	x.
l-N,α-Dimethylphenethylamine base	ABB.
N,α-Dimethylphenethylamine (Desoxyephedrine) base	HEX.
*d-N,α-Dimethylphenethylamine hydrochloride	ABB, GAN, HEX.
*N,α-Dimethylphenethylamine (Desoxyephedrine) hydrochloride	GAN, HEX, MLC.
N,α-Dimethylphenethylamine phosphate	FEC.
N,2-Dimethyl-2-phenylsuccinimide	PD.
Dimethyl-p-toluidine	EK.
3,5-Dinitrobenzamide	MAL.
Diphenylacetyldiethylaminoethanol hydrochloride	WB.
3,5-Dipropionamido-2,4,6-triiodobenzoic acid and sodium salt.	MAL.
Dipropylene glycol salicylate	CP.
p-(Di-N-propylsulfamyl)benzoic acid (Benemid)	MRK.
*Dyes, medicinal:	
Acriflavine (3,6-Diamino-10-methylacridine chloride)	ACF.
2,4-Diamino-4′-ethoxyazobenzene hydrochloride (Serenium)	KON.
Gentian violet	ACF, SDH.
Merbromin (Dibromohydroxymercurifluorescein, sodium salt)	HYN.
Methylene blue	ACF, ACY.
Scarlet red (Phenol red)	ACF.
Other	ACF.
Ephedrine, racemic	MRK.
N-Ethyl-3,3′-diphenyldipropylamine	SPC.
N-Ethyl-3,3′-diphenyldipropylamine citrate	SPC.
N-Ethyl-3,3′-diphenyldipropylamine hydrochloride	SPC.
Ethyl (Iodophenyl)hendecanoate (Pantopaque)	x.
Ethylmercurithiosalicylic acid	LIL.
Ethylmercurithiosalicylic acid, sodium salt	LAS, LIL, PYL.

TABLE 13B.--*Synthetic organic chemicals: Medicinals for which U.S. production or sales were reported, identified by manufacturer, 1959*--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
MEDICINALS, CYCLIC--Continued	
Benzenoid--Continued	
α-Ethyl-α-phenylglutarimide (Doriden)----------	CBP.
Ethyl salicylate carbonate----------	FBS, PD.
Gallic acid----------	MAL.
Glycol monosalicylate----------	FBS, MON.
Guaiacol, liquid and crystalline----------	HN, MON.
Hexylresorcinol----------	HEX, MRK.
p-Hydroxyacetanilide----------	MLS, NEP.
m-Hydroxybenzaldehyde----------	ACF.
p-Hydroxybenzoic acid esters:	
Benzyl p-hydroxybenzoate----------	HN, LIL.
n-Butyl p-hydroxybenzoate (Butoben)----------	FBS, HN.
Ethyl p-hydroxybenzoate----------	HN.
Methyl p-hydroxybenzoate----------	FBS, HN.
Propyl p-hydroxybenzoate----------	FBS, HN.
N-2-Hydroxyethylgentisamide----------	FBS.
Hydroxymercuri-4-nitro-o-cresol anhydride (Metaphen)-------	ABB.
4-Hydroxy-3-nitrobenzenearsonic acid----------	SAL.
2-Hydroxy-2-phenethyl carbamate----------	ARP.
α-(Isopropylaminomethyl)protocatechuyl alcohol (Aleudrine)-	SPC.
Mandelic acid (Phenylglycolic acid)----------	NEP.
Mandelic acid, calcium salt----------	MAL.
o-Methoxy-N,α-dimethylphenethylamine (l-(o-Methoxyphenyl)-2-methylaminopropane) hydrochloride.	MLS, ORT.
3-(o-Methoxyphenoxy)-1,2-propanediol (Glyceryl guaiacyl ether).	FBS, GAN.
α-(1-Methylaminoethyl)benzyl alcohol (Pseudoephedrine) hydrochloride.	BUR, GAN.
α-(1-Methylaminoethyl)benzyl alcohol sulfate----------	GAN.
4-(2-Methylaminoethyl)pyrocatechol----------	DOD.
1-Methyl-4-carbethoxy-4-phenylhexamethylenimine (Ethoheptazine) citrate.	WYT.
N-[2-(3,4-Methylenedioxyphenyl)isopropyl]-α-aminomethyl-protocatechuyl alcohol hydrochloride (Caytine).	LKL.
*α-Methylphenethylamine (Amphetamine) base and salts:	
α-Methylphenethylamine (Amphetamine) (Benzedrine) base---	HEX, ORT, SK.
d-α-Methylphenethylamine base----------	HEX.
α-Methylphenethylamine hydrochloride----------	HEX.
d-α-Methylphenethylamine hydrochloride----------	HEX.
α-Methylphenethylamine sulfate----------	HEX.
d-α-Methylphenethylamine sulfate----------	HEX, SK.
N-Methyl-2-phenylsuccinimide----------	PD.
2-Naphthol (β-Naphthol)----------	FIN.
2-Naphthyl benzoate----------	BKL.
Neostigmine bromide----------	HEX.
Neostigmine methyl sulfate----------	HEX.
p-Nitrobenzenearsonic acid----------	SAL.
*Norephedrine (Propadrine) hydrochloride----------	FBS, GAM, HEX, ORT.
Phenacaine [(Di-p-ethoxyphenyl)acetamidine] hydrochloride--	GAN, SDW.
Phenacetin (Acetophenetidin)----------	DOW, MON.
Phenolphthalein----------	MON.
Phenolsulfonic acid salts:	
Aluminum phenolsulfonate----------	MAL.
Ammonium phenolsulfonate----------	GAM.
Calcium phenolsulfonate----------	MAL.
Sodium phenolsulfonate----------	GAM, MAL.
Zinc phenolsulfonate----------	MAL.
2-Phenyl-tert-butylamine resin complex------ ----------	BPC.
trans-2-Phenylcyclopropylamine sulfate----------	BPC.
l-Phenylephrine base----------	GAN.
*Phenylephrine (Neosynephrine) hydrochloride----------	GAN, HEX, SDW, SPC.
2-Phenyl-1,3-indandione (Danilone)----------	GAN, SPC.
β-Phenylisopropylhydrazine hydrochloride----------	LKL.
Phenyl mercuric derivatives:	
o-Chloromercuriphenol (o-Hydroxyphenylmercuric chloride)-	MTL.
Phenylmercuric acetate----------	BRK.

TABLE 13B.--*Synthetic organic chemicals: Medicinals for which U.S. production or sales were reported, identified by manufacturer, 1959*--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
MEDICINALS, CYCLIC--Continued	
Benzenoid--Continued	
Phenyl mercuric derivatives--Continued	
Phenylmercuric benzoate	BRK, MTL.
Phenylmercuric borate	BRK, MTL.
Phenylmercuric chloride	MTL.
Phenylmercuric nitrate	BRK, MTL.
Phthalazone	ACF.
Pyrogallic acid	MAL.
Quinidine sulfate	HEX.
Resorcinol monoacetate	EK.
Resorcinol monobenzoate	EKT.
Salicylamide	PEN.
*Salicylic acid	DOW, HN, MON, SDH.
*Salicylic acid salts:	
Calcium salicylate	DOW.
Magnesium salicylate	MAL.
Mercuric salicylate	MAL.
Potassium salicylate	PEN.
*Sodium salicylate	DOW, HN, MON.
Strontium salicylate	DOW, MAL.
Salol (Phenyl salicylate)	DOW, MAL, PEN.
Sodium antimony(III)-bis(catechol-2,4-disulfonate) (Fouadin).	SDW.
Sodium benzyl succinate	LEM.
Sodium o-iodohippurate dihydrate (Hippuran)	MAL.
Sodium phenoxyacetate	ABB.
Sodium santoninate	MAL.
p-Stibonobenzoic acid	BKC.
*Sulfa drugs:	
6-Acetamido-4-hydroxy-3-(4′-sulfamoylphenylazo)-2,7-naphthalenedisulfonic acid, disodium salt (Neoprontosil) (Prontosil soluble).	SDW.
N^1-Acetyl-3,4-dimethyl-5-sulfanilamidoisoxazole	HOF.
4′-(Acetylsulfamoyl)phthalanilic acid	LEM.
Benzoylsulfanilamide	ACY.
Benzoylsulfanilamide, sodium salt	ACY.
p-Benzylaminobenzenesulfonamide	SDW.
N^1-(6-Chloro-2-pyrazinyl)sulfanilamide	ACY.
N^1-(2,6-Dimethoxy-4-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-1,3,4-thiadiazol-2-yl)sulfanilamide	ACY.
4′-(p-Nitrophenylsulfamoyl)acetanilide (N^4-Acetyl-N^1-(4-nitrophenyl)sulfanilamide).	ACY, SAL.
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)	ACY.
Sulfanilanilide	SAL.
N-Sulfanilylacetamide (Sulfacetamide)	LEM, SCH.
N-Sulfanilylacetamide, sodium salt	LEM, SCH.
Sulfapyridine	ACY, MRK.
Sulfapyridine, sodium salt	ACY, MRK.
Sulfaquinoxaline	MRK.
Sulfasuxidine (Succinylsulfathiazole)	MRK.
Sulfathalidine	MRK.
Sulfathiazole	ACY, MRK.
Sulfathiazole, sodium salt	ACY, MRK.
Tannin albuminate (Tannalbin)	PYL.
Thiosalicylic acid	LIL.
Thymol	GIV, HNW.
Thymol iodide	MAL.
*3-o-Toloxy-1,2-propanediol (o-Cresyl α-glyceryl ether)	BKL, FBS, HEX.

TABLE 13B.--*Synthetic organic chemicals: Medicinals for which U.S. production or sales were reported, identified by manufacturer, 1959*--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
MEDICINALS, CYCLIC--Continued	
Benzenoid--Continued	
Vitamins:	
K (2-Methyl-1,4-naphthalenediol diphosphate, tetrasodium salt).	HOF.
*K (Menadione) (2-Methyl-1,4-naphthoquinone)	ABB, HET, HFT.
K (Menadione), sodium bisulfite	ABB, HET.
K_1 (2-Methyl-3-phytyl-1,4-naphthoquinone)	MRK.
K_5 (4-Amino-2-methyl-1-naphthol, hydrochloride)	PD.
Alicyclic and Heterocyclic	
5-Acetamido-1,3,4-thiadiazole-2-sulfonamide	ACY.
2-Acetylamino-5-nitrothiazole (Acetyl enheptin)	ACY.
Adenine hydrochloride	SBR.
Adenine sulfate	SBR.
Adenosine	SBR.
Adenosine-5-phosphoric acid	SBR.
Adenosinetriphosphoric acid	SBR.
Adenosinetriphosphoric acid, salt	PBS, SBR.
Adenylic acid	SBR.
*Alkaloids and related products:	
Berberine hydrochloride	ABB, PEN.
Colchicine	ABB, PEN.
Digitalis glucosides:	
Digitonin	PEN.
Gitalin	PEN.
All other	BUR, CBP.
Eserine salicylate	PEN.
Ethylmorphine hydrochloride	MAL, MRK.
Eucatropine hydrochloride	WER.
Homatropine	HEX, SPC.
Homatropine hydrobromide	SPC.
*Homatropine methyl bromide	EN, HEX, SPC.
Hydrastine	PEN.
Hydrastine hydrochloride	ABB, PEN.
d-3-Methoxy-N-methylmorphinan hydrobromide	HOF.
Rauwolfia serpentina (Alseroxylon) fraction	RIK.
Reserpine	PEN.
Reserpine with rescinnamine	PFZ.
Tubocurarine	OMS.
Veratrum viride (Alkavervir)	PEN, RIK.
Allantoin (5-Ureidohydantoin)	FIN, HFT.
2-Aminopurine-6-thiol	BUR.
Amino acids:	
dl-Acetyltryptophane	SDW.
d-Tryptophane	DOW.
dl-Tryptophane	SDW.
l-Tryptophane	SDW.
2-Amino-5-nitrothiazole (Enheptin)	ACY.
3-Amino-2-oxazolidinone	NOR.
1-m-Aminophenyl-2-pyridone	BPC.
*Antibiotics for human or veterinary use:	
Actidione	UPJ.
*Bacitracin	COM, PBS, PEN, PFZ.
Carbomycin (Magnamycin)	PFZ.
Chloramphenicol (Chloromycetin)	PD.
Chlortetracycline (Aureomycin) hydrochloride	ACY.
Cycloserine	COM, PFZ.
*Dihydrostreptomycin	ACY, LIL, MRK, OMS, PFZ.
Erythromycin	ABB, COM, LIL.
Fumagillin	ABB.
Gramicidin	PEN.
*Neomycin, base	ACY, MRK, OMS, PEN, PFZ, UPJ.
Novobiocin	MRK, x.
Nystatin	OMS.
Oleandomycin	PFZ.
Oleandomycin, triacetate	PFZ.
Oxytetracycline (Terramycin) hydrochloride	PFZ.

TABLE 13B. -- *Synthetic organic chemicals: Medicinals for which U.S. production or sales were reported, identified by manufacturer, 1959* --Continued

Chemical	Manufacturers' identification codes (according to list in table 23
MEDICINALS, CYCLIC--Continued	
Alicyclic and Heterocyclic--Continued	
*Antibiotics for human or veterinary use--Continued	
*Penicillin salts:	
Benzathine penicillin G	PFZ, WYT.
Benzathine penicillin V	WYT.
Chloroprocaine penicillin O	UPJ.
Hydrabamine penicillin V	ABE.
Penicillin V	LIL.
*Potassium penicillin G	ABB, BRS, LIL, MRK, OMS, PFZ, WYT.
*Potassium penicillin V	ABB, LIL.
*Potassium α-phenoxyethyl penicillin	BRS.
*Procaine penicillin G	ABE, BRS, LIL, MRK, OMS, PFZ, WYT.
Sodium penicillin G	MRK, OMS, PFZ.
Sodium penicillin O	UPJ.
Polymixin B sulfate	PFZ.
Spontin	ABE.
*Streptomycin	ACY, LIL, MRK, OMS, PFZ.
*Tetracycline	ACY, BRS, PFZ.
Thiostrepton	OMZ.
Tyrothricin	PEN.
Viomycin	PFZ.
Other	ACY, BRS, LIL, MRK, OMZ.
*Antibiotics for animal feed supplements, food preservation, and crop spraying:	
Aterrimin	BIF.
*Bacitracin	COM, GFR, PBS, PEN.
Chlortetracycline (Aureomycin, hydrochloride	ACY.
Hygromycin B	LIL.
Oxytetracycline (Terramycin,	PFZ.
Penicillin salts:	
Benzathine penicillin G	PFZ.
Potassium penicillin G	PFZ.
*Procaine penicillin G	ABE, COM, LIL, MRK, OMS, PFZ.
Streptomycin	MRK, PFZ.
All other	MRK.
*Antihistamines:	
2-(Benzhydryloxy -N,N-dimethylethylamine 8-chloro-theophyllinate.	SRL.
2-[Benzyl 2-dimethylaminoethyl amino]pyridine citrate	CBP.
2-[Benzyl(2-dimethylaminoethyl)amino]pyridine hydrochloride.	CBP.
2-[1-(p-Bromophenyl)-3-dimethylaminopropyl]pyridine (Parabromolylamine, maleate.	SCH.
1-(4-Chlorobenzhydryl)-4-methylpiperazine hydrochloride	ABE, BUR.
2-[p-Chloro-α-(2-dimethylaminoethoxy)benzyl]pyridine maleate.	SCH.
1-(p-Chloro-α-phenylbenzyl -4-(p-tertbutylbenzyl)-piperazine dihydrochloride.	PFZ.
*2-[2-(p-Chlorophenyl -3-dimethylaminopropyl]pryidine maleate (Chlorophenylpyridamine maleate .	HEX, SCH, x.
1-(p-Chlorophenyl -2-phenyl-4-pyrrolidyl-2-butanol	LIL.
1-(p-Chlorophenyl -2-phenyl-4-pyrrolidyl-1-butene diphosphate and hydrochloride.	LIL.
1-(p-Chlorophenyl -2-phenyl-4-pyrrolidyl-1-butene hydrobromide.	LIL.
2-[α-(2-Dimethylaminoethoxy)-α-methylbenzyl]pyridine succinate (2-(Methyl-2'-dimethylaminoethoxybenzyl) pyridine succinate (Decapryn succinate).	BKT.
2-[(2-Dimethylaminoethyl-p-methoxybenzyl)amino]pyridine maleate.	MRK.
2-[(2-Dimethylaminoethyl-p-methoxybenzyl amino]pyrimidine (N,N-Dimethyl-N'-p-methoxybenzyl-N,2-pyrimidylethylene-diamine .	NEP.
2-[(2-Dimethylaminoethyl)thenylamino]pyridine fumarate (N,N-Dimethyl-N',2-pyridyl-N',2-thenylethylenediamine fumarate).	ABB, MON.
2-[(2-Dimethylaminoethyl)thenylamino]pyridine hydrochloride (N,N-Dimethyl-N',2-pyridyl-N',2-thenyl-ethylenediamine hydrochloride).	ABE, SDW.

TABLE 13B. --*Synthetic organic chemicals: Medicinals for which U.S. production or sales were reported, identified by manufacturer, 1959*--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
MEDICINALS, CYCLIC--Continued	
Alicyclic and Heterocyclic--Continued	
*Antihistamines--Continued	
2-[(2-Dimethylaminoethyl)thenylamino]pyridine o-(p-hydroxybenzoyl)benzoate.	LIL.
N-(2'-Dimethylamino-2'-methyl)ethylphenothiazine hydrochloride.	MON, WYT.
*2-[3-(Dimethylamino)-1-phenylpropyl]pyridine maleate	HEX, SCH, x.
N,N-Dimethyl-N'-(2-pyridyl)-N'-(5-chloro-2-thenyl)-ethylenediamine citrate.	MON.
Phenindamine	HOF.
Antipyrine (1,5-Dimethyl-2-phenyl-3-pyrazolone)	DOW.
Barbituric acid	ABB, KF.
Barbituric acid, sodium salt	ABB.
*Barbituric acid derivatives:	
5-Allyl-5-sec-butylbarbituric acid	SDW.
5-Allyl-5-(2-cyclopenten-1-yl)barbituric acid and salt (Cyclopal).	GAN.
5-Allyl-5-isobutylbarbituric acid and salt	GAN.
*5-Allyl-5-(1-methylbutyl)barbituric acid (Secobarbital) and salt.	BPC, GAN, LIL.
5-Allyl-5-(1-methylbutyl)-2-thiobarbituric acid, sodium salt (Thiamylal).	PD.
dl-5-Allyl-1-methyl-5-(1-methyl-2-pentynyl) barbituric acid and salt.	LIL.
5-sec-Butyl-5-ethylbarbituric acid	ABB, BPC, GAN.
5-sec-Butyl-5-ethylbarbituric acid, sodium salt	ABB, BPC, GAN.
5-(1-Cyclohexen-1-yl)-1,5-dimethylbarbituric acid (Evipal).	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-Diallylbarbituric acid (Dial)	GAN.
5,5-Diethylbarbituric acid (Barbital)	GAN, LIL.
5,5-Diethylbarbituric acid, sodium salt	GAN.
5-Ethyl-5-isoamylbarbituric acid and salt (Amytal)	BPC, GAN, LIL.
5-Ethyl-5-isopropylbarbituric acid and salt	ABB.
5-Ethyl-5-(1-methyl-1-butenyl)barbituric acid (Delvinal)	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 (Pentothal).	ABB, BPC.
5-Ethyl-1-methyl-5-phenylbarbituric acid (Mephobarbital)	SDW.
5-Ethyl-5-n-pentylbarbituric acid, sodium salt	BPC.
*5-Ethyl-5-phenylbarbituric acid (Phenobarbital) (Luminal)	ABB, BPC, GAN, MAL, SDW.
*5-Ethyl-5-phenylbarbituric acid, sodium salt	BPC, GAN, MAL, SDW.
2-Thiobarbituric acid	EK.
1-[2-(Benzylcarbamoyl)ethyl]-2-isonicotinoylhydrazine	PFZ.
3-Benzyl-3,4-dihydro-6-(trifluoromethyl)-2H-1,2,4-benzothiadiazine-7-sulfonamide, 1,1-dioxide (Benzhydroflumethiazide).	OMS.
2-Benzyl-2-imidazoline (Tolazoline) hydrochloride	SPC.
1-Benzyl-2-(5-methyl-3-isoxazolalcarbonyl) hydrazine	HOF.
3-Benzylthiomethyl-6-chloro-2H-1,2,4-benzothiadiazine-7-sulfonamide, 1,1-dioxide.	PFZ.
*Bile acids and salts:	
Bilirubin	PFN.
Bilron	LIL.
Cholic acid	ARP, DRG, SRL, WIL, WTM.
*Dehydrocholic acid	DRG, MRK, WIL, WTM.
Desoxycholic acid	DRG, MRK, WIL.
*Ketocholanic acids	EN, MRK, SRL, WTM.
Mixed oxidized bile acids	ARP, WIL.
*Bromocamphor, mono-	DOW, MAL, PEN.
4-[3-p-Butoxyphenoxy]propylmorpholine hydrochloride (Pyramoxine).	ABB.
α-Butyloxycinchoninic acid diethylethylenediamide and hydrochloride (Nupercaine).	CBP.
*Caffeine, natural	GNF, MYW, RB.
*Caffeine, synthetic	MON, PFZ.

TABLE 13B. --*Synthetic organic chemicals: Medicinals for which U.S. production or sales were reported, identified by manufacturer, 1959*--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
MEDICINALS, CYCLIC--Continued	
Alicyclic and Heterocyclic--Continued	
Caffeine derivatives, natural and synthetic:	
*Caffeine citrate	MAL, MRK, PFZ.
Caffeine sodium benzoate	MAL.
Camphor, synthetic, U.S.P	DUP, HNW.
Camphoric acid	FIN, PYL.
Camphoric anhydride	FIN, PYL.
Camphosulfonic acid	PYL.
Camphosulfonic acid, calcium salt	FIN.
Carboxymethylcellulose, sodium salt	CBP.
N-[3-(Carboxymethylmercaptomercuri)-2-methoxypropyl] α-camphoramate, disodium salt.	WYT.
Cellulose, oxidized	EKT.
7-Chloro-4-(4-diethylamino-1-methylbutylamino)quinoline (Aralen).	SDW.
6-Chloro-3,4-dihydro-2H-1,2,4-benzothiadiazine-7-sulfonamide 1,1-dioxide.	CBP, MRK.
7-Chloro-4-(4-[ethyl(2-hydroxyethyl)amino]-1-methylbutylamino)quinoline sulfate.	SDW.
*5-Chloro-7-iodo-8-quinolinol (Iodochlorohydroxyquinoline)	CBP, LEM, MTL.
2-(4-Chlorophenyl)tetrahydro-3-methyl-4H-1,3-thiazin-4-one 1,1-dioxide.	SDW.
4-(7-Chloro-4-quinolylamino)-α-diethylamino-o-cresol	PD.
2-Chlorothiophene	GAM.
Coenzyme A	PBS.
Cozymase	PBS.
α-Cyclohexyl-α-phenyl-1-piperidinepropanol	SDW.
Cyclopentanol	LIL.
Cyclopentyl bromide	LIL.
1-Cyclopentyl-2-methylpropylamine (Cyclopentamine) hydrochloride.	LIL.
α-Cyclopentyl-2-thiophenylglycolic acid, 2-diethylaminoethyl ester methobromide.	SDW.
Cytosine	KF.
Dextran	COM.
2,4-Diamino-5-(p-chlorophenyl)-6-ethylpyrimidine	BUR.
1,3-Dibromo-5,5-dimethylhydantoin	DRG.
4,7-Dichloroquinoline	PD.
Diethylaminocarbethoxybicyclohexyl (Dicyclomine, hydrochloride (Bentyl hydrochloride).	BKC.
6-(2-Diethylaminoethoxy)-2-dimethylaminobenzothiazole hydrochloride.	HOF.
1-Diethylcarbamyl-4-methylpiperazine dihydrogen citrate (Hetrazan).	ACY.
*Dihydrocodeinone bitartrate	EN, MAL, MRK, PEN.
Dihydrohydroxycodeinone hydrochloride	EN.
3,5-Diiodo-N-methyl-4-pyridone-2,6-dicarboxylic acid	SCH.
3,5-Diiodo-4-pyridone-N-acetic acid, diethanolamine	SDW.
*5,7-Diiodo-8-quinolinol	LEM, MTL, PYL, RSA, SRL.
6,7-Dimethoxy-1-(4-ethoxy-3-methoxybenzyl)-3-methylquinoline phosphate (Dioxyline phosphate).	LIL.
3-(3-Dimethylaminopropyl)-1,3,8,8-tetramethylazoniabicyclo-[3,2,1]octane, methyl sulfate, methosulfate.	WYT.
p,α-Dimethylbenzyl camphorate, diethanolamine salt	SPC.
N,α-Dimethylcyclohexane-ethylamine (1-Cyclohexyl-2-methylaminopropane).	SK.
6-Dimethyl-2-[2-(2,5-dimethyl-1-phenyl-3-pyrrolyl)vinyl]-1-methylquinolinium chloride dihydrate.	x.
N,N-Dimethyl-4-piperidylidene-1,1-diphenylmethane, methyl sulfate (Diphenmethanil methyl sulfate).	SCH.
5,5-Diphenylhydantoin	PD.
5,5-Diphenylhydantoin, sodium salt	HEX, PD, PYL.
5-Ethyl-3,5-dimethyl-2,4-oxazolidinedione	ABB.
5-Ethyl-10,10-diphenylphenarsazine	MRK.
Ethyl 1-methyl-4-phenylisonipecotate (Demarol)	SDW, WYT.
3-Ethyl-5-phenylhydantoin	ABB.
N-Ethyl-3-piperidyl benzilate methobromide	LKL.
N-Ethyl-3-piperidyl diphenylacetate hydrochloride	LKL.
Ethynyl cyclohexyl carbamate (Valmid)	LIL.
Fructose (Levulose)	DLI.

TABLE 13B. --*Synthetic organic chemicals: Medicinals for which U.S. production or sales were reported, identified by manufacturer, 1959*--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
MEDICINALS, CYCLIC--Continued	
Alicyclic and Heterocyclic--Continued	
Galactose	PFN.
Glucose-6-phosphate, barium salt and sodium salt	SBR.
Glucuronolactone	CRN.
1-Hexadecylpyridinium chloride	HEX, x.
Hexamethylenetetramine	HN.
Hexamethylenetetramine anhydromethylene citrate (Helmitol)	SDW.
Hexamethylenetetramine mandelate	NEP.
Hexokinase	PBS.
Hexosediphosphoric acid salts:	
Barium and magnesium salts	SBR.
Calcium hexosediphosphate	SBR.
*Hormones (steroid):	
Adrenocorticotropic hormone (ACTH)	ARP, ORG, WIL.
Allopregnane-3,11,20-trione	UPJ.
Dexamethasone	MRK.
Dexamethasone acetate	SCH.
Dexamethasone alcohol	SCH.
Dienediol	UPJ.
Estrogenic substance	ORG.
Estrone, natural, equine	ORG.
Fluorocortisone	MRK.
9-α-Fluorohydrocortisone acetate	UPJ.
Fluoxymesterone	UPJ.
*Hydrocortisone alcohol and acetate	MRK, PFZ, UPJ.
Hydrocortisone diethylaminoacetate hydrochloride	PFZ.
*17-Hydroxy-11-dehydrocorticosterone (Cortisone) and acetate.	MRK, SCH, UPJ.
11-α-Hydroxyprogesterone	UPJ.
Methylandrostenediol	SRL.
Methylprednisolone	x.
Methyltestosterone	CBP, SRL.
*Prednisolone	MRK, PFZ, UPJ.
*Prednisone	MRK, SCH, UPJ.
Progesterone	SRL, x.
Sitosterol B	UPJ.
Testosterone	SRL.
Testosterone propionate	SRL.
Triamcinolone	ACY, OMS.
Trienediol	UPJ.
1-Hydrazinonaphthalazine hydrochloride	CBP.
3-Hydroxy-1-methylpyridinium bromide dimethylcarbamate	HOF.
8-Hydroxyquinoline-5-sulfonic acid	LEM.
4,5-Imidazoledicarboxamide (Glycarbylamide)	MRK.
2-Iodoethyl-1,3-dioxolane-4-methanol	x.
Isonicotinic acid hydrazide	NEP.
1-Isonicotinyl-2-isopropylhydrazine phosphate	HOF.
Maltose	PFN.
β-Menthofuran	x.
Menthyl salicylate	FES.
homo-Menthyl salicylate	FES.
6-Mercaptopurine	BUR.
β-Methoxy-γ-hydroxymercuric propylamide of camphoric acid, sodium salt with theophylline (Mercupurin).	FIN.
Methoxyoximercuripropylsuccinyl urea	LKL.
2-(p-Methoxyphenyl)-1,3-indandione	SCH.
2-Methylbenzothiazole	FMT.
Methylcholanthrene	EK.
Methyl dehydromorphinone	MAL.
3,3'-Methylenebis[4-hydroxycoumarin] (Dicumarol)	ABB, FIN.
Methyl nicotinate	NEP.
3-Methyl-2-phenylmorpholine hydrochloride (Preludin)	GGY.
N-Methyl-3-piperidylbenzilate methobromide	LKL.
N-Methylpiperidyl-3-methylphenothiazine hydrochloride hydrate.	NEP.
3-(2-Methyl-1-piperidyl)propyl benzoate (Metycaine)	LIL.
3-(2-Methyl-1-piperidyl)propyl p-cyclohexyloxybenzoate	LIL.
2-Methyl-3-o-tolyl-4(3H)-quinazolinone	BPC.
1-Methyl-2-undecyl-3-benzylimidazolium bromide	LIL.

TABLE 13B.--*Synthetic organic chemicals: Medicinals for which U.S. production or sales were reported, identified by manufacturer, 1959*--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
MEDICINALS, CYCLIC--Continued	
Alicyclic and Heterocyclic--Continued	
5-(4-Morpholinomethyl)-3-(5-nitrofurfurylideneamino)-2-oxazolidinone.	NOR.
2-(1-Naphthylmethyl)-2-imidazoline (Privine) hydrochloride	ORT.
Nikethamide (Coramine)	CBF, PYL.
5-Nitro-2-furaldehyde diacetate	NOR.
5-Nitro-2-furaldehyde semicarbazone (Furacin)	NOR.
5-Nitro-2-furfurylidene-1-aminohydantoin (Furadantin)	NOR.
N-(5-Nitro-2-furfurylidene)-3-amino-2-oxazolidene	NOR.
Novalgin (1-Phenyl-2,3-dimethyl-4-methylamino-5-pyrazolone formaldehyde bisulfite).	SDW.
Nucleic acid	SBR.
Nucleic acid salts	SBR.
Papaverine hydrochloride, synthetic	LIL.
Phenothiazine	CLV.
α-Phenylcyclohexaneglycolic acid, 1-methyl-1,4,5,6-tetrahydro-2-pyrimidinemethanol ester.	PFZ.
1-Phenylcyclopentylcarboxylic acid, 2-(2-diethylaminoethoxy)ethyl ester.	PFZ.
2-Phenyl-1,3-diketohydrindane	BKC.
Phytic acid	STA.
Phytic acid, calcium salt	STA.
Piperazine	JCC, UCC.
*Piperazine derivatives:	
N-Benzhydryl-N^1-methylpiperazine base and hydrochloride	BUR.
N-(β-Cyclohexyl-β-hydroxy-β-phenyl)ethyl-N'-methylpiperazine methosulfate.	ABB.
Dimethylaminoethyl-4-methylpiperazine	UCC.
N-(β,β-Diphenyl-β-hydroxy)ethyl-N'-methylpiperazine dihydrochloride.	ABB.
Methyl-N-methyl-N-piperazine acetate	ABB.
N-Methylpiperazine	JCC, UCC.
Piperazine adipate	JCC.
Piperazine calcium ethylenediamine tetraacetate (Perin)	EN.
Piperazine carbon disulfide	BRK.
Piperazine citrate	JCC, PYL, RSA.
Piperazine dihydrochloride	JCC, PYL.
Piperazine hydrochloride	JCC.
Piperazine phosphate	BUR, JCC.
Piperazine tartrate	PYL.
sym-N-Tetramethylpiperazine diiodide	PYL.
Piperazine hexahydrate	JCC.
6-Propyl-2-thiouracil	ACY, PYL.
2-Pyridinemethanol tartrate	HOF.
Pyridium (2,6-Diamino-3-phenylazopyridine)	HOF, NEP.
Quinacrine (Atebrin) (2-Methoxy-6-chloro-9-diethylaminopentylaminoacridine).	SDW.
8-Quinolinol (8-Hydroxyquinoline) salts and esters:	
*8-Quinolinol base	GAM, LEM, MTL.
8-Quinolinol benzoate	GAM.
8-Quinolinol citrate	GAM.
*8-Quinolinol sulfate (Quinosol)	GAM, LEM, MTL.
Rutin	LEM, PEN.
Terpinol hydrate	LEM, PEN.
dl-2-(1,2,3,4-Tetrahydro-1-naphthyl)-2-imidazoline hydrochloride.	PFZ.
Theobromine derivatives:	
Theobromine calcium gluconate	WTM.
Theobromine sodium acetate	MAL.
Theobromine sodium salicylate	CLC, MAL.
*Theophylline (1,3-Dimethylxanthine) base and derivatives:	
Theophylline aminoisobutanol	GAN.
Theophylline, anhydrous	GAN.
Theophylline base	LEM, MAL.
Theophylline cholinate	NEP.
*Theophylline ethylenediamine (Aminophylline)	GAN, LEM, SRL.
Theophylline ethylenediamine, sodium biphosphate	GAN.
Theophylline methoxyoximercuripropyl succinylurea	LKL.
Theophylline sodium acetate	GAN, MAL.
2-Thiouracil	ACY.

TABLE 13B.--*Synthetic organic chemicals: Medicinals for which U.S. production or sales were reported, identified by manufacturer, 1959*--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
MEDICINALS, CYCLIC--Continued	
Alicyclic and Heterocyclic--Continued	
Thymidine	SBR.
*Tranquilizers (including benzenoid):	
1-p-Chlorobenzhydrol-4-[2-(2-hydroxyethoxy)ethyl]-piperazine (Hydroxyzine) dihydrochloride.	PFZ.
1-(p-Chlorobenzhydryl)-4-[2-(2-hydroxyethoxy)ethyl]-diethylenediamine dihydrochloride.	[illegible]
2-Chloro-10-(3-dimethylaminopropyl)phenothiazine (Chlorpromazine) hydrochloride.	SK.
2-Chloro-10-(3-[4-(2-hydroxyethyl)piperazinyl]propyl)-phenothiazine.	SCH.
2-Chloro-10-[3-(1-methyl-4-piperazinyl)propyl]pheno-thiazine dimaleate.	SK.
2-(p-Chlorophenyl)-3-methyl-2,3-butanediol	LIL.
10-(γ-Dimethylaminopropyl)phenothiazine (Promazine) hydrochloride.	WYT.
2-Ethyl-3-propylglycidamide (Quiactin)	BKC.
α-(4-Piperidyl)benzhydrol (Azocyclonol) hydrochloride	BKC.
6-(Trifluoromethyl)-1,2,4-benzothiadiazine-7-sulfonamide, 1,1-dioxide.	OMS.
2-Trifluoromethyl-10-(3-dimethylaminopropyl)phenothiazine (Triflupromazine) hydrochloride.	OMS.
3,5,5-Trimethyl-2,4-oxazolidinedione (Tridione)	ABB.
Triphosphopyridine nucleotide	PBS.
3-Tropanol (Tropine)	HEX.
Tropine benzhydryl ether methanesulfonate	x.
Uric acid	x.
Uridine	SBR.
Uridine triphosphate	PBS.
1-Vinyl-2-pyrrolidinone iodine complex monomer	GAF.
*Vitamins:	
*A, from all sources:	
A acetate	CW, EK, HOF, MRK, PFZ.
A acetate (feed grade)	HOF, PFZ.
A alcohol	CW.
A esters (natural)	EK.
A palmitate	EK, HOF, MRK, PFZ.
A palmitate (feed supplement)	EK, HOF, PFZ.
β-Carotene	HOF.
*B_1 (Thiamine derivatives):	
(Thiamine hydrochloride)	HOF, MRK.
(Thiamine nitrate)	HOF, MRK.
B_2:	
(Riboflavin-5′-phosphate, monosodium salt) (100%)	HOF.
*(Riboflavin for human consumption) (100%)	GPR, HOF, MRK.
*(Riboflavin for animal and poultry consumption)	COM, GPR, HOF, MRK, PBS.
*B_6 (Pyridoxine)	ACY, HOF, MRK.
*B_{12}, 100%:	
Feed grade	BIF, COM, GPR, MRK, PBS, PFZ.
Pharmaceutical quality	BIF, MRK.
U.S.P. Crystalline	MRK.
*D_2 (Irradiated ergosterol) (Calciferol)	DGS, DLI, GNM, SDW, VTM.
*D_3 (Irradiated animal sterol) (Delsterol)	DGS, DLI, NOP, VTM.
E (α-Tocopherol)	HOF.
E (α-Tocopherol acetate)	HOF.
Biotin	HOF.
*Folic acid	ABB, ACY, SCR, UPJ.
Inositol	STA.
*Niacin (Nicotinic acid)	ABB, ACP, HFT, KPT, MRK, NOP.
*Niacinamide	ABB, MRK, NEP, SCR.
*Nicotinic acid (animal feed)	CKL, KPT.
Sodium nicotinate	MRK.
Xylose	PFN.
MEDICINALS, ACYCLIC	
Acetylcarbromal (1-Acetyl-3-(2-bromo-2-ethylbutyryl)urea)	MLS.
Acetylcholine bromide	EK.
Acetylcholine chloride	MRK.
Acetylmethionine	DOW, USI.

TABLE 13B.--*Synthetic organic chemicals: Medicinals for which U.S. production or sales were reported, identified by manufacturer, 1959*--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
MEDICINALS, ACYCLIC--Continued	
Acetyl-β-methylcholine chloride	RSA.
*Amino acids:	
dl-Alanine (dl-α-Alanine)	DOW.
*β-Alanine	ABB, BFG, NOP.
dl-Aspartic acid	ACF.
l-Cysteine hydrochloride	PUL.
Glutamic acid and salts:	
l(+)-Glutamic acid	GNM, HPC, IMC.
l(+)-Glutamic acid, calcium salt	LEM.
*l(+)-Glutamic acid hydrochloride	GNM, IMC, LEM.
l(+)-Glutamic acid, monoammonium salt	x.
l(+)-Glutamic acid, monopotassium salt	IMC.
l(+)-Glutamine	IMC.
Glycine (Aminoacetic acid)	BPC, DOW.
Glycine hydrochloride	EK.
2-Hydroxy-4-(methylthic)butyric acid, calcium salt	DUP, MON.
l-Isoleucine	DOW.
dl-Leucine	DOW.
l-Leucine	STA.
*l(+)-Lysine hydrochloride	DUP, MRK, PFZ.
dl-Methionine	DOW, DUP, LEM.
Methionine (animal-feed grade)	DUP.
dl-Threonine	SDW.
dl-Valine	DOW.
l-Valine	SBR.
Amino acid mixtures	CUT, STA.
Amyl nitrite (Isoamyl nitrite)	MAL.
Betaine base	HFT.
*Betaine hydrochloride	HFT, IMC, LEM.
Bromoform (Tribromomethane)	DOW.
Calcium lactophosphate	MAL.
Calcium succinate	LEM, PEN.
Carbromal (Bromodiethylacetylcarbamide)	BKL, MLS.
*Chloretone (tert-Trichlorobutyl alcohol)	BPC, FBS, PD.
3-Chloromercuri-2-methoxypropylurea	LKL.
β-Chlorovinylethylethynyl carbinol	ABB.
*Choline compounds:	
Choline bicarbonate	COM.
Choline bitartrate	ACY, HFT.
*Choline chloride, for animal and poultry feed and for use as a chemical.	COM, HFT, x.
Choline chloride, medicinal grade only	HFT.
Choline dihydrogen citrate	ACY, HFT.
Choline tricitrate	ACY.
Diallylacetic acid	x.
3-Diethylamino-2,2-dimethylpropanol acid ester phosphate	HOF.
Di(2-ethylhexyl) sulfosuccinate	ACY.
2,4-Dihydroxy-3,3-dimethylbutyric acid gamma-lactone	PD.
2,4-Dihydroxy-3,3-dimethylbutyric acid gamma-lactone, racemic.	PD.
Divinyl ether	MRK.
Ethyl carbamate (Urethane)	FMP.
2-Ethyl-cis-crotonylurea	MLS.
Ethylenediamine diiodide	PYL.
Ethyl iodide	EK, FMC, MAL.
Ethyl nitrite	MAL.
*Gluconic acid salts:	
Ammonium gluconate	PFZ.
Calcium glucoheptonate	PFN.
Calcium gluconate	MAL, PFZ.
Calcium gluconate borate	FIN.
Copper gluconate	PFZ.
Iron (ferrous) gluconate	PFZ.
Magnesium gluconate	PFZ.
Manganese gluconate	PFZ.
Potassium gluconate	PFZ.
Sodium gluconate	DLI, PFZ.
Glucono-delta-lactone	PFZ.
Glucosamine hydrochloride	PFZ.

TABLE 13B.--*Synthetic organic chemicals: Medicinals for which U.S. production or sales were reported, identified by manufacturer, 1959*--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
MEDICINALS, ACYCLIC--Continued	
Glutathione	SBR.
Glutathione (oxidized)	SBR.
Glycerophosphoric acid	HN.
*Hexamethylenebis[trimethylammonium chloride] (Hexamethonium chloride).	HEX, NEP, RSA.
2-Hydroxy-4-methylisobutyric acid, calcium salt	MON.
Iodized oils	SRL.
Iodoform	MAL, PEN.
Iodomethanesulfonic acid, sodium salt	SDW.
Iron (ferrous) oxalate	BKL.
Lactic acid salts (medicinal grades only): Iron (ferrous) lactate.	MAL.
Lecithin	UPJ.
Magnesium citrate	MAL.
Malononitrile	GAM, KF.
Methylenecitric acid and salts	SDW.
Methylene iodide	SDW.
Methyl iodide	EK, MAL.
2-Methyl-2-propyl-1,3-propanediol	ABB, BKL.
Pantolactone (racemic)	ABB, CKL, UCC.
Phosphoglyceric acid	SBR.
2-Propylvaleric acid, bismuth salt	x.
Ribose-5-phosphate, barium salt	SBR.
Sodium bismuth triglycolamate	BPC.
Sodium succinate	PEN.
Sodium tartrate	MAL.
Succinylcholine dichloride	BUR, SDW.
Tetramethylammonium chloride	EK.
Tetramethylammonium hydroxide	RSA.
Thiosemicarbazide	FMT.
*Tranquilizers: 2-Methyl-2-n-propyl-1,3-propanediol dicarbamate (Meprobamate (Equanil (Miltown).	ABB, BKL, FBS, PEN, x.
2,2,2-Tribromoethanol	SDW.
Triiodoethionic acid	SCH.
*Vitamins:	
*Ascorbic acid and derivatives:	
*Ascorbic acid	HOF, MRK, PFZ.
Ascorbic acid, calcium salt	PFZ.
Ascorbic acid, sodium salt	HOF, MRK, PFZ.
Ascorbyl palmitate	PFZ.
*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, SCR.
Pantothenic acid, sodium salt	PD.
d-Pantothenyl alcohol (α,γ-Dihydroxy-N-(3-hydroxypropyl)-β,β-dimethylbutyramide).	HOF.
dl-Pantothenyl alcohol	HOF.

Flavor and Perfume Materials

TABLE 14B. --*Synthetic organic chemicals: Flavor and perfume materials for which U.S. production or sales were reported, identified by manufacturer, 1959*

[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	TBK.
7-Acetyl-6-ethyl-1,1,4,4-tetramethyl-1,2,3,4-tetrahydronaphthalene.	GIV, TBK.
*4-Allylveratrole (Eugenyl methyl ether)	FBS, GIV, TBK.
Anethole (p-Propenylanisole)	GLD, HNW, HPC.
*p-Anisaldehyde (p-Methoxybenzaldehyde)	FBS, GIV, OPC, TBK.
Anisole (Methyl phenyl ether)	FBS, GIV.
Anisyl acetate	GIV, TBK.
Anisyl alcohol	GIV, TBK.
*Benzophenone	FBS, GIV, OPC, TBK.
*Benzyl acetate	GIV, IFF, OPC, SHL, TBK.
*Benzyl alcohol	BPC, GIV, OPC, SHL, TBK, TNP.
*Benzyl benzoate	GIV, MON, OPC, TBK, TNP.
Benzyl butyrate	TBK.
*Benzyl cinnamate	FBS, GIV, TBK.
Benzyl ether	OPC.
Benzyl formate	TBK.
Benzyl isoeugenyl ether	GIV, TBK.
Benzyl isopentyl ether	GIV, TBK.
Benzyl phenylacetate (Benzyl α-toluate)	GIV, TBK.
*Benzyl propionate	FB, GIV, TBK.
Benzyl salicylate	GIV, TBK.
α-Bromostyrene	TBK.
4'-tert-Butyl-2',6'-dimethyl-3',5'-dinitroacetophenone (Musk ketone).	GIV, SHL.
6-tert-Butyl-3-methyl-2,4-dinitroanisole (Musk ambrette)	GIV, SHL.
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, FBS, GIV, OPC, TBK.
Cinnamic acid	BPC.
Cinnamyl acetate	TBK.
*Cinnamyl alcohol	GIV, NEO, TBK.
Cinnamyl anthranilate	FEL, GIV.
Cinnamyl cinnamate	TBK.
Cinnamyl formate	FEL.
Cinnamyl isovalerate	TBK.
trans-Decahydro-2-naphthol	IFF.
p,α-Dimethylbenzyl alcohol (p-Methylphenylmethylcarbinol)	GIV.
α,α-Dimethylphenethyl acetate	GIV, IFF, TBK.
α,α-Dimethylphenethyl alcohol	IFF.
α,α-Dimethyl-3-phenyl-1-propanol	IFF, TBK.
4,6-Dinitro-1,1,3,3,5-pentamethylindan	GIV.
Diphenylmethane	TBK.
2-Ethoxynaphthalene (Ethyl β-naphthyl ether)	GIV, TBK.
Ethyl anthranilate	FMT.
Ethyl benzoate	TBK.
Ethyl cinnamate	TBK.
*Ethyl α,β-epoxy-β-methylhydrocinnamate	FEL, GIV, TBK, VPC.
2-Ethylhexyl salicylate	FEL.
Ethyl p-methoxycinnamate	GIV.
Ethyl β-phenylglycidate	TBK, VPC.
Ethyl salicylate	TBK.
Ethylvanillin	MON.
*Eugenol	FB, FBS, GIV, LUE, PEN, RT, TBK, VLY, WEB, x.
Hexylcinnamaldehyde	IFF, TBK.
Hydratropaldehyde (α-Phenylpropionaldehyde)	GIV, TBK.

TABLE 14B.--*Synthetic organic chemicals: Flavor and perfume materials for which U.S. production or sales were reported, identified by manufacturer, 1959*--Continued

Material	Manufacturers' identification codes (according to list in table 23)
FLAVOR AND PERFUME MATERIALS, CYCLIC--Continued	
Benzenoid and Naphthalenoid--Continued	
Hydratropaldehyde, dimethyl acetal	GIV.
*Isobutyl phenylacetate (Isobutyl α-toluate)	FB, GIV, MYW, TBK.
*Isobutyl salicylate	FB, GIV, TBK.
*Isoeugenol	GIV, OPC, SHL, TBK, VLY.
Isoeugenyl acetate	TBK.
*Isopentyl salicylate (Amyl salicylate)	FB, FBS, GIV, TBK.
p-Isopropylbenzaldehyde (Cumaldehyde)	GIV, VPC.
*p-Isopropyl-α-methylhydrocinnamaldehyde (Cyclamen aldehyde).	GIV, OPC, TBK, VPC.
*4-Methoxyacetophenone	FBS, GIV, OPC, TBK.
2-Methoxynaphthalene (Methyl β-naphthyl ether)	GIV, TBK.
Methoxyphenylbutanone	TBK.
p-Methylacetophenone (Methyl p-tolyl ketone)	TBK.
p-Methylanisole (p-Cresyl methyl ether)	GIV, OPC, TBK.
*Methyl anthranilate	DOW, GIV, MEE, OPC, UCC.
Methyl benzoate	HN, TBK.
*α-Methylbenzyl acetate	GIV, TBK, VLY.
p-Methylbenzyl acetate	FBS.
*α-Methylcinnamaldehyde	GIV, VLY, VPC.
Methyl cinnamate	FBS, TBK.
Methyl N-methylanthranilate (Dimethyl anthranilate)	GIV, OPC.
Methyl phenylacetate (Methyl α-toluate)	GIV, TBK.
*Methyl salicylate (Synthetic wintergreen oil)	DOW, HN, MON, PEN.
*α-Pentylcinnamaldehyde (α-Amylcinnamaldehyde)	GIV, IFF, NEO, TBK, VLY.
Pentyl phenylacetate	GIV.
*Phenethyl acetate	GIV, IFF, NEO, OPC.
*Phenethyl alcohol	GIV, IFF, OPC.
Phenethyl formate	IFF.
*Phenethyl isobutyrate	GIV, IFF, RT, TBK.
Phenethyl isovalerate	FB.
Phenethyl methacrylate	GIV.
*Phenethyl phenylacetate (Phenethyl α-toluate)	GIV, IFF, TBK.
Phenethyl salicylate	IFF, TBK.
2-Phenoxyethyl isobutyrate	GIV, IFF, TBK.
Phenylacetaldehyde (α-Tolualdehyde)	GIV, TBK.
Phenylacetaldehyde, dimethyl acetal	GIV, TBK.
Phenylacetaldehyde phenylethylene glycol acetal	TBK.
o-Phenylanisole (2-Methoxybiphenyl)	GIV, IFF.
4-Phenyl-3-buten-2-one (Benzylidene acetone)	TBK.
3-Phenyl-1-propanol (Hydrocinnamic alcohol)	GIV, TBK.
Phenyl-2-propanone (Benzyl methyl ketone)	TBK.
3-Phenyl-1-propyl acetate	GIV, TBK.
*4-Propenylveratrole (Isoeugenyl methyl ether)	FBS, GIV, TBK.
Salicylaldehyde	DOW.
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 phenylacetate (p-Cresyl α-toluate)	GIV, TBK.
*α-(Trichloromethyl)benzyl acetate (Rosetone)	FBS, OPC, TBK.
Vanillin	MON, MYW, SLV.
Terpenoid, Heterocyclic, and Alicyclic	
Allyl ionone	GIV, TBK.
Bornyl acetate	FEL.
4-tert-Butylcyclohexyl acetate	IFF.
Carvone (Carvol)	FB, FRM, OPC, PEN.
Caryophyllene	FB, GIV.
Cedrol	GIV, IFF, TBK, VLY.
*Cedryl acetate	GIV, IFF, TBK, x.
Cineole (Eucalyptol)	OPC.
*Citral (Geranial)	FB, GIV, LUE, NEO, RT, TBK, x.
Citronellal	FB, GIV, TBK.
*Citronellol	FB, FBS, GIV, GLD, IFF, SHL, TBK, VLY.
*Citronellyl acetate	GIV, IFF, OPC, TBK, VLY.
Citronellyl butyrate	GIV.
*Citronellyl formate	GIV, IFF, TBK.
Citronellyl isobutyrate	GIV, TBK.
*Coumarin	DOW, MON, NEO, TBK.

TABLE 14B. --*Synthetic organic chemicals: Flavor and perfume materials for which U.S. production or sales were reported, identified by manufacturer, 1959*--Continued

Material	Manufacturers' identification codes (according to list in table 23)
FLAVOR AND PERFUME MATERIALS, CYCLIC--Continued	
Terpenoid, Heterocyclic, and Alicyclic--Continued	
Cyclohexadecanolide	IFF.
Cyclopentanol	ARA.
Cyclopentanone	ARA.
Dihydrosafrole	GIV.
Dihydroterpinyl acetate	GIV.
*Ethyl oxyhydrate	FEL, FLO, LUE, RT, VND, VPC.
*Geraniol	FB, GIV, GLD, IFF, SHL, TBK, VLY.
*Geranyl acetate	FB, FEL, GIV, IFF, TBK, VLY.
Geranyl butyrate	GIV.
Geranyl formate	GIV, TBK, VLY.
Geranyl phenylacetate (Geranyl α-toluate)	GIV, TBK.
2-Hexyl-2-cyclopenten-1-one	IFF.
*Hydrocoumarin (3,4-Dihydrocoumarin)	FBS, GIV, OPC, TBK.
*Hydroxycitronellal	GIV, NEO, TBK, VLY.
*Hydroxycitronellal, dimethyl acetal	FB, GIV, TBK.
16-Hydroxy-δ-7-hexadecenoic acid, lactone	IFF.
Indole	GIV.
*Ionones:	
*α-Ionone	GIV, IFF, MYW, TBK.
β-Ionone	GIV, MYW, NEO, TBK.
Ionone (α- and β-)	GIV, IFF, LUE, MYW, NEO, TBK, VLY, x.
Isoborneol (Isobornyl alcohol)	TBK.
Isobornyl acetate	GIV, OPC, TBK, x.
Isobutylfuryl propionate	VPC.
Isobutylquinoline	IFF.
Isopropylquinoline	FMT.
Isopulegol	GIV, VLY.
Isosafrole	GIV, OPC.
d-Limonene	FLA, RT, x.
*Linalool	FB, FEL, GIV, GLD, HOF, IFF, NEO, TBK.
*Linalyl acetate	FB, GIV, GLD, HOF, LUE, NEO, TBK, x.
Linalyl benzoate	FMT.
Linalyl cinnamate	TBK.
Linalyl isobutyrate	GIV, TBK.
Linalyl propionate	FB, TBK.
*Menthol, synthetic:	
*Tech	FBS, GIV, GLD, NEO, SHL.
*U.S.P	GIV, GLD, HNW, NEO, SHL.
*Menthone	GIV, GLD, HNW.
Menthyl acetate	FB, GIV.
6-Methylcoumarin	GIV.
*Methylionones:	
Methyl-α-ionone	GIV, IFF, MYW.
Methyl-β-ionone	MYW.
Methylionone (α- and β-)	GIV, IFF, MYW, NEO, TBK, VLY, x.
Methyl-δ-ionone	TBK.
Methyl-γ-ionone	TBK.
Neomenthol	GLD.
Neomenthyl acetate	GLD.
*Nerol	FB, GLD, IFF, TBK.
Nopyl acetate	DOW.
Phellandrene	FBS.
*Piperonal (Heliotropin)	GIV, PEN, SHL, TBK.
*Rhodinol	FB, FEL, GIV, IFF, SHL.
Rhodinyl acetate	FB, GIV, IFF.
Rhodinyl formate	GIV, IFF.
*Safrole	FB, FLO, GIV, OPC, PEN, TBK.
Santalol	GIV, IFF.
Santalyl acetate	GIV.
*Sweeteners, synthetic:	
Cyclohexanesulfamic acid, calcium salt	ABB, DUP.
Cyclohexanesulfamic acid, sodium salt	ABB, DUP.
Saccharin	MEE, MON.
Saccharin, calcium salt	MEE.
Saccharin, sodium salt	MEE, MON.
*Terpineols:	
α-Terpineol	GLD, HNW, HPC.
β-Terpineol	HNW.
Terpineol (α- and β-)	GIV.

TABLE 14B.--*Synthetic organic chemicals: Flavor and perfume materials for which U.S. production or sales were reported, identified by manufacturer, 1959*--Continued

Material	Manufacturers' identification codes (according to list in table 23)
FLAVOR AND PERFUME MATERIALS, CYCLIC--Continued	
Terpenoid, Heterocyclic, and Alicyclic--Continued	
Terpinol hydrate (Terpin hydrate), tech	HPC.
*Terpinyl acetate	GIV, HNW, OPC, TBK, x.
Terpinyl propionate	GIV, TBK.
3,5,5-Trimethylcyclohexanol	FBS.
Vetivenol	TBK.
*Vetivenyl acetate	FB, GIV, IFF, NEO, TBK.
FLAVOR AND PERFUME MATERIALS, ACYCLIC	
Allyl heptanoate (Allyl enanthate)	TBK.
*Allyl hexanoate (Allyl caproate)	FB, GIV, RT, TBK.
Allyl isothiocyanate (Synthetic mustard oil)	FBS, MRT, OPC.
Allyl sulfide (Diallyl sulfide)	RT.
2,3-Butanedione (Biacetyl)	BPC, FBS.
Butyl butyrate	TBK.
Butyl isovalerate	TBK.
Butyrone (Di-n-propyl ketone)	TBK.
Decanal (Capraldehyde) (C_{10})	GIV, TBK.
Diethyl sebacate (Ethyl sebacate)	FEL, TBK.
Diethyl succinate	UCC.
2,6-Dimethyl-2-heptenal	GIV.
3,6-Dimethyl-3-octanol	AIR.
Dimethyl succinate	FBS.
Dodecyl acetate (Lauryl acetate)	TBK.
*Ethyl butyrate	FB, NW, RT, TBK.
Ethyl decanoate (Ethyl caprate)	RT.
Ethyl heptanoate (Ethyl enanthate)	FEL, TBK.
*Ethyl hexanoate (Ethyl caproate)	NW, RT, TBK.
Ethyl isovalerate	FB, TBK.
Ethyl laurate	FB.
Ethyl nonanoate (Ethyl pelargonate)	TBK.
Ethyl octanoate (Ethyl caprylate)	RT.
Glutamic acid, monopotassium salt	GRW.
*Glutamic acid, monosodium salt (Monosodium glutamate)	GRW, HPC, IMC, MRK, STA.
Heptanal (Enanthaldehyde) (C_7)	BAC, WTM.
Heptyl alcohol (Heptanol)	BAC.
Heptyl ether (Enanthic ether)	TBK.
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.
*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.
Lauraldehyde (Dodecyl aldehyde) (C_{12})	GIV, TBK.
6-Methyl-5-hepten-2-one	GIV, TBK.
2-Methylundecanal (2-Methylnonylacetaldehyde)	GIV, TBK.
Nonanal (Pelargonaldehyde) (C_9)	GIV, TBK.
Octanal (Caprylaldehyde) (C_8)	GIV, TBK.
n-Octyl acetate	FB, TBK.
*n-Octyl isobutyrate	FB, FBS, TBK.
Tetradecanal	PFZ.
Trimethylundecylaldehyde	VPC.
Undecanal (Hendecanaldehyde) (C_{11})	GIV, TBK.
Undecenal (Hendecenaldehyde)	GIV, TBK.
9-Undecen-1-ol (Hendecenol)	GIV.
Valerolactone	GIV.
CHEMICALLY MODIFIED ESSENTIAL OILS	
Citronella oil, acetone condensation product	CP.
Citronella oil, acetylated	FB.
Geranium oil isopropyl alcoholysis product	CP.
Lavandin, acetylated	FEL.
Rosemary oil, acetylated	FB, x.
Sassafras oil, hydrogenated	GIV.
Spike lavender oil, acetylated	FB.

Plastics and Resin Materials

TABLE 15B. --*Synthetic organic chemicals: Plastics and resin materials for which U.S. production or sales were reported, identified by manufacturer, 1959*

[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	
Aniline-formaldehyde resins	TRC, UCP.
*Coumarone-indene resins	ACP, DSO, NEV, NSP, PAI.
Epoxy resins:	
*Unmodified	DOW, JOD, RCI, REL, SHC, TRC, UCP.
*Modified	ACP, ADM, AMF, BEN, CM, CPV, DSO, EW, FRE, GE, GEI, GLD, GRV, ICF, JOB, MCC, MID, MNP, MRB, MRW, OSB, PPG, PRM, RCI, SPR. SRR. SW, WAS, WTT.
*Petroleum polymer and condensation resins	ACC, CFX, DSC, ESL, NEV, NSP, PAI, TRC, VEL.
*Phenolic and other tar-acid resins:	
*Unmodified:	
*Cresols-formaldehyde	BOR, CD, HRB, ICF, RAB, RCI, SCN, UCP, VAR.
*Cresylic acid-formaldehyde	CAT, CD, FCD, FOM, HRB, ICF, RAB, RCD, RCI, SCN, SPL, TAY, UCP, VAR.
*Phenol(and substituted phenols)-formaldehyde	ACP, ACR, ADM, AMR, ARK, BOR, CAT, CD, CIK, DEP, DSO, EW, FL, FOM, GE, GEI, GLD, GRG, HKD, HRB, ICF, INL, IRI, KND, KRM, MMM, MON, MRB, MTC, PGU, PLS, PYR, PYZ, RAB, RCI, RGC, RH, SCN, SED, SIM, SPL, SPR, SW, SYR, SYV, UCP, VAR, WAT, WEV, WTT.
*Resorcinol-formaldehyde	AMR, BOR, CAT, KPC, MTC, PGU, RCI, RH, SCN, UCP.
All other unmodified phenolic and other tar-acid resins	ACP, BOR, CAT, CD, GE, ICF, MTC, RAB, RCD, RGC, SCN, SPL, SPR, UCP, WAS.
*Modified:	
*Phenol(and substituted phenols)-formaldehyde with modifiers (except rosin).	CAT, CPR, DSO, FCD, GE, HER, NTC, PPG, RAB, RCI, REZ, RH, SCN, SNC, UCP.
*Rosin and rosin esters modified with phenolic and other tar-acid resins (hard resins).	ACP, ADM, AKL, CPV, DAV, DSO, GIL, GLD, HPC, KRM, RCI, RH, SCN, SW, WTT.
All other modified phenolic and other tar-acid resins	ADM, DSO, GE, REZ, SPR, UCP.
*Phthalic alkyd resins:	
*Unmodified	ABR, ACP, ACY, ADM, AKL, AMF, AMK, APV, ARO, BAL, BEN, BOY, CEN, CIK, CM, CPL, CPV, CRO, DAV, DSO, DUP, EW, FAR, FBR, FCD, FLW, FRE, GE, GEI, GIL, GLD, GRV, HAN, HPC, ICF, JOB, JOD, JWL, KEL, KPV, KYN, LON, MCC, MCW, MID, MJM, MR, MRW, NON, NTL, OB, OSB, PPG, PRT, RCI, RED, REL. RH, RMC, SCF, SCN, SED, SIP, SPP, SPR, SRR, STT, SW, TEK, TV, UCP, VTV, WAS, WEV, WPC, WTT.
*Modified	ACP, ACY, ADM, AKL, AMF, APV, ARO, BAL, BEN, BOY, BRU, CEN, CIK, CM, CPV, CRO, DAV, DSO, DUN, DUP, EW, FAR, FCD, FLW, FRE, FSH, GE, GEI, GIL, GLD, GRG, GRV, HPC, ICF, JAM, JOD, JWL, KRM, KYN, LON, MAS, MCC, MCW, MID, MJM, MNP, MR, MRW, NON, OB, OSB, PER, PFP, PPG, PRT, RCI, RED, REL. RH, RMC, SCF, SCN, SED, SIP, SPP, SPR, SRR, STT, SW, TV, UCP, VTV, WEV, x.
*Polyester resins	ACP, ACR, ACY, ADM, AKL, AMK, AMR, APD, CEL, CIK, CPR, CPV, DAV, DSO, EW, FMP, FRE, GE, GEI, GLD, GNT, GRG, GRV, GYR, HKD, ICF, MOB, NOP, OSB, PPG, RCI, REL, RH, SCN, SPR, SW, USR, WTC, WTT.
*Polyurethane and diisocyanate resins	ACP, ADM, AMF, APV, ARO, BFG, CWN, DUP, FRE, GLD, MOB, NOP, WTC.
*Styrene and styrene derivative polymer and copolymer resins:	
Polymethyl styrene	ACC, ACY.
*Polystyrene	CSD, DOW, FG, GOR, GRD, KPP, MON, MTC, SEM, SOL, UBS, UCP, UNC.
*Styrene-acrylonitrile copolymer	ACY, BFG, DOW, MON, UCP, USR.
*Styrene-alkyd polyesters (for protective coatings)	ACP, ACY, ADM, APV, CEN, CPV, DSO, DUP, EW, FRE, GLD, GRV, ICF, JOD, KEL, MTC, PPG, RCI, REL, RH, SCN, SPP, SPR, SW.
*Styrene-butadiene copolymer:	
*Latexes	DOW, DSO, FIR, GNT, GRD, GYR, KPP, SHC, USR.
All other	BFG, BOR, DSO, FIR, GRV, GYR, MCB, MMM, SPR, USR.
*Styrene-divinylbenzene copolymer	CPR, DOW, PRM, RH.
All other styrene and styrene derivative polymer and copolymer resins.	ACP, ACY, ARO, CAT, DOW, DUP, FIR, GLD, GNT, GYR, JNS, MCW, PAI, PRM, SW, UCP, WAS.

TABLE 15B.--*Synthetic organic chemicals: Plastics and resin materials for which U.S. production or sales were reported, identified by manufacturer, 1959*--Continued

Material	Manufacturers' identification codes (according to list in table 23)
PLASTICS AND RESIN MATERIALS, BENZENOID--Continued	
Toluenesulfonamide resins	ACY, MON.
All other benzenoid plastics and resin materials	ACP, ACY, MTC, RH.
PLASTICS AND RESIN MATERIALS, NONBENZENOID	
Acetone-formaldehyde resins	ACY, PRM, RCI, UCP.
Acrylic resins:	
Polymethylmethacrylate resins	CAT, DOW, DUP, ICF, RCI, RH, USP.
All other acrylic resins	ACY, DOW, DSO, DUP, ICF, JNS, MMM, PPG, RCI, RH, TRC, UBS, UCP, WIC.
*Alkyd resins (except phthalic):	
*Unmodified	ACP, ACY, ADM, AMF, APV, CM, CPL, CPV, DSO, DUN, DUP, EW, FBR, FLW, FRE, GEI, GLD, GRV, HPC, MCC, MCW, MR, OSB, PPG, PRT, RCI, RH, SPP, SPR, SRR, SW, WTC.
*Modified:	
*Rosin and rosin esters, modified with maleic and fumaric acids only (hard resins).	ACP, ADM, APV, BAL, CBY, CEN, CM, CPT, CPV, DAV, DSO, FAR, FBR, FCD, FLW, FSH, GIL, GLD, GRV, HPC, JOD, KRM, MCC, MCW, MID, MR, OSB, PPG, RCI, RED, REL, RH, SCF, SCN, SPR, SRR, SW, WAS.
All other modified alkyd resins	ADM, AMF, AMR, BRD, CIK, FBR, GEI, GLD, ICF, KYN, LON, MJM, MMM, OSB, PPG, RCI, REL, RH, RMC, STT, SW, TV, UCP, VTV, WEV.
Dicyandiamide resins	ACY, CRC, DEP, GGY, NOP, TEK, TRC, VAL, WIC, x.
*Polyamide resins	ACF, DUP, FIR, GNM, SPN.
Polychloroethylene and polyfluoroethylene resins	DUP, FIR.
*Polyethylene resins:	
*High-pressure process	ACS, DOW, DUP, EKX, KPP, MTC, NPC, SPN, UCC.
*Low-pressure process	ACS, CEL, GRP, HPC, KPP, PLC, UCC.
Polypropylene resins	ACP, HPC.
Polyterpene resins	PAI, SCN.
*Rosin modifications:	
*Rosin and terpene adduct resins	ADM, CEN, CIK, GLD, HPC, OSB, RCI, SPR, SW.
*Rosin and rosin esters, unmodified:	
*Esterified with glycerol	ACP, ADM, AKL, APV, CBY, CIK, CPV, DAV, FCD, GIL, GLD, HPC, KRM, MCC, OB, OSB, PPG, RCI, SW.
*Esterified with other alcohols	ADM, AKL, BRD, CBY, CPV, DSO, FAR, GLD, HPC, MMM, MRW, OB, OSB, RCI, SCN, SPR, SRR, SW, WAS.
All other rosin modifications	ACP, DUN, GRV, ICF, JNS, MMM, ONX, PPG, RCI, UCP, WAS.
*Silicone resins	ACP, DCC, SPD, UCS.
*Urea and melamine resins:	
*Melamine-formaldehyde type	ACP, ACY, CAT, CDF, COL, CPV, DUP, FOM, GLD, MON, MTC, PPG, RCI, RH, SFA, SW, TEK, x.
*Urea-formaldehyde type	ACP, ACY, AMR, APX, AV, BOR, BRY, CAP, CAT, CDF, CPR, CPV, CRC, DEP, DUP, EDY, FOM, GDN, GGY, GLD, GRV, HPC, HRT, ICF, JOD, MDP, MMM, MON, MTC, NTC, ONX, PC, PGU, PPG, QCP, RCI, REL, RH, SAN, SIM, SNW, SOR, SPR, SW, SYV, TEK, TRC, USO, USR, VAL, WIC, WON, x.
*Vinyl and vinyl copolymer resins:	
*Polyvinyl acetate	AML, BCN, BFG, BOR, BOY, CEL, COL, DAV, DSO, DUP, FLH, GLD, GRD, HAN, HRT, JOD, MCC, MRN, NOP, NSC, ONX, PGU, QCP, RCI, RH, SED, SH, SHW, SNM, SPR, SW, SYR, UCC, WIC.
Polyvinyl alcohol	BOR, COL, DUP, SHW.
Polyvinyl butyral	DUP, SHW, UCC.
*Polyvinyl chloride and copolymers:	
Polyvinyl chloride	AKL, BFG, CRY, DA, DOW, ESC, FIR, GNT, GRA, GYR, KYS, MTC, PRS, RCI, RUB, THC, UCC, USR.
Polyvinyl chloride-acetate copolymer	ADM, BFG, BOR, CRY, FIR, MTC, PRS, RUB, UCC.
All other polyvinyl chloride and copolymer resins	BFG, DOW, FBR, FIR, GYR.
Polyvinyl chloride-vinylidene chloride copolymer	DOW.
Polyvinyl formal	ACP, SHW.
All other vinyl and vinyl copolymer resins	GAF, MMM.
All other nonbenzenoid plastics and resin materials	AKL, BOR, CPR, DUP, FIR, GLD, GLY, GRD, HKD, KRM, MTC, PPG, UCP.

Rubber-Processing Chemicals

TABLE 17B. --*Synthetic organic chemicals: Rubber-processing chemicals for which U.S. production or sales were reported, identified by manufacturer, 1959*

[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.
N,N′-Dibutyldithioadipamide	DUP.
4,4′-Dithiodimorpholene	MON.
α-Ethyl-β-propylacrylanilide	CCO.
Formaldehyde-p-toluidine (Methylene-p-toluidine)	DUP.
Heptaldehyde-aniline	USR.
Triethyltrimethylenetriamine	USR.
p-Benzoquinone dioxime	ACF, DUP.
Carbon disulfide-1,1′-methylenedipiperidine	MON.
Dibenzoyl-p-quinonedioxime	USR.
Dibenzylamine	USR.
Di-N-pentamethylenethiuram tetrasulfide	DUP.
*Dithiocarbamic acid derivatives:	
Dibenzyldithiocarbamic acid, sodium salt	USR.
Dibenzyldithiocarbamic acid, zinc salt	USR.
Dibutyldithiocarbamic acid, N,N-dimethylcyclohexylamine 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	ACF.
2-Imidazoline-2-thiol	DUP.
Poly-p-dinitrosobenzene	CWN, 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.
*2,2′-Dithiobis(benzothiazole)	ACY, GYR, MON, USR.
*2-Mercaptobenzothiazole	ACY, GYR, MON, USR.
2-Mercaptobenzothiazole, sodium salt	ACY, GYR, MON.
2-Mercaptobenzothiazole, zinc salt	ACY, GYR, USR.
N-Oxydiethylene-2-benzothiazolesulfenamide	ACY, GYR.
Thiazoline-2-thiol	ACY.
All other cyclic accelerators	DUP, MON, x.
Antioxidants:	
Aldehyde- and acetone-amines:	
Acetaldehyde-aniline hydrochloride	USR.
Aldol-α-naphthylamine condensation	BFG.
Diphenylamine-acetone	BFG, MON, USR.
p-Phenetidine-acetone	MON.
Phenyl-2-naphthylamine-acetone	USR.
*Amino and hydroxy compounds:	
*Amino compounds:	
p-Anilinophenol	BFG.
N-Cyclohexyl-N′-phenyl-p-phenylenediamine	MON, USR.
Diarylarylene diamines, mixed	GYR.
N,N′-Di(1-ethyl-3-methylpentyl)-p-phenylenediamine	EKT, UPM.
1,2-Dihydro-2,2,4-trimethylquinoline	BFG.
p,p′-Dimethoxydiphenylamine	DUP.

TABLE 17B.--*Synthetic organic chemicals: Rubber-processing chemicals for which U.S. production or sales were reported, identified by manufacturer, 1959*--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
RUBBER-PROCESSING CHEMICALS, CYCLIC--Continued	
Antioxidants--Continued	
*Amino and hydroxy compounds--Continued	
*Amino compounds--Continued	
N,N'-Di(1-methylheptyl)-p-phenylenediamine	EKT, UPM.
N,N'-Di-2-naphthyl-p-phenylenediamine	BFG.
N,N'-Diphenylethylenediamine	CCO, NOP.
*N,N'-Diphenyl-p-phenylenediamine	BFG, DUP, USR.
N,N'-Diphenyl-1,3-propanediamine	CCO.
N,N'-Di-o-tolylethylenediamine	CCO.
6-Ethoxy-1,2-dihydro-2,2,4-trimethylquinoline	MON.
p-Isopropoxydiphenylamine	BFG.
N-Isopropyl-N'-phenyl-p-phenylenediamine	USR.
4,4'-Methylenedianiline	ACF, USR.
Octyldiphenylamine	USR.
Octyldiphenylamine, alkylated	BFG.
N-Phenyl-1-naphthylamine	ACF, DUP.
N-Phenyl-2-naphthylamine	BFG, DUP.
Tetramethyldiphenylethylenediamine	NOP.
p-(p-Toluenesulfonamido)diphenylamine	USR.
N-o-Tolyl-2-naphthylamine	GYR.
*Hydroxy compounds:	
p-Benzyloxyphenol	BFG.
2,5-Di(1,1-dimethyl-propyl)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, USR.
Phenol, hindered	DUP.
Phenol, styrenated	BFG, GYR.
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 and processing aids:	
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	MON.
N-Nitrosodiphenylamine	BFG, GYR, USR.
Nonyl phenyl phosphites, mixed	USR.
*Peptizers:	
Aryl mercaptans	PIT.
2-Benzamidothiophene, zinc salt	ACY.
2',2'''-Dithiobis(benzanilide)	ACY.
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.
Bis(iso-octylhydroxyphenylmethylene)	HGY.
RUBBER-PROCESSING CHEMICALS, ACYCLIC	
*Accelerators:	
n-Butyraldehyde-butylamine	DUP.
Di-n-butylammonium oleate	DUP.
*Dithiocarbamic acid derivatives:	
Dibutyldithiocarbamic acid, sodium salt	ALC, DUP, USR.
*Dibutyldithiocarbamic acid, zinc salt	ALC, DUP, GYR, PAS, USR, VNC.
Diethyldithiocarbamic acid, selenium salt	VNC.
Diethyldithiocarbamic acid, sodium salt	PAS, USR.
Diethyldithiocarbamic acid, tellurium salt	VNC.
*Diethyldithiocarbamic acid, zinc salt	ALC, GYR, PAS, USR, VNC.
Dimethyldithiocarbamic acid, bismate salt	VNC.
Dimethyldithiocarbamic acid, copper salt	VNC.

TABLE 17B.--*Synthetic organic chemicals: Rubber-processing chemicals for which U.S. production or sales were reported, identified by manufacturer, 1959*--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
RUBBER-PROCESSING CHEMICALS, ACYCLIC--Continued	
*Accelerators--Continued	
*Dithiocarbamic acid derivatives--Continued	
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, RBC, RH, VNC.
*Dimethyldithiocarbamic acid, sodium salt and sodium polysulfide.	BFG, GNT, USR.
All other	PAS.
*Thiurams:	
Bis(dibutylthiocarbamoyl)sulfide	USR.
Bis(diethylthiocarbamoyl)disulfide	GYR, PAS.
*Bis(dimethylthiocarbamoyl)disulfide	BFG, CLY, DUP, GYR, MON, PAS, RBC, USR, VNC.
Bis(dimethylthiocarbamoyl)sulfide	DUP, GYR, USR.
Xanthates and sulfides:	
Di-n-butylxantho disulfide	USR.
Di-isopropylxantho disulfide	BFG.
Zinc dibutylxanthate	USR.
All other acyclic accelerators:	
Ethylenediamine carbonate	DUP.
Polyoxyalkylenetetrasulfide	TKL.
*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, USR.
Zinc laurate	USR.

Elastomers (Synthetic Rubbers)

TABLE 18B. --*Synthetic organic chemicals: Elastomers (synthetic rubbers) for which U.S. production or sales were reported, identified by manufacturer, 1959*

[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, PLC, SHC, TUS, URC, USR.
*Polyurethane type	BFG, DUP, GNT, NOP, TKL, USR.
ELASTOMERS, ACYCLIC	
Polyacrylate ester type	BFG, FIR.
Polybutadiene type	FRS, GYR.
*Polybutadiene-acrylonitrile type (N-type)	BFG, FIR, GYR, HER, USR.
*Polychloroprene type (Neoprene)	DUP.
*Polyisobutylene-isoprene type (Butyl)	ESL, HUM.
Polysulfide polymers	TKL.
Reaction products of natural rubber	GYR, HPC.
*Silicone type	DCC, SPD, UCS.
All other	ASY, DUP, ESL, SHC, x,x.

Plasticizers

TABLE 19B.--*Synthetic organic chemicals: Plasticizers for which U.S. production or sales were reported, identified by manufacturer, 1959*

[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	
Camphor, synthetic	DUP.
Coumarone-indene plasticizer	NEV.
N-Cyclohexyl-p-toluenesulfonamide	MON.
Dibenzyl sebacate	WTH.
Diethylene glycol dibenzoate	TNP.
Di-tert-octylphenyl ether	DOW.
Diphenyl cyclohexane, o-, m-, p-	MON.
Dipropanediol dibenzoate	TNP, UCC.
N-Ethyl-p-toluenesulfonamide	MON.
Isopropylidenediphenoxypropanol	DOW.
Naphthalene, alkylated	ACC.
Phosphoric acid esters:	
*Cresyl diphenyl phosphate	CEL, KLK, MON, MTR, SPP.
Dibutyl phosphate	MON.
Diphenyl mono-o-xenyl phosphate	DOW.
Diphenyl octyl phosphate	MON.
Methyl diphenyl phosphate	MON.
Tri(tert-butylphenyl) phosphate	DOW.
*Tricresyl phosphate	CEL, FMP, KLK, MON, MTR.
*Triphenyl phosphate	CEL, DOW, EK, MON, MTR.
*Phthalic anhydride esters:	
Butyl benzyl phthalate	MON.
Butyl cyclohexyl phthalate	ACP.
Butyl decyl phthalate	PCC, PRS, ROS.
Butyl 2-ethylhexyl phthalate	ACP, MON, UCC.
Butyl isodecyl phthalate	RUB.

TABLE 19B.--*Synthetic organic chemicals: Plasticizers for which U.S. production or sales were reported, identified by manufacturer, 1959*--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
PLASTICIZERS, CYCLIC--Continued	
*Phthalic anhydride esters--Continued	
Butyl iso-octyl phthalate	RUB.
Butyl octyl phthalate	KLK.
Butyl phthalyl butyl glycolate	MON, NOP.
Castor oil phthalate	DUP.
Diamyl phthalate	PRS.
Di(2-butoxyethyl) phthalate	FMP, KES.
*Dibutyl phthalate	ACP, COM, DEC, DUP, EKT, FMP, GRD, HAL, KLK, MON, NPI, PFZ, RUB, SPR, SW, WTC, WTH.
*Dicyclohexyl phthalate	ACP, DUP, FMP, MON.
*Didecanoyl phthalate (Dicapryl phthalate)	ACP, RH, WTH.
Di-n-decyl phthalate	BFG.
Di(2-(2-ethoxyethoxy)ethyl) phthalate	FMP.
Diethylene glycol phthalate	ARK.
Di(ethylhexyl) hexahydrophthalate	UCC.
*Diethyl phthalate	DUP, EKT, KF, KLK, MON.
Di-n-hexyl phthalate	CCA, PRS, SW.
Diisobutyl phthalate	EKT.
*Diisodecyl phthalate	ACP, BFG, DEC, KLK, MON, PCC, PFZ, RUB, THC, UCC.
Diisohexyl phthalate	RUB.
*Di(2-methoxyethyl) phthalate	DUP, EKT, FMP, KES.
*Dimethyl phthalate	ACP, DUP, EKT, KF, KLK, MON.
Dinonyl phthalate	DEC, EKT.
*Dioctyl phthalates:	
*Di-2-ethylhexyl phthalate	ACP, BFG, DEC, DUP, EKT, FMP, GRD, KLK, MON, NOP, NPI, PCC, PFZ, ROS, RUB, SW, THC, UCC, WTC.
*Diiso-octyl phthalates and mixtures	ACP, BFG, DEC, EKT, FMP, GDL, KLK, MON, PCC, PFZ, PRS, ROS, RUB, SPR, THC, UCC, WTC, WTH.
Diphenyl phthalate	MON.
Ditridecyl phthalate	RUB.
2-Ethylhexyl isodecyl phthalate	UCC.
Ethyl, and methyl phthalyl ethyl glycolate	MON.
Isobutyl isodecyl phthalate	ACP, KLK, THC.
Isobutyl isooctyl phthalate	EKT.
*Octyl decyl phthalates:	
*Iso-octyl isodecyl phthalate	ACP, BFG, DEC, KLK, PCC, PFZ, RUB.
*n-Octyl n-decyl phthalate	ACP, DEC, FMP, HPC, KLK, PCC, PFZ, PRS, THC.
All other phthalic anhydride esters	ACP, ARG, DEC, FMP, HPC, PFZ, PRS, ROS.
Tetrahydrofurfuryl oleate	CCW, EMR.
Toluenesulfonamide, o-, p- mixture	MON.
All other cyclic plasticizers	AV, PFZ, TNP.
PLASTICIZERS, ACYCLIC	
*Adipic acid esters:	
Di(2-(2-butoxyethoxy)ethyl) adipate	FMP, TKL.
Di(2-butoxyethyl) adipate	DEC, DUP, MON.
Diisobutyl adipate	DEC, FMP, GRD.
*Di(2-ethylhexyl) adipate	DEC, EKT, FMP, KLK, PCC, PFZ, ROS, RUB, SPR, THC, UCC.
*Diisodecyl adipate	ACP, BFG, DEC, FMP, HAL, KLK, MON, PCC, RUB, THC, UCC.
*Dioctyl adipate	ACP, BFG, DEC, EKT, FMP, KLK, MON, NOP, PCC, PFZ, PRS, RH, RUB.
Dinonyl adipate	EKT, PCC.
*Octyl decyl adipate	BFG, DEC, FMP, HPC, MON, PCC, PRS, THC.
*Complex adipic acid polyesters	EKT, MON, PFZ, RUB, UCC.
All other adipic acid esters	ACP, DEC, KES, PFZ, RH, ROS.
*Azelaic acid esters:	
*Di(2-ethylhexyl) azelate	DEC, DUP, EKT, EMR, HAL, PFZ, SW.
Diisobutyl azelate	EKT, HAL.
All other azelaic acid esters	EMR, GRD, PFZ.
N-Butyl myristate	AHC, KES.
Castor oil maleate	RH.
Di(2-(2-butoxyethoxy)ethyl) methane	TKL.
Dibutyl maleate	DUP, GRD, MON, RUB.
Diethylene glycol dinonanoate	EMR, RUB.
Diisooctyl diglycolate	CCA, FMP.
Glycerol diacetyl tartrate monoesters	WTC.
Lauric acid esters	FOR, HAL, KES.

TABLE 19B. --*Synthetic organic chemicals: Plasticizers for which U.S. production or sales were reported, identified by manufacturer, 1959*-- Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
PLASTICIZERS, ACYCLIC--Continued	
*Oleic acid esters:	
2-Butoxyethyl oleate	HAL, KES.
*Butyl oleate	AHC, CCW, FMP, HAL, KES, NOP, RUB, WTH.
Glycerol trioleate	DRW, EMR.
*Methyl oleate	AHC, EMR, FOR, NOP.
All other oleic acid esters	AHC, EMR, FMP, RH, x.
*Palmitic acid esters:	
Isooctyl palmitate	KES, KLK, PFZ, RUB.
All other palmitic acid esters	EKT, FOR.
*Phosphoric acid esters	EKT, FMP, UCC.
Polyethylene glycol di-2-ethylhexoate	KES, UCC.
Ricinoleic and acetylricinoleic acid esters:	
n-Butyl acetylricinoleate	BAC, DEC.
Butyl ricinoleate	BAC, DEC.
*Glycerol monoricinoleate	BAC, CCW, GLY, HAL, NOP.
All other ricinoleic and acetylricinoleic acid esters	BAC, DEC, KES, NOP.
*Sebacic acid esters:	
*Dibutyl sebacate	DEC, EKT, GRD, HAL, PCC, RH, WTH.
Di(2-ethylhexyl) sebacate	DEC, GRD, HAL, PCC, RH, RUB, WTH.
All other sebacic acid esters	DEC, HAL, NOP, PFZ, PRS, RH, RUB, x.
*Stearic acid esters:	
*n-Butyl stearate	AHC, CCW, FMP, KES, NOP, RUB, SCP, WTH.
All other stearic acid esters	ARG, BAC, CCW, DRW, FMP, HK, HPC, KES, NOP, RH, ROS.
Tributyl acetylcitrate	EKT, PFZ.
*Triethylene glycol di(caprylate-caprate)	DRW, FOR, RUB.
Triethylene glycol di-2-ethylbutyrate	UCC.
All other acyclic plasticizers	ARG, DUP, EKT, EMR, FMP, HPC, KES, PFZ, PRS, RH, ROS, RUB, UCC, x.

Surface-Active Agents

TABLE 20B. --*Synthetic organic chemicals: Surface-active agents for which U.S. production or sales were reported, identified by manufacturer, 1959*

[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)
SURFACE-ACTIVE AGENTS, CYCLIC	
*Esters and ethers, nonsulfonated:	
Anhydrohexitol castor oil polyethoxyethyl ether	APD.
Anhydrohexitol dioleate	APD.
Anhydrohexitol glycerol monolaurate	APD.
Anhydrohexitol monolaurate	APD.
Anhydrohexitol monolaurate polyethoxyethyl ether	APD.
Anhydrohexitol mono-oleate	APD.
Anhydrohexitol mono-oleate polyethoxyethyl ether	APD.
Anhydrohexitol monopalmitate	APD.
Anhydrohexitol monopalmitate polyethoxyethyl ether	APD.
Anhydrohexitol monostearate	APD.
Anhydrohexitol monostearate polyethoxyethyl ether	APD.
Anhydrohexitol tall oil ester	APD.
Anhydrohexitol tall oil polyethoxyethyl ether	APD.
Anhydrohexitol tetrastearate	APD.
Anhydrohexitol trioleate	APD.
Anhydrohexitol trioleate polyethoxyethyl ether	APD.
Anhydrohexitol triricinoleate	APD.
Anhydrohexitol tristearate	APD.
Anhydrohexitol tristearate polyethoxyethyl ether	APD.
Castor oil phthalate polyester	APD.

TABLE 20B. --*Synthetic organic chemicals: Surface-active agents for which U.S. production or sales were reported, identified by manufacturer, 1959*--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
SURFACE-ACTIVE AGENTS, CYCLIC--Continued	
*Esters and ethers, nonsulfonated--Continued	
Cyclohexyloxy polyethoxyethanol	APD.
Diisobutylphenoxy polyethoxyethanol	GAF, RH.
Dinonylphenoxy polyethoxyethanol	GAF.
Dodecylphenoxy polyethoxyethanol	MON, PCS.
Glucose polyethoxyethyl distearate	APD.
Glucose polyethoxyethyl oleate	APD.
Iso-octylphenoxy polyethoxyethanol	GAF, NOP, QMC.
*Nonylphenoxy polyethoxyethanol	AHC, APD, CLY, GAF, HPC, JCC, NOP, QMC, PCS, RH, STP, UCC, VIS.
Pentylphenoxy polyethoxyethanol	APD.
Pentylphenoxy tall oil polyethoxyethanol	APD.
Phenoxy polyethoxyethanol	APD, GAF, NOP.
Tetradecylphenoxy polyethoxyethanol	ORO, PCS.
All other	HDG, HPC, TRC, VIS.
*Nitrogen-containing surface-active agents, nonsulfonated:	
Benzyldimethyl hydrogenated tallow ammonium chloride	ARC.
Benzyldimethyloctadecylammonium chloride	APX, RET.
Benzyldimethyloctylammonium chloride	ONX.
*Benzyldodecyldimethylammonium chloride	APD, DBP, FIN, ITX, ONX, RH, SDH.
Benzylhexadecyldimethylammonium chloride	FIN, ONX, RH, SDW.
Benzyl(polyethoxyethylcoco)dimethylammonium chloride	GAF.
Benzyltrimethylammonium chloride	COM.
Caproylethyl-5-hydroxycycloimidine, sodium ethylate, sodium ethionate.	MIR.
3,4-Dichlorobenzyldodecyldimethylammonium chloride	ONX, SDW.
(Dodecylbenzyl)diethyl(2-hydroxyethyl)ammonium chloride	ORO.
(Dodecylbenzyl)triethylammonium chloride	PC.
(Dodecylbenzyl)trimethylammonium chloride	WTC.
Dodecyl(dimethylbenzyl)dimethylammonium chloride	ONX.
2-Dodecylisoquinolinium bromide	ITX, ONX.
(Dodecylmethylbenzyl)trimethylammonium chloride	RH.
1-Dodecylpyridinium chloride	HK.
(Ethoxybenzyl)dimethyl(octylphenoxy)ammonium chloride	RH.
2-Heptadecenyl-1-hydroxyethyl-2-imidazoline	GGY.
2-Heptadecyl-1-hydroxyethyl-2-imidazoline	GGY, PCS.
1-Hexadecylpyridinium chloride	FBS, FIN.
N-(2-Hydroxyethyl)-1,2-diphenylethylenediamine	APX.
1-Hydroxyethyl-2-nonyl-2-imidazoline	GGY.
1-Hydroxyethyl-2-tridecylimidazolium chloride	GGY.
1-Hydroxyethyl-2-undecylimidazoline	GGY.
Lauroyl-5-ethoxycycloimidine, disodium ethionate	MIR.
Laurcylethyl-5-hydroxycycloimidine, sodium ethylate, sodium ethionate.	MIR.
2-Lauroyloxyethylcarbamoyl-1-methylpyridinium chloride	WTC.
Oleoyl imidazoline	PCS, SNW.
Oxazoline, substituted	COM.
Rosin aminopolyethoxyethanol	APD, HPC, PCS, VIS.
Rosin polyamidoimidazoline	GRD, PCS.
Stearoylethyl-5-hydroxycycloimidine, sodium ethylate, sodium ethionate.	MIR.
Stearoyl imidazoline	SCO.
2-Stearoyloxyethylcarbamoyl-1-methylpyridinium chloride	WTC.
N-Tallow 1,2-propanediamine naphthenic acid	APD.
All other	APD, FBS, FIN, ONX, PCS.
*Sulfated and sulfonated cyclic surface-active agents:	
*Alkyl benzenoid compounds, sulfated and sulfonated:	
*Decylbenzenesulfonic acid	EFH, HLI, MON, SCO, STP.
Didodecylbenzenesulfonic acid	APD, CO.
*Dodecylbenzenesulfonic acid	ACF, CO, KRY, LEV, MON, NOP, PIL, PRX, QCP, SOC, STP, TN, TRC, TRP, WTC, WTU.
Dodecylbenzenesulfonic acid, ammonium salt	ATR, VIS.
Dodecylbenzenesulfonic acid, butylammonium salt	WTC.
*Dodecylbenzenesulfonic acid, calcium salt	RH, STP, TRP, VIS, WTC.
Dodecylbenzenesulfonic acid, cyclohexylamine salt	GAF.
*Dodecylbenzenesulfonic acid, isopropylammonium salt	PCS, SNW, STP, TRP, WTC.
Dodecylbenzenesulfonic acid, potassium salt	TRP.
*Dodecylbenzenesulfonic acid, sodium salt	ACF, AHC, AML, ATR, CO, DEP, EMK, HLI, HRT, LEV, NOP, PC, PG, PIL, PRX, SOC, TDC, TN, TRP, WIC, WTU, WYN, x.

TABLE 20B.--*Synthetic organic chemicals: Surface-active agents for which U.S. production or sales were reported, identified by manufacturer, 1959*--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
SURFACE-ACTIVE AGENTS, CYCLIC--Continued	
*Sulfated and sulfonated cyclic surface-active agents--Continued	
*Alkyl benzenoid compounds, sulfated and sulfonated--Continued	
*Dodecylbenzenesulfonic acid, triethanolamine salt	ACF, AML, ATR, CO, HLI, LUR, PCS, PIL, STP, TN, TRP, WTC, x.
Nonylbenzenesulfonic acid, sodium salt	WTU.
Pentylbenzenesulfonic acid, sodium salt	MON.
Tridecylbenzenesulfonic acid, ammonium salt	WTU.
Tridecylbenzenesulfonic acid, sodium salt	CP, WTU.
All other	PCS.
*Lignin derivatives, sulfonated:	
Lignosulfonic acid, ammonium salt	CRZ.
*Lignosulfonic acid, calcium salt	CWP, INP, LKY, MAR, NYP, PSP.
Lignosulfonic acid, magnesium salt	MAR.
Lignosulfonic acid, sodium salt	CRZ, INP, MAR, WVA.
*Naphthalene derivatives, sulfonated:	
Benzylnaphthalenesulfonic acid	GAF.
*Butylnaphthalenesulfonic acid	CMG, GGY, PFZ, SCP.
*Dibutylnaphthalenesulfonic acid	GAF, MRA, SAN, SNW.
Didodecylnaphthalenesulfonic acid	PFZ.
*Diisopropylnaphthalenesulfonic acid	DUP, GAF, GRD, PFZ, WTU.
Dipentylnaphthalenesulfonic acid	x.
*Isopropylnaphthalenesulfonic acid, mono-	ACF, BRY, CMG, DUP, NOP, ONX.
Methylenedi(2-naphthalenesulfonic acid)	AHC, DUP.
Mixed alkylnaphthalenesulfonic acid	DRW, UDI.
Pentylnaphthalenesulfonic acid	ONX.
Tetrahydronaphthalenesulfonic acid	DUP.
*All other sulfated and sulfonated cyclic surface-active agents:	
N-Alkylethylmorpholinium ethyl sulfate	APD.
Benzenesulfonic acid, sodium salt	UPF.
Butylhydroxybiphenylsulfonic acid	FBS, RBC.
N-Cyclohexyl-N-palmitoyl taurine	GAF.
N-(Didodecylbenzyl)-N-methyl taurine, sodium salt	ORO.
Dodecylphenoxy polyethoxyethyl sulfate	GAF.
Nonylphenoxy polyethoxyethyl phosphate	GAF.
Nonylphenoxy polyethoxyethyl sulfate	GAF, HLI, KRY, STP, TRP, WTC.
n-Octylphenoxy polyethoxyethyl sulfate	RH.
n-Octylphenoxy polyethoxyethyl sulfonate	RH.
*Petroleum sulfonate, water soluble type, sodium salt	SIN, SOI, SON.
*Toluene sulfonic acid, sodium salt	CO, PIL, STP, TRP, WTU.
Trichlorophenol sulfate, ethanolamine salt	GAF.
*Xylene sulfonic acid, sodium salt	CO, NES, PIL, STP, TRP, WTU.
All other	FIN, GAF, TRC.
SURFACE-ACTIVE AGENTS, ACYCLIC	
*Esters and ethers, nonsulfonated:	
*Diethylene glycol monolaurate	CCW, GLY, HAL, HDG, KAL, KES, NOP, PCS, QCP, WTC.
*Diethylene glycol mono-oleate	EMR, GLY, HDG, KES, NOP, WTC.
*Diethylene glycol monostearate	CCW, CP, GLY, HAL, KES, NOP, PC, PCS, QCP, VAL, VND, WTC.
Diethylene glycol tall oil ester	WTC, x.
Diisobutylene maleate	RH.
Dipolyethoxyethyl polyoxypropylene glycol ether	PCS, VIS, WYN.
Ethylene glycol mono-oleate	CSP, EFH, HAL.
*Ethylene glycol monostearate	GLY, HAL, KES, KNP, PCS, STP, VND.
Glycerol dioleate	KES, LEV.
Glycerol maleate mono-oleate	NOP, WTC.
Glycerol mono and di esters of fatty acids	DRW, KES, PCS, WTC.
Glycerol monococate	CP, HAL, VND.
Glycerol monoester of lard	DRW, GLY.
Glycerol monolaurate	KES, KNP.
*Glycerol mono-oleate	APD, CCW, DRW, EFH, EMR, GLY, HAL, HDG, KES, PAR, PCS, SPP, STP.
*Glycerol monostearate	APD, APX, BCN, CCW, CP, CRC, DRW, EFH, GLY, HAL, HDG, KES, LUR, MRA, NOP, NW, PC, PCS, PG, VND, WTC.
Hexitol polyethoxyethyl beeswax ester	APD.

TABLE 20B. --*Synthetic organic chemicals: Surface-active agents for which U.S. production or sales were reported, identified by manufacturer, 1959* --Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
SURFACE-ACTIVE AGENTS, ACYCLIC--Continued	
*Esters and ethers, nonsulfonated--Continued	
Hexitol polyethoxyethyl dioleate	APD.
Hexitol polyethoxyethyl hexaoleate	APD.
Hexitol polyethoxyethyl hexa(tall oil) ester	APD.
Hexitol polyethoxyethyl lanolin ester	APD.
Hexitol polyethoxyethyl oleate	APD.
Hexitol polyethoxyethyl pentalaurate	APD.
Hexitol polyethoxyethyl penta(tall oil) ester	APD.
Hexitol polyethoxyethyl stearate	APD.
Hexitol polyethoxyethyl tetra(oleate, laurate) ester	APD.
Hexitol polyethoxyethyl tetra(tall oil) ester	APD.
*Methoxy polyethoxyethyl coconut oil ester	DRW, JOR, KES, ONX.
Pentaerythritol monostearate	VAL.
Polyethoxyethyl castor oil ester	GAF, GGY, WTC.
*Polyethoxyethyl castor oil ether	APD, NOP, PCS, VIS.
Polyethoxyethyl coconut oil ester	NOP, PG, WTC.
Polyethoxyethyl decyl ether	AHC, APD, PCS.
Polyethoxyethyl diglycolate	APD.
*Polyethoxyethyl dilaurate	DEX, EFH, GGY, GLY, HAL, JOR, KES, PCS.
*Polyethoxyethyl dioleate	EFH, GGY, GLY, HAL, HDG, KES, NOP, PCS, SPP.
*Polyethoxyethyl distearate	GLY, HAL, KES, PCS, QCP.
Polyethoxyethyl dodecyl ether	APD, DUP, GAF, JCC, PCS, UCC.
Polyethoxyethyl tert-dodecyl thioether	EFH, MON, PAS.
Polyethoxyethyl hydrogenated castor oil ether	APD.
Polyethoxyethyl lanolin ether	APD, GAF, VIS.
Polyethoxyethyl mixed fatty acid esters and ethers	APD.
*Polyethoxyethyl monolaurate	ARC, BSC, CCA, DEX, DRW, GGY, GLY, HAL, JOR, KES, KNP, NOP, QCP, SRR, SYC.
*Polyethoxyethyl mono-oleate	AHC, APD, ARC, CCA, DEX, DRW, EFH, GAF, GGY, GLY, HAL, HDG, KES, NOP, ONX, PAR, PCS, QCP, SPP, SYC.
Polyethoxyethyl monopalmitate	APD, DRW.
Polyethoxyethyl monoricinoleate	HAL, KES, NOP.
*Polyethoxyethyl monostearate	AHC, AML, APD, ARC, CCW, DEX, GAF, GGY, GLY, HAL, HDG, JOR, KES, KNP, NOP, ONX, PC, PCS, PD, RH, WTC.
Polyethoxyethyl octadecyl ether	AAC, APD.
*Polyethoxyethyl oleyl ether	APD, DUP, GAF, NOP, PCS.
Polyethoxyethyl resin ester	APD, VIS, x.
Polyethoxyethyl rosin ether	APD.
Polyethoxyethyl tall oil ester	AML, APD, ARC, EFH, KES, MON, NOP, OMB, PCS, WTC.
Polyethoxyethyl tallow ester	DEX, SOS.
*Polyethoxyethyl tridecyl ether	AHC, APD, APX, EFH, GAF, JCC, MON, OMC, PCS, VIS, x.
Polyglycerol oleate	WTC.
1,2-Propanediol monococate	CP.
*1,2-Propanediol monolaurate	CP, DRW, HAL, KES.
1,2-Propanediol mono-oleate	HAL, KES.
*1,2-Propanediol monostearate	CCW, CP, HAL, KES, PCS, PG, WTC.
1,2-Propanediol polyethoxyethyl stearate	APD.
Propylpolyethoxyethyl polyoxypropylene glycol ether	APD.
All other	AHC, APD, GRD, PCS, UCC.
*Nitrogen-containing surface-active agents, nonsulfonated:	
Alkylamino polyethoxyethanol	GAF, NOP.
N-(Aminoethyl)-N-(hydroxyethyl)coconut oil amide	DEX, DRW, NOP.
*N-(Aminoethyl)-N-(hydroxyethyl)octadecanamide (Stearamide of aminoethylethanolamine).	AHC, AML, CST, DEP, DEX, HRT, MRA, NOP, ONX, PC, QCP, SAN, SCP, SNW, TRC, WTU.
*N-(Aminoethyl)-N-(hydroxyethyl)oleamide	CMC, DEX, NOP, SOC, WTU.
N-(Aminoethyl)-N-(hydroxyethyl)palm oil amide	SCP.
N,N-Bis(2-hydroxyethyl)bisoleamide	STP.
N,N-Bis(2-hydroxyethyl)decanamide	GGY.
*N,N-Bis(2-hydroxyethyl)dodecanamide	HLI, JRG, KRY, NOP, PCS, PG.
*N,N-Bis(2-hydroxyethyl)octadecanamide	AML, BSC, CST, GGY, JOR, NOP, ONX, QCP, SNW, STP, TXC, WTU, x.
*N,N-Bis(2-hydroxyethyl)oleamide	CCW, GGY, NOP, PCS, SCP, STP, WTC.
N,N-Bis(2-hydroxyethyl)tallow amide	PG.
N-Coconut oil-β-alanine	GNM.
*Coconut oil amide of bis(diethanolamine)	AML, BSC, CMC, DEP, HLI, MOA, MRV, NOP, PCS, PNX, QCP, SNW, TRP, VAL.
*Coconut oil amide of mono(diethanolamine)	APX, CP, EFH, EMK, GGY, HRT, KAL, KNP, MOA, MRA, NOP, ONX, PC, PCS, PG, STP, TRP, VND, WTC.

TABLE 20B. --*Synthetic organic chemicals: Surface-active agents for which U.S. production or sales were reported, identified by manufacturer, 1959*--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
SURFACE-ACTIVE AGENTS, ACYCLIC--Continued	
*Nitrogen-containing surface-active agents, nonsulfonated--Continued	
*Coconut oil amide of diethanolamine, neither bis nor mono.	DEX, JOR, JRG, KRY, LUR, PCS, SCO, TXC, WTU, x.
Coconut oil amide of diethylenetriamine	APX, NOP.
Coconut oil amide of diisopropanolamine	QCP.
Coconut oil amide of isopropanolamine	ARC, STP, TRP.
Coconut oil amide of monoethanolamine	APX, DEP, HRT, PCS, PG, WTC, WTU.
Coconut oil amine acetate	ARC, PCS.
Cocotrimethylammonium chloride	ARC.
N-Cocoyl sarcosine, sodium salt	GGY.
Cottonseed oil mixed amines	GNM.
Decylbetaine	DUP.
Dicocodimethylammonium chloride	ARC, GNM.
Dihydrogenated tallow dimethylammonium chloride	ARC, GNM, ONX.
N-(3-Dimethylamino)oleamide	CCW.
Dimethyldisoya-ammonium chloride	ARC.
Dodecyl, hexadecyl trimethylammonium chloride	DUP.
Dodecyltrimethylammonium chloride	ARC, GNM.
N,N-Ethylene bis-octadecanamide	CCW, NOP, WTU.
N,N-Ethylene bis-oleamide	CCW.
Ethyldimethyloctadecylammonium bromide	ITX.
Ethylhexadecyldimethylammonium chloride	FIN, ONX.
Hexadecylbetaine	DUP.
Hexadecyltrimethylammonium bromide	FIN.
N-(2-Hydroxyethyl)octadecanamide	STP.
N-(2-Hydroxyethyl)oleamide	EFH, FBC.
N-(2-Hydroxyethyl)-N-(2-stearoylaminoethyl) glycine	GAF.
N-(2-Hydroxyethyl)tetradecanamide	WTC.
N-(2-Hydroxypropyl)dodecanamide	PCS, WTU.
N-(2-Hydroxypropyl)oleamide	WTC.
N-(2-Hydroxypropyl)tetradecanamide	WTU.
N-Lauroyl polypeptide	MYW.
N-Lauroyl sarcosine, sodium salt	CP, GGY.
N-Octadecyl-β-alanine, sodium salt	DUP.
Octadecyl amine acetate	ACY, ARC.
Octadecyltrimethylammonium chloride	ARC.
Octyl amine acetate	ARC.
Oleamide of diethylenetriamine	APD, PCS.
Oleoylamino polyethoxyethanol	APD, ARC, GAF.
Oleoyl polypeptide	MYW.
N-Oleoyl sarcosine, sodium salt	GAF, GGY.
Polyethoxyethyl N-coco amine	APD, ARC.
Polyethoxyethyl N-hydrogenated tallow amine	ARC.
Polyethoxyethyl N-octadecyl amine	APD, ARC.
Polyethoxyethyl N-soya amine	ARC.
Polyethoxyethyl N-tallow amine	ARC.
Polyethoxyethyl N-tallow trimethyldiamine	ARC.
Polypeptide	MYW.
Soyatrimethylammonium chloride	ARC.
Stearamide of diethylenetriamine	APX, DEP, NOP, ONX, QCP.
Stearamide of tetraethylenepentamine	AHC, DEX, ONX.
1-Stearamido-1'-adipoamido diethylenetriamine	APX.
Stearoylbiguanide hydrochloride	GAF.
Stearoyl-N-(2-hydroxyethyl)octadecanamide	WTC.
N-Stearoyl sarcosine, sodium salt	GAF, GGY.
Tallow amine acetate	ARC, GNM.
Tallow amine acetate, hydrogenated	ARC, GNM.
N-Tallow-β-aminodipropionic acid, sodium salt	GNM.
Tallow diethanolamine acetate	PG.
N,N,N',N'-Tetrakis hydroxyethyl(polyoxyethylenepolyoxypropylene)ethylenediamine.	VIS, WYN.
Triethanolamine myristate	DOM.
*Triethanolamine oleate	CMC, DOM, HAL, HDG, NOP, QCP.
Triethanolamine stearate	AML, HDG.
Trimethyl hydrogenated tallow ammonium chloride	ARC.
Trimethyl tallow ammonium chloride	ARC.
All other	AHC, APD, CBP, CCW, GAF, GGY, MYW, ONX, PCS, PG, TRC, VIS, x, x, x.

TABLE 20B. --*Synthetic organic chemicals: Surface-active agents for which U.S. production or sales were reported, identified by manufacturer, 1959* --Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
SURFACE-ACTIVE AGENTS, ACYCLIC--Continued	
*Phosphorus-containing surface-active agents, nonsulfonated:	
Alkyl phosphates, diethanolamine salt	DUP.
Caproyl polyphosphate, potassium salt	DEX.
Caproyl polyphosphate, sodium salt	VIC.
Dodecyl polyethoxyethyl phosphate	GAF.
2-Ethylhexyl phosphate, sodium salt	UCC.
Mixed mono and dialkyl acid phosphates	DUP, VIC.
Octyl polyphosphate, potassium salt	DEX.
Octyl polyphosphate, sodium salt	CRC, VIC.
Oleyl phosphate	DUP.
Oleyl polyethoxyethyl phosphate	GAF.
All other	DUP, VIC.
*Salts of fatty acids, nonsulfonated:	
*Coconut oil, potassium salt	LUR, OTT, PCH, SAN.
Coconut oil, triethanolamine salt	PG.
Corn oil, potassium salt	EFH, PCH.
Corn oil, sodium salt	LUR.
Olive oil, sodium salt	LUR.
Peanut oil, potassium salt	KAL.
Potassium laurate	BSC, NOP.
*Potassium oleate	AML, EFH, NOP, OTT, PCH, QCP, SAN, SHP, WBG, x.
Potassium resinate	DEX.
Potassium stearate	DEX, QCP, VAL.
*Potassium tallate	BSC, CON, EFH, KAL, LUR, OTT, PCH, PCS, PNX, QCP.
Rapeseed oil, potassium salt	KAL.
Sodium laurate	DEP.
Sodium oleate	DEP, LUR, MRV, NOP, QCP, WBG, WTC.
Sodium resinate	QCP.
*Sodium stearate	LEV, MAL, MRV, NOP, WTC.
Sodium tallate	BSC, DEX, MRV, NOP, QCP.
Soybean oil, potassium salt	DRW, OTT, PCH.
Tallow, potassium salt	QCP.
*Tallow, sodium salt	CON, DRW, LUR, NOP, QCP.
*Sulfated and sulfonated acyclic surface-active agents:	
*Acids, sulfated and sulfonated:	
Acetyloleic acid, sulfonated	DUP.
*Oleic acid, sulfonated (Sulfonated red oil)	ACT, ACY, AHC, DEX, DRW, GAF, KAL, LEA, LUR, MRA, MRV, NOP, PC, QCP, SCO, SON, SWT, TN, WBG, WHI, WHW.
Ricinoleic acid, sulfonated	DRW, NOP.
*Alcohols, sulfated and sulfonated:	
*Decyl sulfate	DUP, ONX, PCS.
Decyl sulfate, triethanolamine salt	DUP.
3,9-Diethyl-6-tridecyl sulfate	UCC.
Dodecyl, octadecenyl sulfate	DUP.
Dodecyl sulfate, 2-amino-2-methylpropanol salt	DUP.
*Dodecyl sulfate, ammonium salt	AAC, DUP, ONX, PCS, STP, TRP.
*Dodecyl sulfate, diethanolamine salt	AAC, DUP, ONX, PCS, STP, TRP.
Dodecyl sulfate, N,N-diethylcyclohexylamine salt	DUP.
Dodecyl sulfate, monoethanolamine salt	SYC.
Dodecyl sulfate, monoisopropanolamine salt	JRG, PCS.
Dodecyl sulfate, potassium salt	PG.
*Dodecyl sulfate, sodium salt	AAC, DUP, HLI, HLN, KRY, ONX, PCS, PG, RET, STP, TRP.
*Dodecyl sulfate, triethanolamine salt	AAC, DUP, HLI, KRY, ONX, PCS, PG, RET, STP, TRP.
2-Ethylhexyl sulfate	AAC, UCC, WTC.
7-Ethyl-2-methyl-4-undecyl sulfate	UCC.
Hexadecyl, octadecenyl sulfate	CMG.
Hexadecyl sulfate	AAC, DUP, GGY.
Octadecyl sulfate	AAC, DUP, EMK, ONX, PG.
Octadecyl sulfate, triethanolamine salt	DUP.
Octyl sulfate, sodium salt	DUP.
Tridecyl sulfate, sodium salt	AAC.
All other	AAC, PCS.
*Esters and ethers, sulfated and sulfonated:	
Bis-sulfosuccinate ester of tallow monoglyceride	ACY.
Bis(tridecyl)sulfosuccinate, sodium salt	ACY.
Butyl ethylene glycol sulfo-oleate	SAN.
n-Butyl sulfo-oleate	AHC, AML, NOP, ONX, PC.

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TABLE 20B. --*Synthetic organic chemicals: Surface-active agents for which U.S. production or sales were reported, identified by manufacturer, 1959*--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
SURFACE-ACTIVE AGENTS, ACYCLIC--Continued	
*Sulfated and sulfonated acyclic surface-active agents--Continued	
*Esters and ethers, sulfated and sulfonated--Continued	
n-Butyl sulforicinoleate	DEC, NOP.
Coconut oil isethionate, sodium salt	GAF, LEV.
Didecanoyl sulfosuccinate, sodium salt	RH.
*Di(2-ethylhexyl)sulfosuccinate	ACY, AHC, CRC, CST, EMK, GGY, HRT, MOA, MRA, PC, QCP.
Dihexyl sulfosuccinate	ACY, MOA.
Dipentyl sulfosuccinate, sodium salt	ACY.
Dodecyl sulfoacetate	ACF.
Glycerol mono(coconut oil)ester, sulfated, ammonium salt.	CP, KAL.
Glycerol mono(coconut oil)ester, sulfated, sodium salt	CP.
Glycerol monostearate sulfoacetate	WTC.
Glycerol tri(sulfo-oleate)	AHC, MRV, NOP, SCP.
*Isopropyl sulfo-oleate	AHC, BRY, DEX, HRT, LUR, NOP, QCP, SON, TXC.
Lauroyl-2-hydroxy-1-propane sulfonic acid	SDH.
Methyl, ethyl, propyl sulfo-oleate	NOP.
Methyl sulfo-oleate	AHC.
Oleoyl isethionate	GAF.
Polyethoxyethyl decyl sulfate	WTC.
Polyethoxyethyl dodecyl sulfate, sodium salt	AAC, PCS, PG.
Polyethoxyethyl dodecyl sulfate, triethanolamine salt	PG.
Polyethoxyethyl octadecyl sulfate, sodium salt	DUP.
Polyethoxyethyl oleyl sulfate	PCS.
*n-Propyl sulfo-oleate	ACY, BSC, EFH, EMR, MRV.
All other	DEX, EMR, GAF, PFZ, x.
*Nitrogen-containing surface-active agents, sulfated and sulfonated:	
Coconut oil amide of isopropanolamine, sulfated, sodium salt.	APX, ONX, QCP.
*Coconut oil amide of monoethanolamine, sulfated, potassium salt.	DEX, EMK, HRT, ONX, SON.
Coconut oil amide of monoethanolamine, sulfated, sodium salt.	AML, DEP, QCP.
N-(2-Hydroxyethyl)neat's-foot oil amide, sulfated, ammonium salt.	APX.
N-(2-Hydroxyethyl)octadecanamide, sulfated	NOP.
N-(2-Hydroxyethyl)oleamide, sulfated	NOP, SCP.
N-(2-Hydroxyethyl)tallow sulfosuccinamide	SCP.
Lauroylsulfoacetoethanolamide, potassium salt	WTC.
*N-Methyl-N-oleoyl taurine	CRC, DEP, GAF, HRT, MRA, NOP, WIC.
N-Methyl-N-palmitoyl taurine	GAF.
N-Methyl-N-tallow taurine	LEV.
N-(Myristoylethyl)sulfosuccinamide	WTC.
N-Octadecylsulfosuccinamide, disodium salt	ACY.
N-(Oleoylisopropyl)sulfosuccinamide	WTC.
All other	ACY, DUP, RH, x.
*Oils, fats, and waxes, sulfated and sulfonated:	
Animal fats and oils, sulfated and sulfonated:	
Grease, other than wool, sulfonated	NOP, WHW.
Lard oil, sulfonated	APX, FBC, WAW.
*Neat's-foot oil, sulfonated	ACT, APX, ARF, DRW, FBC, KAL, LEA, LUR, MRD, NOP, OTT, PC, WHW.
*Tallow, sulfonated	ACT, ACY, AHC, ARF, BRY, CRC, DRW, EFH, GTS, HRT, LEA, LUR, MRA, MRD, NOP, ONX, OTT, PC, QCP, ROY, SCP, SID, SNW, SON, SOS, WHI.
All other	FBC, FRR, WHI.
*Fish and marine-animal oils, sulfated and sulfonated:	
*Cod oil, sulfonated	ACT, DRW, EFH, FBC, LEA, MRD, NOP, OTT, SAN, WAW, WHI, WHW.
Herring oil, sulfonated	NOP.
Menhaden oil, sulfonated	ARF.
Mixed fish oils, sulfonated	AML, NOP, SCO.
*Sperm oil, sulfonated	ACT, ARF, DRW, EFH, FBC, HRT, KAL, KNG, LEA, MRD, NOP, ONX, OTT, QCP, RTC, SAN, SON, SWT, WBG, WHI, WHW.
Whale oil, sulfonated	KNG.

TABLE 20B. --*Synthetic organic chemicals: Surface-active agents for which U.S. production or sales were reported, identified by manufacturer, 1959*--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
SURFACE-ACTIVE AGENTS, ACYCLIC--Continued	
*Sulfated and sulfonated acyclic surface-active agents--Continued	
*Oils, fats, and waxes, sulfated and sulfonated--Continued	
Vegetable oils, sulfated and sulfonated:	
*Castor oil, sulfonated	AAE, ACT, ACY, AHC, AML, APX, ARF, BRY, BSC, CRC, DEX, DRW, DUP, EFH, FBC, GAF, GTS, HRT, KAL, KNG, LEA, LUR, MRA, MRD, MRV, NOP, ONX, OTT, PC, RTC, ROY, SAN, SCO, SCP, SLC, SON, SWT, WBG, WHI, WHW, WTU.
*Coconut oil, sulfonated	ACY, LEA, LUR, MRD, NOP, OTT, PC, RTC, WBG, WHW.
Cottonseed oil, sulfonated	ARF, NOP.
Linseed oil, sulfonated	LEA.
Mustard-seed oil, sulfonated	LUR, NOP.
*Peanut oil, sulfonated	ACY, AHC, LEA, NOP, ROY, RTC, SCP, SLC, SON, SOS.
Rapeseed oil, sulfonated	NOP.
*Rice-bran oil, sulfonated	EFH, HRT, KNG, LUR, NOP, QCP, ROY.
*Soybean oil, sulfonated	HRT, KAL, LEA, MRD, ONX.
All other oils, fats, and waxes, sulfated and sulfonated:	
Oleostearine, sulfonated	WHW.
*Tall oil, sulfonated	ACY, AHC, APX, ARF, QCP, WHW.
All other	FRR.
All other acyclic surface-active agents:	
Mixed alkane sulfonic acid, sodium salt	DUP.
All other	ACY, AIR, TN.

Pesticides and Other Organic Agricultural Chemicals

TABLE 21B. --*Synthetic organic chemicals: Pesticides and other organic agricultural chemicals for which U.S. production or sales were reported, identified by manufacturer, 1959*

[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:	
Cadmium anilino dilactate	GUA.
Captan (N-Trichloromethylthio-4-cyclohexene-1,2-dicarboximide).	CHO, CSP.
Chloranil (Tetrachloro-p-quinone)	USR.
5-Chloro-2-mercaptobenzothiazole, laurylpyridium salt	VNC.
Dichlone (2,3-Dichloro-1,4-naphthoquinone)	SF, USR.
2,4-Dichloro-6-(o-chloroanilino)-s-triazine	CHG.
3,5-Dimethyltetrahydro-2H,1,3,5-thiadiazine-2-thione	CLY.
Glyodin (2-Heptadecyl-2-imidazoline acetate)	UCC.
2-Mercaptobenzothiazole, monoethanolamine salt	VNC.
*Mercury fungicides:	
2-Chloro-4-(hydroxymercuri)phenol	DUP.
Diphenylmercuriammonium propionate	MTL.
N-(Ethylmercuri)-p-toluenesulfonanilide	DUP.
4-(Hydroxymercuri)-2-nitrophenol	DUP.
8-(Methylmercurioxy)quinoline	MTL.
2-(Phenylmercuriamino)ethyl acetate	CLY.
N-Phenylmercuriformamide	GUA, VIN.
8-(Phenylmercurioxy)quinoline	MTL.
Phenylmercuryammonium acetate	GUA.
Phenylmercury carbonate	GUA.
Phenylmercury hydroxide	BRK, MTL.
Phenylmercury lactate	GUA.
Phenylmercury naphthenate	HNX, MTL.
*Phenylmercury oleate	BKM, CLY, DUP, GUA, HNX, MTL.
Phenylmercury propionate	MTL.
Tris(2-hydroxyethyl)(phenylmercuri)ammonium acetate	GUA.
Tris(2-hydroxyethyl)(phenylmercuri)ammonium lactate	CLY.
2-(1-Methylheptyl)-4,6-dinitrophenyl crotonate (Karathane).	RH.
*Naphthenic acid, copper salt	CCA, FER, HAR, HNX, SHP, SM, SOC, SRR, TGL, WTC.
Naphthyl methylcarbamate	UCC.
Penicillin, dried fermented solids	MRK.
*Pentachlorophenol	DOW, FRO, MON, RCI.
Pentachlorophenol, sodium salt	DOW, MON.
α-Phenyl-p-cresol (p-Benzylphenol)	MON.
8-Quinolinol (8-Hydroxyquinoline), copper salt	GAM, HNX.
2,3,4,6-Tetrachlorophenol	DOW.
Trichloromethylthiophthalimide	CHO.
*2,4,5-Trichlorophenol	DA, DOW, HK.
2,4,5-Trichlorophenol, ethanolamine salt	DOW, GAF.
2,4,5-Trichlorophenol, sodium salt	DOW, MON.
2,4,6-Trichlorophenol	DA, DOW.
2,4,6-Trichlorophenol, potassium salt	CLY, DA.
*Herbicides:	
1-n-Butyl-3-(3,4-dichlorophenyl)-1-methylurea	DUP.
2-sec-Butyl-4,6-dinitrophenol	DOW.
2-sec-Butyl-4,6-dinitrophenol, triethanolamine salt	SAC.
3-(p-Chlorophenyl)-1,1-dimethylurea (CMU)	DUP.
3-(p-Chlorophenyl)-1,1-dimethylurea-trichloroacetate	ACG.
3-(3,4-Dichlorophenyl)-1,1-dimethylurea	DUP.
1,2-Dihydro-3,6-pyridazinedione (Maleic hydrazide)	ACY, USR.
1,1-Dimethyl-3-phenylurea	DUP.
1,1-Dimethyl-3-phenylurea trichloroacetate	ACG.
Dimethyl tetrachloroterephthalate	DA.
4,6-Dinitro-o-cresol (DNOC)	SAC.
4,6-Dinitro-o-cresol, sodium salt (Sinox)	SAC.
Gibberellic acid	ABB, MRK, PFZ.
Indolebutyric acid	ARA, MRK.
Isopropyl carbanilate (Isopropyl N-phenylcarbamate) (IPC)	FMP, PPG.

TABLE 21B. -- *Synthetic organic chemicals: Pesticides and other organic agricultural chemicals for which U.S. production or sales were reported, identified by manufacturer, 1959*--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
PESTICIDES AND OTHER ORGANIC AGRICULTURAL CHEMICALS, CYCLIC--Continued	
*Herbicides--Continued	
Isopropyl 3-chlorocarbanilate (Isopropyl N-(3-chlorophenyl)carbamate) (CIPC).	PPG.
*1-Naphthaleneacetic acid and derivatives:	
1-Naphthaleneacetamide	AMC, TMC.
1-Naphthaleneacetic acid	AMC, COK, TMC.
1-Naphthaleneacetic acid, methyl ester	AMC, COK, TMC.
1-Naphthaleneacetic acid, sodium salt	AMC.
N-1-Naphthylphthalamic acid	USR.
7-Oxabicyclo[2,2,1]heptane-2,3-dicarboxylic acid, disodium salt (Endothal).	PAS.
Phenoxyacetic acid derivatives:	
(4-Chloro-o-tolyloxy)acetic acid	DOW.
*(2,4-Dichlorophenoxy)acetic acid (2,4-D)	DA, DOW, FRO, MON, RIV, TMC.
*(2,4-Dichlorophenoxy)acetic acid, dimethylamine salt	AMC, CSP, RIV, TMC, TMH.
*(2,4-Dichlorophenoxy)acetic acid esters:	
(2,4-Dichlorophenoxy)acetic acid, butoxyethoxypropyl ester.	DA.
(2,4-Dichlorophenoxy)acetic acid, 2-butoxyethyl ester	x.
(2,4-Dichlorophenoxy)acetic acid, butoxypolypropyleneglycol ester.	DOW.
*(2,4-Dichlorophenoxy)acetic acid, n-butyl ester	AMC, DA, DOW, MON, RIV, TMC, TMH.
(2,4-Dichlorophenoxy)acetic acid, sec-butyl ester	MON.
(2,4-Dichlorophenoxy)acetic acid, ethyl ester	AMC.
(2,4-Dichlorophenoxy)acetic acid, 2-ethylhexyl ester	DA.
*(2,4-Dichlorophenoxy)acetic acid, iso-octyl ester	AMC, DOW, MON, RIV, TMC, TMH.
*(2,4-Dichlorophenoxy)acetic acid, isopropyl ester	AMC, DA, DOW, MON, RIV, TMH.
(2,4-Dichlorophenoxy)acetic acid, tetrahydrofurfuryl ester.	CSP.
(2,4-Dichlorophenoxy)acetic acid, sodium salt	DOW.
*(2,4,5-Trichlorophenoxy)acetic acid (2,4,5-T)	DA, DOW, MON, RIV, TMC.
*(2,4,5-Trichlorophenoxy)acetic acid esters:	
(2,4,5-Trichlorophenoxy)acetic acid, butoxyethoxypropyl ester.	DA, MON.
(2,4,5-Trichlorophenoxy)acetic acid, 2-butoxyethyl ester.	x.
(2,4,5-Trichlorophenoxy)acetic acid, butoxypolypropyleneglycol ester.	DOW.
*(2,4,5-Trichlorophenoxy)acetic acid, n-butyl ester	DA, DOW, MON, RIV.
(2,4,5-Trichlorophenoxy)acetic acid, 2-ethylhexyl ester.	DA.
*(2,4,5-Trichlorophenoxy)acetic acid, isc-octyl ester	AMC, DOW, MON, RIV, TMC, TMH.
(2,4,5-Trichlorophenoxy)acetic acid, isopropyl ester	DA, MON.
(2,4,5-Trichlorophenoxy)acetic acid, pentyl ester	TMH.
(2,4,5-Trichlorophenoxy)acetic acid, tetrahydrofurfuryl ester.	CSP.
*Phenylmercury acetate (PMA)	BKM, BRK, CLY, GUA, MTL.
N-Tolylphthalamic acid	USR.
(2,4,5-Trichlorophenoxy)propionic acid	DOW, TMC.
*Insecticides:	
Allethrin (Allyl homolog of Cinerin I)	BPC.
Benzyl thiocyanate	HK.
*Chlorinated insecticides:	
Aldrin (Hexachloro-hexahydro-endo, exo-dimethanonaphthalene).	SHC.
1,1-Bis(p-chlorophenyl)-2-nitrobutane	COM.
1,1-Bis(p-chlorophenyl)-2-nitropropane	COM.
Bis(S'-Diethoxyphosthinethioylmercapto)-methane	FMP.
2-(p-tert-Butylphenoxy)-1-methylethyl-2-chloroethyl sulfite (Aramite).	USR.
Chlordan (Octachloro-tetrahydro-methanoindan)	VEL.
Chlorinated mixed terpenes (Strobane)	BFG.
p-Chlorophenyl p-chlorobenzenesulfonate	DA, DOW.
S-(p-Chlorophenylthio)methyl O,O-diethyl phosphorodithioate.	SF.
p-Chlorophenyl 2,4,5-trichlorophenyl sulfone	FMP.

TABLE 21B. --*Synthetic organic chemicals: Pesticides and other organic agricultural chemicals for which U.S. production or sales were reported, identified by manufacturer, 1959*--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
PESTICIDES AND OTHER ORGANIC AGRICULTURAL CHEMICALS, CYCLIC--Continued	
*Insecticides--Continued	
*Chlorinated insecticides--Continued	
6-Chloropiperonyl chrysanthemummono-carboxylate	BPC.
4,4'-Dichlorobenzilic acid	GGY.
1,1-Dichloro-2,2-bis(p-chlorophenyl)ethane (DDD)	ACG, RH.
1,1-Dichloro-2,2-bis(p-ethylphenyl)ethane	RH.
O-(2,4-Dichlorophenyl) O,O-diethyl phosphorothioate	VC.
4,4'-Dichloro-α-(trichloromethyl)benzhydrol	RH.
Dieldrin (Hexachloro-epoxy-octahydro-endo, exo-di-methanonaphthalene).	SHC.
Endrin (Hexachloro-epoxy-octahydro-endo, endo-di-methanonaphthalene).	SHC, VEL.
Heptachlor (Heptachloro-tetrahydromethanoindene)	VEL.
*Hexachlorocyclohexane (Benzene hexachloride)	ACG, DA, FRC, HK, PPG, SF.
*Lindane	HK.
Toxaphene (Chlorinated camphene)	HPC.
*1,1,1-Trichloro-2,2-bis(p-chlorophenyl)ethane (DDT)	ACG, DA, GGY, LEB, MCH, MTO, OMC.
1,1,1-Trichloro-2,2-bis(p-methoxyphenyl)ethane (Meth-oxychlor).	DUP.
2-Cyclohexyl-4,6-dinitrophenol	DOW.
O,O-Diethyl O-(3-chloro-4-methylumbelliferone) phos-phorothioate.	CHG.
O,O-Diethyl O-(2-isopropyl-4-methyl-6-pyrimidinyl) phosphorothioate.	GGY.
N,N-Diethyltoluamide	CWL.
*O,O-Dimethyl O-(p-nitrophenyl) phosphorothioate (Methyl parathion).	MON, SHC, VEL, VIC.
O,O-Dimethyl S-(4-oxo-1,2,3-benzotriazin-3(4H)-ylmethyl) phosphorodithioate.	CHG.
O-Ethyl O-(p-nitrophenyl)benzene phosphorothioate (EPN)	VIC.
*Parathion (O,O-Diethyl O-(p-nitrophenyl)phosphorothioate)	ACY, AMP, MON, VEL.
Thanite (Isobornyl thiocyanatoacetate)	BKC, HPC.
*Rodenticides:	
2-Isovaleryl-1,3-indandione, calcium salt	MOT.
2-Pivaloyl-1,3-indandione	MOT.
Warfarin (3-(Acetonylbenzyl)-4-hydroxycoumarin)	ABB, PEN.
PESTICIDES AND OTHER ORGANIC AGRICULTURAL CHEMICALS, ACYCLIC	
*Fungicides:	
Bis-1,4-bromoacetoxybutene-2	VIN.
Cadmium succinate	MAL.
Dimethyldithiocarbamic acid, ferric salt (Ferbam)	BRK, DUP, RBC.
*Dimethyldithiocarbamic acid, zinc salt (Ziram)	ALC, BRK, DUP, GYR, PAS, RBC, USR.
Disodium cyanodithioimidocarbonate	BKM.
Ethylene bis(dithiocarbamic acid), diammonium salt	RBC.
*Ethylene bis(dithiocarbamic acid), disodium salt (Nabam)	CIS, DUP, x.
Ethylene bis(dithiocarbamic acid), manganese salt (Manzate).	DUP, RH.
Ethylene bis(dithiocarbamic acid), zinc salt (Zineb)	CIS, DUP, x.
3-Ethyl-(mercurithio)-1,2-propanediol	DUP.
Ethylmercury acetate	DUP, MTL.
Ethylmercury chloride	DUP, MTL.
Ethylmercury phosphate	DUP.
Hydroxyethylmercury acetate	BRK.
2-Methoxyethylmercury acetate	BRK.
Methylmercury cyanide	MTL.
Methylmercury nitrile	BRK, MTL.
Zinc undecenoate (Zinc hendecenoate)	WIM.
*Herbicides:	
2-Chloroallyl diethyldithiocarbamate	MON.
N,N-Diallyl-2-chloroacetamide	MON.
2,2-Dichloropropionic acid, sodium salt	DOW.
Diethyl dithiobis(thionoformate)	RBC.
Ethyl N,N-di-n-propylthiocarbamate	SF.
Hexachloroacetone	ACG.

TABLE 21B. *--Synthetic organic chemicals: Pesticides and other organic agricultural chemicals for which U.S. production or sales were reported, identified by manufacturer, 1959*--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
PESTICIDES AND OTHER ORGANIC AGRICULTURAL CHEMICALS, ACYCLIC--Continued	
*Herbicides--Continued	
*Methanearsonic acid, disodium salt	ASL, CLY, VIN.
Octyldodecylammoniummethyl arsonate	VIN.
S,S,S-Tributyl phosphorotrithioate	CHG, VC.
Trichloroacetic acid, sodium salt (TCA)	DOW.
*Insecticides:	
2-(2-Butoxyethoxy)ethyl thiocyanate	RH.
O-(2,2-Dichlorovinyl) O,O-dimethyl phosphate (DDVP)	MTR.
O,O-Diethyl O-[2-(ethylthio)ethyl] phosphorothioate	CHG.
O,O-Diethyl S-[2-(ethylthio)ethyl] phosphorothioate	CHG.
O,O-Diethyl S-(ethylthio)methyl phosphorodithicate	ACY.
Diethyl phosphorochloridothionate	VIC.
O,O-Dimethyl O-(2-methoxycarbonyl)isopropenyl phosphate	SHC.
Dimethyl phosphorochloridothionate	VIC.
Ethyl pyrophosphate (Tetraethyl pyrophosphate) (TEPP)	AMP, CSP.
Malathion (S-(1,2-Bis(ethoxycarbonyl)ethyl) O,O-dimethyl phosphorodithioate).	ACY.
Metaldehyde	CGM.
2-Thiocyanatoethyl laurate	RH.
*Rodenticides: Sodium fluoroacetate	RBC.
*Soil conditioners: Polyacrylonitrile, hydrolyzed, sodium salt.	ACY.
*Soil fumigants:	
*Bromomethane (Methyl bromide)	AMP, DOW, KLK, MCH.
Chloropicrin	DOW, LMC.
1,2-Dibromo-3-chloropropane	DOW, SHC.
1,2-Dichloropropane	SHC.
1,3-Dichloropropane	DOW.
1,3-Dichloropropene	SHC.
N-Methyldithiocarbamic acid, sodium salt	DUP, SF.

Miscellaneous Synthetic Organic Chemicals

TABLE 22B.--*Synthetic organic chemicals: Miscellaneous chemicals for which U.S. production or sales were reported, identified by manufacturer, 1959*

[Miscellaneous chemicals for which separate statistics are given in table 22A are marked below 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	
2-Aminobenzothiazole	FMT.
1-(2-Aminoethyl)piperazine	JCC.
Benzoic acid salts:	
Aluminum benzoate	GAF.
Calcium benzoate	HN.
*Sodium benzoate, tech	HN, TNP.
*Sodium benzoate, U.S.P	HK, HN, MON, TNP.
p-Benzoquinone (p-Quinone)	EKT, HSH.
Benzothiazole	ACY.
Benzoyl peroxide	CAD, WTL.
Benzoylresorcinol	GAF.
p-Benzylaminophenol hydrochloride	EK.
Benzylmagnesium chloride	ARA.
Benzyl p-methoxycinnamate	GIV.
Biological stains	ACF, HLC.
Bis(2,4-dichlorobenzoyl) peroxide	CAD.
m-Bis(phenoxyphenoxy)benzene	MON.
Boron fluoride-phenol complex	ACG.
Bromocyclopentane (Cyclopentyl bromide)	ARA.
α-[2-(2-Butoxyethoxy)ethoxy]-4,5-methylenedioxy-2-propyltoluene (Piperonyl butoxide).	FMP.
Butoxysafrole	GIV.
2(and 3)-tert-Butyl-4-methoxyphenol	EKT, UPM.
tert-Butyl peroxybenzoate	WTL.
4-tert-Butylpyrocatechol	DOW.
Camphene	DUP, GLD, HPC.
Centralite-1 (N,N'-Diethyl-N,N'-diphenylurea)	PAS, SDH.
Chemical indicators	ACF, EK, HLC, LAM.
Chemical reagents	ACF, ACG, ARA, EK, HLC, LAM, MAL.
Chloramine B	NES.
5-Chloro-α,α-bis[3,5-dichloro-2-hydroxyphenol]-o-toluenesulfonic acid.	GAF.
Chlorophyllin, sodium-potassium-copper	KCH.
Cholesterol	CW.
Cumene hydroperoxide	HPC.
Cyclohexanone peroxide	WTL.
Cyclohexene-1,2-dicarboxylic acid (Tetrahydrophthalic acid), disubstituted, polyester salts:	
Barium salt	DEC.
Barium cadmium salt	DEC.
Cadmium salt	DEC.
N-Cyclohexyltaurine, sodium salt	GAF.
Cyclopentanepropionic acid	ARA.
*Cyclopropane	MAL, OH, OMS, TAE.
Cytidine and derivatives	SBR.
Decahydronaphthalene (Decalin)	DUP.
Decyl diphenyl phosphite	HKP.
n-Decylgallophenone	ARA.
Diazodinitrophenol	HPC.
1,3-Dibromo-5,5-dimethylhydantoin	ARA, GLY.
2,5-Di-n-butoxyaniline (Aminohydroquinone, dibutyl ether)	EKT.
1,3-Dichlorohexahydro-s-triazine-2,4,6-trione	FMP.
*2,6-Di-tert-butyl-p-cresol:	
*Food grade	CAT, EKT, HPC, KPT, SHC.
*Tech	ACY, CAT, EKT, HPC, KPT, SHC.
2,5-Di-tert-butylhydroquinone	EKT.
1,3-Dichloro-5,5-dimethylhydantoin	GLY.
Dicyclohexylammonium nitrite	OMC.
Dicyclopentadienyliron	TNA.
Didecyl phenyl phosphite	HKP.
2,5-Diethoxyaniline	EKT.
2,2'-Dihydroxy-4,4'-dimethoxybenzophenone	GAF.
2,6-Dihydroxyisonicotinic acid (2,6-Dihydroxy-4-carboxypyridine).	EK.

TABLE 22B.--*Synthetic organic chemicals: Miscellaneous chemicals for which U.S. production or sales were reported, identified by manufacturer, 1959*--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
MISCELLANEOUS CHEMICALS, CYCLIC--Continued	
3,5-Diiodosalicylic acid	MRT.
Diisopropylenebenzene hydroperoxide	HPC.
2,5-Dimethoxyaniline	EKT.
p-Dimethoxybenzene (Dimethyl ether of hydroquinone)	FBS.
Dimethyl xylyl phosphate	TNA.
4,4-Dinitrocarbanilide-4,6-dimethyl-2-pyrimidinol	x.
Dioxane (1,4-Diethylene oxide)	UCC.
Diphenyl hydrogen phosphite	HKP.
Diphenylpentaerythritol diphosphite	HKP.
1,2-Epoxy-3-phenoxypropane (Glycidyl phenyl ether)	SHC.
6-Ethoxy-m-anol (Propenylmethylguaethol)	FBS.
2-Ethoxyethyl p-methoxycinnamate	GIV.
Ethylenediaminebis[o-hydroxyphenylacetic acid], monosodium ferric salt.	GGY.
Ethylene glycol 2,4-dichlorophenyl ether	UCC.
2-Ethylhexyl octylphenyl phosphite	VC.
Ethyl hydrocaffeate	FBS.
4-Ethylmorpholine	JCC.
1-Ethyl-3-(5-nitro-2-thiazolyl)urea	x.
Ethyl 2-phenylbutyrate	MAL.
Ethyl 2-phenylcyclopropanecarboxylate	BPC.
Fenchone	HNW.
*Flotation reagents:	
Diresylphosphorodithioic acid (Diresylthiophosphoric acid).	ACY.
Diresylphosphorodithioic acid, ammonium salt	ACY.
Diresylphosphorodithioic acid, sodium salt	KCU.
2,2'-Dimethylthiocarbanilide (Di-o-tolylthiourea)	DUP.
Rosin amines	HPC.
Thiocarbanilide (Diphenylthiourea)	ACY, MON.
Furan derivatives:	
2-Furaldehyde (Furfural)	QKO.
2-Furoic acid	QKO.
Tetrahydrofurfuryl alcohol	QKO.
Gallic acid, tech	HSH, MAL.
*Gasoline additives:	
p-Butylaminophenol	DUP.
2,6-Di-tert-butylphenol	TNA.
*N,N'-Di-sec-butyl-p-phenylenediamine	DUP, EKT, UPM.
N,N'-Disalicylidene-1,2-propanediamine	DUP, EKT, UPM.
Methylcyclopentadienylmanganese tricarbonyl	TNA.
2,2'-Thiobis(2-tert-butyl-p-cresol)	CAT.
All other	EKT, UPM.
Glyceryl p-aminobenzoate	VND.
*Hexamethylenetetramine, tech	BOR, DUP, HKD, HN, MRK, UCP.
Hydroxymethyl-5,5-dimethylhydantoin	GLY.
2-Hydroxy-4-methoxybenzophenone	GAF.
2-Imidazolidinethione (1,3-Ethylene-2-thiourea)	PAS.
Isopropylcresols	CP, GIV.
Ligninsulfonic acid-iron complex	CRZ.
*Lubricating oil additives:	
Chlorosulfurized and sulfurized compounds:	
Alicyclic compounds, sulfurized	SIN, SOI.
Heterocyclic compounds, sulfurized	ORO.
Tall oil ester, sulfurized	LUB.
Terpenes, sulfurized	LUB.
Liquid disulfide	HK.
Oil-soluble petroleum sulfonates:	
Oil-soluble petroleum sulfonate, ammonium salt	SIN.
*Oil-soluble petroleum sulfonate, barium salt	ACY, ATR, CO, LUB, PAR, SIN, SON, x.
*Oil-soluble petroleum sulfonate, calcium salt	CO, LUB, ORO, SHO, SIN, SON.
*Oil-soluble petroleum sulfonate, sodium salt	CO, MOR, NOP, PAR, SHO, SOC, SOI, SON, SUN, TX, x, x.
Phenol salts:	
Barium salt of dodecylphenol	x.
Barium salt of nonylphenol	CCA.
Barium salts of other alkylphenols	LUB, MON.
Calcium salt of octylphenol-formaldehyde	SHC.
Calcium salt of polypropylphenol	ORO.
Calcium salts of other alkylphenols	LUB, SIN.
All other	ACY, GDC, LUB, ORO, SIN.

TABLE 22B.--*Synthetic organic chemicals: Miscellaneous chemicals for which U.S. production or sales were reported, identified by manufacturer, 1959*--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
MISCELLANEOUS CHEMICALS, CYCLIC--Continued	
*Lubricating oil additives--Continued	
Phosphorodithioates (Dithiophosphates)	MON, ORO.
All other	GDC, MON, ORO, SHC, SIN, TNA.
p-Menthane	HNW, HPC.
8-p-Menthyl hydroperoxide	HNW, HPC.
4-Methoxyphenol	ASL, EKT, FBS.
Methylbenzylphenol mixture	DOW.
2-Methylcyclohexanol	HK.
2,2-Methylenebis[6-tert-butyl-p-cresol]	CAT.
2,2'-Methylenebis[4-chlorophenol] (Dichlorophene)	GIV.
2,2'-Methylenebis[3,4,6-trichlorophenol] (Hexachlorophene)	GIV.
2,2'-Methylenedi-p-cresol (Bis(5-methyl-2-hydroxyphenyl) methane).	GIV.
Methyl gallate	HSH.
Methylglucoside	CRN.
4-Methylmorpholine	JCC.
Methyl phenyl phosphates	TNA.
1-Methyl-2-pyrrolidone, monomer	GAF.
Methyl terpinyl ether	HPC.
Morpholine	JCC, UCC.
Morpholine cocate	ARC.
Morpholine oleate	PCH.
Morpholine salt of p-toluenesulfonic acid	AMB.
*Naphthenic acid salts:	
Aluminum naphthenate	HAR.
Barium naphthenate	x.
Cadmium naphthenate	CCA.
*Calcium naphthenate	CCA, FER, HAR, HNX, SHP, SOC, SPP, SRR, SW, WTC.
Cobalt lead manganese naphthenate	HAR, HNX, SW.
*Cobalt naphthenate	CCA, CCC, CS, FER, HAR, HNX, SHP, SOC, SPP, SRR, SW, WTC.
*Iron naphthenate	CCA, HAR, HNX, SOC, SRR, WTC.
*Lead naphthenate	CCA, CCC, CCW, FER, HAR, HNX, SHP, SOC, SPP, SRR, SW, WTC, x.
Lithium naphthenate	CCA.
*Manganese naphthenate	CCA, CCC, FER, HAR, HNX, SHP, SOC, SPP, SRR, SW, WTC.
Mercury naphthenate	HNX, MTL.
Nickel naphthenate	CCA.
Rare earths naphthenate	CCA, HNX.
Strontium naphthenate	CCA.
*Zinc naphthenate	CCA, CCC, FER, HAR, HNX, SHP, SOC, SRR, SW, WTC.
Organic mercury compounds:	
Phenyl mercuric borate	BRK.
Pyridyl mercuric acetate	MAL.
All other	MTL.
Pentachlorophenylthioacetic acid	DUP.
Phenolthiosulfonic acid	GAF.
2-Phenoxyethanol (Ethylene glycol monophenyl ether)	DOW, UCC.
2,2'-(p-Phenyleneoxy)diethanol (2,2-Paraphenylenedioxy-diethanol).	EKT.
Phenylmagnesium bromide	ARA.
4-Phenylmorpholine	UCC.
5-Phosphorylribose-1-pyrophosphate	PBS.
*Photographic chemicals:	
3-Amino-1,2,4-triazole (5-Amino-1,3,4-triazole)	FMT.
*Benzotriazole	EK, FMT, MRT.
Catechol (Pyrocatechin)	KPC.
5-Chlorobenzotriazole	FMT.
3-Chloro-4-diethylaminobenzenediazonium chloride (p-Diazo-2-chloro-N,N-diethylaniline) - zinc chloride.	FMT.
2,4-Diaminophenol dihydrochloride (Amidol)	VPC.
*p-Diethylaminobenzenediazonium chloride (p-Diazo-N,N-diethylaniline) - zinc chloride.	ACF, FMT, GAF, IDC, MRT.
N,N-Diethyl-p-phenylenediamine hydrochloride	EKT.
N,N-Diethyltoluene-2,5-diamine, monohydrochloride	EKT.
2,5-Dihydroxybenzenesulfonic acid	EK.
p-Dimethylaminobenzenediazonium chloride (p-Diazo-N,N-dimethylaniline) - zinc chloride.	FMT, IDC.

TABLE 22B.--*Synthetic organic chemicals: Miscellaneous chemicals for which U.S. production or sales were reported, identified by manufacturer, 1959*--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
MISCELLANEOUS CHEMICALS, CYCLIC--Continued	
*Photographic chemicals--Continued	
p-(N-Ethylbenzamido)benzenediazonium chloride (p-Diazo-N-benzyl-N-ethylaniline).	FMT.
p-(N-Ethylbenzamido)benzenediazonium chloride (p-Diazo-N-benzyl-N-ethylaniline) - zinc chloride.	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.
N-(p-Hydroxyphenyl)glycine	IDC.
1-(3-Hydroxyphenyl)urea	FMT.
4-Methoxy-1-naphthol	EKT.
p-Methylaminophenol sulfate (Metol)	EK, HSH.
5-Methylbenzotriazole	EK.
2-Methylnaphthoxazole	FMT.
2-Methylthiazoline	FMT.
6-Nitrobenzimidazole	EK, FMT.
p-(N-Phenylamino)benzenediazonium chloride	FMT.
Phenylmercaptotetrazole	FMT.
1-Phenyl-3-pyrazolidone	GGY.
4-Phenylpyrocatechol	EKT.
4,4'-Thiodiresorcinol (Diresorcyl sulfide)	BKC.
2,5,6-Trimethylbenzoxazole	FMT.
All other	FMT.
Phthalic acid, lead salt, dibasic	NTL.
Pinene	GLD, HPC.
Pinene mercaptan	DUP.
Polyethylene terephthalate	DUP, EK.
Polyvinyl phthalate	x.
*Propyl gallate	EKT, FIN, HN, HSH.
Purine and pyrimidine derivatives	PBS, SBR.
Pyrogallol (Pyrogallic acid)	HSH, MAL.
Quinhydrone	HSH.
*Rosin acid salts:	
Aluminum resinate	JMS, MAL.
Calcium lead resinate	JOD.
Calcium resinate	JMS, SRR, SW.
Calcium zinc resinate	JOD.
Cobalt resinate	SHP, WTC.
Copper resinate	JMS.
Iron resinate	JMS.
*Lead resinate	HAR, JMS, SRR.
Manganese resinate	JMS, SRR.
Zinc resinate	GLD, HAR, JMS, SW.
Salicylanilide	DUP, MON.
Salicylic acid, lead salt	NTL.
1-Salicylideneaminoguanidine, tall oil salt	DUP.
Silicones	DCC.
Sulfosalicylic acid	MON, MRK.
Sodium cresoxide (Cresylic acid, sodium salt)	DEX, GOC.
Tall oil fatty acyl chloride	GAF.
*Tall oil salts (Linoleic-rosin acid salts):	
Barium zinc tallate	HAR.
Calcium tallate	CCA, HNX, WTC.
*Cobalt tallate	CCA, CCC, FER, HAR, HNX, SHP, SRR, WTC.
Copper tallate	HNX, SHP.
Iron tallate	CCA, HNX, SRR, WTC.
Lead manganese tallate	HAR.
*Lead tallate	CCA, CCC, FER, HAR, HNX, SHP, SRR, WTC.
*Manganese tallate	CCA, CCC, FER, HAR, HNX, SHP, WTC.
Zinc glyceryl tallate	CCA.
Zinc tallate	CCA, HAR, HNX.
Tannic acid	MAL.

TABLE 22B.--*Synthetic organic chemicals: Miscellaneous chemicals for which U.S. production or sales were reported, identified by manufacturer, 1959*--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
MISCELLANEOUS CHEMICALS, CYCLIC--Continued	
*Tanning materials, synthetic:	
Hydroxytoluenesulfonic acid, formaldehyde condensate (Cresol-formaldehyde sulfonate), sodium salt.	GGY.
*2-Naphthalenesulfonic acid, formaldehyde condensate and salts.	ACF, GRD, NOP, NYC, RH.
2-Naphtholsulfonic acid, formaldehyde condensate	NOP.
1-Phenol-2-sulfonic acid, formaldehyde condensate (Phenol-formaldehyde, sulfonated).	NOP, RH.
Styrene maleic anhydride interpolymer, partial sodium salt.	DUP.
Sulfonyldiphenolsulfonic acid, formaldehyde condensate	GAF.
Terpene hydrocarbons	DUP.
2-Terpinoxyethanol (Ethylene glycol terpinyl ether)	HPC.
Tetraldiphenylphosphite pentaerythritol	HKP.
1,2,3,4-Tetrahydronaphthalene (Tetralin)	DUP.
Tetrahydro-2-naphthylmethylidyne-1-octadecenylpyrimidine	SPP.
Tetrahydrothiophene	ORO, PAS.
Tetraphenylbutadiene	ARA.
*Textile chemicals, other than surface-active agents:	
N-Benzyl(and N,N-dibenzyl)-p-sulfanilic acid	GAF.
1,3-Bis(hydroxymethyl)-2-imidazolidone (Dimethylol ethylene urea).	ACY, DEX.
N^1,N^1-Diphenyl-1,2-propanediamine	SNW.
1-[(Octadecyloxy)methyl]pyridinium chloride	DUP.
Phenol, sulfurated	GAF.
Protalbinic acid	CMG.
Saccharide bisulfite	SNW.
Stearamidomethylcarbamide	SNW.
2,2',4,4'-Tetrahydroxybenzophenone	GAF.
2,2'-Thiobis[4-chlorophenol]	GIV.
2,2'-Thiobis[4,6-dichlorophenol]	CAT, MON.
o-Tolylbiguanide	MON.
3,4,4'-Trichlorocarbanilide	MON.
3,4,5-Trimethoxybenzoic acid	FBS.
s-Trioxane	CEL.
Triphenyl phosphite	HK, HKP, MON.
1-Vinyl-2-pyrrolidinone, monomer	GAF.
1-Vinyl-2-pyrrolidinone, polymer	GAF, SH.
1-Vinyl-2-pyrrolidinone - vinyl acetate copolymer	GAF.
MISCELLANEOUS CHEMICALS, ACYCLIC	
*Acetaldehyde	BFG, CEL, COM, DUP, EKT, EKX, GOC, HPC, MTC, PUB, UCC.
Acetamide	ACG.
Acetamidine hydrochloride	x.
2-Acetamidoethanol (N-Acetylethanolamine)	RBC, UCC.
Acethydrazide trimethylammonium chloride	ARA.
*Acetic acid, synthetic, 100%	CEL, COM, EKT, HPC, PUB, UCC.
*Acetic acid salts:	
Aluminum acetate	ACG, ACY, NOP, UCC.
Aluminum subacetate	MAL.
*Ammonium acetate	ACG, BKC, MAL.
Barium acetate	ACG, BKC, MAL.
Cadmium acetate	ACG, MAL.
Calcium acetate	ACG, BKC, MAL.
Chromium acetate	ACY, VAL.
Cobalt acetate	BKC, HAR, SHP.
*Copper acetate	ACG, BKC, UCC.
Lead acetate	ACG, BKC, MAL, SRR, SW.
Lead subacetate	ACG, BKC.
Lead tetraacetate	ARA.
Magnesium acetate	ACG, BKC.
Manganese acetate	HAR.
Mercuric acetate	ACG, BKC, MAL.
Nickel acetate	HAR.
*Potassium acetate	ACG, BKC, MAL, UCC.
Silver acetate	MAL.

TABLE 22B. --*Synthetic organic chemicals: Miscellaneous chemicals for which U.S. production or sales were reported, identified by manufacturer, 1959*--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued	
*Acetic acid salts--Continued	
Sodium acetate	ACG, BKC, CEL, MAL, UCC.
*Zinc acetate	ACG, BKC, HAR, MAL, UCC.
Zirconium acetate	NTL.
All other	UCC.
*Acetic anhydride, 100%:	
From acetaldehyde	HPC, UCC.
From recovered acetic acid by the vapor-phase process	CEL, EKT, HPC.
From acetic acid (other than recovered) by the vapor-phase process.	CEL, EKT.
Acetin:	
Mono	KES.
Di	KES.
Tri	EKT, KES.
*Acetone:	
By fermentation	PUB.
From cumene	ACP, HPC, SHC, SOC.
*From isopropyl alcohol	EKT, ESL, SHC, UCC, x.
All other	CEL.
Acetone semicarbazone	NOR.
Acetonitrile	UCC.
Acetyl chloride	TBK.
Acetylenedicarboxylic acid	ACF.
Acetyl peroxide	WIL.
Acrolein (Acrylaldehyde)	UCC.
*Acrylic acid	BFG, RH, UCC.
Acrylic monomers not specifically listed	RH.
*Acrylonitrile	ACY, BFG, MTC, UCC.
*Adipic acid	ACF, CS, DUP, MON.
Adiponitrile	CS, DUP.
Adipyl chloride	EK.
*Alcohols, monohydric, unsubstituted:	
*Alcohols C_9 or lower:	
Allyl alcohol	SHC.
Amyl alcohols:	
Unmixed:	
Amyl alcohol (n-Pentyl alcohol)	PAS.
Isopentyl alcohol (Isoamyl alcohol)	FB, USI.
2-Methyl-2-butanol (tert-Amyl alcohol)	PAS.
2-Pentanol	PAS.
Mixed:	
Fusel oil, crude	USI.
Fusel oil, refined	COM, PUB, USI.
Other than fusel oil:	
Primary mixed	EKX, PAS, UCC.
Secondary mixed	PAS.
Other	PAS.
*Butyl alcohols:	
Primary:	
Iso (Isopropylcarbinol)	CEL, DUP, EKT, EKX, UCC.
Normal (n-Propylcarbinol)	CEL, DUP, EKT, PUB, UCC.
Secondary (Methylethylcarbinol)	SHC, x.
Tertiary (Trimethylcarbinol)	SHC.
Mixed	CEL, EKX.
2,6-Dimethyl-4-heptanol (Diisobutylcarbinol)	UCC.
*Ethyl alcohol, synthetic	DUP, EKX, ESL, HPC, NPC, SHC, UCC.
2-Ethyl-1-butanol (sec-Hexyl alcohol)	UCC.
2-Ethyl-1-hexanol	EKX, UCC.
2-Ethyl-4-methyl-1-pentanol	EKX, KF.
Hexyl alcohol	CEL, ESL, UCC.
1-Hexyn-3-ol	AIR.
3-Hexyn-2-ol	LIL.
*Iso-octyl alcohols	EKX, ESL, GOC, SOI.
*Isopropyl alcohol (Isopropanol)	ESL, SHC, UCC.
*Methanol, synthetic	ACN, CEL, COM, DUP, ESC, GOC, HPC, MTC, RH, SPN, UCC.
3-Methyl-3-pentanol	AIR.
4-Methyl-2-pentanol (1-Methylisobutylcarbinol)	SHC, UCC.
3-Methyl-1-pentyn-3-ol (Methylparafynol)	AIR.

TABLE 22B.--*Synthetic organic chemicals: Miscellaneous chemicals for which U.S. production or sales were reported, identified by manufacturer, 1959*--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	
Nonyl alcohol	EKX.
*1-Octanol	DUP.
*2-Octanol	RH, WTH.
Propyl alcohol (Propanol)	CEL, DUP, UCC.
All other	AIR, CEL, EKX.
*Alcohols C_{10} or higher:	
*Decyl alcohols	DUP, ESL, PG, SOI, UCC.
3,9-Diethyl-6-tridecanol	UCC.
Dodecyl alcohol (Lauryl alcohol)	DUP, PG.
7-Ethyl-2-methyl-4-hendecanol	UCC.
5-Ethyl-2-nonanol	UCC.
*1-Hexadecanol (Cetyl alcohol)	ADM, DUP, WTH.
1-Octadecanol (Stearyl alcohol)	ADM, DUP, PG.
cis-9-Octadecen-1-ol (Oleyl alcohol)	ADM, DUP.
1-Tridecanol	ESL.
2,6,8-Trimethyl-4-nonanol	UCC.
All other	ADM, DUP, GOC, HMY, PG, x.
Aldol (Acetaldol)	UCC.
Alkylene oxides, mixed	DOW.
Alkyl mercaptans and thioethers	HMY.
Alkyl sulfides	ORO.
Allyl(hydroxyethyl)urea	FMT.
Allyl isothiocyanate, nonflavoring grade	FBS.
1-(Allyloxy)-2,3-epoxypropane (Allyl glycidyl ether)	SHC.
3-(Allyloxy)-1,2-propanediol (Allyl glyceryl ether)	SHC.
Aluminum isopropoxide (Aluminum isopropylate)	ORT, SFA.
Amidinourea (Guanylurea) phosphate	ACY.
Amidinourea (Guanylurea) sulfate	ACY.
*Amines:	
*Butylamine	EKT, PAS, UCC.
tert-Butylamine	MON, RH.
Cetyldimethylamine	ONX.
*Coconut oil amine	ADM, ARC, GNM.
Coco-alkylenediamines	ARC, GNM.
Diallylamine	SHC.
Dibutylamine	PAS, UCC.
N,N-Dibutyl-1,3-propanediamine	ACY.
*Diethylamine	DUP, PAS, UCC.
Diethylamine hydrochloride	BKL.
Diethylenetriamine	DOW, UCC.
N,N-Diethylethylenediamine	COK, GGY.
N^1,N^1-Diethyl-1,4-pentanediamine (Novoldiamine)	SDH.
N,N-Diethyl-1,3-propanediamine	ACY, UCC.
Diisopropylamine	PAS.
*Dimethylamine	COM, DUP, PAS, RH.
Dimethylamine sulfate	RH.
N,N-Dimethyloctadecylamine (Stearyldimethylamine)	ARC, x.
N,N-Dimethyl-1,3-propanediamine	ACY, UCC.
Dimethyl tallow amine, dihydrogenated	ADM, ARC.
Dipentylamine (Diamylamine)	EK, PAS.
Dipropylamine	PAS.
Dipropylenetriamine	UCC.
Dodecylamine	ARC, GNM.
Ethylamine	PAS, UCC.
Ethylenediamine	DOW, HMP, UCC.
Ethylenediamine dihydrochloride	BKC.
Fish oil amines, hydrogenated	ADM.
*Hexadecylamine	ADM, ARC, GNM.
1,6-Hexanediamine (Hexamethylenediamine)	CS, DUP.
3,3′-Iminobispropylamine	ACY, UCC.
Isobutylamine	PAS.
Isopentylamine	ALB, PAS.
Isopropylamine	PAS, UCC.
*Methylamine, mono-	COM, DUP, PAS, RH.
Octadecylamine	ARC, GNM.
Octylamine	ARC, RH, UCC.

TABLE 22B. --*Synthetic organic chemicals: Miscellaneous chemicals for which U.S. production or sales were reported, identified by manufacturer, 1959*-- Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued	
*Amines--Continued	
Pentylamine (Monoamylamine)	PAS.
Primary amines, mixed	RH.
1,2-Propanediamine (Propylenediamine)	UCC.
Propylamine	PAS, UCC.
Soybean oil amine	ARC, GNM.
Tallow amine	ADM, ARC, GNM.
*Tallow amine, hydrogenated	ADM, ARC, GNM.
Tallow-alkylenediamines	ARC, GNM.
Tetraethylenepentamine	DOW, UCC.
N,N,N′,N′-Tetramethyl-1,3-butanediamine	UCC.
N,N,N′,N′-Tetramethylethylenediamine	ALB.
Tributylamine	PAS.
Tricaprylylamine	GNM.
Triethylamine	PAS, UCC.
Triethylenetetramine	DOW, UCC.
*Trimethylamine	COM, DUP, PAS, RH.
Tripentylamine	PAS.
All other	ARC, MON.
Amine acid reaction products	SHC.
2-Amino-1-butanol	COM.
1-Aminoethanol (Acetaldehyde ammonia)	TBK.
Aminoethoxypropylsilane	UCS.
2-(2-Aminoethylamino)ethanol (Aminoethylethanolamine)	JCC, UCC.
2-Amino-2-ethyl-1,3-propanediol	COM.
Aminoguanidine bicarbonate	TRJ.
Aminoguanidine sulfate	GAF.
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	VAL.
3-Amino-1-propanol	ACY.
*Amyl acetates, 90%:	
Amyl acetate (n-Pentyl acetate)	COM, EK, MAL, TBK.
Isopentyl acetate (Isoamyl acetate)	FB, NW.
Mixed	PAS, PUB, UCC.
Azelaic acid	EMR.
2,2′-Azobis[2-methylpropionitrile] (α,α′-Azodiisobutyronitrile).	WST.
Barbituric acid, sodium salt	KF.
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)	JCC, OMC, UCC, WYN.
Bis(2-chloro-1-methylethyl) ether (Dichloroisopropyl ether).	DOW, WYN.
Bis(2,6-dimethyl-4-heptyl) maleate	GAF.
Bis(dodecyltrimethylammonium) polythionate	BKC, PAS.
Bis(2-ethoxyethyl) ether (Diethylene glycol diethyl ether)	UCC.
1,3-Bis(hydroxymethyl)urea (Dimethylolurea)	DUP, x.
Bis[2-(2-methoxyethoxy)ethyl] ether (Tetraethylene glycol dimethyl ether).	ASL.
Bis(2-methoxyethyl) ether (Diethylene glycol dimethyl ether).	ASL.
Biuret	SW.
Boric acid esters:	
Trihexylene glycol biborate	USB.
Trimethyl borate	MTR.
All other	USB.
Boron fluoride ethyl ether complex	ACG.
Boron trifluoride monoethylamine complex	ACG.
N-Bromoacetamide	ARA.
2-Bromododecanoic acid (α-Bromolauric acid)	DUP.
N-Bromosuccinimide (Succinibromimide)	ARA, SDW.

TABLE 22B.--*Synthetic organic chemicals: Miscellaneous chemicals for which U.S. production or sales were reported, identified by manufacturer, 1959*--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued	
1,2(and 1,3)-Butanediol (Butylene glycol)	CEL.
1,4-Butanediol	GAF.
2,3-Butanedione 2-oxime	EK.
2-Butanone (Methyl ethyl ketone)	EKT, SHC, x.
Butanone mixture	CEL.
2-Butanone oxime	ACF, ALB, x.
2-Butanone peroxide	CAD, WTL.
2-Butene-1,4-diol	GAF.
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, EK, EKT, PUB, UCC.
Secondary	ESL, HPC, x.
Mixed	CEL, EKT.
Butyl acrylate	CEL.
Butylene oxide	UCC.
Butyl ether (Di-n-butyl ether)	EK, UCC.
tert-Butyl hydroperoxide	CAD, SHC, WTL.
Butyl isocyanate	CWN.
Butyl lactate	COM.
tert-Butyl peroxide (Di-tert-butyl peroxide)	SHC, WTL.
tert-Butyl peroxyacetate	WTL.
tert-Butyl peroxyisobutyrate	WTL.
1-Butyne (Ethylacetylene)	AIR.
2-Butyne-1,4-diol	GAF.
Butyraldehyde	CEL, EKT, EKX, UCC.
Butyraldehyde oxime	ACF.
*Butyric acid	CEL, EKT, UCC.
Butyric anhydride	EKT, UCC.
Butyrolactone	GAF.
Butyryl chloride	HK.
*Carbon disulfide	ACG, BKT, FMW, OLH, PAS, PPG, SF, WRS.
2-Carboxymethyl semicarbazide	NOR.
*Cellulose esters:	
*Cellulose acetate	AV, CEL, DUP, EKT, HPC.
Cellulose acetate butyrate	EKT.
Cellulose acetate propionate	EKT.
Cellulose propionate	CEL.
Nitrocellulose (Cellulose nitrate)	DUP, HPC.
All other	x.
*Cellulose ethers:	
Ethylcellulose	DOW, HPC.
Ethylhydromethylcellulose	HPC.
Hydroxyethylcellulose	UCC.
Methylcellulose	DOW.
*Sodium carboxymethylcellulose, 100%	BUK, DUP, HPC, KON, WYN.
Sodium carboxymethylhydroxyethylcellulose	BUK, HPC.
*Chloral (Trichloroacetaldehyde)	DA, FMW, GGY, MTO.
*Chloroacetic acid, mono-	BPC, BUK, DOW, HPC, MON.
Chloroacetic acid, mono, derivatives:	
Butyl chloroacetate	MON.
Ethyl chloroacetate	DOW, KF, MON.
Methyl chloroacetate	DOW, KF.
Sodium chloroacetate	DOW.
Chloroacetic anhydride	BPC.
Chloroacetonitrile	BPC.
Chloroacetyl chloride	DOW.
*2-Chloro-N,N-dimethylethylamine (Dimethylaminoethyl chloride) hydrochloride.	ABB, BKL, GAM, HEX, MCH, NES.
2-Chloro-N,N-dimethylpropylamine hydrochloride	MCH.

TABLE 22B. --*Synthetic organic chemicals: Miscellaneous chemicals for which U.S. production or sales were reported, identified by manufacturer, 1959*--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued	
3-Chloro-N,N-dimethylpropylamine hydrochloride	MCH, NES.
2-Chloroethanol (Ethylene chlorohydrin)	OMC, TKL, UCC, x.
2-(2-Chloroethoxy)ethyl 2-chloroethyl ether (Triethylene glycol dichloride).	UCC.
N-(2-Chloroethyl)diisopropylamine hydrochloride	MCH.
2-Chloroethyl vinyl ether	UCC.
Chloromethyl methyl ether	EK, HK, x.
Chloromethyl silanes	SPD.
1-Chloro-1-penten-3-one (β-Chlorovinyl ethyl ketone)	ABB.
3-Chloro-1,2-propanediol (Glycerol α-chlorohydrin)	EKT, FBS, RBC.
Chloro-2-propanone (Chloroacetone)	EK.
N-Chlorosuccinimide (Succinichlorimide)	ACF.
2-Chlorotriethylamine (Diethylaminoethyl chloride)	NES.
2-Chlorotriethylamine hydrochloride	BKL, GAM, MCH.
4-Chloro-N,N,1-trimethylpropylamine hydrochloride	MCH.
Chlorotrimethylsilane	UCS.
Citric acid	ML, 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.
Manganese citrate	MAL.
Potassium citrate	MAL, PFZ.
Sodium citrate	MAL, PFZ.
Coconut oil amide	ADM, ARC, KES.
Crotonaldehyde	CEL, EKT, UCC.
Crotonic acid (2-Butenoic acid)	EKT, UCC.
2-Cyanoacetamide	KF.
Cyanoacetic acid	KF.
2-Cyanopropylamine	EKT.
n-Decane	HMY.
1,10-Decanediol	KLK.
Decanoic acid (Capric acid)	FOR.
Decanoyl chloride	HK.
1-Decene	HMY.
Decyl hydrogen succinate	KES.
1,2-Dibutoxyethane (Ethylene glycol di-n-butyl ether)	DOW.
2-Dibutylaminoethanol	PAC.
Dibutyl fumarate	MON, RUB.
Di-n-butylmercury	EK.
Dibutylmethoxytin (Dibutyl tin methoxide)	x.
1,3-Dibutyl-2-thiourea	PAC.
Dichloroacetaldehyde	FMW.
Dichloroacetic acid	KF.
Dichloroacetyl chloride	EK, KF.
Dichlorodimethylsilane	UCS.
Dichlorohydrogenmethylsilane	UCS.
Dichloromethylvinylsilane	DCC.
Di(1,2-epoxypropane)amine	DUP.
Diethoxydimethylsilane	UCS.
Diethylaluminum chloride	TNA.
Diethyl adipate	ARA.
2-Diethylaminoethanol	PAC, UCC.
2-Diethylaminoethyl methacrylate	DUP.
Diethylaminopropionamide	DUP.
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)	ABB, LIL.
*Diethylene glycol	ACN, CAU, DOW, GAF, JCC, OMC, UCC, WYN.
Diethylene glycol chloroformate	PPG.
Diethyl (ethoxymethylene)malonate	KF.
Diethyl ethylisopentylmalonate	BPC, KF, LIL.
Diethyl ethyl(1-methylbutyl)malonate	ABB.

TABLE 22B.--*Synthetic organic chemicals: Miscellaneous chemicals for which U.S. production or sales were reported, identified by manufacturer, 1959*--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued	
Di-2-ethylhexyl fumarate	RUB.
Di-2-ethyl-1-hexyl maleate	AHC, QCP, UCC.
N,N-Diethylhydroxylamine oxalate	EK.
Diethyl maleate	ACY, UCC.
*Diethyl malonate (Malonic ester)	ABB, KF, LIL.
Diethyl (1-methylbutyl)malonate	ABB, LIL.
Diethyl oxalate (Ethyl oxalate)	BPC, FMP.
Diethylthiophosphoryl chloride	ACY.
1,3-Diethyl-2-thiourea	PAS.
Diglycolic acid	DUP.
2,4-Dihydroxy-3,3-dimethylbutyric acid, γ-lactone (Pantolactone).	ACY.
1,3-Dihydroxy-2-propanone	PFZ.
2-Diisopropylaminoethanol	PAS.
Diisopropylammonium nitrite	OMC.
Diisopropyl peroxydicarbonate (Isopropyl percarbonate)	PPG.
1,3-Diisopropyl-2-thiourea	PAS.
Dimethoxyethane (Ethylene glycol dimethyl ether)	ARA, ASL.
N,N-Dimethylacetamide	ARA, DUP, EK.
*2-Dimethylaminoethanol	PAS, RH, UCC.
3-Dimethylaminopropionitrile	ACY.
2,3-Dimethyl-2,3-butanediol, hydrate	ARA.
3,3-Dimethyl-2-butanone (Pinacolone)	ARA.
Dimethylcarbamoyl chloride	GAM.
N,N-Dimethylformamide	DUP.
Dimethylglyoxime	EK, PRE.
2,5-Dimethyl-2,5-hexanediol	AIR.
2,5-Dimethyl-3-hexyne-2,5-diol	AIR.
1,1-Dimethylhydrazine	FMP, FMW.
Dimethyl malonate	KF.
3,6-Dimethyl-4-octyne-3,6-diol	AIR.
Di(4-methyl-2-pentyl) maleate	RUB.
2,2-Dimethyl-1,3-propanediol (Neopentyl glycol)	EKX.
Dimethyl sulfoxide	CRZ.
1,3-Dimethylurea	PAS.
Dioctyl maleate	DEC, RUB.
Dioleyl maleate	MON.
Dipentaerythritol	HPC.
Dipropylene glycol	CEL, DOW, JCC, UCC.
n-Dodecane	HMY.
Dodecanemethylenimine (Dodecyl-azomethine)	SPP.
1-Dodecene	HMY.
*Dodecenylsuccinic anhydride	ACF, HMY, MON.
*Epichlorohydrin	DOW, SHC, UCC.
Erucamide	ADM, FIN.
Erucic acid	ADM.
*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 salt with formaldehyde	RH.
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, UCC.
3-Ethoxypropionitrile	ACY.
1-Ethoxy-1,3,3-trimethoxypropane	KF.
*Ethyl acetate, 85%	COM, EKT, ESL, HPC, PUB, SHW, UCC.
Ethyl acetoacetate	FMP, UCC.
*Ethyl acrylate	CEL, RH, UCC.
Ethylaluminum dichloride	TNA.
Ethylaluminum sesquichloride	TNA.
2-Ethylaminoethanol (Ethylmonoethanolamine)	PAS.
Ethyl bromoacetate	DOW.
2-Ethylbutyraldehyde	UCC.

TABLE 22B.--*Synthetic organic chemicals: Miscellaneous chemicals for which U.S. production or sales were reported, identified by manufacturer, 1959*--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued	
2-Ethylbutyric acid (Diethylacetic acid)	UCC.
Ethyl carbamate	FMP.
Ethyl chloroformate	FMP.
Ethyl cyanoacetate	KF.
Ethylene, from ethyl alcohol	OH.
Ethylene carbonate	JCC.
*Ethylene glycol	ACN, CAU, CEL, DOW, DUP, GAF, JCC, QMC, UCC, WYN.
Ethylene glycol diacetate	UCC.
Ethylene glycol dimercaptoacetate	EVN.
*Ethylene oxide	ACN, CAU, DOW, GAF, JCC, QMC, UCC, WYN.
*Ethyl ether:	
Absolute	MAL.
Tech	EKX, ESL, HPC, NPC, UCC.
U.S.P.	MAL, QMS.
*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.
Cadmium 2-ethylhexanoate	CCA, ROS.
*Calcium 2-ethylhexanoate	CCA, FER, HAR, HNX, SRR, SW, WTC.
*Cobalt 2-ethylhexanoate	CCA, CCW, FER, HAR, HNX, SRR, SW, WTC.
Copper 2-ethylhexanoate	CCA, SRR.
Iron 2-ethylhexanoate	WTC.
*Lead 2-ethylhexanoate	CCA, HAR, HNX, NTL, SRR, SW, WTC.
Lithium 2-ethylhexanoate	WTC.
*Manganese 2-ethylhexanoate	CCA, HAR, HNX, SRR, SW.
Rare earths 2-ethylhexanoate	CCA.
Strontium 2-ethylhexanoate	CCA.
*Zinc 2-ethylhexanoate	CCA, HAR, HNX, ROS, SRR, WTC.
Zirconium 2-ethylhexanoate	CCA, HNX.
2-Ethyl-2-hexenoic acid (2-Ethyl-3-propylacrylic acid)	UCC.
2-Ethyl-1-hexyl acetate	DEC, UCC.
2-Ethyl-1-hexyl acrylate	CEL, UCC.
Ethyl 2-hydroxy-3-methylbutyrate (Ethyl α-hydroxyisovalerate).	RH.
2-Ethyl-2-(hydroxymethyl)-1,3-propanediol (Trimethylolpropane).	CEL.
2,2'-(Ethylimino)diethanol (N,N-Bis-(2-hydroxyethyl)-ethylamine).	PAS.
2-Ethylisohexyl acetate	EKT.
Ethyl lactate	ACY, KF.
Ethylmagnesium bromide	ARA.
2-(Ethylmercapto)ethanol	PAS.
Ethyl 2-methyllactate (Ethyl α-hydroxyisobutyrate)	RH.
2-Ethyl-4-methylvaleric acid (2-Ethylisohexoic acid)	EKT.
Ethyl polysiloxanes	SFA.
*Ethyl propionate	FB, NW, TBK.
Ethyl propyl nitrate	TNA.
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.
All other	BAC, RT.
Fatty acids, chemically modified:	
α-Bromo(lauric-stearic) acids	DUP.
Castor oil fatty acids, dehydrated	BAC.
Stearic acid, dehydrated	RH.
*Fatty acid esters, not included with plasticizers or surface-active agents:	
Butyl palmitate	NOP.
Ethyl 3-oxoeicosanoate (Ethyl stearoylacetate)	x.
Ethyl stearate	FBS.

TABLE 22B. --*Synthetic organic chemicals: Miscellaneous chemicals for which U.S. production or sales were reported, identified by manufacturer, 1959*--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued	
*Fatty acid esters, not included with plasticizers or surface-active agents--Continued	
Hexadecyl stearate	KES.
*Isopropyl myristate	AHC, GIV, KES, PRP.
*Isopropyl oleate	AHC, KES, PFZ, PRP.
Isopropyl palmitate	AHC, GIV, KES, PRP.
Isopropyl stearate	KES, PRP.
Methyl decanoate	FOR.
Methyl ester of coconut oil	FOR.
Methyl ester of lard oil	CCW.
Methyl esters of tallow	FOR.
Methyl 12-hydroxystearate	BAC.
Methyl myristate	FOR.
Methyl octanoate	FOR.
Pentaerythritol monostearate	JNS.
1,2-Propylene glycol dioleate	DRW.
Vinyl stearate, monomer and polymer	AIR.
All other	RT, x.
Flotation reagents:	
Isopropyl ethylthionocarbamate	DOW.
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.
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	DOW, KCC, USR.
Sodium sec-butylxanthate	ACY.
Sodium ethylxanthate	ACY, DOW.
Sodium isopropylxanthate	ACY, DOW.
All other	ACY.
*Formaldehyde, 37% by weight	ACN, BOR, CEL, COM, DUP, HKD, HN, HPC, KF, MRK, MTC, RCI, RH, SPN, TRJ, UCP.
Formamide	DUP.
*Formic acid, 90%	DUP, HN, MAL, VIC.
*Formic acid salts:	
Aluminum formate	SNW, VIC, UCC.
Ammonium formate	ACG, HEX.
Calcium formate	TRJ.
Chromic formate	GAF.
Copper formate	CIT.
Lead formate	NTL.
Nickel formate	HAR.
Sodium formate, refined	ACG.
Sodium formate, tech	HN, HPC, TEK.
Thallous formate	EK.
*Fumaric acid	ACF, BZ, MON.
Fumaric acid, lead salt (Tetrabasic)	NTL.
Gluconic acid, tech	DLI, PFZ.
Glutaric acid	EK.
Glycerol, synthetic	DOW, SHC.
Glycerol tri(polyoxypropylene) ether	UCC, WYN.
Glycidol (2,3-Epoxy-1-propanol)	RBC.
Glycine (Aminoacetic acid), tech	BPC.
Glycine, cupric salt	BPC.
Glycine ethyl ester hydrochloride	BPC.
Glycolic acid (Hydroxyacetic acid)	DUP.
Glycolonitrile	ACY.
Glyoxal	UCC.

TABLE 22B.--*Synthetic organic chemicals: Miscellaneous chemicals for which U.S. production or sales were reported, identified by manufacturer, 1959*--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued	
Guanidine hydrochloride	ACY, NYC.
Guanosine and derivatives	SBR.
4-Guanyl-1-isonitrosoguanyl-1-tetrazene	REM.
*Halogenated hydrocarbons:	
1-Bromobutane (n-Butyl bromide)	DOW, EK.
2-Bromobutane (sec-Butyl bromide)	ABB, DOW.
Bromochloromethane	DOW.
1-Bromo-3-chloropropane (Trimethylenechlorobromide)	DOW, MCH.
1-Bromododecane	DOW, HMY.
Bromoethane (Ethyl bromide)	DOW, MCH.
1-Bromohexadecane (Cetyl bromide)	DOW.
1-Bromohexane (n-Hexyl bromide)	BPC.
2-Bromo-3-hexyne	LIL.
1-Bromo-octadecane	DUP, GAF.
1-Bromopentane (n-Amyl bromide)	DOW.
2-Bromopentane (1-Methylbutyl bromide)	ABB, LIL.
1-Bromopropane (n-Propyl bromide)	DOW.
2-Bromopropane (Isopropyl bromide)	DOW.
3-Bromopropene (Allyl bromide)	DOW.
3-Bromopropyne	GAF.
Bromotrichloromethane	DOW.
Bromotrifluoromethane	DOW, DUP.
*Carbon tetrachloride	ACO, DA, DOW, FMW, FRO, MAL, PPG, SF.
*Chlorinated paraffins:	
Less than 35% chlorine	HK, x.
*35%-64% chlorine	DA, HK, HPC, UCP, UWS.
65% or more chlorine	DA.
1-Chlorobutane (n-Butyl chloride)	UCC.
2-Chlorobutane	EK.
1-Chloro-1,1-difluoroethane	ACG.
*Chlorodifluoromethane	ACG, DUP, PAS, UCC.
1-Chlorododecane (Lauryl chloride)	HMY, USR.
*Chloroethane (Ethyl chloride):	
Tech	DOW, DUP, HPC, MTO, NPC, TNA.
U.S.P	DOW, SHC.
*Chloroform:	
*Tech	ACO, BR, DA, DOW, DUP, FRO, KLK, SF.
*U.S.P	ACO, BR, DA, DOW, KLK.
*Chloromethane (Methyl chloride):	
Crude	ASL, DCC, KLK, SPD.
Refined (refrigerant grade)	ACO, DA, DOW, DUP.
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.
Chlorotrifluoroethylene, (Trifluorovinyl chloride)	ACG, DUP.
Chlorotrifluoroethylene, polymerized	ACG, HK.
Chlorotrifluoromethane	DUP.
Dibromodifluoromethane	DOW, DUP.
1,2-Dibromoethane (Ethylene dibromide)	AMP, DOW, ETD, FMW, 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)	DA, DOW, JCC, MTC, OMC, RH, TNA, UCC, WYN.
*Dichloromethane (Methylene chloride)	ACO, DA, DOW, DUP, FRO, KLK, SF.
Dichloromonofluoromethane	ACG.
Dichloropentanes, mixed isomers	PAS.
1,2-Dichloropropane (Propylene dichloride)	DOW, JCC, UCC, WYN.
2,3-Dichloropropene	RBC, UCC.
*Dichlorotetrafluoroethane	ACG, DUP, PAS.
1,1-Difluoroethane	ACG.
Difluorotetrachloroethane	DUP.
Diiodomethane (Methylene iodide)	NTB.
Hexafluoropropene	DUP.
Iodoethane (Ethyl iodide), tech	CLB, FMT.
Iodoform (Triiodomethane)	NTB.

TABLE 22B.--*Synthetic organic chemicals: Miscellaneous chemicals for which U.S. production or sales were reported, identified by manufacturer, 1959*--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued	
*Halogenated hydrocarbons--Continued	
Iodomethane (Methyl iodide), tech	CLB.
Pentachloroethane	DUP.
1,1,2,2-Tetrabromoethane (Acetylene tetrabromide)	DOW.
1,1,2,2-Tetrachloroethane (Acetylene tetrachloride)	DUP, PPG.
*Tetrachloroethylene (Perchloroethylene)	DA, DOW, DUP, FRO, PPG, SF, TTX.
Tetrafluoroethylene polymer (Teflon)	DUP.
Tetrafluoromethane	DUP.
1,1,1-Trichloroethane (Methyl chloroform)	DOW.
1,1,2-Trichloroethane (Vinyl trichloride)	UCC.
*Trichloroethylene	DOW, DUP, HK, PPG, TTX.
*Trichlorofluoromethane	ACG, DUP, PAS, UCC.
1,2,3-Trichloropropane	SHC.
Trichlorotrifluoroethane	ACG, DUP, PAS.
*Vinyl chloride, monomer (Chloroethylene)	ACO, BFG, DA, DOW, GYR, MTC, TNA, UCC, USR.
Vinylidene chloride, monomer (1,1-Dichloroethylene)	DOW.
Vinyl fluoride	DUP.
All other	CLB, EK, HK.
2-Heptanone (Methyl amyl ketone)	UCC.
3-Heptanone (Ethyl butyl ketone)	UCC.
1-Heptene	HMY.
Hexadecane	HMY.
Hexadecenylsuccinic anhydride	HMY.
Hexamethyleneadipamide	CS.
2,5-Hexanedione (Acetonylacetone)	RBC.
Hexanoic acid (Caproic acid)	TBK.
5-Hexen-2-one (Allylacetone)	FMP.
Hexyl acetates	CEL.
Hexyl ether	UCC.
Hexyl-octyl silicates	UCC.
2-(Hexyloxy)ethanol (Ethylene glycol hexyl ether)	UCC.
Hydracrylic acid, β-lactone (β-Propiolactone)	CEL.
Hydracrylonitrile (Ethylene cyanohydrin)	RH, UCC.
Hydrazine and salts	FMT, CMC.
2-Hydrazinoethanol	NOR.
N-2-Hydroxyethylacetamide	WTC.
1,1'-(2-Hydroxyethylimino)di-2-propanol (N,N-Diisopropanol ethanolamine).	UCC.
α-Hydroxyisobutyric acid	EK.
2-(Hydroxymethyl)-2-methyl-1,3-propanediol (Trimethylol-ethane).	TRJ.
2-(Hydroxymethyl)-2-nitro-1,3-propanediol (Tris(hydroxy-methyl)nitromethane).	COM.
N-(Hydroxymethyl)octadecanamide (N-Hydroxymethylstear-amide).	DUP.
4-Hydroxy-4-methyl-2-pentanone (Diacetone alcohol)	SHC, UCC.
Iminodiacetic acid, disodium salt	GGY.
Iodoacetic acid	EK.
Isethionic acid (2-Hydroxyethanesulfonic acid)	GAF.
*Isoascorbic acid and sodium salt	MLS, MRK, PFZ.
Isobutyl vinyl ether	UCC.
Isobutyraldehyde	EKX.
Isobutyric acid and anhydride	EKT.
Isobutyronitrile	EKX.
Iso-octyl acetate	DEC.
Iso-octyl mercaptopropionate	EVN.
Isopropanolamines:	
1-Amino-2-propanol (Monoisopropanolamine)	DOW, UCC.
1,1'-Iminodi-2-propanol (Diisopropanolamine)	DOW, UCC.
1,1',1''-Nitrilotri-2-propanol (Triisopropanolamine)	UCC.
Mixed	DOW.
3-Isopropoxypropionitrile	ACY.
3-Isopropoxypropylamine	ACY.
*Isopropyl acetate	EKT, ESL, HPC, UCC.
2-Isopropylaminoethanol	PAS.
Isopropyl chloroformate	DLM, FMP, PPG.
*Isopropyl ether	ESL, SHC, UCC.
Isopropylidine	ARA.
Isovalerone (Diisobutyl ketone)	UCC.
Itaconic acid (Methylenesuccinic acid) and esters	PFZ.

TABLE 22B. --*Synthetic organic chemicals: Miscellaneous chemicals for which U.S. production or sales were reported, identified by manufacturer, 1959*--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued	
*Lactic acid, 100%:	
*Edible	AMZ, CLN, DUP.
*Medicinal	DUP.
*Technical	AMZ, CLN, DUP.
*Lactic acid salts:	
Ammonium lactate	CIT.
Calcium lactate	AMZ, SHF.
Sodium zirconium lactate	NTL.
Zirconium lactate	NTL.
Lactide (3,6-Dimethyl-2,5-p-dioxanedione)	CLN.
Lauric acid, barium cadmium salt	CCW.
Lauroyl chloride	GAF, HK, TBK, WTC.
Lauroyl peroxide	CAD, WTL.
Levulinic acid	QKO.
*Linoleic acid salts:	
*Calcium linoleate	CCA, LEF, SHP, SRR, WTC.
*Cobalt linoleate	HAR, SDH, SHP, SRR.
Copper linoleate	HAR, WTC.
Iron linoleate	HAR.
*Lead linoleate	HAR, HNX, SHP, SRR, WTC.
Lead manganese linoleate	SDH, SRR.
Manganese linoleate	SHP, SRR.
*Lubricating oil additives:	
Chloronaphtha xanthate	MON.
Chlorosulfurized lard oil	CCW.
Chlorosulfurized sperm oil	CCW.
High-molecular-weight hydrocarbons and their phosphorus derivatives.	SOI.
Lauryl and diethylaminoethyl polymethacrylates	DUP.
Oxidized hydrocarbons	ALX.
*Phosphorodithioates (Dithiophosphates):	
Barium alkyl phosphorodithioates	ACY, LUB, SIN.
Nickel zinc alkyl phosphorodithioates	SIN.
Zinc di(butylhexyl) phosphorodithioate	ORO.
Zinc dihexyl phosphorodithioate	SIN.
Zinc hexyl isopropyl phosphorodithioate	ACY, x.
Sulfurized butenes	LUB.
Sulfurized lard oil	CCW, GOC.
*Sulfurized sperm oil	CCW, LUB, SIN, WBG, x.
Tetradecyl selenide	ORO.
All other	CCW, GDC, HK, LUB, MON, ORO, SIN.
Magnesium methylate	MRT, SFA.
Maleic acid	ACF, PFN.
Maleic acid, tribasic lead salt	NTL.
*Maleic anhydride	ACF, ACY, MON, PCC, RCI.
Maleic liquid	PCC.
Malic acid	ACF, EK, PFN.
Malonic acid	AMB, KF.
Mannitol	APD.
Mannitol hexanitrate	APD.
Mercaptoacetic acid (Thioglycolic acid)	EVN, HAB.
*Mercaptoacetic acid (Thioglycolic acid) derivatives: 2-Aminoethyl mercaptoacetate (Monoethanolamine thioglycolate).	EVN, HAB.
*Ammonium mercaptoacetate (Ammonium thioglycolate)	EVN, HAB, HLN, MRT, SUM.
Antimony mercaptoacetate	x.
Calcium mercaptoacetate	EVN.
Dodecyl mercaptoacetate	RET.
Iso-octyl mercaptoacetate	EVN, RET.
Potassium mercaptoacetate	EVN.
Sodium mercaptoacetate	EVN.
Mercaptoethanol	UCC.
3-Mercapto-1,2-propanediol (Thioglycerol)	EVN.
Mercaptopropionic acid	EVN.
Mesityl oxide	SHC, UCC.
Metal soaps of oxidized hydrocarbons	ALX.
Methacrylamide	RH.
Methacrylate monomers above methyl	DUP.
Methacrylic acid	DUP, RH.

TABLE 22B.--*Synthetic organic chemicals: Miscellaneous chemicals for which U.S. production or sales were reported, identified by manufacturer, 1959*--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued	
Methacrylic acid, sodium salt	RH.
3-Methoxy-1-butanol	CEL.
2-Methoxyethanol (Ethylene glycol monomethyl ether)	DOW, GMC, UCC.
2-(2-Methoxyethoxy)ethanol (Diethylene glycol monomethyl ether).	DOW, GMC, UCC.
2-[2-(2-Methoxyethoxy)ethoxy]ethanol (Triethylene glycol monomethyl ether).	DOW, GMC, UCC.
2-(2-Methoxyethoxy)ethyl 2-methoxyethyl ether (Triethylene glycol dimethyl ether).	ASL.
2-Methoxyethyl acetate	UCC.
Methoxypolyethylene glycol	UCC.
1-Methoxy-2-propanol	DOW.
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	ACY.
*Methyl acetate	BOR, COL, FBS, SHW, UCC.
Methyl acetoacetate	UCC.
Methyl acrylate, monomer	CEL, RH.
2-Methylaminoethanol (N-Methylethanolamine)	UCC.
Methyl borate	SFA.
2-Methyl-1-butene	HMY.
2-Methyl-1-buten-3-yne (Isopropenylacetylene)	AIR.
2-Methyl-3-butyn-2-ol	AIR.
2-Methylbutyric acid	EKT.
Methyl carbamate	FMP.
Methyl chloroformate	DLM.
Methyl cyanoacetate	KF.
Methyl 2-cyanoacrylate	EKT.
Methyl dichloroacetate	KF, PD.
Methyl disulfide	EK.
N,N'-Methylenebisacrylamide	ACY.
N,N'-Methylenebisoctadecanamide	ARC.
Methyl ether (Dimethyl ether)	COM, DUP.
Methyl formate	DUP.
N-Methylglucamine	DUP.
Methyl glycolate (Methyl hydroxyacetate)	DUP.
Methyl hexanoate (Methyl caproate)	FOR.
2,2'-(Methylimino)diethanol (Methyl diethanolamine)	UCC.
2-Methyllactonitrile (Acetone cyanohydrin)	DUP, RH.
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.
4-Methyl-2-pentanone (Methyl isobutyl ketone)	SHC, UCC.
4-Methyl-2-pentanone oxime (Methylisobutyl ketoxime)	ALB.
4-Methyl-2-pentyl acetate	UCC.
Methylpolyethanolamine	GAF.
2-Methyl-2-propyl-1,3-propanediol	FBS.
Methyl sulfate (Dimethyl sulfate)	DUP.
Methyl sulfide (Dimethyl sulfide)	CRZ.
N-Methyltaurine	GAF.
Methylurea	LIL.
2-Methylvaleraldehyde (2-Methylpentaldehyde)	UCC.
Methyl vinyl ether	GAF.
Mucochloric acid (2,3-Dichloro-3-formylacrylic acid)	EK.
Nitrilotriacetic acid, tripotassium salt	GGY.
Nitriminobispropionic acid	ACY.
Nitroethane	COM.
Nitromethane	COM.
1-Nitropropane	COM.
2-Nitropropane	COM.
Nonanoic acid (Pelargonic acid)	EMR.
Nonenylsuccinic anhydride	HMY.
Nylon (Polyhexamethylene adipamide)	CS, DUP.
1-Octadecene	HMY.

TABLE 22B.--*Synthetic organic chemicals: Miscellaneous chemicals for which U.S. production or sales were reported, identified by manufacturer, 1959--* Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued	
Octadecyl isocyanate	MOB.
n-Octane	HMY.
1-Octanesulfonyl fluoride	HK.
1-Octanethiol (n-Octyl mercaptan)	PAS.
Octanoic acid (Caprylic acid)	FOR.
Octanoic acid (Caprylic acid) salts:	
Aluminum octanoate	LEF, NOP.
Barium octanoate	CCW.
Cadmium octanoate	CCW.
Zinc octanoate	BKC.
2-Octanone (Hexyl methyl ketone)	ACP, EKT, RH, TBK, VLY, WTH.
3-Octanone (Amyl ethyl ketone)	SHC.
Octanoyl chloride	TBK.
1-Octene	HMY.
1-(and 2-)Octene	WTH.
2-Octene	ACP, HMY.
Octenylsuccinic anhydride	HMY.
Octylene mixture	HMY.
Octyl nitrile	ARC.
Oleamide (Octadecene amide)	ARC, FIN.
*Oleic acid salts:	
Aluminum oleate	MAL, WTC.
Barium zinc oleate	HAR.
Cobalt oleate	CCW.
*Copper oleate	SHP, SRR, WTC.
Lead oleate	SHP, WTC.
Oleoyl chloride	DEP, GAF, WTH.
*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.
Ferrous oxalate	BKL.
Potassium binoxalate	BKC.
Potassium oxalate	ACG, BKC, PFZ.
Sodium binoxalate	VIC.
Sodium oxalate	ACG, BKC, MAL, VIC.
Oxalyl chloride	EK.
Oxidized hydrocarbon mixtures, other than lubricating oil additives.	ALX.
2-Oxohexamethylenimine (Caprolactam)	ACF.
Palmitic acid salts:	
Aluminum palmitate	LEF, NOP, WTC.
*Zinc palmitate	ACY, LEF, NOP, WTC.
All other	APD.
Palmitoyl chloride	GAF, TBK.
Paraformaldehyde	CEL, DUP, HN.
Paraldehyde (Paracetaldehyde)	UCC.
*Pentaerythritol	COM, DCI, GOC, HN, HPC, RCI, TRJ.
*Pentaerythritol tetranitrate	APD, DUP, HPC, TRJ.
2,4-Pentanedione (Acetylacetone)	UCC.
2-Pentanone (Methyl propyl ketone)	UCC.
3-Pentanone (Diethyl ketone)	UCC.
Perchloromethanethiol (Perchloromethyl mercaptan)	CHO.
Peroxyacetic acid	FMB.
*Phosgene (Carbonyl chloride)	DLM, DUP, PPG, SWC, TNA.
*Phosphorus acid esters, not elsewhere specified (*See also* Plasticizers, Surface-Active Agents, Pesticides, Flotation reagents, and Lubricating oil additives):	
Bis(2-chloroethyl) vinyl phosphonate	MON.
Bis(2-ethylhexyl) hydrogen phosphite	HKP, VC.
Butyl phosphates (mono and di)	VIC.
Chloropropyl thiophosphate	TNA.
Dichlorovinyl dimethyl phosphate	OPC.
Dodecyl phosphates (mono and di)	DUP, VIC.
2-Ethylhexyl phosphates (mono and di)	UCC, VIC.
Ethyl phosphates (mono and di)	VIC.

TABLE 22B. --*Synthetic organic chemicals; Miscellaneous chemicals for which U.S. production or sales were reported, identified by manufacturer, 1959*--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued	
*Phosphorus acid esters, not elsewhere specified--Continued	
Iso-octyl hydrogen phosphate	VC.
Methyl phosphates (mono and di)	HK, VIC.
Octadecyl phosphates (Mono and distearyl phosphates)	HK.
Octyl phosphates (mono and di)	DUP, VIC.
Pentyl phosphates (Mono and diamyl phosphates)	HK, VIC.
Tributyl phosphate	COM, EKT, FMP.
Tributyl phosphite	VC.
Tridecyl phosphite	HKP.
Triethyl phosphite	VC.
Triiso-octyl phosphite	VC.
Trimethyl phosphite	VC.
Trioctadecyl phosphate	PRM.
Tris(2-chloroethyl) phosphate	CEL.
Tris(2-chloroethyl) phosphite	VC.
Tris(2,3-dibromopropyl) phosphate	DUP, MCH.
Tris(2-ethylhexyl) phosphite	HKP.
All other	HK, VC, VIC.
Pine oil, synthetic	CBY.
Polyacrylamide	ACY.
Polyacrylic acid	BFG.
*Polyacrylic acid salts:	
Ammonium polyacrylate	BFG, NOP.
Sodium polyacrylate	ALC, BFG, JOR, NOP, RH, WIC.
Polyacrylonitrile	DUP.
Polyethoxyethylsorbitol	APD.
*Polyethylene glycol	CAU, DOW, JCC, OMC, UCC, WYN.
Polyethylene oxide	UCC.
Polyethylene polysulfide	BFG.
Polyglycerol	CP, WTC.
Polyglycols, ethylene glycol and glycol ethers, mixtures	DOW.
Polyoxypropylene ethers	WYN.
Polypropoxysorbitol	APD.
Polypropylene glycol	DOW, JCC, UCC, WYN.
Polytetramethylene glycol	DUP.
Propionaldehyde	EKX, UCC.
*Propionic acid	CEL, COM, DUP, EKT, UCC.
Propionic acid salts:	
*Calcium propionate	CEL, DUP, EKT, UCC.
*Sodium propionate	CEL, DUP, EKT, UCC.
Zinc propionate	BKC.
Propionic anhydride	EKT, UCC.
Propionitrile	UCC.
Propionyl chloride	ABB.
Propyl acetate	CEL.
*Propylene carbonate	JCC, UCC.
*Propylene glycol (1,2-Propanediol)	CEL, DOW, DUP, JCC, UCC.
Propylene glycol, mixed ethers	DOW.
*Propylene oxide	CEL, DOW, JCC, UCC, WYN.
Propylene oxide adduct of glycerol	JCC.
Propyl isocyanate	CWN.
Propyl 4-methylvalerate (Propyl isocaproate)	COM.
Propyl nitrate	TNA.
Propyne (Methylacetylene)	AIR.
Rare sugars	PFN.
Ricinoleic acid, calcium salt	BAC.
d-Saccharic acid, calcium salt	PFZ.
Sarcosine (N-Methylaminoacetic acid)	ACY, DUP, GAF, VPC.
Sarcosine, sodium salt	GGY.
Sebacic acid	WTH, x.
Sebacyl chloride	EK.
Semicarbazide base and hydrochloride	FMT.
*Sequestering agents:	
(Diethylenetrinitrilo)pentaacetic acid	TEK.
(Diethylenetrinitrilo)pentaacetic acid, monosodium hydrogen ferric salt.	GGY.
*(Diethylenetrinitrilo)pentaacetic acid, sodium salt	DOW, GGY, HMP, MOA.
N,N-Dihydroxyethylglycine, sodium salt	DOW, GGY, MOA.
*(Ethylenedinitrilo)tetraacetic acid (Ethylenediamine-tetraacetic acid).	ACY, DOW, GAF, GGY, GLY, HMP, TEK, VIC.

TABLE 22B.--*Synthetic organic chemicals: Miscellaneous chemicals for which U.S. production or sales were reported, identified by manufacturer, 1959*--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued	
*Sequestering agents--Continued	
(Ethylenedinitrilo)tetraacetic acid, dihydrogen disodium salt.	DOW, EK, GGY, HMP, HRT, TEK.
(Ethylenedinitrilo)tetraacetic acid, disodium calcium salt.	GGY.
(Ethylenedinitrilo)tetraacetic acid, disodium copper salt.	GGY.
(Ethylenedinitrilo)tetraacetic acid, disodium zinc salt, dihydrate.	GGY.
(Ethylenedinitrilo)tetraacetic acid, manganese salt-----	GGY, TEK.
(Ethylenedinitrilo)tetraacetic acid, monohydrogen trisodium salt.	DOW, GGY, HMP, TEK.
*(Ethylenedinitrilo)tetraacetic acid, monosodium iron salt.	DOW, GAF, GGY, GLY, HMP, TEK.
(Ethylenedinitrilo)tetraacetic acid, tetrapotassium salt	GGY.
*(Ethylenedinitrilo)tetraacetic acid, tetrasodium salt---	DOW, GAF, GGY, GLY, HMP, MOA, NOP, TEK.
Glucoheptonic acid, sodium salt----------	PFN, WIC.
Hexahydroxyheptanoic acid, sodium salt----------	PCW.
(N-Hydroxyethylethylenedinitrilo)triacetic acid---------	GGY.
*(N-Hydroxyethylethylenedinitrilo)triacetic acid, trisodium salt.	DOW, GGY, HMP, MOA, TEK.
Nitrilotriacetic acid, trisodium salt----------	HMP.
All other----------	GGY, TEK.
Serine and derivatives----------	SBR.
Silicones----------	DCC, ORO, SPD.
Sodium diethyldithiocarbonate----------	HMP.
Sodium ethoxide----------	KF.
Sodium ethyl oxalacetate----------	FMP.
Sodium formaldehydebisulfite----------	ACG, EK.
*Sodium formaldehydesulfoxylate----------	NOP, RH, ROY.
*Sodium methoxide (Sodium methylate)----------	HAR, KF, OMC, x.
Sodium sorbitol borate----------	APD.
Sorbic acid (2,4-Hexadienoic acid) and potassium salt-----	UCC.
Sorbitol----------	APD, x.
Soybean oil acyl chloride salt of sodium lysalbinate-----	KLD.
Stearamide (Octadecane amide)----------	ADM, DUP, FIN.
*Stearic acid salts:	
*Aluminum stearates:	
Aluminum monostearate----------	ACY, LEF, MAL, NOP.
*Aluminum distearate----------	ACY, HNX, JTC, LEF, MAL, NOP, PRP, SYP, WTC.
Aluminum tristearate----------	ACY, HNX, LEF, MAL, NOP, PRP, SYP, WTC.
*Ammonium stearate----------	DEX, FRR, LEF, NOP, SYP, WTC.
Barium stearate----------	LEF, NOP, PRP, SYP, WTC.
Cadmium stearate----------	SYP, WTC.
*Calcium stearate----------	ACY, CCW, HNX, JTC, LEF, MAL, NOP, PRP, SYP, WTC.
Cobalt stearate----------	NOP, WTC.
Copper stearate----------	WTC.
Ferric stearate----------	WTC.
*Lead stearate----------	HAR, LEF, NOP, NTL, WTC.
Lead stearate, dibasic----------	NOP, NTL, WTC.
Lithium hydroxystearate----------	WTC.
*Lithium stearate----------	LEF, NOP, PRP, WTC.
*Magnesium stearate----------	ACY, JTC, LEF, MAL, NOP, PRP, SYP, WTC.
Manganese stearate----------	WTC,
Stannous stearate----------	WTC.
*Zinc stearate----------	ACY, CCW, HAR, HNX, JTC, LEF, MAL, NOP, PRP, SYP, WTC.
All other----------	APD.
Stearoyl chloride----------	GAF, WTC.
Succinic acid----------	ACF, ARA.
Succinic acid, sodium salt----------	MAL.
Succinic anhydride----------	ACF, MON.
Succinimide----------	ARA.
Succinonitrile----------	ACY.
Succinyl peroxide----------	WTL.
Sucrose octa-acetate----------	UCC.
Tallow amide, hydrogenated----------	ADM, ARC.
Tallow fatty acyl chloride----------	GAF.
Tartaric acid salts, nonmedicinal----------	MAL, PFZ.

TABLE 22B.--*Synthetic organic chemicals: Miscellaneous chemicals for which U.S. production or sales were reported, identified by manufacturer, 1959*--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued	
n-Tetradecane	HMY.
1,1,3,3-Tetraethoxypropane	KF.
Tetraethylene glycol	DOW, JCC.
Tetraethyllead	DUP, TNA.
Tetrahydroxysuccinic acid (Dioxytartaric acid)	ACY.
Tetrakis(hydroxymethyl)phosphonium chloride	HK.
N,N,N',N'-Tetrakis(2-hydroxypropyl)ethylenediamine	WYN.
Tetramethylammonium hydroxide	EK.
Tetramethylguanidine	ACY.
Tetraoctyl orthosilicate	MON.
Thioacetamide	ARA, EK.
2,2'-Thiodiethanol (Thiodiethylene glycol)	UCC.
3,3'-Thiodipropionic acid	ACY.
Titanic acid esters	DUP.
Triallyl cyanurate	ACY.
Tributylphosphine	FMP.
Trichloroacetyl chloride	EK.
Trichloroethylsilane (Ethyl silicone trichloride)	DCC, UCS.
Trichloromethylsilane	DCC,
Trichloro-octadecylsilane	DCC.
Trichloropentylsilane	UCS.
Trichlorovinylsilane	DCC, UCS.
Triethoxyethylsilane	UCS.
Triethoxyvinylsilane	UCS.
Triethyl acetylcitrate	PFZ.
Triethylaluminum	KPP.
Triethylaluminum chloride	TNA.
Triethylboron	KPP.
*Triethylene glycol	ACN, CAU, DOW, GAF, JCC, OMC, UCC.
Tri-2-ethylhexyl acetylcitrate	PFZ.
Triethyl orthoacetate	EK, KF.
Triethyl orthoformate	KF.
Triethyl orthopropionate	KF.
Trifluoroacetic anhydride	EK.
Tri-isobutenylsuccinic anhydride	HMY.
Triisobutylaluminum	TNA.
Trimethoxyboroxine	MTR.
Trimethylaluminum	TNA.
2,6,8-Trimethyl-4-nonanone	UCC.
Trimethyl orthoformate	KF.
2,2,4-Trimethyl-1,3-pentanediol	EKX.
Tri-n-octylphosphine oxide	EK.
1,2,6-Tri(polypropoxypropyl)hexane	UCC.
Tripropylene glycol	DOW.
Undecenoic acid (Undecylenic acid)	BAC, WTM.
*Urea in compounds or mixtures:	
*In feed compounds	ACN, DUP, GCC, GRC, MSC, SOH.
*In liquid fertilizer	ACN, DUP, GCC, GRC, HPC, MSC, SOH, SPN.
*In solid fertilizer	ACN, DUP, GCC, GRC, MSC, SHC, SOH, SPN.
In plastics	DUP.
All other	ACN, DUP, MRK, SOH.
Urea peroxide	FMB.
Urea-urethane copolymer	DUP.
*Vinyl acetate, monomer	AIR, CEL, DUP, 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 1959, the Directory of Manufacturers lists 653 primary manufacturers (see table 23). Some of the companies that report production of synthetic organic chemicals 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, the company address, and the plant locations.

TABLE 23.--*Synthetic organic chemicals: Directory of manufacturers, 1959*

SECTION 1. ALPHABETICAL DIRECTORY BY CODE

[Names of synthetic organic chemical manufacturers that reported production or sales to the U.S. Tariff Commission for 1959 are listed below in the order of their identification codes as used in tables in pt. III. Section 2 of this table lists these manufacturers alphabetically and gives their office and plant addresses]

Code	Name of company	Code	Name of company
AAC	American Alcolac Corp.	ARC	Armour & Co., Armour Industrial Chemical Co. Div.
AAE	American Aniline & Extract Co., Inc.	ARF	Atlas Refinery, Inc.
ABB	Abbott Laboratories	ARG	Argus Chemical Corp.
ABR	Andrew Brown Co.	ARK	Armstrong Cork Co.
ACC	Amoco Chemicals Corp.	ARO	Arco Co.
ACF	Allied Chemical Corp., National Aniline Div.	ARP	Armour & Co., Armour Pharmaceutical Co. Div.
ACG	Allied Chemical Corp., General Chemical Div.	ASH	Ashland Oil & Refining Co.
ACN	Allied Chemical Corp., Nitrogen Div.	ASL	Ansul Chemical Co.
ACO	Allied Chemical Corp., Solvay Process Div.	AST	Astra Pharmaceutical Products, Inc.
ACP	Allied Chemical Corp., Plastics & Coal Chemicals Div.	ASY	American Synthetic Rubber Corp.
		ATL	Atlantic Chemical Corp.
ACR	Acme Resin Corp.	ATR	Atlantic Refining Co.
ACS	Allied Chemical Corp., Semet-Solvay Petrochemical Div.	AUG	Augusta Chemical Co.
		AV	American Viscose Corp.
ACT	Arthur C. Trask Co.	BAC	Baker Castor Oil Co.
ACY	American Cyanamid Co.	BAL	Baltimore Paint & Chemical Corp.
ADC	Ad-Co Color Corp.	BAT	Bates Chemical Co.
ADM	Archer-Daniels-Midland Co.	BCN	Beech-Nut Life Savers, Inc.
AHC	Arnold, Hoffman & Co., Inc.	BEN	Bennett's
AIR	Air Reduction Co., Inc., Air Reduction Chemical Co. Div.	BFG	B. F. Goodrich Co., B. F. Goodrich Chemical Co. Div.
AKL	Reichhold Chemicals, Inc., Alkydol Laboratories Div.	BIF	Bioferm Corp.
		BIS	Bios Laboratories, Inc.
ALB	Ames Laboratories, Inc.	BKC	J. T. Baker Chemical Co.
ALC	Alco Oil & Chemical Corp.	BKL	Berkeley Chemical Corp.
ALL	Alliance Color & Chemical Co.	BKM	Buckman Laboratories, Inc.
ALT	Crompton & Knowles Corp., Althouse Chemical Co. Div.	BKT	J. T. Baker Chemical Co., Taylor Chemical Div.
		BL	Belle Chemical Co., Inc.
ALX	Alox Corp.	BLN	Brooklyn Color Works, Inc.
AMB	American Bio-Synthetics Corp.	BOR	Borden Chemical Co.
AMC	Amchem Products, Inc.	BOY	Walter N. Boysen Co.
AMF	American Marietta Co., Ferbert-Schorndorfer Co. Div.	BPC	Benzol Products Co.
		BR	Brown Co.
AMK	American Alkyd Industries	BRD	Bird & Son, Inc., Floor Covering Div.
AML	Amalgamated Chemical Corp.	BRK	F. W. Berk & Co., Inc.
AMO	American Oil Co. (Texas)	BRS	Bristol-Meyers Co., Bristol Laboratories Div.
AMP	American Potash & Chemical Corp.	BRU	M. A. Bruder & Sons, Inc.
AMR	American Marietta Co., Adhesive, Resin & Chemical Div.	BRY	Bryant Chemical Corp.
		BSC	Burkart-Schier Chemical Co.
AMS	American Marietta Co., Ridgway Color & Chemical Co. Div.	BUK	Buckeye Cellulose Corp.
		BUR	Burroughs Wellcome & Co. (U.S.A.), Inc.
AMZ	American Maize Products Co.	BZ	Bzura, Inc.
APC	Appleton Coated Paper Co.	CAD	Cadet Chemical Corp.
APD	Atlas Powder Co.	CAP	Capital Plastics, Inc.
APR	Atlas Processing Co.	CAT	Catalin Corp. of America
APV	Armstrong Paint & Varnish Works, Inc.	CAU	Calcasieu Chemical Corp.
APX	Apex Chemical Co., Inc.	CBP	Ciba Pharmaceutical Products, Inc.
ARA	Arapahoe Chemicals, Inc.	CBT	Samuel Cabot, Inc.

TABLE 23. --*Synthetic organic chemicals: Directory of manufacturers, 1959* --Continued

Code	Name of company
CBY	Crosby Chemicals, Inc.
CC	Collway Colors, Inc.
CCA	Carlisle Chemical Works, Inc., Advance Solvents & Chemical Div.
CCC	Chase Chemical Corp.
CCO	Chemico, Inc.
CCP	Crown Central Petroleum Corp.
CCW	Carlisle Chemical Works, Inc.
CD	Continental-Diamond Fibre Corp.
CDF	Concord Dyeing & Finishing Co., Inc.
CEL	Celanese Corp. of America: Celanese Chemical Co. Div. Celanese Plastics Co. Div.
CEN	Central Paint & Varnish Works, Inc.
CFX	Chemfax, Inc.
CHG	Chemagro Corp.
CHO	Stauffer Chemical Co., Calhio Chemicals, Inc. Div.
CIK	California Ink Co., Inc.
CIS	Chemical Insecticide Corp.
CIT	City Chemical Corp.
CKL	Chemlek Laboratories, Inc.
CLB	Columbia Organic Chemicals, Inc.
CLC	Chas. L. Huisking & Co., Inc., Clintbrook Chemical Co. Div.
CLN	Standard Brands, Inc., Clinton Corn Processing Co. Div.
CLV	Clover Chemical Co.
CLY	W. A. Cleary Corp.
CM	Carpenter-Morton Co.
CMC	Comcolloid, Inc.
CMG	Chemical Manufacturing Co., Inc.
CO	Continental Oil Co.
COK	Cockerille Chemicals, Inc.
COL	Air Reduction Co., Inc., Colton Chemical Co. Div.
COM	Commercial Solvents Corp.
CON	Concord Chemical Co., Inc.
COP	Coopers Creek Chemical Corp.
COS	Coastwise Petroleum Co.
CP	Colgate-Palmolive Co.
CPC	Childs Pulp Colors, Inc.
CPD	Chemical Products Corp.
CPL	Coast Paint & Lacquer Co., Inc.
CPR	Chemical Process Co.
CPT	Consolidated Paint Co.
CPV	Cook Paint & Varnish Co.
CPY	Copolymer Rubber & Chemical Corp.
CRC	Crown Chemical Corp.
CRN	Corn Products Co.
CRO	Crownoil Chemical Co., Inc.
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.
CSP	California Spray-Chemical Corp.
CST	Charles S. Tanner Co.
CUT	Cutter Laboratories
CW	Collett-Week Corp.
CWL	Cowles Chemical Co.
CWN	Carwin Co.
CWP	Consolidated Water Power & Paper Co.
DA	Diamond Alkali Co.
DAN	Dan River Mills, Inc.
DAV	H. B. Davis Co.
DCC	Dow Corning Corp.
DCI	Delaware Chemicals, Inc.
DEC	Deecy Products Co.
DEP	DePaul Chemical Co., Inc.
DEX	Dexter Chemical Corp.
DGS	Douglas Chemical Corp.
DLH	Delhi-Taylor Oil Corp.
DLI	Dawe's Laboratories, Inc.
DLM	Delmar Chemical Co., Inc.
DLT	Delta Chemical Works, Inc.
DOD	Donald A. Dodd
DOM	Dominion Products, Inc.
DOW	Dow Chemical Co.
DRG	Drug Processors, Inc.
DRW	E. F. Drew & Co., Inc.
DSC	Dye Specialties, Inc.
DSO	DeSoto Chemical Coatings, Inc.
DUN	Frank W. Dunne Co.
DUP	E. I. duPont de Nemours & Co., Inc.
DYK	Dykem Co.
EAK	J. S. & W. R. Eakins, Inc.
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.
EMK	Emkay Chemical Co.
EMR	Emery Industries, Inc.
EN	Endo Laboratories, Inc.
ERD	Erdmann Chemical Co., Inc.
ESC	Escambia Chemical Corp.
ESL	Humble Oil & Refining Co., Esso Standard Div. (Louisiana)
ESO	Humble Oil & Refining Co., Esso Standard Div. (New Jersey)
EST	Eastern States Petroleum & Chemical Co.
ETD	Ethyl-Dow Chemical Co.
EVN	Evans Chemetics, Inc.
EW	Westinghouse Electric Corp.
FAR	Farnow, Inc.
FB	Fritzsche Bros., Inc.
FBC	Fiber Chemical Corp.
FBR	Fibreboard Paper Products Corp.
FBS	Fries Bros., Inc.
FCD	France, Campbell & Darling, Inc.
FCL	Federal Color Laboratories, Inc.
FEL	Felton Chemical Co., Inc.
FER	Ferro Chemical Corp.
FG	Foster Grant Co., Inc.
FH	Foster-Heaton Co.
FIN	Fine Organics, Inc.
FIR	Firestone Tire & Rubber Co., Firestone Plastics Co. Div.
FL	Farley & Loetscher Manufacturing Co.
FLA	Florida Chemical Co., Inc.
FLH	H. B. Fuller Co.
FLO	Florasynth Laboratories, Inc.
FLW	W. P. Fuller & Co.
FMB	Food Machinery & Chemical Corp., Becco Chemical Div.
FMF	Schuylkill Chemical Co.
FMP	Food Machinery & Chemical Corp., Chemicals & Plastics Div.
FMT	Fairmount Chemical Co., Inc.
FMW	Food Machinery & Chemical Corp., Chlor-Alkali and Mineral Products Div.
FOM	Formica Corp., Subsidiary of American Cyanamid Co.
FOR	Foremost Food & Chemical Co., El Dorado Div.
FRE	Freeman Chemical Corp.
FRM	Farmers' Chemical Co.
FRO	Vulcan Materials Co., Frontier Chemical Co. Div.
FRR	Estate of W. U. Farrington
FRS	Firestone Tire & Rubber Co., Firestone Synthetic Rubber & Latex Co. Div.
FSH	Frisch & Co., Inc.
GAF	General Aniline & Film Corp., Dyestuff & Chemical Div.
GAM	Gamma Chemical Corp.
GAN	Gane's Chemical Works, Inc.

TABLE 23. -- *Synthetic organic chemicals: Directory of manufacturers, 1959* --Continued

Code	Name of company
GCC	W. R. Grace & Co., Grace Chemical Div.
GDC	Gulf Research & Development Co.
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.
GGC	Goodrich-Gulf Chemicals, Inc.
GGY	Geigy Chemical Corp.
GIL	Gilman Paint & Varnish Co.
GIV	Givaudan Corp.
GLD	Glidden Co.
GLY	Chas. L. Huisking & Co., Inc., Glyco Chemicals Div.
GNC	General Color Co., 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.
GPR	Grain Processing Corp.
GRA	Great American Plastics Co.
GRC	Deere & Co., Grand River Chemical Div.
GRD	W. R. Grace & Co., Dewey & Almy Chemical Div.
GRG	P. D. George Co.
GRP	W. R. Grace & Co., Polymer Chemicals Div.
GRS	Great Southern Chemical Corp.
GRV	Grand Rapids Varnish Corp.
GRW	Great Western Sugar Co.
GTS	Greenwood Textile Supply Co.
GUA	Guard Chemical Co.
GUY	Guyan Color & Chemical Works, 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.
HAR	Harshaw Chemical Co.
HCC	Holland Color & Chemical Co.
HDG	Hodag Chemical Corp.
HER	Heresite & Chemical Corp.
HET	Heterochemical Corp.
HEX	Hexagon Laboratories, Inc.
HFT	Hoffman-Taff, Inc.
HK	Hooker Chemical Corp.
HKD	Hooker Chemical Corp., Durez Plastics Div.
HKP	Hooker Chemical Corp., Phosphorus Div.
HLC	Hartman-Leddon Co., Inc.
HLI	Haag Laboratories, Inc.
HLN	Helene Curtis Industries, Inc.
HMC	H. M. Chemical Co., Ltd.
HMP	Hampshire Chemical Corp.
HMY	Humphrey-Wilkinson, Inc.
HN	Heyden Newport Chemical Corp.
HNW	Heyden Newport Chemical Corp., Newport Industries Co. Div.
HNX	Heyden Newport Chemical Corp., Nuodex Products Co. Div.
HOF	Hoffmann-LaRoche, Inc.
HPC	Hercules Powder Co.
HRB	Harbor Plywood Corp.
HRT	Hart Products Corp.
HST	Hoechst Chemical Corp.
HSY	Harsyd Chemicals, Inc.
HUM	Humble Oil & Refining Co., Humble Div.
HUS	Husky Oil Co.
HYN	Hynson, Westcott & Dunning, Inc.
ICC	Interchemical Corp., Color & Chemicals Div.
ICF	Interchemical Corp., Finishes Div.
IDC	Industrial Dyestuff Co.
IFF	International Flavors & Fragrances, Inc.
IMC	International Minerals & Chemical Corp.
IMP	Imperial Color Chemical & Paper Corp.
INL	Inland Steel Container Co.
INP	International Paper Co.
IRI	Ironsides Co.
ITX	Intex Chemical Corp.
JAM	Jamestown Paint & Varnish Co.
JCC	Jefferson Chemical Co., Inc.
JEN	Jennison-Wright Corp.
JMS	J. Meyer & Sons, Inc.
JNS	S. C. Johnson & Son, Inc.
JOB	Jones-Blair Paint Co., Inc.
JOD	Jones-Dabney Co.
JOR	W. H. & F. Jordan, Jr. Manufacturing Co.
JRG	Andrew Jergens Co.
JTC	Joseph Turner & Co.
JWL	Jewel Paint & Varnish Co.
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	Kessler Chemical Co., Inc.
KF	Kay-Fries Chemicals, Inc.
KLD	Kalide Corp.
KLK	Kolker Chemical Corp.
KLS	Kilsdonk Chemical Corp.
KND	Knoedler Chemical Co.
KNG	O. L. King & Co.
KNP	Knapp Products, Inc.
KON	H. Kohnstamm & Co., Inc.
KPC	Koppers Co., Inc., Chemicals & Dyestuffs Div.
KPP	Koppers Co., Inc., Plastics Div.
KPT	Koppers Co., Inc., Tar Products Div.
KPV	Keystone Paint & Varnish Corp.
KRM	Krumbhaar Chemicals, Inc.
KRY	Krystall Chemical Co.
KYN	Kyanize Paints, Inc.
KYS	Keysor Chemical Co.
LAM	LaMotte Chemical Products Co.
LAS	LaSalle Chemical Corp.
LEA	Leatex Chemical Co.
LEB	Lebanon Chemical Corp.
LEF	Leffingwell Chemical Co.
LEM	B. L. Lemke & Co., Inc.
LEN	Leonard Refineries, Inc.
LEV	Lever Brothers Co.
LEW	Lewis Tar Products Co.
LIL	Eli Lilly & Co.
LKL	Lakeside Laboratories, Inc.
LKY	St. Regis Paper Co., Lake States Yeast & Chemical Div.
LON	Charles R. Long, Jr. Co.
LUB	Lubrizol Corp.
LUE	George Lueders & Co.
LUR	Laurel Soap Manufacturing Co., Inc.
LVR	C. Lever Co., Inc.
LVY	Fred'k H. Levey Co., Inc.
MAL	Mallinckrodt Chemical Works
MAR	American Can Co., Marathon Corp. Div.
MAS	Maas & Waldstein Co.
MAY	Otto B. May, Inc.
MCB	Borg-Warner Corp., Marbon Chemical Div.
MCC	McCloskey Varnish Co.
MCH	Michigan Chemical Corp.
MCW	McWhorter Chemicals, Inc.
MDP	Maryland Plastics Co.
MED	Medical Chemicals Corp.
MEE	Maumee Chemical Co.
MER	Jefferson Lake Sulphur Co., Merichem Co. Div.
MGR	Magruder Color Co., Inc.

TABLE 23. --*Synthetic organic chemicals: Directory of manufacturers, 1959*--Continued

Code	Name of company
MID	Midland Industrial Finishes Co.
MIR	Miranol Chemical Co., Inc.
MJM	M. J. Merkin Paint Co., Inc.
ML	Miles Laboratories, Inc.
MLS	Miles Chemical Co.
MMM	Minnesota Mining & Manufacturing Co.
MNP	Minnesota Paints, Inc.
MOA	Mona Industries, Inc.
MOB	Mobay Chemical Co.
MON	Monsanto Chemical Co.
MOR	Mineral Oil Refining Co.
MOT	Motomco, Inc.
MR	Benjamin Moore & Co.
MRA	Metro-Atlantic, Inc.
MRB	Marblette Corp.
MRD	Marden-Wild Corp.
MRK	Merck & Co., Inc.
MRN	Morningstar Paisley, Inc.
MRT	Morton Chemical Co.
MRV	Marlowe-Van Loan Corp.
MRW	Morwear Paint Co.
MRX	Max Marx Color & Chemical Co.
MSC	Mississippi Chemical Corp.
MTC	Monsanto Chemical Co., Plastics Div.
MTL	Metalsalts Corp.
MTO	Montrose Chemical Corp. of California
MTR	Montrose Chemical Co.
MYW	Maywood Chemical Works
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.
NON	A. P. Nonweiler Co.
NOP	Nopco Chemical Co., Inc.
NOR	Norwich Pharmacal Co.
NPC	National Petro-Chemicals Corp.
NPI	National Polychemicals, Inc.
NSC	National Starch & Chemical Corp.
NSP	National Southern Products Corp.
NTB	National Biochemical Co.
NTC	National Casein Co.
NTL	National Lead Co.
NW	Northwestern Chemical Co.
NYC	American Dyewood Co., New York Color & Chemical Co. Div.
NYP	New York & Pennsylvania Co.; Inc.
OB	O'Brien Corp.
ODB	Odessa Butadiene Co.
ODS	Odessa Styrene Co.
OH	Ohio Chemical & Surgical Equipment Co.
OIL	Oil & Chemical Products, Inc.
OLC	Old Colony Tar Co., Inc.
OLH	Old Hickory Chemical Co., Inc.
OMB	Olin Mathieson Chemical Corp., Blockson Chemical Co. Div.
OMC	Olin Mathieson Chemical Corp., Chemicals Div.
OMS	Olin Mathieson Chemical Corp., E. R. Squibb & Sons Div.
ONX	Onyx Chemical Corp.
OPC	Orbis Products Corp.
ORG	Organics, Inc.
ORO	Oronite Chemical Co.
ORT	Ortho Chemical Corp.
OSB	C. J. Osborn Co.
OTT	Ottol Oil Co.
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.
PC	Proctor Chemical Co., Inc.
PCC	Pittsburgh Coke & Chemical Co.
PCH	Peerless Chemical Co.
PCO	Peerless Color Co., Inc.
PCS	Process Chemicals Co.
PCW	Pfister Chemical Works, Inc.
PD	Parke-Davis & Co.
PDC	Poughkeepsie Dyestuff Corp.
PEK	Peck's Products Co.
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 Manufacturing Co.
PGU	Perkins Glue Co.
PIL	Pilot Chemical Co. of California
PIT	Pitt-Consol Chemical Co.
PLC	Phillips Chemical Co.
PLP	Phillips Petroleum Co.
PLS	Plastics Engineering Co.
PNX	Phoenix Oil Co.
PPG	Pittsburgh Plate Glass Co.
PRD	Productol Co.
PRE	Premium Chemicals, Inc.
PRM	Pfaudler Permutit, Inc., Permutit Co. Div.
PRO	Pure Oil Co.
PRP	M. W. Parsons-Plymouth, Inc.
PRS	Presto Plastic Products Co., Inc.
PRT	Pratt & Lambert, Inc.
PRX	Purex Corp., Ltd.
PSP	Puget Sound Pulp & Timber Co.
PTT	Petro-Tex Chemical Corp.
PUB	Publicker Industries, Inc.
PUL	Paul-Lewis Laboratories, Inc.
PYL	Polychemical Laboratories, Inc.
PYR	Poly Resins, Inc.
PYZ	Polyrez Co., Inc.
QCP	Quaker Chemical Products Corp.
QKO	Quaker Oats Co.
RAB	Raybestos-Manhattan, Inc.
RB	Robert & Co., Inc.
RBC	Roberts Chemicals, Inc.
RCD	Richardson Co.
RCI	Reichhold Chemicals, Inc.
RED	Red Spot Paint & Varnish Co., Inc.
REL	Reliance Varnish Co., Inc.
REM	Remington Arms Co., Inc.
REP	Republic Creosoting Co.
RET	Rayette, Inc., Chemical Div.
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.
RMC	Rinshed-Mason Co.
ROC	Rock Hill Printing & Finishing Co.
ROM	Roma Chemical Corp.
ROS	Rosett Chemicals, Inc.
ROY	Royce Chemical Co.
RSA	R. S. A. Corp.
RT	F. Ritter & Co.
RTC	Ritter Chemical Co., Inc.
RUB	Rubber Corp. of America
RUR	Ruberoid Co.
SAC	Standard Agricultural Chemicals, Inc.
SAL	Dr. Salsbury's Laboratories
SAN	Sandoz, Inc.
SBR	Schwarz BioResearch, Inc.

TABLE 23.--*Synthetic organic chemicals: Directory of manufacturers, 1959*--Continued

Code	Name of company
SCC	Standard Chlorine Chemical Co., Inc.
SCF	Schaefer Varnish Co., Inc.
SCH	Schering Corp.
SCN	Schenectady Varnish Co., Inc.
SCO	Scholler Bros., Inc.
SCP	Standard Chemical Products, Inc.
SCR	R. P. Scherer Corp.
SDC	American Marietta Co., 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.
SED	Seidlitz Paint & Varnish Co.
SEM	Seamco Chemical Co.
SF	Stauffer Chemical Co.
SFA	Stauffer Chemical Co., Anderson Chemical Co. Div.
SH	Stein, Hall & Co., Inc.
SHC	Shell Chemical Corp.
SHF	National Dairy Products Corp., Sheffield Chemical Co. Div.
SHL	Shulton, Inc.
SHO	Shell Oil Co.
SHP	Shepherd Chemical Co.
SHW	Shawinigan Resins Corp.
SID	George F. Siddall Co., Inc.
SIM	Simpson Redwood Co.
SIN	Sinclair Refining Co.
SIP	James B. Sipe & Co.
SK	Smith, Kline & French Laboratories
SLC	Soluol Chemical Co., Inc.
SLV	Salvo Chemical Corp.
SM	Socony Mobil Oil Co., Inc.
SNA	Sun Chemical Corp., Ansbacher-Siegle Corp. Div.
SNC	Sunoco Products Co.
SNM	Sun Chemical Corp., Ampruf Paint Co. Div.
SNP	Sun Chemical Corp., Pigment Div.
SNT	Suntide Refining Co.
SNW	Sun Chemical Corp., Warwick Chemical Co. Div.
SOC	Standard Oil Co. of California
SOH	Sohio Chemical Co.
SOI	Standard Oil Co. of Indiana
SOL	Solar Chemical Corp.
SON	L. Sonneborn Sons, Inc.
SOR	Southern Resin Glue Co.
SOS	Southern Sizing Co.
SPC	Specific Pharmaceuticals, Inc.
SPD	General Electric Co., Silicone Products Dept.
SPL	Spaulding Fibre Co., Inc.
SPN	Spencer Chemical Co.
SPP	Socony Paint Products Co.
SPR	Specialty Resins Co.
SRL	G. D. Searle & Co.
SRR	Fred'k A. Stresen-Reuter, Inc.
STA	A. E. Staley Manufacturing Co.
STD	Standard Dyestuff Corp.
STG	Wm. J. Stange Co.
STN	Standard Naphthalene Products Co., Inc.
STP	Stepan Chemical Co.
STS	Stansbury Chemical Co., Inc.
STT	Standard-Toch Chemicals, Inc.
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.
SWT	Swift & Co.
SYC	Synthetic Chemicals, Inc.
SYP	Synthetic Products Co.
SYR	Synco Resins, Inc.
SYV	Synvar Corp.
TAE	Thomas A. Edison Industries, McGraw-Edison Co.
TAR	Tar Distilling Co., Inc.
TAY	Taylor Fibre Co.
TBK	Trubek Laboratories
TDC	Diversey Corp.
TEK	Refined Products Corp.
TGL	Triangle Chemical Co.
THC	Thompson Chemical Co.
TKL	Thiokol Chemical Corp.
TMC	Thompson Chemicals Corp.
TMH	Thompson-Hayward Chemical Co.
TMS	Thomasset Colors, Inc.
TN	Tennessee Corp.
TNA	Ethyl Corp.
TNP	Tennessee Products & Chemical Corp.
TRC	Toms River-Cincinnati Chemical Corp.
TRJ	Trojan Powder Co.
TRP	Treplow Chemical Co.
TTX	Detrex Chemical Industries, Inc.
TX	Texaco, Inc.
TXB	Texas Butadiene & Chemical Corp.
TXC	Tex Chemical Co.
TUS	Texas-U.S. Chemical Co.
TV	Tousey Varnish Co.
UBS	U B S Chemical Corp.
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., and Petrochemicals Co.
UHL	Paul Uhlich & Co., Inc.
UNC	United Cork Companies
UNG	Ungerer & Co.
UOC	Union Oil Co. of California
UPF	United States Pipe & Foundry Co.
UPJ	Upjohn Co.
UPM	Universal Oil Products Co., Universal Polychem Manufacturing Div.
URC	United Rubber & Chemical Co.
USB	U.S. Borax Research Corp.
USI	National Distillers & Chemical Corp., U.S. Industrial Chemicals Co. Div.
USO	U.S. Oil Co.
USP	U.S. Plastic Products Corp.
USR	United States Rubber Co., Naugatuck Chemical Div.
UWS	Universal Western Chemical Corp.
VAL	Valchem
VAR	Reichhold Chemicals, Inc., Varcum Chemical Corp. Div.
VC	Virginia-Carolina Chemical Corp.
VEL	Velsicol Chemical Corp.
VIC	Stauffer Chemical Co., Victor Chemical Works Div.
VIN	Vineland Chemical Co.
VIS	Visco Products Co.
VLY	Verley Chemical Co., Inc.
VNC	Vanderbilt Chemical Corp.
VND	Van Dyk & Co., Inc.
VPC	Verona-Pharma Chemical Corp.
VPT	Vickers Petroleum Co., Inc.
VTM	Vitamins, Inc.
VTV	Vita-Var Corp.
WAS	T. F. Washburn Co.
WAT	Watertown Manufacturing Co.
WAW	W. A. Wood Co.
WBG	White & Bagley Co.
WDC	Western Dry Color Co.
WEB	R. D. Webb & Co., Inc.
WER	Werner Drug & Chemical Co.
WEV	Geo. D. Wetherill Varnish Co.
WHI	White & Hodges, Inc.
WHW	Whittemore-Wright Co., Inc.
WIC	Wica Co., Inc.
WIL	Wilson & Co., Inc., Wilson Laboratories Div.

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TABLE 23. --*Synthetic organic chemicals: Directory of manufacturers, 1959* --Continued

Code	Name of company	Code	Name of company
WLM	Wilmot & Cassidy, Inc.	WTL	Wallace & Tiernan, Inc., Lucidol Div.
WOC	Wilson Organic Chemicals, Inc.	WTM	Wallace & Tiernan, Inc.
WON	Woonsocket Color & Chemical Co.	WTT	John H. Witte & Sons, Resin Div.
WPC	Warren Paint & Color Co.	WTU	Witco Chemical Co., Ultra Chemical Works, Inc. Div.
WRN	Warner-Jenkinson Manufacturing Co.	WVA	West Virginia Pulp & Paper Co., Polychemicals Div.
WRS	Wheeler, Reynolds & Stauffer	WYN	Wyandotte Chemicals Corp.
WST	Westville Laboratories, Inc.	WYT	American Home Products Corp., Wyeth Laboratories, Inc. Div.
WTC	Witco Chemical Co., Inc.		
WTH	Wallace & Tiernan, Inc., Harchem Div.	YAW	Young Aniline Works, Inc.

TABLE 23. --*Synthetic organic chemicals: Directory of manufacturers, 1959*--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 1959 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 (location of plant given in parentheses if not in same city as office)
ABB	Abbott Laboratories	14th St. and Sheridan Rd., North Chicago, Ill.
ACR	Acme Resin Corp	1401 Circle Ave., Forest Park, Ill.
ADC	Ad-Co Color Corp	66 Lister Ave., Newark 5, N.J.
	Air Reduction Co., Inc.:	
AIR	Air Reduction Chemical Co. Div	150 E. 42d St., New York 17, N.Y. (Calvert City, Ky.; and Bound Brook, N.J.).
COL	Colton Chemical Co. Div	1747 Chester Ave., Cleveland 14, Ohio (Elkton, Md.).
ALC	Alco Oil & Chemical Corp	Trenton Ave. and William St., Philadelphia 34, Pa.
ALL	Alliance Color & Chemical Co	33 Avenue P, Newark 5, N.J.
	Allied Chemical Corp.:	
ACG	General Chemical Div	40 Rector St., New York 6, N.Y. (Danville, Ill.; Baton Rouge, La.; Baltimore, Md.; Buffalo, N.Y.; and Marcus Hook, Pa.).
ACF	National Aniline Div	40 Rector St., New York 6, N.Y. (Buffalo, N.Y.; Hopewell, Va.; and Moundsville, W. Va.).
ACN	Nitrogen Div	40 Rector St., New York 6, N.Y. (Omaha, Nebr.; South Point, Ohio; and Orange, Tex.).
ACP	Plastics & Coal Chemicals Div	40 Rector St., New York 6, N.Y. (Fairfield, Ala.; Calumet City and Chicago, Ill.; Detroit, Mich.; Edgewater and Whippany, N.J.; Ironton, Toledo, and Youngstown, Ohio; Bethlehem, Frankford, and Philadelphia, Pa.).
ACS	Semet-Solvay Petrochemical Div	40 Rector St., New York 6 (Tonawanda), N.Y.
ACO	Solvay Process Div	P.O. Box 271, Syracuse 1 (Village of Solvay), 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	Amber, Pa. (Niles, Calif.; and St. Joseph, Mo.).
AAC	American Alcolac Corp	3440 Fairfield Rd., Baltimore 26, Md.
AMK	American Alkyd Industries	Broad & 14th Sts., Carlstadt, N.J.
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.
MAR	American Can Co., Marathon Corp. Div	Menasha (Green Bay and Rothschild), Wis.
ACY	American Cyanamid Co	30 Rockefeller Plaza, New York 20, N.Y. (Azusa, Calif.; Stamford and Wallingford, Conn.; Avondale, La.; Bound Brook, Linden, Princeton, and Woodbridge, N.J.; Pearl River, N.Y.; Charlotte, N.C.; Cincinnati and Marietta, Ohio; Bridgeville, Pa.; Damascus, Va.; and Willow Island, W. Va.).
NYC	American Dyewood Co., 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 2899, Philadelphia 1 (Westchester), Pa.
AMZ	American Maize Products Co	250 Park Ave., New York 17, N.Y.
	American Marietta Co.:	
AMR	Adhesive, Resin & Chemical Div	42 S. 3d St., Newark, Ohio; and 3400 13th Ave., S.W., Seattle 4, Wash.
AMF	Ferbert-Schorndorfer Co. Div	12815 Elmwood Ave., Cleveland 11, Ohio.
AMS	Ridgway Color & Chemical Co. Div	75 Front Street, Ridgway, Pa.
SDC	Southern Dyestuff Co. Div	P.O. Box 10098, Charlotte 1 (Sodyeco), N.C.
AMO	American Oil Co. (Texas)	P.O. Box 401, Texas City, Tex.
AMP	American Potash & Chemical Corp	3000 W. 6th St., Los Angeles 54, Calif.
ASY	American Synthetic Rubber Corp	P.O. Box 360, Louisville 1, Ky.
AV	American Viscose Corp	1617 Pennsylvania Blvd., Philadelphia 3, Pa. (Meadville, Pa.; and Fredericksburg, Va.).
ALB	Ames Laboratories, Inc	132 Water St., S. Norwalk, Conn.
ACC	Amoco Chemicals Corp	910 S. Michigan Ave., Chicago 80, Ill. (Joliet, Ill.; and Texas City, Tex.).
ASL	Ansul Chemical Co	Staunton Street, Marinette, Wis.
APX	Apex Chemical Co., Inc	200 S. 1st St., Elizabethport 1, N.J.
APC	Appleton Coated Paper Co	1200 N. Meade St., Appleton, Wis.
ARA	Arapahoe Chemicals, Inc	2800 Pearl St., Boulder, Colo.
ADM	Archer-Daniels-Midland Co	700 Investors Bldg., Minneapolis, Minn. (Los Angeles, Calif.; Pensacola, Fla.; Minneapolis, Minn.; Valley Park, Mo.; and Newark, N.J.).
ARO	Arco Co	7301 Bessemer Ave., Cleveland 27, Ohio.
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 (McCook), Ill.
ARP	Armour Pharmaceutical Co. Div	P.O. Box 511, Kankakee (Bradley), Ill.

TABLE 23.--*Synthetic organic chemicals: Directory of manufacturers, 1959*--Continued

Code	Name of company	Office address (location of plant given in parentheses if not in same city as office)
ARK	Armstrong Cork Co----------	W. Liberty St., Lancaster (Pittsburgh), Pa.
APV	Armstrong Paint & Varnish Works, Inc---	1318-1500 S. Kilbourn Ave., Chicago 23, Ill.
AHC	Arnold, Hoffman & Co., Inc----------	55 Canal Street, Providence 1, R.I. (Dighton, Mass.; Charlotte, N.C.; and Cincinnati, Ohio).
ASH	Ashland Oil & Refining Co----------	1401 Winchester Ave., Ashland, Ky. (Tonawanda, N.Y.).
AST	Astra Pharmaceutical Products, Inc----	7 Neponset St., Worcester 6, Mass.
ATL	Atlantic Chemical Corp----------	153 Prospect St., Passaic (Nutley), N.J.
ATR	Atlantic Refining Co----------	260 S. Broad St., Philadelphia 1, Pa. (Philadelphia, Pa.; and Port Arthur, Tex.).
APD	Atlas Powder Co----------	Wilmington 99, Del. (New Castle, Del.; Memphis, Tenn.; and Houston, Tex.).
APR	Atlas Processing Co----------	P.O. Box 1786, 3546 Midway St., Shreveport, La.
ARF	Atlas Refinery, Inc----------	142 Lockwood St., Newark 5, N.J.
AUG	Augusta Chemical Co----------	P.O. Box 660, Augusta, Ga.
BAC	Baker Castor Oil Co----------	40 Avenue A, Bayonne, N.J. (Los Angeles, Calif.; and Bayonne, N.J.).
BKC	J. T. Baker Chemical Co----------	600 N. Broad St., Phillipsburg, N.J.
BKT	Taylor Chemical Div----------	600 N. Broad St., Phillipsburg, N.J. (Penn Yan, N.Y.).
BAL	Baltimore Paint & Chemical Corp--------	2325 Annapolis Ave., Baltimore 30, Md.
BAT	Bates Chemical Co----------	Scottdale Road, Lansdowne, Pa.
BCN	Beech-Nut Life Savers, Inc----------	Canajoharie, N.Y.
BL	Belle Chemical Co., Inc----------	534 Pearl St., Reading (Womelsdorf), Pa.
BEN	Bennett's----------	65 W. 1st South, Salt Lake City 10, Utah.
BFC	Benzol Products Co----------	237 South St., Newark 5 (Nixon), N.J.
BRK	F. W. Berk & Co., Inc----------	Wood-Ridge, N.J.
BKL	Berkeley Chemical Corp----------	11 Summit Ave., Berkeley Heights, N.J.
BIF	Bioferm Corp----------	P.O. Box 1375, Wasco, Calif.
BIS	Bios Laboratories, Inc----------	17 W. 60th St., New York 23, N.Y.
BRD	Bird & Son, Inc., Floor Covering Div---	E. Walpole (Norwood), Mass.
BOR	Borden Chemical Co----------	350 Madison Ave., New York 17, N.Y. (Demopolis, Ala.; Compton, Calif.; Illiopolis, Ill.; Leominster, North Andover, and Peabody, Mass.; Middlesex, N.J.; Bainbridge, N.Y.; Fayetteville, N.C.; Springfield, Oreg.; Philadelphia, Pa.; Kent and Seattle, Wash.; and Browntown, Wis.).
MCB	Borg-Warner Corp., Marbon Chemical Div-	Box 68, Washington, W. Va.
BOY	Walter N. Boysen Co----------	1101 42d St., Oakland 8, Calif.
BRS	Bristol-Meyers Co., Bristol Laboratories Div.	P.O. Box 657, Syracuse 1, N.Y.
BLN	Brooklyn Color Works, Inc----------	Morgan & Norman Avenues, Brooklyn 22, N.Y.
BR	Brown Co----------	650 Main St., Berlin, N.H.
ABR	Andrew Brown Co----------	5431 District Blvd., Los Angeles 22, Calif.
BRU	M. A. Bruder & Sons, Inc----------	52d St. & 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.
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, Inc----------	Clark St. & Broadway, Keyport, N.J.
CBT	Samuel Cabot, Inc----------	246 Summer St., Boston 10 (Chelsea), Mass.
CAD	Cadet Chemical Corp----------	2153 Lockport-Olcott Rd., Burt, N.Y.
CAU	Calcasieu Chemical Corp----------	P.O. Box 6, 821 Gravier St., New Orleans 6 (Lake Charles), La.
CIK	California Ink Co., Inc----------	711 Camelia St., Berkeley 10, Calif.
CSP	California Spray-Chemical Corp---------	Lucas & Ortho Way, Richmond, Calif.
CAP	Capital Plastics, Inc----------	250 Mill St., Rochester 14, N.Y. (Brodhead, Wis.).
CCW	Carlisle Chemical Works, Inc----------	West Street, 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.
CWN	Carwin Co----------	Stiles Lane, North Haven, Conn.
CRY	Cary Chemicals, Inc----------	P.O. Box 38, East Brunswick (Flemington), N.J.
CAT	Catalin Corp. of America----------	1 Park Ave., New York, N.Y. (Calumet City, Ill.; Fords, N.J.; and Thomasville, N.C.).
CEL	Celanese Corp. of America:	
	Celanese Chemical Co. Div----------	180 Madison Avenue, New York 16, N.Y. (Amcelle and Cumberland, Md.; Celriver and Rockhill, S.C.; Bishop and Pampa, Tex.; Celco and Narrows, Va.; and Gallipolis Ferry and Point Pleasant, W. Va.).
	Celanese Plastics Co. Div----------	744 Broad St., Newark 2, N.J. (Belvidere and Newark, N.J.; and Deer Park, Tex.).
CEN	Central Paint & Varnish Works, Inc-----	59 Prospect St., Brooklyn 1, N.Y.
CCC	Chase Chemical Corp----------	3527 Smallman St., Pittsburgh 1, Pa.
CHG	Chemagro Corp----------	Hawthorn Rd., Kansas City 20, Mo.
CFX	Chemfax, Inc----------	P.O. Box 763, Gulfport, Miss.
CIS	Chemical Insecticide Corp----------	30 Whitman Ave., Metuchen, N.J.

TABLE 23. --*Synthetic organic chemicals: Directory of manufacturers, 1959*--Continued

Code	Name of company	Office address (location of plant given in parentheses if not in same city as office)
CMG	Chemical Manufacturing Co., Inc--------	Ashland, Mass.
CPR	Chemical Process Co--------------------	1901 Spring St., Redwood City, Calif.
CPD	Chemical Products Corp-----------------	P.O. Box 815, Cartersville, Ga.
CCO	Chemico, Inc---------------------------	2508 E. Bailey Rd., Cuyahoga Falls, Ohio.
CKL	Chemlek Laboratories, Inc--------------	4040 W. 123d St., Worth, Ill.
CS	Chemstrand Corp------------------------	350 5th Ave., New York 1, N.Y. (Gonzales, Fla.).
CPC	Childs Pulp Colors, Inc----------------	43 Summit St., Brooklyn 31, N.Y.
CBP	Ciba Pharmaceutical Products, Inc------	556 Morris Ave., Summit, N.J.
CIT	City Chemical Corp---------------------	132 West 22d St., New York 11, N.Y. (Jersey City, N.J.).
CLY	W. A. Cleary Corp----------------------	P.O. Box 749, New Brunswick (Franklin Township), N.J.
CLV	Clover Chemical Co---------------------	P.O. Box 10865, Pittsburgh 36, Pa.
CPL	Coast Paint & Lacquer Co., Inc---------	P.O. Box 1113, Houston 1, Tex.
COS	Coastwise Petroleum Co-----------------	1127 Munsey Bldg., Baltimore 2, Md. (Good Hope, La.).
COK	Cockerille Chemicals, Inc--------------	Greenwood, Va.
CP	Colgate-Palmolive Co-------------------	300 Park Avenue, New York 22, N.Y.
CW	Collett-Week Corp----------------------	Quimby St., Ossining, N.Y.
CC	Collway Colors, Inc--------------------	15 Market St., Paterson 1, N.J.
CLB	Columbia Organic Chemicals, Inc--------	1012 Drake Street, Columbia, S.C.
CMC	Comcolloid, Inc------------------------	3240 Grace Ave., Bronx 69, N.Y.
COM	Commercial Solvents Corp---------------	260 Madison Ave., New York 16, N.Y.
CON	Concord Chemical Co., Inc--------------	205 S. 2d St., Camden 1, N.J.
CDF	Concord Dyeing & Finishing Co., Inc----	3470 3d Ave., New York 56, N.Y.
CPT	Consolidated Paint Co------------------	3101 E. 11th St., Los Angeles 23, Calif.
CWP	Consolidated Water Power & Paper Co----	Wisconsin Rapids, Wis.
CD	Continental-Diamond Fibre Corp---------	70 S. Chapel St., Newark, Del. (Bridgeport, Pa.).
CO	Continental Oil Co---------------------	1000 South Pine, Ponca City, Okla. (Westlake, La.; and Ponca City, Okla.).
CPV	Cook Paint & Varnish Co----------------	P.O. Box 389, Kansas City 41, Mo.
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-----------------------	17 Battery Place, New York 4, N.Y. (Argo, Ill.).
CSD	Cosden Petroleum Corp------------------	P.O. Box 1311, Big Spring, Tex.
CWL	Cowles Chemical Co---------------------	7016 Euclid Ave., Cleveland 3, Ohio (Skaneateles Falls, N.Y.).
ALT	Crompton & Knowles Corp., Althouse Chemical Co. Div.	530 Pear St., Reading, Pa.
CBY	Crosby Chemicals, Inc------------------	Picayune, Miss. (De Ridder, La.; and Picayune, Miss.).
CCP	Crown Central Petroleum Corp-----------	American Bldg., Baltimore 2, Md. (Pasadena, Tex.).
CRC	Crown Chemical Corp--------------------	240 India St., Providence 3, R.I.
CRO	Crownoil Chemical Co., Inc-------------	2-14 49th Ave., Long Island 1, N.Y.
CRT	Crown Tar & Chemical Works, Inc--------	900 Wewatta St., Denver 4, Colo.
CRZ	Crown Zellerbach Corp., Chemical Products Div.	Camas, Wash. (Lebanon, Oreg.).
CUT	Cutter Laboratories--------------------	4th & Parker Streets, Berkeley 10, Calif.
DAN	Dan River Mills, Inc-------------------	Danville, Va.
DAV	H. B. Davis Co-------------------------	Bush and Severn Streets, Baltimore 30, Md.
DLI	Dawe's Laboratories, Inc---------------	4800 S. Richmond St., Chicago 32, Ill. (Chicago, Ill.; and Newaygo, Mich.).
DEC	Deecy Products Co----------------------	120 Potter St., Cambridge 42, Mass.
GRC	Deere & Co., Grand River Chemical Div--	Pryor, Okla.
DCI	Delaware Chemicals, Inc----------------	50 Murray St., Staten Island 9, N.Y.
DLH	Delhi-Taylor Oil Corp------------------	Box 4067, Corpus Christi, Tex.
DLM	Delmar Chemical Co., Inc---------------	P.O. Box 108, Elkton, Md.
DLT	Delta Chemical Works, Inc--------------	23 W. 60th St., New York 23, N.Y.
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. (Ashtabula, Ohio).
DEX	Dexter Chemical Corp-------------------	845 Edgewater Rd., New York 59, N.Y.
DA	Diamond Alkali Co----------------------	300 Union Commerce Bldg., Cleveland 14, Ohio (Newark, N.J.; Fairport Harbor, Ohio; Houston and Pasadena, Tex.; and Belle, W. Va.).
TDC	Diversey Corp--------------------------	1820 Roscoe St., Chicago 13, Ill.
DOD	Donald A. Dodd-------------------------	Rt. 5, Box 621, Everett, Wash.
DOM	Dominion Products, Inc-----------------	10-40 44th Dr., Long Island 1, N.Y.
DGS	Douglas Chemical Corp------------------	1624 Darrow Ave., Evanston, Ill.
DOW	Dow Chemical Co------------------------	Midland, Mich. (Pittsburgh and Torrance, Calif.; Gales Ferry, Conn.; and Freeport, Tex.).
DCC	Dow Corning Corp-----------------------	P.O. Box 592, Midland, Mich.
DRW	E. F. Drew & Co., Inc------------------	15 E. 26th St., New York 10, N.Y. (Boonton, N.J.).
DRG	Drug Processors, Inc-------------------	1219 E. Church St., Adrian, Mich.
DUN	Frank W. Dunne Co----------------------	1007 41st St., Oakland 8, Calif.

TABLE 23.--*Synthetic organic chemicals: Directory of manufacturers, 1959*--Continued

Code	Name of company	Office address (location of plant given in parentheses if not in same city as office)
DUP	E. I. duPont de Nemours & Co., Inc-----	10th and Market Sts., Wilmington 98, Del. (Birmingham, Ala.; Antioch and San Francisco, Calif.; Louviers, Colo.; Fairfield, Conn.; Edge Moor, Newport, and Seaford, Del.; Tucker, Ga.; Chicago and Seneca, Ill.; E. Chicago and Fortville, Ind.; Clinton and Ft. Madison, Iowa; Louisville and Wurtland, Ky.; Baltimore, Md.; Everett and Leominster, Mass.; Ecorse, Flint, Montague, and Wyandotte, Mich.; Carl Junction, Mo.; Arlington, Carney's Point, Deepwater, Gibbstown, Kearny, Linden, Newark, Parlin, Perth Amboy, and Pompton Lakes, N.J.; Buffalo, Dresden, Newburgh, Niagara Falls, and Rochester, N.Y.; Kingston, N.C.; Circleville, Cleveland, Columbia Park, and Toledo, Ohio; Moosic, Philadelphia, and Towanda, Pa.; Camden, S.C.; Chattanooga, Columbia, Memphis, and Old Hickory, Tenn.; Beaumont, LaPorte, Orange, and Victoria, Tex.; Martinsville, Richmond, and Waynesboro, Va.; DuPont, Wash.; Belle, Charleston, Martinsburg, and Parkersburg, W. Va.; and Barksdale, Wis.).
DSC	Dye Specialties, Inc----------	26 Journal Sq., Jersey City 6, N.J.
DYK	Dykem Co----------	2307 N. 11th St., St. Louis 6, Mo.
EAK	J. S. & W. R. Eakins, Inc----------	55 Berry St., Brooklyn 11, N.Y.
EST	Eastern States Petroleum & Chemical Co-	P.O. Box 5008, Harrisburg Station, Houston 12, Tex.
EK	Eastman Kodak Co----------	343 State St., Rochester 4, N.Y.
EKT	Tennessee Eastman Co. Div----------	Eastman Rd., Kingsport, Tenn.
EKX	Texas Eastman Co. Div----------	P.O. Box 2068, Longview, Tex.
EDY	Eddystone Manufacturing Co----------	P.O. Box 471, Wilmington 99, Del. (Eddystone, Pa.).
TAE	Thomas A. Edison Industries, McGraw-Edison Co.	120 S. LaSalle St., Chicago 3, Ill. (Stuyvesant Falls, N.Y.).
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.
ERD	Erdmann Chemical Co., Inc----------	70 Lister Ave., Newark 5, N.J.
ESC	Escambia Chemical Corp----------	P.O. Box 467, Pensacola (Pace), Fla.
TNA	Ethyl Corp----------	100 Park Ave., New York 17, N.Y. (Pittsburg, Calif.; Baton Rouge, La.; Orangeburg, S.C.; and Pasadena, Tex.).
ETD	Ethyl-Dow Chemical Co----------	Midland, Mich. (Freeport, Tex.).
EVN	Evans Chemetics, Inc----------	250 E. 43d St., New York 17 (Waterloo), N.Y.
FMT	Fairmount Chemical Co., Inc----------	117 Blanchard St., Newark 5, N.J.
Fl	Farley & Loetscher Manufacturing Co----	7th & White Sts., Dubuque, Iowa.
FRM	Farmers' Chemical Co----------	P.O. Box 591, Kalamazoo, Mich.
FAR	Farnow, Inc----------	4-83 48th Ave., Long Island City 1, N.Y.
FRR	Estate of W. U. Farrington----------	Box 389, East Greenwich (Warwick), R.I.
FCL	Federal Color Laboratories, Inc--------	4633 Forest Ave., Norwood, Cincinnati 12, Ohio.
FEL	Felton Chemical Co., Inc----------	599 Johnson Ave., Brooklyn 37, N.Y.
FER	Ferro Chemical Corp----------	P.O. Box 349, 450 Krick Rd., Bedford, Ohio.
FBC	Fiber Chemical Corp----------	P.O. Box 218, Matawan (Cliffwood), N.J.
FBR	Fibreboard Paper Products Corp---------	P.O. Box 4331, Oakland 23 (Emeryville), Calif.
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.
	Food Machinery & Chemical Corp.:	
FMB	Becco Chemical Div----------	Sawyer Ave. & River Rd., Buffalo 7 (Tonawanda), N.Y.
FMP	Chemicals & Plastics Div----------	1701 Patapsco Ave., Baltimore 26, Md. (Nitro, W. Va.).
FMW	Chlor-Alkali and Mineral Products Div.	161 E. 42d St., New York 17, N.Y. (Newark, Calif.; and S. Charleston, W. Va.).
FOR	Foremost Food & Chemical Co., El Dorado Div.	P.O. Box 599, Oakland 4, Calif.
FOM	Formica Corp., Subsidiary of American Cyanamid Co.	4614 Spring Grove Ave., Cincinnati 32, Ohio.
FH	Foster-Heaton Co----------	16 E. 5th St., Paterson 4, N.J.
FCD	France, Campbell & Darling, Inc--------	North Michigan Ave., Kenilworth, N.J.
FRE	Freeman Chemical Corp----------	211 E. Main St., Port Washington, Wis. (Ambridge, Pa.; and Saukville, Wis.).
FBS	Fries Bros., Inc----------	P.O. Box 8, Carlstadt, N.J.
FSH	Frisch & Co., Inc----------	88 E. 11th St., Paterson 4, N.J.
FB	Fritzsche Bros., Inc----------	76 9th Ave., New York 11, N.Y. (Clifton, N.J.).
FLH	H. B. Fuller Co----------	4819 Industrial Court, Cincinnati 17, Ohio.
FLW	W. P. Fuller & Co----------	450 E. Grand Ave., S. San Francisco, Calif.
GAM	Gamma Chemical Corp----------	355 Lexington Ave., New York 17, N.Y. (Great Meadows, N.J.).
GAN	Gane's Chemical Works, Inc----------	535 5th Ave., New York 17, N.Y. (Carlstadt, N.J.).

TABLE 23. --*Synthetic organic chemicals: Directory of manufacturers, 1959*--Continued

Code	Name of company	Office address (location of plant given in parentheses if not in same city as office)
GGY	Geigy Chemical Corp----------	P.O. Box 430, Yonkers (Ardsley), N.Y.
GAF	General Aniline & Film Corp., Dyestuff & Chemical Div.	435 Hudson St., New York, N.Y. (Calvert City, Ky.; Linden, N.J.; and Rensselaer, N.Y.).
GNC	General Color Co., Inc----------	24 Avenue B, Newark 5, N.J.
	General Electric Co.:	
GE	Chemical Materials Dept----------	1 Plastics Ave., Pittsfield, Mass. (Anaheim, Calif.; Pittsfield, Mass.; and Coshocton, Ohio).
GEI	Insulating Materials Dept----------	23 River Rd., Schenectady 5, N.Y. (Chelsea, Mass.).
SPD	Silicone Products Dept----------	Waterford, N.Y.
GNF	General Foods Corp., Maxwell House Div-	1125 Hudson St., Hoboken, N.J.
GNM	General Mills, Inc----------	9200 Wayzata Blvd., Minneapolis 26, Minn. (Kankakee, Ill.; and Keokuk, Iowa).
GNT	General Tire & Rubber Co., Chemical Div.	1708 Englewood Ave., Akron 9, Ohio (Ashtabula and Mogadore, Ohio; and Odessa, Tex.).
GRG	P. D. George Co----------	5200 N. 2d St., St. Louis 7, Mo.
GIL	Gilman Paint & Varnish Co----------	W. 8th and Pine Sts., Chattanooga 1, Tenn.
GIV	Givaudan Corp----------	109-201 Delawanna Ave., Delawanna, N.J.
GLD	Glidden Co----------	900 Union Commerce Bldg., Cleveland 14, Ohio.
BFG	B. F. Goodrich Co., B. F. Goodrich Chemical Co. Div.	3135 Euclid Ave., Cleveland 15, Ohio (Henry, Ill.; Calvert City and Louisville, Ky.; Niagara Falls, N.Y.; and Akron and Avon Lake Village, Ohio).
GGC	Goodrich-Gulf Chemicals, Inc----------	1717 E. 9th St., Cleveland 14, Ohio (Port Neches, Tex.; and Institute, W. Va.).
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----------	Broad & 13th Sts., Carlstadt, N.J. (Wilmington, Del.).
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 Whittemore Ave., Cambridge 40, Mass.
GCC	Grace Chemical Div----------	P.O. Box 4915, Memphis 7 (Woodstock), Tenn.
GRP	Polymer Chemicals Div----------	225 Allwood Rd., Clifton, N.J. (Baton Rouge, La.).
GPR	Grain Processing Corp----------	1600 Oregon St., Muscatine, Iowa.
GRV	Grand Rapids Varnish Corp----------	1350 Steele Ave. SW., Grand Rapids 2, Mich.
FG	Foster Grant Co., Inc----------	289 N. Main St., Leominster, Mass. (Baton Rouge, La.; and Manchester, N.H.).
GRA	Great American Plastics Co----------	85 Factory Street, Nashua, N.H. (Fitchburg, Mass.).
GRS	Great Southern Chemical Corp----------	P.O. Box 4166, Corpus Christi, Tex.
GRW	Great Western Sugar Co----------	Box 5308, Terminal Annex, Denver 17 (Johnstown), Colo.
GTS	Greenwood Textile Supply Co----------	27 Meadow St., Warwick, R.I.
GUA	Guard Chemical Co----------	North Water St., Ossining, N.Y.
GOC	Gulf Oil Corp----------	P.O. Drawer 2100, Houston 1, Tex. (Cleves, Ohio; Philadelphia, Pa.; and Port Arthur, Tex.).
GDC	Gulf Research & Development Co---------	P.O. Drawer 2038, Pittsburgh 30 (Philadelphia), Pa.
GUY	Guyan Color & Chemical Works, Inc------	Box 1088, Huntington 1, W. Va.
HMC	H. M. Chemical Co., Ltd----------	754 22d St., Santa Monica, Calif.
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.
HAM	Hampden Color & Chemical Co----------	5 Albany St., Springfield, Mass.
HMP	Hampshire Chemical Corp----------	Poisson Ave., Nashua, N.H.
HAN	Hanna Paint Manufacturing Co., Inc-----	1313 Windsor Ave., Columbus 16, Ohio.
HRB	Harbor Plywood Corp----------	P.O. Box 940, Aberdeen, Wash.
HAR	Harshaw Chemical Co----------	1945 E. 97th St., Cleveland 6, Ohio (Louisville, Ky.; Gloucester City, N.J.; and Hastings, N.Y.).
HSY	Harsyd Chemicals, Inc----------	397 W. 21st St., Holland, Mich.
HRT	Hart Products Corp----------	1440 Broadway, New York 18, N.Y. (Jersey City, N.J.).
HLC	Hartman-Leddon Co., Inc----------	60th & Woodland Ave., Philadelphia 43 (Conshohocken), Pa.
HLN	Helene Curtis Industries, Inc----------	4401 W. North Ave., Chicago 39, Ill.
HPC	Hercules Powder Co----------	900 Market St., Wilmington 99, Del. (Brunswick, Ga.; Mansfield, Mass.; Hattiesburg, Miss.; Burlington, Kenvil, and Parlin, N.J.; and Hopewell, Va.).
HER	Heresite & Chemical Co----------	822 S. 14th St., Manitowoc, Wis.
HET	Heterochemical Corp----------	111 E. Hawthorne Ave., Valley Stream, N.Y.
HN	Heyden Newport Chemical Corp----------	342 Madison Ave., New York 17, N.Y. (Fords and Garfield, N.J.).
HNW	Newport Industries Co. Div----------	P.O. Box 911, Pensacola, Fla.
HNX	Nuodex Products Co. Div----------	830 Magnolia Ave., Elizabeth, N.J. (Long Beach, Calif.; and Elizabeth and Newark, N.J.).
HEX	Hexagon Laboratories, Inc----------	3536 Peartree Ave., New York 69, N.Y.
HDG	Hodag Chemical Corp----------	7247 N. Central Park Ave., Chicago 45, Ill.
HST	Hoechst Chemical Corp----------	129 Quidnick St., W. Warwick, R.I.
HOF	Hoffmann-LaRoche, Inc----------	324-424 Kingsland Rd., Nutley 10, N.J.
HFT	Hoffman-Taff, Inc----------	P.O. Box 1246, Springfield, Mo.

TABLE 23.--*Synthetic organic chemicals: Directory of manufacturers, 1959*--Continued

Code	Name of company	Office address (location of plant given in parentheses if not in same city as office)
HCC	Holland Color & Chemical Co----------	492 Douglas Ave., Holland, Mich.
HK	Hooker Chemical Corp----------	Buffalo Ave. & 47th St., Niagara Falls, N.Y.
HKD	Durez Plastics Div----------	Walck Rd., North Tonawanda, N.Y.
HKP	Phosphorus Div----------	Buffalo Ave. & 47th St., Niagara Falls, N.Y.
EFH	E. F. Houghton & Co----------	303 W. Lehigh Ave., Philadelphia 33, Pa.
	Chas. L. Huisking & Co., Inc.:	
CLC	Clintbrook Chemical Co. Div----------	417 5th Ave., New York 16, N.Y. (Lyndhurst, N.J.).
GLY	Glyco Chemicals Div----------	417 5th Ave., New York 16, N.Y. (Williamsport, Pa.).
	Humble Oil & Refining Co.:	
ESL	Esso Standard Div----------	P.O. Box 551, Baton Rouge 1, La.
ESO	Esso Standard Div----------	P.O. Box 23, Linden, N.J.
HUM	Humble Div----------	P.O. Box 2180, Houston 1 (Baytown), Tex.
HMY	Humphrey-Wilkinson, Inc----------	Devine St., North Haven, Conn.
HUS	Husky Oil Co----------	Box 380, Cody, Wyo. (Dickinson, N.D.).
HYN	Hynson, Westcott & Dunning, Inc--------	Charles & Chase Sts., Baltimore 1, Md.
IMP	Imperial Color Chemical & Paper Corp---	P.O. Box 231, Glens Falls, N.Y.
IDC	Industrial Dyestuff Co----------	P.O. Box 4249, Massasoit Ave., E. Providence 14, R.I.
INL	Inland Steel Container Co----------	6532 S. Mendar 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. (Los Angeles, Calif.; Chicago, Ill.; Elizabeth, N.J.; and Cincinnati, Ohio).
IFF	International Flavors & Fragrances, Inc.	521 W. 57th St., New York 19, N.Y. (Union Beach, N.J.).
IMC	International Minerals & Chemical Corp-	5401 Old Orchard Rd., Skokie, Ill. (San Jose, Calif.; Skokie, Ill.; and Niagara Falls, N.Y.).
INP	International Paper Co----------	220 E. 42d St., New York 17, N.Y. (Corinth, N.Y.; and York Haven, Pa.).
ITX	Intex Chemical Corp----------	167 Main Street, Lodi, N.J.
IRI	Ironsides Co----------	270 W. Mound St., Columbus 15, Ohio.
JAM	Jamestown Paint & Varnish Co----------	Jamestown, Pa.
JCC	Jefferson Chemical Co., Inc----------	P.O. Box 303, Houston 1 (Port Neches), Tex.
MER	Jefferson Lake Sulphur Co., Merichem Co. Div.	P.O. Box 9788, Houston 15, Tex.
JEN	Jennison-Wright Corp----------	Box 4187, Station E, Toledo 9, Ohio.
JRG	Andrew Jergens Co----------	2535 Spring Grove Ave., Cincinnati 14, Ohio.
JWL	Jewel Paint & Varnish Co----------	345 N. Western Ave., Chicago 12, Ill.
JNS	S. C. Johnson & Son, Inc----------	1525 Howe St., Racine, Wis.
JOB	Jones-Blair Paint Co., Inc----------	6969 Denton Dr., P.O. Box 35286, Dallas, Tex.
JOD	Jones-Dabney Co----------	1481 S. 11th St., Louisville 8, Ky.
JOR	W. H. & F. Jordan, Jr. Manufacturing Co.	2126 E. Somerset St., Philadelphia 34, Pa.
KAL	Kali Manufacturing Co----------	427 E. Moyer St., Philadelphia 25, Pa.
KLD	Kalide Corp----------	19 South Canal St., Lawrence, Mass.
KF	Kay-Fries Chemicals, Inc----------	180 Madison Ave., New York 16 (West Haverstraw), N.Y.
KEL	Kelly-Pickering Chemical Corp----------	956 Bransten Rd., San Carlos, Calif.
KEN	Kendall Refining Co----------	77 Kendall Ave., Bradford, Pa.
	Kennecott Copper Corp.:	
KCC	Chino Mines Div----------	Hurley, N. Mex.
KCU	Utah Copper Div----------	151 Mineral Square, Salt Lake City 1 (Arthur and Magna), Utah.
KES	Kessler Chemical Co., Inc----------	State Rd. & Cottman Ave., Philadelphia 35, Pa.
KYS	Keysor Chemical Co----------	Box 338, 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.
KNG	O. L. King & Co----------	640 Gilman St., Berkeley 10, Calif.
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 7 (Brooklyn), N.Y.
KLK	Kolker Chemical Corp----------	600 Doremus Ave., Newark 5, N.J.
	Koppers Co., Inc.:	
KPC	Chemicals and Dyestuffs Div----------	Koppers Bldg., 430 7th Ave., Pittsburgh 19 (Lock Haven and Petrolia), Pa.
KPP	Plastics Div----------	Koppers Bldg., 430 7th Ave., Pittsburgh 19, Pa.
KPT	Tar Products Div----------	Koppers Bldg., 430 7th Ave., Pittsburgh 19, Pa. (Woodward, Ala.; Fontana, Calif.; New Haven, Conn.; Chicago, Ill.; Chalmette, La.; Bangor and Portland, Maine; Everett and Westfield, Mass.; Wyandotte, Mich.; St. Paul, Minn.; Kearny and Westfield, N.J.; Buffalo, Rochester, and Utica, N.Y.; Hamilton, Toledo, Warren, and Youngstown, Ohio; Kobuta, Oil City, Swedeland, and Swissvale, Pa.; East Providence, R.I.; Memphis, Tenn.; Houston, Tex.; Arroya and Follansbee, W. Va.; and Carrollville and Milwaukee, Wis.).

TABLE 23.--*Synthetic organic chemicals: Directory of manufacturers, 1959*--Continued

Code	Name of company	Office address (location of plant given in parentheses if not in same city as office)
KRM	Krumbhaar Chemicals, Inc	24 Jacobus Ave., South Kearny, N.J.
KRY	Krystall Chemical Co	1301 W. Belden Ave., Chicago 14, Ill.
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	LaSalle Chemical Corp	21-23 Merseles St., Jersey City 2, N.J.
LUR	Laurel Soap Manufacturing Co., Inc	Thompson & Tioga Sts., Philadelphia 34, Pa.
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.
LEM	B. L. Lemke & Co., Inc	199 Main St., Lodi, N.J.
LEN	Leonard Refineries, Inc	East Superior St., Alma (Mt. Pleasant), Mich.
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 (Brooklyn), N.Y.
LEW	Lewis Tar Products Co	P.O. Box A, Lyons (McCook), Ill.
LIL	Eli Lilly & Co	740 S. Alabama St., Indianapolis 6, Ind.
LON	Charles R. Long, Jr. Co	1630 W. Hill St., Louisville 10, Ky.
LUB	Lubrizol Corp	Cleveland 17, Ohio.
LUE	George Lueders & Co	427 Washington St., New York 13 (Patchogue), N.Y.
MAS	Maas & Waldstein Co	2121 McCarter Highway, Newark 4, N.J.
MGR	Magruder Color Co., Inc	2385 Richmond Terrace, Staten Island 2, N.Y.
MAL	Mallinckrodt Chemical Works	3600 North Second St., St. Louis 7, Mo. (St. Louis, Mo.; and Jersey City, N.J.).
MRB	Marblette Corp	37-31 30th St., Long Island City 1, N.Y.
MRD	Marden-Wild Corp	500 Columbia St., Somerville 43, Mass.
MRV	Marlowe-Van Loan Corp	1511 Byrum St., High Point, N.C.
MRX	Max Marx Color & Chemical Co	192 Coit St., Irvington 11, N.J.
MDP	Maryland Plastics Co	25 E. Central Ave., Federalsburg (Ridgely), Md.
MEE	Maumee Chemical Co	1310 Expressway Dr., Toledo 8, Ohio.
MAY	Otto B. May, Inc	52 Amsterdam St., Newark 5, N.J.
MYW	Maywood Chemical Works	100 W. Hunter Ave., Maywood, 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. (Albany, Ga.; Danville, Philadelphia, and West Point, Pa.; and Elkton, Va.).
MJM	M. J. Merkin Paint Co., Inc	1441 Broadway, New York 18, N.Y. (Lyndhurst, N.J.).
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. (El Dorado, Ark.).
MID	Midland Industrial Finishes Co	East Water St., Waukegan, Ill.
MLS	Miles Chemical Co	N. Centennial St., Zeeland, Mich.
ML	Miles Laboratories, Inc	Elkhart, Ind.
MOR	Mineral Oil Refining Co	P.O. Drawer C, Dickinson 1, Tex.
MMM	Minnesota Mining & Manufacturing Co	900 Bush Ave., St. Paul 6, Minn.
MNP	Minnesota Paints, Inc	1101 S. 3d St., Minneapolis 15, Minn. (Fort Wayne, Ind.).
MIR	Miranol Chemical Co., Inc	277 Coit St., Irvington 11, N.J.
MSC	Mississippi Chemical Corp	P.O. Box 563, Yazoo City, Miss.
MOB	Mobay Chemical Co	1815 Washington Rd., Pittsburgh 34, Pa. (New Martinsville, W. Va.).
MOA	Mona Industries, Inc	65 E. 23d St., Paterson 17, N.J.
MON	Monsanto Chemical Co	800 N. Lindbergh, St. Louis 66, Mo. (Anniston, Ala.; Long Beach and Santa Clara, Calif.; Monsanto, Ill.; Luling, La.; Boston, Mass.; Trenton, Mich.; Kearny, N.J.; Seattle, Wash.; and Nitro, W. Va.).
MTC	Plastics Div	812 Monsanto Ave., Springfield, Mass. (Texas City, Tex.).
MTR	Montrose Chemical Co	100 Lister Ave., Newark 5, N.J.
MTO	Montrose Chemical Corp. of California	824 Wilshire Blvd., Los Angeles 17, Calif. (Torrance, Calif.; and Henderson, Nev.).
MR	Benjamin Moore & Co	511 Canal St., New York 13, N.Y. (Los Angeles, Calif.; Denver, Colo.; Carteret, N.J.; and Cleveland, Ohio).
MRN	Morningstar Paisley, Inc	1770 Canalport Ave., Chicago 16, Ill.
MRT	Morton Chemical Co	Ringwood, Ill.
MRW	Morwear Paint Co	568 14th St., Oakland 12, Calif.
MOT	Motomco, Inc	89 Terminal Ave., Clark, N.J.
NTB	National Biochemical Co	3127 W. Lake St., Chicago 12, Ill.
NTC	National Casein Co	601 W. 80th St., Chicago 20, Ill. (Tyler, Tex.).
SHF	National Dairy Products Corp., Sheffield Chemical Co. Div.	Box 630, Norwich, N.Y.
USI	National Distillers & Chemical Corp., U.S. Industrial Chemicals Co. Div.	99 Park Ave., New York 16, N.Y. (New Orleans, La.).
NTL	National Lead Co	111 Broadway, New York 6, N.Y. (San Francisco, Calif.; Perth Amboy, N.J.; and Philadelphia, Pa.).

TABLE 23.--*Synthetic organic chemicals: Directory of manufacturers, 1959*--Continued

Code	Name of company	Office address (location of plant given in parentheses if not in same city as office)
NPC	National Petro-Chemicals Corp----------	99 Park Ave., New York 16, N.Y. (Tuscola, Ill.).
NPI	National Polychemicals, Inc----------	Eames St., Wilmington, Mass.
NSP	National Southern Products Corp--------	P.O. Box 390, Tuscaloosa, Ala.
NSC	National Starch and Chemical Corp------	750 3d Ave., New York 17, N.Y. (Meredosia, Ill.; and Plainfield, N.J.).
NES	Nease Chemical Co., Inc----------	P.O. Box 221, State College, Pa. (Fernald, Ohio; and Lock Haven and State College, Pa.).
NEP	Nepera Chemical Co., Inc----------	Rt. 17 & Averill Ave., Harriman, N.Y.
NEV	Neville Chemical Co----------	Neville Island, Pittsburgh 25, Pa. (Anaheim, Calif.; and Neville Island, Pa.).
NYP	New York & Pennsylvania Co., Inc-------	425 Park Ave., New York 22, N.Y. (Johnsonburg, Pa.).
NIL	Nilok Chemicals, Inc----------	2000 College Ave., Niagara Falls (Lockport), N.Y.
NON	A. P. Nonweiler Co----------	P.O. Box 1007, Oshkosh, Wis.
NOP	Nopco Chemical Co., Inc----------	60 Park Place, Newark 2, N.J. (Richmond, Calif.; Cedartown, Ga.; and Carlstadt, Clifton, Harrison, and North Arlington, N.J.).
NEO	Norda Essential Oil & Chemical Co., Inc.	601 W. 26th St., New York 1, N.Y. (Boonton, N.J.).
NW	Northwestern Chemical Co----------	120 N. Aurora St., West Chicago, Ill.
NOR	Norwich Pharmacal Co----------	17 Eaton Ave., Norwich, N.Y.
OB	O'Brien Corp----------	2001 W. Washington Ave., South Bend 21, Ind. (Baltimore, Md.; and South Bend, Ind.).
ODB	Odessa Butadiene Co----------	P.O. Box 1161, El Paso (Odessa), Tex.
ODS	Odessa Styrene Co----------	P.O. Box 1161, El Paso (Odessa), Tex.
OH	Ohio Chemical & Surgical Equipment Co--	1400 E. Washington Ave., Madison 10, Wis. (Cleveland, Ohio).
OIL	Oil & Chemical Products, Inc----------	295 Madison Ave., New York 17, N.Y. (Houston, Tex.).
OLC	Old Colony Tar Co., Inc----------	500 5th Ave., New York 36, N.Y. (Cambridge and Worcester, Mass.).
OLH	Old Hickory Chemical Co., Inc----------	P.O. Box 1480, Richmond 12, Va. (Old Hickory, Tenn.; and Richmond, Va.).
	Olin Mathieson Chemical Corp.:	
OMB	Blockson Chemical Co. Div----------	Joliet, Ill.
OMC	Chemicals Div----------	10 Light St., Baltimore 3, Md. (Huntsville and McIntosh, Ala.; Brandenburg, Ky.; Lake Charles, La.; Niagara Falls and Rochester, N.Y.).
OMS	E. R. Squibb & Sons Div----------	745 5th Ave., New York 22, N.Y. (New Brunswick, N.J.; and Brooklyn, N.Y.).
ONX	Onyx Chemical Co----------	190 Warren St., Jersey City 2, N.J. (Jersey City, N.J.; and Rossville, Staten Island, N.Y.).
OPC	Orbis Products Corp----------	601 W. 26th St., New York 1, N.Y. (Newark, N.J.).
ORG	Organics, Inc----------	1724 Greenleaf Ave., Chicago 26, Ill.
ORO	Oronite Chemical Co----------	200 Bush St., San Francisco 4, Calif. (Oak Point, La.).
ORT	Ortho Chemical Corp----------	52-20 37th St., Long Island City, N.Y.
OSB	C. J. Osborn Co----------	1301 W. Blancke St., Linden, N.J.
OTT	Ottol Oil Co----------	455 Cortlandt St., Belleville 9, N.J.
PBS	Pabst Brewing Co----------	Merchandise Mart, Chicago 54, Ill. (Peoria, Ill.; and Milwaukee, Wis.).
PAN	Pan American Petroleum Corp----------	P.O. Box 591, Tulsa 2, Okla. (Ulysses, Kans.; Cotton Valley, La.; and Alvin, Frankel City, Katy, Levelland, Pettus, Sundown, and Sweeney, Tex.).
PD	Parke-Davis & Co----------	Jos. Campau at the River, Detroit 32, Mich.
PRP	M. W. Parsons-Plymouth, Inc----------	59 Beekman St., New York 39 (Brooklyn), N.Y.
PAT	Patent Chemicals, Inc----------	335 McLean Blvd., Paterson, N.J.
PUL	Paul-Lewis Laboratories, Inc----------	4215 N. Port Washington Ave., Milwaukee 12, Wis.
PEK	Peck's Products Co----------	610 E. Clarence Ave., St. Louis 15, Mo.
PCH	Peerless Chemical Co----------	3850 Oakman Blvd., Detroit 4, Mich.
PCO	Peerless Color Co., Inc----------	521 North Avenue, Plainfield, N.J.
PEN	S. B. Penick & Co----------	100 Church St., New York, N.Y. (Jersey City, Lyndhurst, Montville, and Newark, N.J.).
PAS	Pennsalt Chemicals Corp----------	3 Penn Center, Philadelphia 2, Pa. (Calvert City, Ky.; Wyandotte, Mich.; and Houston, Tex.).
PAI	Pennsylvania Industrial Chemical Corp--	120 State Street, Box 240, Clairton (Chester), Pa.
PAR	Pennsylvania Refining Co----------	Butler Savings & Trust Bldg., Butler (Karns City), Pa.
PGU	Perkins Glue Co----------	632 Cannon Ave., Lansdale, Pa. (W. Memphis, Ark.; High Point, N.C.; and Shawano, Wis.).
PER	Perry & Derrick Co----------	2510 Highland Ave., Cincinnati 12, Ohio (Dayton, Ky.).
PET	Petroleum Chemicals, Inc----------	P.O. Box 6, 821 Gravier St., New Orleans 6 (Lake Charles), La.
PTT	Petro-Tex Chemical Corp----------	P.O. Box 2584, Houston 1, Tex.
PFN	Pfanstiehl Laboratories, Inc----------	104 Lakeview Ave., Waukegan, Ill.
PRM	Pfaudler Permutit, Inc., Permutit Co. Div.	50 West 44th St., New York 36, N.Y. (Birmingham, N.J.).
PCW	Pfister Chemical Works, Inc----------	Ridgefield, N.J.
PFZ	Chas. Pfizer & Co., Inc----------	11 Bartlett St., Brooklyn 6, N.Y.
PFP	Phelan-Faust Paint Manufacturing Co----	932 Loughborough Ave., St. Louis 11, Mo.
PLC	Phillips Chemical Co----------	Bartlesville, Okla. (Borger and Pasadena, Tex.).

TABLE 23.--*Synthetic organic chemicals: Directory of manufacturers, 1959*--Continued

Code	Name of company	Office address (location of plant given in parentheses if not in same city as office)
PLP	Phillips Petroleum Co	Bartlesville, Okla. (Phillips, Tex.).
PNX	Phoenix Oil Co	9505 Cassius Ave., Cleveland 5, Ohio.
PIL	Pilot Chemical Co. of California	11756 Burke St., Santa Fe Springs, Calif.
PIT	Pitt-Consol Chemical Co	191 Doremus Ave., Newark 5, N.J.
PCC	Pittsburgh Coke & Chemical Co	2100 Grant Bldg., Pittsburgh 19, Pa.
PPG	Pittsburgh Plate Glass Co	1 Gateway Center, Pittsburgh 22, Pa. (Torrance, Calif.; Atlanta, Ga.; Detroit, Mich.; Newark, N.J.; Barberton and Cleveland, Ohio; Springdale, Pa.; Houston, Tex.; New Martinsville, W. Va.; and Milwaukee, Wis.).
PLS	Plastics Engineering Co	1607 Geele Ave., Sheboygan, Wis.
PYL	Polychemical Laboratories, Inc	490 Hunts Point Ave., New York 59, N.Y.
PYR	Poly Resins, Inc	11655 Wicks St., Sun Valley, Calif.
PYZ	Polyrez Co., Inc	So. Columbia St. & Railroad, Woodbury, N.J.
PDC	Poughkeepsie Dyestuff Corp	77 N. Water St., Poughkeepsie, N.Y.
PRT	Pratt & Lambert, Inc	75 Tonawanda St., Buffalo 7, N.Y.
PRE	Premium Chemicals, Inc	113 Marine St., Farmingdale, N.Y.
PRS	Presto Plastic Products Co., Inc	5410 Avenue U, Brooklyn 34, N.Y.
PCS	Process Chemicals Co	8733 S. Dice Rd., Santa Fe Springs, Calif.
PG	Procter & Gamble Manufacturing Co	301 E. 6th St., Cincinnati 2, Ohio (Long Beach and Sacramento, Calif.; Chicago, Ill.; Iowa City, Iowa; Kansas City, Kans.; Quincy, Mass.; Baltimore, Md.; St. Louis, Mo.; Cincinnati, Ohio; Staten Island, N.Y.; and Dallas, Tex.).
PC	Proctor Chemical Co., Inc	P.O. Box 399, Salisbury, N.C.
PRD	Productol Co	417 South Hill St., Los Angeles 13 (Santa Fe Springs), 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	35 East Wacker Dr., Chicago 1, Ill.
PRX	Purex Corp., Ltd	9300 Rayo Avenue, South Gate, Calif.
QCP	Quaker Chemical Products Corp	Elm, Lime, and Sandy Sts., Conshohocken, Pa.
QKO	Quaker Oats Co	Merchandise Mart Plaza, Chicago 54, Ill. (Cedar Rapids, Iowa; Omaha, Nebr.; and Memphis, Tenn.).
RSA	R. S. A. Corp	690 Saw Mill River Rd., Ardsley, N.Y.
RAB	Raybestos-Manhattan, Inc	P.O. Box 1021, Bridgeport (Stratford), Conn.
RET	Rayette, Inc., Chemical Div	261 E. 5th St., St. Paul 1, Minn.
RED	Red Spot Paint & Varnish Co., Inc	110 Main St., Evansville 8, Ind.
TEK	Refined Products Corp	624 Schuyler Ave., Lyndhurst, N.J.
RCI	Reichhold Chemicals, Inc	525 North Broadway, White Plains, N.Y. (Tuscaloosa, Ala.; Azusa and San Francisco, Calif.; Jacksonville, Fla.; Argo, Ill.; Kansas City, Kans.; Ballardvale, Mass.; Ferndale, Mich.; Charlotte, N.C.; Elizabeth, N.J.; Brooklyn, N.Y.; Hampton, S.C.; Houston, Tex.; and Seattle and Tacoma, Wash.).
AKL	Alkydol Laboratories Div	3242 S. 50th Ave., Cicero, Ill.
VAR	Varcum Chemical Corp. Div	Niagara Falls, N.Y.
RIL	Reilly Tar & Chemical Corp	1615 Merchants Bank Bldg., Indianapolis 4, Ind.
REL	Reliance Varnish Co., Inc	4730 Crittenden Dr., Louisville 9, Ky.
REM	Remington Arms Co., Inc	939 Barnum Ave., Bridgeport 2, Conn.
REP	Republic Creosoting Co	1615 Merchants Bank Bldg., Indianapolis 4, Ind.
REZ	Rezolin, Inc	1651 18th St., Santa Monica, Calif.
RCD	Richardson Co	27th Ave. and Lake St., Melrose Park, Ill.
RIC	Richfield Oil Corp	555 S. Flower St., Los Angeles 17 (Watson), Calif.
RIK	Riker Laboratories, Inc	19901 Nordhoff St., Northridge, Calif.
RMC	Rinshed-Mason Co	5935 Milford Ave., Detroit 10, Mich. (Anaheim, Calif.).
RT	F. Ritter & Co	4001 Goodwin Avenue, 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.
RB	Robert & Co., Inc	92 Liberty St., New York 6, N.Y. (Newark, N.J.).
RBC	Roberts Chemicals, Inc	P.O. Box 446, Nitro, W. Va.
ROC	Rock Hill Printing & Finishing Co	Rock Hill, S. C.
RGC	Rogers Corp	Rogers (Manchester), Conn.
RH	Rohm & Haas Co	222 W. Washington Sq., Philadelphia 5, Pa. (Bristol and Philadelphia, Pa.; Knoxville, Tenn.; and Deer Park, Tex.).
ROM	Roma Chemical Corp	900 Passaic Ave., E. Newark, N.J.
ROS	Rosett Chemicals, Inc	84 Waydell St., Newark 5, N.J.
ROY	Royce Chemical Co	Carlton Ave., Carlton Hill, N.J.
RUB	Rubber Corp. of America	New South Rd., Hicksville, N.Y.
RUR	Ruberoid Co	500 5th Ave., New York 36, N.Y. (Joliet, Ill.; Baltimore, Md.; and Erie, Pa.).
SWC	S & W Chemical Co., Inc	P.O. Box 995, LaPorte, Tex.
LKY	St. Regis Paper Co., Lake States Yeast & Chemical Div.	603 W. Davenport St., Rhinelander, Wis.
SAL	Dr. Salsbury's Laboratories	500 Gilbert St., Charles City, Tex.
SLV	Salvo Chemical Corp	Rothschild, Wis.
SAN	Sandoz, Inc	P.O. Box 357, Fair Lawn, N.J.

TABLE 23.--*Synthetic organic chemicals: Directory of manufacturers, 1959*--Continued

Code	Name of company	Office address (location of plant given in parentheses if not in same city as office)
SCF	Schaefer Varnish Co., Inc	15th & Magnolia Sts., Louisville 10, Ky.
SCN	Schenectady Varnish Co., Inc	Congress St. & 9th Ave., Schenectady 1 (Rotterdam Jct.), N.Y.
SCR	R. P. Scherer Corp	9425 Grinnell Ave., Detroit 13, Mich.
SCH	Schering Corp	60 Orange St., Bloomfield (Union), N.J.
SCO	Scholler Bros., Inc	Collins & Westmoreland Sts., Philadelphia 34, Pa.
SWF	Schuylkill Chemical Co	2346 Sedgley Ave., Philadelphia 32, Pa.
SBR	Schwarz BioResearch, Inc	230 Washington St., Mt. Vernon, N.Y.
SEM	Seamco Chemical Co	3 Hanover St., Holyoke, Mass.
SRL	G. D. Searle & Co	P.O. Box 5110, Chicago 80, Ill.
SED	Seidlitz Paint & Varnish Co	18th & Garfield, Kansas City, Mo.
SHW	Shawinigan Resins Corp	644 Monsanto Ave., Springfield 1, Mass. (Trenton, Mich.).
SHC	Shell Chemical Corp	50 W. 50th St., New York 20, N.Y. (Dominguez, Martinez, Pittsburg, Torrance, and Ventura, Calif.; Denver, Colo.; Norco, La.; and Houston, Tex.).
SHO	Shell Oil Co	50 W. 50th St., New York 20, N.Y. (Martinez and Wilmington, Calif.; Roxana, Ill.; Norco, La.; Deer Park, Tex.; and Anacortes, Wash.).
SHP	Shepherd Chemical Co	2803 Highland Ave., Cincinnati 12, Ohio.
SW	Sherwin-Williams Co	101 Prospect Ave. NW., Cleveland 1, Ohio (Chicago, Ill.; Detroit, Mich.; Cleveland and Dayton, Ohio; and Philadelphia and Pittsburgh, Pa.).
SHL	Shulton, Inc	697 Route 46, Clifton, N.J.
SID	George F. Siddall Co., Inc	P.O. Box 925, Spartanburg, S.C. (Cranston, R.I.; and Spartanburg, S.C.).
SIM	Simpson Redwood Co	2301 N. Columbia Blvd., Portland 17, Oreg.
SIN	Sinclair Refining Co	600 5th Ave., New York 20, N.Y. (E. Chicago, Ind.; Sand Springs, Okla.; Marcus Hook, Pa.; and Houston, Tex.).
SIP	James B. Sipe & Co	Box 8010, Pittsburgh 10 (Bridgeville), Pa.
SK	Smith, Kline & French Laboratories	1500 Spring Garden St., Philadelphia 1, Pa.
SM	Socony Mobil Oil Co., Inc	612 S. Flower St., Los Angeles 54, Calif.; and Beaumont, Tex.
SPP	Socony Paint Products Co	Metuchen, N.J.
SOH	Sohio Chemical Co	550A Guildhall Bldg., Cleveland 15 (Lima), Ohio.
SOL	Solar Chemical Corp	29 Fuller St., Leominster, Mass.
SLC	Soluol Chemical Co., Inc	Green Hill & Market Sts., W. Warwick, R.I.
SVT	Solvent Chemical Co., Inc	341 Commercial St., Malden 48, Mass.
SON	L. Sonneborn Sons, Inc	300 Park Ave. S., New York 10, N.Y.
SNC	Sonoco Products Co	Hartsville, S. C.
SOR	Southern Resin Glue Co	P.O. Box 352, Fayetteville (Vander), N.C.
SOS	Southern Sizing Co	3056 SE. Main St., East Point, Ga.
SPL	Spaulding Fibre Co., Inc	310 Wheeler St., Tonawanda, N.Y.
SPR	Specialty Resins Co	2801 Lynwood Rd., Lynwood, Calif.
SPC	Specific Pharmaceuticals, Inc	331 4th Ave., New York 10, N.Y. (Bayonne, N.J.).
SPN	Spencer Chemical Co	610 Dwight Bldg., Kansas City 5, Mo. (Calumet City, Ill.; Pittsburg, Kans.; Henderson, Ky.; Vicksburg, Miss.; and Orange, Tex.).
STA	A. E. Staley Manufacturing Co	N. 22d St., Box 151, Decatur, Ill.
SAC	Standard Agricultural Chemicals, Inc	1301 Jefferson St., Hoboken, N.J.
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	5th St. & 5th Ave., Paterson 4, N.J.
STN	Standard Naphthalene Products Co., Inc	115 Jacobus Ave., S. Kearny, N.J.
SOC	Standard Oil Co. of California	225 Bush St., San Francisco 20 (Bakersfield, El Segundo, and Richmond), Calif.
SOI	Standard Oil Co. of Indiana	910 S. Michigan Ave., Chicago 80, Ill. (Wood River, Ill.; Whiting, Ind.; Neodesha, Kans.; and Sugar Creek, Mo.).
STT	Standard-Toch Chemicals, Inc	2600 Richmond Terrace, Staten Island 3, N.Y.
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.
STS	Stansbury Chemical Co., Inc	1929 Aurora Ave., Seattle 9, Wash.
SF	Stauffer Chemical Co	380 Madison Ave., New York 17, N.Y. (LaMoyne, Ala.; Richmond and Torrance, Calif.; Louisville, Ky.; Henderson, Nev.; Brooklyn, Chauncey, and Niagara Falls, N.Y.; Perry, Ohio; Chester, Pa.; Lowland, Tenn.; and Bentonville and Roanoke, Va.).
SFA	Anderson Chemical Co. Div	Weston, Mich.
CHO	Calhio Chemicals, Inc. Div	380 Madison Ave., New York 17, N.Y. (Perry, Ohio).
VIC	Victor Chemical Works Div	155 N. Wacker Dr., Chicago 6, Ill.
SH	Stein, Hall & Co., Inc	285 Madison Ave., New York 17, N.Y. (Charlotte, N.C.).
STP	Stepan Chemical Co	427 W. Randolph St., Chicago 6, Ill.
	Sterling Drug, Inc.:	
SDG	Glenbrook Laboratories Div	1450 Broadway, New York 18, N.Y. (Trenton, N.J.)
SDH	Hilton-Davis Chemical Co. Div	2235 Langdon Farm Rd., Cincinnati 13, Ohio.
SDW	Winthrop Laboratories Div	1450 Broadway, New York 18 (Rensselaer), N.Y.

TABLE 23.--*Synthetic organic chemicals: Directory of manufacturers, 1959*--Continued

Code	Name of company	Office address (location of plant given in parentheses if not in same city as office)
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.
	Sun Chemical Corp.:	
SNM	Ampruf Paint Co. Div----------	416 Boulevard, E. Paterson, N.J.
SNA	Ansbacher-Siegle Corp. Div----------	92 Chestnut Ave., Rosebank, Staten Island 5, N.Y.
SNP	Pigment Div----------	750 3d Ave., New York 17, N.Y. (Harrison, N.J.).
SNW	Warwick Chemical Co. Div----------	1040 44th Ave., Long Island City, N.Y. (Wood River Jct., R.I., and Rockhill, S.C.).
SUN	Sun Oil Co----------	1608 Walnut St., Philadelphia 3 (Marcus Hook), Pa.
SNT	Suntide Refining Co----------	P.O. Box 658, Corpus Christi (Viola), Tex.
SWI	Swift & Co----------	4115 S. Packers Ave., Chicago 9, Ill.
SYR	Synco Resins, Inc----------	Henry St., Bethel, Conn.
SYC	Synthetic Chemicals, Inc----------	335 McLean Blvd., Paterson, N.J.
SYP	Synthetic Products Co----------	1636 Wayside Rd., Cleveland 20, Ohio.
SYV	Synvar Corp----------	P.O. Box 1752, 726 King St., Wilmington 99, Del.
CST	Charles S. Tanner Co----------	250 S. Water St., Providence 3, R.I.
TAR	Tar Distilling Co., Inc----------	500 5th Ave., New York 36, N.Y. (Cleveland, Ohio).
TAY	Taylor Fibre Co----------	Norristown (Betzwood), Pa.
TN	Tennessee Corp----------	61 Broadway, New York 6, N.Y. (Copperhill, Tenn.).
TNP	Tennessee Products & Chemical Corp----	2611 West End Ave., Nashville 5 (Chattanooga), Tenn.
TXC	Tex Chemical Co----------	20-21 Wagaraw Rd., Fair Lawn, N.J.
TX	Texaco, Inc----------	135 E. 42d St., New York 17, N.Y. (Port Arthur, Tex.).
TXB	Texas Butadiene & Chemical Corp-------	440 Bank of the Southwest Bldg., Houston (Channelview), Tex.
TUS	Texas-U.S. Chemical Co----------	P.O. Box 667, Port Neches, Tex.
TKL	Thiokol Chemical Corp----------	P.O. Box 27, Bristol, Pa. (Moss Point, Miss.; and Trenton, N.J.).
TMS	Thomasset Colors, Inc----------	120 Lister Ave., Newark 5, N.J.
THC	Thompson Chemical Co----------	90 Mendor Ave., Pawtucket, R.I. (Hebronville, Mass.; and Pawtucket, R.I.).
TMC	Thompson Chemicals Corp----------	3023 Locust St., St. Louis 3, Mo.
TMH	Thompson-Hayward Chemical Co----------	2915 Southwest Blvd., Kansas City 8, Mo.
TRC	Toms River-Cincinnati Chemical Corp---	P.O. Box 71, Toms River, N.J.
TV	Tousey Varnish Co----------	520 W. 25th St., Chicago 16, Ill.
ACT	Arthur C. Trask Co----------	327 S. LaSalle St., Chicago 4, Ill.
TRP	Treplow Chemical Co----------	59 Camden St., Paterson, N.J.
TGL	Triangle Chemical Co----------	206 Lower Elm St., Macon, Ga.
TRJ	Trojan Powder Co----------	17 N. 7th St., Allentown (Seiple), Pa.
TBK	Trubek Laboratories----------	State Highway 17, E. Rutherford, N.J.
JTC	Joseph Turner & Co----------	P.O. Box 88, Pleasantview Terrace, Ridgefield, N.J.
UBS	U B S Chemical Corp----------	491 Main St., Cambridge, Mass.
UHL	Paul Uhlich & Co., Inc----------	90 West St., New York 6, N.Y.
UNG	Ungerer & Co----------	161 Avenue of the Americas, New York 13 (Totowa), N.Y.
	Union Carbide Corp.:	
UCC	Union Carbide Chemicals Co. Div-----	30 E. 42d St., New York 17, N.Y. (Torrance, Calif.; Whiting, Ind.; Niagara Falls, N.Y.; Port Lavaca and Texas City, Tex.; and Institute and S. Charleston, W. Va.).
UCP	Union Carbide Plastics Co. Div------	30 E. 42d St., New York 17, N.Y. (Ottawa, Ill.; Wyandotte, Mich.; Bound Brook, N.J.; and Marietta, Ohio).
UCS	Silicones Div----------	30 E. 42d St., New York 17, N.Y. (Sistersville, W. Va.).
UOC	Union Oil Co. of California----------	461 S. Boylston St., Los Angeles 17, Calif. (Contra Costa County, Los Angeles, San Luis Obispo County, and Santa Barbara County, Calif.; Glacier County, Mont.; and Snohomish County, Wash.).
UNC	United Cork Companies----------	Central Ave., Kearny (Jamesburg), 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 (Boron), Calif.
USO	U.S. Oil Co----------	P.O. Box 1345, Providence, R.I.
UPF	United States Pipe & Foundry Co-------	3300 1st Ave. N., Birmingham 2, Ala.
USP	U.S. Plastics Products Corp----------	Lake & Whitman Aves., Metuchen, N.J.
USR	United States Rubber Co., Naugatuck Chemical Div.	1230 Avenue of the Americas, New York 20, N.Y. (Naugatuck, Conn.).
UDI	Universal Detergents, Inc. and Petro-chemicals Co.	1825 E. Spring St., Long Beach 6, Calif.
UPM	Universal Oil Products Co., Universal Polychem Manufacturing Div.	30 Algonquin Rd., Des Plaines (McCook), Ill.
UWS	Universal Western Chemical Corp-------	12800 E. Imperial Hwy., P.O. Box 487, Norwalk, Calif.
UPJ	Upjohn Co----------	301 Henrietta St., Kalamazoo 99, Mich.
VAL	Valchem----------	1407 Broadway, New York 18, N.Y. (Langley, S.C.).
VNC	Vanderbilt Chemical Corp----------	230 Park Ave., New York 17, N.Y. (Bethel, Conn.).
VND	Van Dyk & Co., Inc----------	11 William St., Belleville 9, N.J.
VEL	Velsicol Chemical Corp----------	330 E. Grand Ave., Chicago 11, Ill. (Marshall, Ill.; and Memphis, Tenn.).
VLY	Verley Chemical Co., Inc----------	200 Pulaski St., Newark 5, N.J.
VPC	Verona-Pharma Chemical Corp----------	Iorio Ct., Union (Bayonne and Newark), N.J.
VPT	Vickers Petroleum Co., Inc----------	P.O. Box 2240, Wichita (Potwin), Kans.

TABLE 23.--*Synthetic organic chemicals: Directory of manufacturers, 1959*--Continued

Code	Name of company	Office address (location of plant given in parentheses if not in same city as office)
VIN	Vineland Chemical Co	W. Wheat Rd., Vineland, N.J.
VC	Virginia-Carolina Chemical Corp	401 E. Main St., Richmond 8, Va. (Charleston, S.C.).
VIS	Visco Products Co	1020 Holcombe Blvd., Houston 6 (Sugar Land), Tex.
VTM	Vitamins, Inc	809 W. 58th St., Chicago 21, Ill.
VTV	Vita-Var Corp	10 Commerce Court, Newark 2, N.J.
FRO	Vulcan Materials Co., Frontier Chemical Co. Div.	P.O. Box 545, Wichita, Kans.
WTM	Wallace & Tiernan, Inc	25 Main St., Belleville 9, N.J..
WTH	Harchem Div	P.O. Box 178, Newark, N.J. (Dover, Ohio).
WTL	Lucidol Div	1740 Military Rd., Buffalo 5 (Genessee and Tonawanda), N.Y.
WRN	Warner-Jenkinson Manufacturing Co	2526 Baldwin St., St. Louis 6, Mo.
WPC	Warren Paint and Color Co	700 Wedgewood Ave., Nashville 4, Tenn.
WAS	T. F. Washburn Co	2244 Elston Ave., Chicago 14, Ill.
WAT	Watertown Manufacturing Co	127 Echo Lake Rd., Watertown, Conn.
WEB	R. D. Webb & Co., Inc	Stimpson Ave. at Stiles St., Linden, N.J.
WER	Werner Drug & Chemical Co	759 Beechwood Ave., Cincinnati 32, Ohio.
WDC	Western Dry Color Co	600 W. 52d St., Chicago 9, Ill.
EW	Westinghouse Electric Corp	P.O. Box 146, Pittsburgh 30, Pa.
WST	Westville Laboratories, Inc	Wheeler Rd., Monroe, Conn.
WVA	West Virginia Pulp and Paper Co., Polychemicals Div.	Charleston, S.C.
WEV	Geo. D. Wetherill Varnish Co	Haddon Ave. & White Horse Pike, Camden 3, N.J.
WRS	Wheeler, Reynolds & Stauffer	636 California St., San Francisco 8 (Richmond), Calif.
WBG	White & Bagley Co	100 Foster St., Worcester 8, Mass.
WHI	White & Hodges, Inc	576 Lawrence St., Lowell, Mass.
WHW	Whittemore-Wright Co., Inc	62 Alford St., Boston 29, Mass.
WIC	Wica Co., Inc	P.O. Box 506, Charlotte 1, N.C.
WLM	Wilmot & Cassidy, Inc	108-112 Provost St., Brooklyn 22, N.Y.
WIL	Wilson & Co., Inc., Wilson Laboratories Div.	4221 S. Western Ave., Chicago 9, Ill.
WOC	Wilson Organic Chemicals, Inc	P.O. Box 452, Sayreville, N.J.
WTC	Witco Chemical Co., Inc	122 E. 42d St., New York 17, N.Y.
WTU	Ultra Chemical Works, Inc. Div	2 Wood St., Paterson 6, N.J.
WTT	John H. Witte & Sons, Resin Div	Oak St. & Bluff Rd., Burlington, Iowa.
WAW	W. A. Wood Co	108 Spring St., Everett 49, Mass.
WON	Woonsocket Color & Chemical Co	179 Sonnyside Ave., Woonsocket, R.I.
WYN	Wyandotte Chemicals Corp	1609 Biddle Ave., Wyandotte, Mich. (Geismar, La.; and 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 1957-59, 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 1959, general imports of coal-tar chemicals entered under paragraph 27 totaled 28.8 million pounds, with a foreign invoice value of $14.0 million, compared with imports of 14.4 million pounds, valued at $10.7 million, in 1958. Most of the coal-tar chemicals imported in 1959 were declared to be competitive (duty based on "American selling price"). Almost half of the total imports of these products in 1959 came from West Germany; imports from that country amounted to 10.8 million pounds, compared with 6.9 million pounds in 1958. Imports from Italy in 1959 amounted to 5.1 million pounds, compared with 1.7 million pounds in 1958. Imports from France totaled 2.7 million pounds in 1959, compared with 567,000 pounds in 1958, and imports from the United Kingdom amounted to 2.4 million pounds in 1959, compared with 1.2 million pounds in 1958. In 1959 sizable quantities of products that are dutiable under paragraph 27 were also imported from Canada (1,377,000 pounds), the Netherlands (1,375,000 pounds), Belgium (1,350,000 pounds), Switzerland (1,227,000 pounds), Japan (782,000 pounds), Denmark (764,000 pounds), Spain (364,000 pounds), Sweden (199,000 pounds), the Union of South Africa (165,000 pounds), and Norway (123,000 pounds). Smaller quantities came from Austria (66,000 pounds) and Australia (14,000 pounds).

TABLE 24.-- ***Coal-tar intermediates and finished coal-tar products: U.S. general imports, classified by use, 1957-1959***

Product	1957		1958		1959	
	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]	11,869	10,683	14,408	10,654	28,842	14,033
Finished coal-tar products, total	6,604	13,278	7,092	15,784	11,259	21,901
Dyes, total	3,187	5,586	3,440	6,467	4,251	7,867
Acid	700	1,582	947	1,833	1,117	2,391
Azoic compositions	11	27	24	45	24	48
Basic	211	382	342	666	462	777
Direct	674	1,513	716	1,576	917	1,921
Disperse	50	115	59	131	94	215
Fiber-reactive	(2)	(2)	220	631	170	494
Fluorescent brightening agents	(2)	(2)	289	293	280	416
Ingrain	(2)	(2)	48	118	64	154
Mordant	256	351	175	252	169	312
Solvent	164	332	23	74	32	104
Sulfur	6	5	18	17	20	15
Vat	655	858	575	824	888	987
All other	460	421	4	7	14	33
Synthetic organic pigments (toners and lakes)	(2)	(2)	209	286	202	401
Medicinals and pharmaceuticals	1,349	5,792	1,550	7,185	2,305	10,676
Flavor and perfume materials	275	392	391	610	559	865
All other	1,793	1,508	1,502	1,236	3,942	2,092

[1] Includes small quantities of organic pesticides and agricultural chemicals, rubber-processing chemicals, and surface-active agents.
[2] Not separately classified in 1957.

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

[1] U.S. Tariff Commission, *Imports of Coal-Tar Products, 1959*, 1960 [processed].

The most important individual intermediates imported in 1959 were phthalic anhydride, gamma acid, refined naphthalene, 2-naphthol, and acetoacetanilide. In 1959, imports of phthalic anhydride, which totaled 12.9 million pounds, came principally from Italy, West Germany, and France; imports of gamma acid, which totaled 609,000 pounds, came from Italy, the Netherlands, West Germany, France, and Japan. Imports of refined naphthalene, which came from Belgium, West Germany, the Netherlands, the United Kingdom, and Japan, totaled 593,000 pounds; and imports of 2-naphthol, which came from West Germany and the United Kingdom, totaled 542,000 pounds. Imports of acetoacetanilide, which came from the United Kingdom, West Germany, and Switzerland, totaled 491,000 pounds. Among the other important individual chemicals imported, anthraquinone came from France and the United Kingdom; cyclohexylamine, from West Germany and Switzerland; 1,4-naphthoquinone, from Japan, Switzerland, and Italy; and H acid, from West Germany and Italy. West Germany was also the source of most of the imports of phenyl isocyanate and 1-naphthol; France, of all the hydroxycinnamic acid, sodium salt; Canada, of all the phthalic acid, diisodecyl ester; and the Netherlands, of all the caprolactam monomer.

Imports in 1959 of all finished coal-tar products that are dutiable under paragraph 28 comprised 1,968 items, with a total weight of 11.3 million pounds and a foreign invoice value of $21.9 million. In 1958, imports consisted of 1,636 items, with a total weight of 7.1 million pounds and a foreign invoice value of $15.8 million. In 1959, as in 1957 and 1958, medicinals and pharmaceuticals were the most important group of finished coal-tar products imported. Imports of medicinals and pharmaceuticals in 1959 amounted to $10.7 million (foreign invoice value), or 49 percent of the total value of all imports under paragraph 28. In 1958, imports of medicinals and pharmaceuticals amounted to $7.2 million (foreign invoice value), or 46 percent of the total value of all imports under paragraph 28.

Imports of coal-tar dyes, the next most important group of products entered under paragraph 28 in 1959, were 22 percent larger in that year than in 1958 and 47 percent larger than in 1957. In 1959, imports of dyes (excluding synthetic organic pigments) were valued at $7.9 million (foreign invoice value), or 36 percent of total imports under paragraph 28. In 1958, imports of dyes (excluding synthetic organic pigments) were valued at $6.5 million, or 41 percent of total imports under paragraph 28. In 1959, imports of synthetic organic pigments (toners and lakes) were valued at $401,000, compared with $286,000, in 1958. Imports of flavor and perfume materials in 1959 ($865,000) were 42 percent greater than those in 1958. In 1959, imports of other coal-tar products entered under paragraph 28 (chiefly synthetic resins), valued at $2.1 million, were 69 percent greater than those in 1958.

B. Research Workers and Research Expenditures in the Synthetic Organic Chemical Industry

Because the synthetic organic chemical industry has evidenced considerable interest in statistics on chemical research, the Tariff Commission for a number of years has collected and published statistics on the number of technically trained research workers in the industry, their salaries, and the cost of research (see table 25). Such information is not available elsewhere. Many of the companies that produce synthetic organic chemicals also manufacture other products, and the cost of research applicable to synthetic organic chemicals must therefore be allocated; in some instances the allocation is somewhat arbitrary. Moreover, since not all companies report their research activities to the Tariff Commission, the data given in table 25 are only about 80 percent complete. Notwithstanding these limitations, the statistics do indicate general trends in the amount of research conducted in the field of synthetic organic chemicals.

In 1959, 471 companies reported research activities on synthetic organic chemicals. The number of technically trained research workers reported for 1959 was 15,585, compared with the 14,242 reported for 1958. The average salary paid in 1959 was $9,136, compared with $8,717 in 1958. Total salaries paid research workers in 1959 amounted to $142 million, compared with $124 million in 1958. In 1959 the gross cost of research was $363 million--$50 million more than in 1958. Research conducted for the industry outside the facilities of the reporting companies--a cost not included in the gross cost given above--amounted to $18 million, or about $4 million more than in 1958. This figure, however, probably does not represent all research projects conducted for the reporting companies in universities and private laboratories, or all consulting services.

TABLE 25.--*Synthetic organic chemical industry: Number of research workers, salaries paid research workers, and cost of research, 1955-59*

Year	Companies reporting	Technically trained research workers[1]	Salaries paid research workers	Total reported cost of research		
				Within the plant		Outside the plant
				Gross	Net[2]	
	Number	*Number*	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*
1955	403	14,191	104,804	252,530	239,511	11,614
1956	409	15,498	117,186	313,430	308,376	12,566
1957	441	14,852	133,005	309,716	305,748	16,687
1958	447	14,242	124,151	313,315	309,070	13,839
1959	471	15,585	142,389	362,971	355,825	18,261

[1] For the year 1955 a technically trained research worker was defined as a person with technical training engaged in research work and earning not less than $3,600 per year; for 1956-57 a research worker was defined as such a person earning not less than $4,500 per year; for 1958-59 a research worker was defined as such a person earning not less than $5,000 per year.

[2] The net-cost figure is obtained by deducting from gross cost the credits for salable products obtained in the course of research.

C. 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 originally was 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.

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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-Acetoacetochloroanilide	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_1-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-Aminosaligenin-2-methyl ether	5-Amino-2-methoxybenzyl alcohol.
6-Amino-3-(p-toluenesulfone)amino-4-methoxytoluene	4'-Amino-5'-methyl-p-toluenesulfon-o-anisidide.
3'-Amino-(p-toluenesulfone)ethoxytoluene	3-Methyl-N-(p-toluenesulfono)-p-phenetidine.
2-Aminotoluene-5-sulfonic acid	4-Amino-m-toluenesulfonic acid [SO_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^1-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-9,10-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)benzenesulfonic acid.
1-(2-Chloro-4-sulfophenyl)-3-methyl-5-pyrazolone	5-Chloro-4-(3-methyl-5-oxo-2-pyrazolin-1-yl)benzenesulfonic acid.
1-(6-Chloro-3-sulfophenyl)-3-methyl-5-pyrazolone	4-Chloro-3-(3-methyl-5-oxo-2-pyrazolin-1-yl)benzenesulfonic 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-Nitrotolueneanilide	5-Nitro-n-phenyl-o-toluidine [NH_2=1].
6-Nitro-3-(p-toluenesulfone)amino-4-methoxytoluene	N-(5-Methyl-4-nitro-o-methoxyphenyl)-p-toluenesulfonamide.
4′-Nitro-p-toluenesulfone-o-toluide	4′-Nitro-p-toluenesulfono-o-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-anthraquinone-sulfonic 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.
Trichlorophenylsiliceane	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.

D. Cross-Reference List of *Colour Index* and Common Names of Toners and Lakes

In previous reports in this series, individual toners and lakes were identified by the names by which they were most commonly known in the literature and in the trade. In this report, they are identified by the names used in the second edition of *Colour Index*.

To facilitate comparison of the statistics shown in this report and those given in the reports for earlier years, the following cross-reference list has been compiled. The list gives, for each *Colour Index* name used in tables 11A, 12, and 11B of this report, the corresponding name by which the pigment was identified in earlier reports.

Toners and lakes: Cross-reference list of Colour Index *and common names*

Colour Index name	Common name
Natural Black 3	Logwood black.
Pigment Blue 1	Victoria pure blue B.
Pigment Blue 9	Setoglaucine.
Pigment Blue 14	Ethyl violet.
Pigment Blue 15	Phthalocyanine blue B, BG.
Pigment Blue 19	Alkali blue.
Pigment Blue 24	Peacock blue, fugitive.
Pigment Blue 25	Dianisidine blue.
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 Orange 2	o-Nitroaniline orange.
Pigment Orange 5	2,4-Dinitroaniline orange.
Pigment Orange 13	Benzidine orange.
Pigment Orange 16	Dianisidine orange.
Acid Red 26	Scarlet 2R.
Pigment Red 1	Para red.
Pigment Red 2	Naphthol AS and dca.
Pigment Red 3	Toluidine red.
Pigment Red 4	o-Chloro-p-nitroaniline red.
Pigment Red 5	Naphthol AS-ITR and ITR base.
Pigment Red 17	Naphthol AS-D and pnot.
Pigment Red 18	Toluidine maroon.
Pigment Red 22	Naphthol AS and pnot.
Pigment Red 23	Naphthol AS-BS and pnoa.
Pigment Red 38	Pyrazolone red.
Pigment Red 41	Dianisidine red.
Pigment Red 48	Permanent red 2B.
Pigment Red 49	Lithol red R.
Pigment Red 52	Lithol red 2G.
Pigment Red 53	Red lake C.
Pigment Red 57	Lithol rubine B.
Pigment Red 60	Pigment scarlet 3B.
Pigment Red 63	B.O.N. maroon.
Pigment Red 81	Rhodamine 6G.
Pigment Red 83	Alizarin red B.
Pigment Red 90	Eosine.
Pigment Violet 1	Rhodamine B.
Pigment Violet 3	Methyl violet B.
Pigment Violet 5	Helio fast rubine 4BL.
Acid Yellow 23	Tartrazine.
Basic Yellow 2	Auramine.
Pigment Yellow 1	Hansa yellow G.
Pigment Yellow 3	Hansa yellow 10G.
Pigment Yellow 12	Benzidine yellow (dcb and aaa).
Pigment Yellow 13	Benzidine yellow (dcb and aamx).
Pigment Yellow 14	Benzidine yellow (dcb and aaot).

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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)

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

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*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. 201, 2d ser., 1959), 60¢

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