UNITED STATES TARIFF COMMISSION

SYNTHETIC ORGANIC CHEMICALS

United States Production and Sales, 1961

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

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Introduction

This is the forty-fifth 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 1961 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, medicinal chemicals, flavor and perfume materials, plastics and resin materials, rubber-processing chemicals, elastomers, plasticizers, surface-active agents, pesticides and other organic agricultural chemicals, and miscellaneous chemicals. The use classifications of finished synthetic organic chemicals are based principally on the manufacturers' annual reports to the Tariff Commission; other sources include trade associations, the chemical literature, chemical dictionaries, encyclopedias, and consultants in the chemical industry. With a few exceptions, the report does not cover organic chemicals (such as wood-distillation products, essential oils, and naval stores) that are derived from natural (vegetable) sources by simple extraction or distillation. The Commission has compiled the statistics presented in this report from information supplied by the 722 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 these changes is the replacement of the numerical identification code previously used to identify manufacturers, by an alphabetical code. Each reporting company has been assigned an identification symbol consisting of a combination of not more than three capital letters, selected in most instances with the approval of the manufacturer. 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, 1959, and 1960 reports, includes data on only those individual chemicals for which the volume of production or sales in the year covered exceeded 1,000 pounds or for which the value of sales exceeded $1,000.

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

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

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

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

[1] A toll agreement is an agreement between two firms, under which one firm furnishes the raw materials and pays the processing costs and the other firm prepares the finished product and returns it to the first firm.

Production excludes--

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

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

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

Sales exclude--

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

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

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

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

In this report, statistics are presented in as great detail as is possible without revealing the operations of individual producers. Statistics for an individual chemical or group of chemicals are not given if there are fewer than three producers. Moreover, even when there are three or more producers, statistics are not given if there is any possibility that their publication would violate the statutory provisions relating to unlawful disclosure of information accepted in confidence by the Commission.[2]

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

Statistics on U.S. imports in 1961 of coal-tar intermediates and finished coal-tar products that entered under paragraphs 27 and 28 of the Tariff Act of 1930 are given in appendix A. Appendix B is a glossary of the common, or trivial, names of coal-tar intermediates usually encountered in the trade, together with their equivalent standard (or *Chemical Abstracts*) names. Appendix C is a cross-reference list of the *Colour Index* and common names of toners and lakes.

This report does not contain the section on the number of trained research workers employed, and the cost of research in the synthetic organic chemical industry, which appeared as appendix B in previous reports. The Bureau of the Census, in cooperation with the National Education Association, now compiles comprehensive statistics on individual research (U.S. Bureau of the Census, *Survey of Industrial Research and Development*, 1960 (preliminary)).

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

Summary

Combined production of all synthetic organic chemicals, tars, tar crudes, and crude products from petroleum and natural gas in 1961 was 100,670 million pounds--an increase of 4.1 percent over the output in 1960 (see table 1). Sales of these materials in 1961, which totaled 58,356 million pounds, valued at $7,980 million, were 5.1 percent larger than in 1960 in terms of quantity and 6.3 percent larger in terms of value. These figures include data on production and sales of chemicals measured at several successive steps in the manufacturing process, and therefore they necessarily contain some duplication.

In 1961, production of all synthetic organic chemicals, including cyclic intermediates and finished chemical products, totaled 56,183 million pounds, or 4.1 percent more than the output in 1960. The production of flavor and perfume materials (64 million pounds) was 16.4 percent larger in 1961 than in 1960; that of surface-active agents (1,729 million pounds) was 12.9 percent larger; and that of plastics and resin materials (6,709 million pounds) was 9.2 percent larger.

The output of most of the other groups of synthetic organic chemicals also increased in 1961 from 1960. Production of pesticides and other organic agricultural chemicals (700 million pounds) was 8.0 percent greater; that of coal-tar dyes (167 million pounds) was 7.1 percent greater; that of cyclic intermediates (10,275 million pounds) was 7.0 percent greater; that of plasticizers (630 million pounds) was 4.7 percent greater; that of medicinal chemicals (118 million pounds) was 3.5 percent greater; that of rubber-processing chemicals (205 million pounds) was 2.5 percent greater; and that of miscellaneous chemicals (32,744 million pounds) was 2.6 percent greater. Production of two groups of synthetic organic chemicals was smaller in 1961 than in 1960. Output of toners and lakes (35 million pounds) declined 12.5 percent, and output of elastomers (2,807 million pounds) declined 4.9 percent.

TABLE 1. --*Synthetic organic chemicals and their raw materials: U.S. production and sales, 1960 and 1961*

Chemical	Production			Sales					
				Quantity			Value		
	1960	1961	Increase or decrease (-), 1961 over 1960[1]	1960	1961	Increase or decrease (-), 1961 over 1960[1]	1960	1961	Increase or decrease (-), 1961 over 1960[1]
	Million pounds	*Million pounds*	*Percent*	*Million pounds*	*Million pounds*	*Percent*	*Million dollars*	*Million dollars*	*Percent*
Grand total	96,729	100,670	4.1	55,538	58,356	5.1	7,507	7,980	6.3
Tar	7,094	6,499	-8.4	3,333	3,266	-2.0	43	42	-2.3
Tar crudes	9,536	9,425	-1.2	5,771	5,565	-3.6	154	147	-4.5
Crude products from petroleum and natural gas	26,147	28,563	9.2	17,674	18,513	4.7	648	644	-0.6
Synthetic organic chemicals, total-	53,952	56,183	4.1	28,760	31,012	7.8	6,662	7,147	7.3
Intermediates	9,602	10,275	7.0	3,964	4,103	3.5	622	621	-0.2
Dyes	156	167	7.1	148	158	6.8	192	213	10.9
Toners and lakes	40	35	-12.5	33	29	-12.1	64	66	3.1
Medicinal chemicals	114	118	3.5	88	92	4.5	557	577	3.6
Flavor and perfume materials	55	64	16.4	47	55	17.0	60	68	13.3
Plastics and resin materials	6,143	6,709	9.2	5,347	5,989	12.0	1,653	1,710	3.4
Rubber-processing chemicals	200	205	2.5	153	156	2.0	101	104	3.0
Elastomers (synthetic rubbers)	2,952	2,807	-4.9	2,551	2,565	0.5	698	717	2.7
Plasticizers	602	630	4.7	500	536	7.2	149	155	4.0
Surface-active agents	1,532	1,729	12.9	1,399	1,583	13.2	278	292	5.0
Pesticides and other organic agricultural chemicals	648	700	8.0	570	612	7.4	262	303	15.6
Miscellaneous chemicals	31,908	32,744	2.6	13,960	15,134	8.4	2,026	2,321	14.6

[1] Percentages calculated from figures rounded to thousands.

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

Tars

Coal tar is produced chiefly by the steel industry as a byproduct of the manufacture of coke; water-gas tar and oil-gas tar are produced by the fuel-gas industry. Production of coal tar, therefore, depends on the demand for steel; production of water-gas and oil-gas tar reflects the consumption of manufactured gas for industrial and household use. Water-gas and oil-gas tars have properties intermediate between those of petroleum asphalts and coal tars. Petroleum asphalts are not usually considered to be raw materials for chemicals.

The quantity of tar produced in the United States from all sources in 1961 was 650 million gallons, or 8.4 percent less than the 709 million gallons produced in 1960. Of the total quantity produced in 1961, 633 million gallons was coal tar and 17 million gallons was water-gas and oil-gas tar (see table 2).

TABLE 2.--*Tar*: *U.S. production and consumption, 1960 and 1961*

[In thousands of gallons]

Product	1960	1961
PRODUCTION		
Total	709,360	649,878
Water-gas and oil-gas tar[1]	21,800	16,500
Coal tar from coke-oven byproduct plants[2]	687,560	633,378
CONSUMPTION		
Total	721,190	634,769
Tar consumed by distillation, total	616,105	603,724
Coal tar distilled or topped by coke-oven operators[2]	275,310	276,965
Coal tar, water-gas tar, and oil-gas tar distilled by producers and tar distillers[3]	340,795	326,759
Tar consumed chiefly as fuel[2 4]	85,146	16,810
Tar consumed otherwise than by distillation or as fuel, total	19,939	14,235
Coal tar consumed at coke-oven plants for roads and upkeep[2]	714	939
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]	19,225	13,296

[1] Reported to the American Gas Association.
[2] Reported to the U.S. Bureau of Mines.
[3] Reported to the U.S. Tariff Commission. Represents tar purchased from companies operating coke ovens and gas-retort plants and distilled by companies operating tar-distillation plants.
[4] Figures show the amount of coal tar sold or consumed as fuel by coke-oven operators. No data were reported on water-gas and oil-gas tar consumed as fuel.
[5] Reported to the American Gas Association and to the U.S. Tariff Commission.

Total consumption of tar in 1961 amounted to 635 million gallons, of which 604 million gallons was consumed by distillation, 17 million gallons as fuel, and 14 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 1961 amounted to 545 million gallons--19.3 percent more than the 457 million gallons reported for 1960. These totals include data for benzene produced from tars, light oil, and petroleum. Sales of benzene by coke-oven operators and petroleum operators in 1961 amounted to 421 million gallons, valued at $134 million, compared with 377 million gallons, valued at $118 million, in 1960. In 1961 the output of toluene from all sources (including material produced for use in blending in aviation fuel) amounted to 260 million gallons--5.3 percent less than the 274 million gallons reported for 1960. Sales of toluene in 1961 were 163 million gallons, valued at $33 million, compared with 200 million gallons, valued at $39 million, in 1960. The output of xylene in 1961 (including that produced for blending in motor fuels) was 257 million gallons, compared with 282 million gallons in 1960. More than 96 percent of the xylene produced in 1961 was obtained from petroleum sources.

TABLE 3.--*Tar and tar crudes: Summary of U.S. production of specified products, average 1950-54, annual 1960 and 1961*

Chemical	Unit of quantity	Average 1950-54	1960	1961	Increase, or decrease (-)	
					1961 over 1950-54	1961 over 1960
					Percent	*Percent*
Tar[1]	1,000 gal--	876,070	709,360	649,878	-25.8	-8.4
Benzene:[2]						
Tar distillers[3]	1,000 gal--	41,389	12,787	12,355	-70.2	-3.4
Coke-oven operators	1,000 gal--	163,356	135,327	120,205	-26.4	-11.2
Petroleum operators	1,000 gal--	46,635	309,210	412,819	785.2	33.5
Total	1,000 gal--	251,380	457,324	545,379	117.0	19.3
Toluene:						
Tar distillers	1,000 gal--	7,497	3,232	3,131	-58.2	-3.1
Coke-oven operators	1,000 gal--	32,981	30,399	28,407	-13.9	-6.6
Petroleum operators	1,000 gal--	80,725	[4] 240,768	[4] 228,330	182.8	-5.2
Total	1,000 gal--	121,203	274,399	259,868	114.4	-5.3
Xylene:						
Tar distillers	1,000 gal--	1,373	369	547	-60.2	48.2
Coke-oven operators	1,000 gal--	9,028	8,076	7,564	-16.2	-6.3
Petroleum operators	1,000 gal--	78,188	[4] 274,017	[4] 249,228	218.8	-9.0
Total	1,000 gal--	88,589	282,462	257,339	190.5	-8.9
Naphthalene, crude (solidifying at less than 79° C.)[5]	1,000 lb---	307,537	517,039	[6] 497,165	61.7	-3.8
Creosote oil (Dead oil)[7]	1,000 gal--	109,946	82,004	77,195	-29.8	-5.9

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

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

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

[4] Includes data for material produced for use in blending motor fuels.

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

[6] Includes petroleum-derived naphthalene.

[7] Includes data for creosote oil produced by tar distillers and coke-oven operators and used only in wood preserving. Data for production of creosote oil in coal-tar solution have been excluded because the figures for 1950-54 are not comparable with the figures for 1960 and 1961. Production figures for 1950-54 are for the distillate sold or consumed as such; and, for 1960 and 1961, the production of the distillate is on a 100-percent-creosote basis.

Production of crude naphthalene in 1961 (including petroleum-derived naphthalene) amounted to 497 million pounds, compared with 517 million pounds in 1960. Sales of naphthalene in 1961 were 299 million pounds, valued at $18 million, compared with 310 million pounds, valued at $16 million, in 1960. In 1961 the output of creosote oil (100-percent creosote basis), used principally in wood preserving, was 88 million gallons, compared with 93 million gallons in 1960. Production of road tar in 1961 was 57 million gallons, compared with 63 million gallons in 1960.

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

TABLE 4A.--*Tar crudes: U.S. production and sales, 1961*

[Listed below are all tar crudes for which any reported data on production or sales may be published. (Leaders are used where the reported data are accepted in confidence and may not be published or where no data were reported.) Table 4B in pt. III lists separately all products for which data on production or sales were reported and identifies the manufacturers reporting to the U.S. Tariff Commission]

Product	Unit of quantity	Production	Sales		
			Quantity	Value	Unit value[1]
				1,000 dollars	
Crude light oil: Coke-oven operators	1,000 gal-	214,003	18,519	3,249	$0.18
Intermediate light oil: Coke-oven operators	1,000 gal-	4,437	4,345	663	.15
Light-oil distillates:					
Benzene, specification and industrial grades, total	1,000 gal-	545,379	...	...	...
Tar distillers[2]	1,000 gal-	12,355	...	...	...
Coke-oven operators	1,000 gal-	120,205	113,272	34,774	.31
Petroleum operators	1,000 gal-	412,819	307,739	99,348	.32
Toluene, all grades, total[3]	1,000 gal-	259,868	162,850	32,588	.20
Tar distillers	1,000 gal-	3,131	2,649	677	.26
Coke-oven operators	1,000 gal-	28,407	27,421	5,938	.22
Petroleum operators	1,000 gal-	228,330	132,780	25,973	.20
Xylene, total[3]	1,000 gal-	257,339	124,047	27,558	.22
Tar distillers	1,000 gal-	547	490	169	.34
Coke-oven operators	1,000 gal-	7,564	7,281	1,922	.26
Petroleum operators	1,000 gal-	249,228	116,276	25,467	.22
Solvent naphtha, total	1,000 gal-	9,149	8,355	2,029	.24
Tar distillers	1,000 gal-	4,633	3,971	923	.23
Coke-oven operators	1,000 gal-	4,516	4,384	1,106	.25
Other light-oil distillates, total	1,000 gal-	7,584	5,220	909	.17
Tar distillers	1,000 gal-	3,045	2,719	501	.18
Coke-oven operators	1,000 gal-	4,539	2,501	408	.16
Pyridine crude bases (dry basis)	1,000 gal-	836	...	...	...
Naphthalene, crude (tar distillers and coke-oven operators), total[4]	1,000 lb--	497,165	299,127	18,241	.06
Solidifying at--					
Less than 74° C	1,000 lb--	19,278	19,007	642	.03
74° C. to less than 76° C	1,000 lb--	20,428	11,140	517	.05
76° C. to less than 79° C.[5]	1,000 lb--	457,459	268,980	17,082	.06
Crude tar-acid oils:					
Tar distillers	1,000 gal-	757	475	190	.40
Coke-oven operators	1,000 gal-	28,981	28,615	6,835	.24
Creosote oil (Dead oil) (tar distillers and coke-oven operators) (100% creosote basis), total[6]	1,000 gal-	87,758	79,129	17,709	.22
Distillate as such (100% creosote basis)	1,000 gal-	77,195	69,357	14,582	.21
Creosote content of coal-tar solution (100% creosote basis)	1,000 gal-	10,563	9,772	3,127	.32
All other distillate products[7]	1,000 gal-	23,690	14,137	2,660	.19
Tar, road	1,000 gal-	57,210	56,286	9,371	.17
Tar (crude and refined) for other uses[8]	1,000 gal-	28,697	...	...	...
Pitch of tar:					
Soft and medium (water softening points less than 110° F., and 110° F. to 160° F. ASTM D61-24)	1,000 tons	1,356	622	20,871	33.55
Hard (water softening point above 160° F.)	1,000 tons	689	513	22,179	43.23
Pitch-of-tar coke and pitch emulsion	1,000 tons	13	...	...	...

[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 commercial grades of naphthalene. Because of conversion of naphthalene from one grade to another, the figures may include some duplication.
[5] Includes petroleum-derived naphthalene.
[6] Statistics include data only for creosote oil sold for, or used in, wood preserving. In 1961, production of creosote in coal-tar solution (100% solution basis) amounted to 16,518 thousand gallons; sales were 16,261 thousand gallons, valued at 3,127 thousand dollars, with a unit value of $0.19 per gallon.
[7] Includes data for crude cresylic acid and neutral oils produced by tar distillers, and for crude sodium phenolate produced by coke-oven operators.
[8] Includes data for tar used for paint, pipe covering, saturating, and other uses.

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

Some of the products included in the statistics in table 4A are derived from other products for which data are also included in the table. The statistics, therefore, involve considerable duplication, and for this reason no group totals or grand totals are given. After duplication has been eliminated insofar as possible, it is estimated that the net value of the output of these products and of tar burned as fuel was $440 million in 1961, compared with $413 million in 1960 and $360 million in 1959.

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 fuel but in blending aviation and motor-grade gasolines.

TABLE 5A.-- ***Crude products from petroleum and natural gas for chemical conversion: U.S. production and sales, 1961***

[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	28,562,694	18,513,151	644,336	$0.035
AROMATICS AND NAPHTHENES[2]				
Total	8,476,445	5,709,345	171,349	.030
Alkyl aromatics, distillates, and solvents	1,868,992	1,556,959	16,326	.010
Benzene (1° and 2°), total	3,025,963	2,255,727	99,348	.044
Benzene, 1°	2,365,911	1,984,290	89,003	.045
Benzene, 2°	660,052	271,437	10,345	.038
Cresylic acid, crude	24,520	12,004	384	.032
Naphthenic acids, total	27,830	13,001	1,399	.108
Acid No. 150-199	3,573	3,607	377	.105
Acid No. 225-249	4,105	3,697	365	.099
All other	20,152	5,697	657	.115
Toluene, all grades, total	1,653,109	961,327	25,973	.027
Nitration grade, 1°	1,133,531	769,807	20,889	.027
Pure commercial grade, 2°	217,562	80,820	2,218	.027
All other[3]	302,016	110,700	2,866	.026
Xylenes, mixed, total	1,796,933	838,350	25,467	.030
3° and 5°	909,758	401,179	12,019	.030
All other[3]	887,175	437,171	13,448	.031
All other aromatics and naphthenes[4]	79,098	71,977	2,452	.034

See footnotes at end of table.

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

TABLE 5A.--*Crude products from petroleum and natural gas for chemical conversion: U.S. production and sales, 1961*--Continued

Product	Production	Sales		
		Quantity	Value	Unit value[1]
ALIPHATIC HYDROCARBONS	*1,000 pounds*	*1,000 pounds*	*1,000 dollars*	*Per pound*
Total	20,086,249	12,803,806	472,987	$0.037
C_2 hydrocarbons, total	6,729,414	3,739,592	172,765	.046
Acetylene[5]	170,877	...	...	...
Ethane	902,752	378,973	3,425	.009
Ethylene	5,655,785	3,360,619	169,340	.050
C_3 hydrocarbons:				
Propane	3,156,238	2,613,987	31,937	.012
Propylene	2,674,596	1,483,036	36,009	.024
C_4 hydrocarbons, total	5,416,625	3,250,826	183,958	.057
1,3-Butadiene, grade for rubbers (elastomers)	1,910,920	1,125,328	131,456	.117
Butadiene and butylene fractions	454,254	64,825	1,727	.027
n-Butane	971,121	561,919	6,642	.012
1-Butene	21,330	7,586	457	.060
1-Butene and 2-butene mixture[6]	1,318,863	1,013,370	32,276	.032
Isobutane	369,903	225,123	3,246	.014
Isobutylene	300,483	203,319	6,758	.033
All other[7]	69,751	49,356	1,396	.028
C_5 hydrocarbons[8]	98,269	71,942	2,269	.032
All other aliphatic hydrocarbons and derivatives, total	2,011,107	1,644,423	46,049	.028
Diisobutylene (Diisobutene)	28,689	26,233	1,756	.067
1-Dodecene (Tetrapropylene)	416,341	209,442	6,967	.033
Nonene (Tripropylene)	164,996	105,826	3,851	.036
Polybutene[9]	105,919	82,388	5,904	.072
Hydrocarbon derivatives[10]	12,406	9,031	2,958	.328
All other[11]	1,282,756	1,211,503	24,613	.020

[1] Calculated from rounded figures.
[2] The chemical raw materials designated as aromatics are in some cases identical with those obtained from the distillation of coal tar. However, the statistics given in the table above relate only to such materials as are derived from petroleum and natural gas. Statistics on aromatic chemicals from all sources are given in table 4A.
[3] Includes toluene and xylene used as solvents, as well as that which is blended in aviation and motor gasolines.
[4] Includes data for 90-percent benzene, sodium cresylate, 1,4-methano-2,5-cyclopentadiene, mixed pyridines, sodium carbolate and phenate, and miscellaneous cyclic hydrocarbons. Statistics on naphthalene from petroleum are combined with those for coal-tar naphthalene, and are given in table 4A.
[5] The total production of acetylene from all sources in 1961, as reported by the U.S. Bureau of the Census, amounted to 801,293 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).
[6] The statistics represent principally the butene content of crude refinery gases from which butadiene is manufactured.
[7] Includes data for 2-butene, mixed butylenes, and mixed olefins.
[8] Includes data for isoprene, pentanes, pentenes, and C_5 hydrocarbon mixtures.
[9] Includes compounds having a molecular weight of 3,000 or less.
[10] Includes data for di-tert-butyldisulfide, miscellaneous mercaptans, and aliphatic acids.
[11] Includes data for methane, propane-propylene mixture, hexanes, heptanes and heptenes, octanes, eicosane, and hydrocarbon mixtures.

The output of crude products derived from petroleum and natural gas as a group amounted to 28,563 million pounds in 1961, or 9.2 percent more than the 26,147 million pounds reported for 1960. The larger output in 1961 is accounted for chiefly by increased production of benzene, ethylene, propane, propylene, and 1-butene and 2-butene mixtures. Sales of crude chemicals from petroleum in 1961 were 18,513 million pounds, valued at $644 million, compared with 17,674 million pounds, valued at $648 million, in 1960.

The output of all aromatic and naphthenic products amounted to 8,476 million pounds in 1961, compared with 7,587 million pounds in 1960. Sales in 1961, which amounted to 5,709 million pounds, valued at $171 million, were 253 million pounds larger, and valued at $16 million more, than those in 1960. Benzene was produced from petroleum sources in substantially greater quantities in 1961 than in 1960, and production of naphthenic acids was 16.9 percent larger. The output of 1° and 2° benzene from petroleum amounted to 3,026 million pounds in 1961--33.5 percent more than the 2,267 million pounds produced in 1960. The output of toluene in 1961 was 1,653 million pounds--5.2 percent less than the 1,743 million pounds produced in 1960. Production of xylene was 1,797 million pounds in 1961, compared with 1,976 million pounds in 1960. These figures include toluene and xylene used in blends in aviation and motor-grade gasolines. The output of naphthenic acids amounted to 28 million pounds in 1961, compared with 24 million pounds in 1960. Production of cresylic acid in 1961--25 million pounds--was 32.7 percent less than in 1960.

Production of all aliphatic hydrocarbons and derivatives from petroleum and natural gas was 20,086 million pounds in 1961, compared with 18,560 million pounds in 1960. Sales of these products were 12,803 million pounds, valued at $473 million, in 1961, compared with 12,217 million pounds, valued at $493 million, in 1960. The statistics on production of acetylene (table 5A) include only acetylene produced from natural gas and used as a raw material in the production of other chemicals. Total production of acetylene (principally from calcium carbide), as reported to the U.S. Bureau of the Census, amounted to 801 million pounds in 1961, compared with 713 million pounds in 1960 (see footnote 5, table 5A, for conversion factor). Production of ethylene was 5,656 million pounds in 1961, or 3.8 percent more than the 5,448 million pounds produced in 1960. The output of propane and propylene was 5,831 million pounds in 1961--7.7 percent more than the 5,414 million pounds produced in 1960. Production of 1,3-butadiene, one of the principal ingredients of S-type synthetic rubber, was 1,911 million pounds in 1961, compared with 1,883 million pounds in 1960. The output of 1,3-butadiene in 1961--the largest on record--was 1.5 percent more than that in 1960.

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, medicinal chemicals, flavor and perfume materials, plastics and resin materials, rubber-processing chemicals, elastomers (synthetic rubbers), plasticizers, surface-active agents, pesticides and other organic agricultural chemicals, and miscellaneous synthetic organic chemicals. Most of these groups are further subdivided, according to chemical classes, into cyclic and acyclic compounds. As most of the intermediates are used in the manufacture of finished products, aggregate figures that cover both intermediates and finished products necessarily include much duplication.

Total production of synthetic organic chemicals (intermediates and finished products combined) in 1961 was 56,183 million pounds, or 4.1 percent more than the output of 53,952 million pounds reported for 1960 (see table 6). Sales of synthetic organic chemicals in 1961 amounted to 31,012 million pounds, valued at $7,147 million, compared with 28,760 million pounds, valued at $6,662 million in 1960. Production of all cyclic products (intermediates and finished products combined) in 1961 totaled 18,679 million pounds, or 4.8 percent more than the 17,818 million pounds produced in 1960. The output of acyclic organic chemicals in 1961 amounted to 37,504 million pounds--3.8 percent more than the 36,134 million pounds reported for 1960.

TABLE 6.--*Synthetic organic chemicals: Summary of U.S. production and sales of intermediates and finished products, average 1950-54, annual 1960 and 1961*

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

Chemical	Average 1950-54	1960	1961	Increase, or decrease (-)	
				1961 over 1950-54	1961 over 1960
				Percent	*Percent*
Organic chemicals, cyclic and acyclic, grand total:					
Production	26,708,705	53,952,190	56,183,265	110.4	4.1
Sales	14,490,020	28,760,172	31,012,471	114.0	7.8
Sales value	3,692,368	6,662,095	7,147,440	93.6	7.3
Cyclic, total:					
Production	8,727,657	17,817,908	18,679,248	114.0	4.8
Sales	5,552,600	10,734,631	11,183,127	101.4	4.2
Sales value	1,914,275	3,236,796	3,304,167	72.6	2.1
Acyclic, total:					
Production	17,981,048	36,134,282	37,504,017	108.6	3.8
Sales	8,937,420	18,025,541	19,829,344	121.9	10.0
Sales value	1,778,093	3,425,299	3,843,273	116.1	12.2
1. Intermediates, Cyclic					
Production	4,281,640	9,602,147	10,275,933	140.0	7.0
Sales	1,699,407	3,964,213	4,103,457	141.5	3.5
Sales value	305,623	622,414	620,542	103.0	-.3
2. Dyes, Cyclic					
Production	167,359	155,896	166,550	-.5	6.8
Sales	157,224	147,738	158,351	.7	7.2
Sales value	173,198	192,107	213,078	23.0	10.9
3. Toners and Lakes, Cyclic					
Production	43,501	40,238	35,062	-19.4	-12.9
Sales	38,197	32,687	29,472	-22.8	-9.8
Sales value	53,144	64,264	66,322	24.8	3.2

TABLE 6.--*Synthetic organic chemicals: Summary of U.S. production and sales of intermediates and finished products, average 1950-54, annual 1960 and 1961*--Continued

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

Chemical	Average 1950-54	1960	1961	Increase, or decrease (-)	
				1961 over 1950-54	1961 over 1960
4. Medicinal Chemicals				*Percent*	*Percent*
Cyclic:					
Production	51,761	76,519	80,973	56.4	5.8
Sales	41,915	55,042	61,322	46.3	11.4
Sales value	398,867	521,486	540,592	35.5	3.7
Acyclic:					
Production	12,670	37,299	36,576	188.7	-1.9
Sales	10,294	32,897	31,168	202.8	-5.3
Sales value	26,091	35,445	36,169	38.6	2.0
5. Flavor and Perfume Materials					
Cyclic:					
Production	18,689	33,027	36,746	96.6	11.3
Sales	15,936	25,781	28,581	79.3	10.9
Sales value	22,854	37,393	40,148	75.7	7.4
Acyclic:					
Production	12,312	22,261	26,815	117.8	20.5
Sales	11,881	21,280	26,109	119.8	22.7
Sales value	19,556	22,710	27,684	41.6	21.9
6. Plastics and Resin Materials					
Cyclic:					
Production	1,450,115	2,716,094	2,828,509	95.1	4.1
Sales	1,194,058	2,227,866	2,348,926	96.7	5.4
Sales value	323,776	627,516	633,594	95.7	1.0
Acyclic:					
Production	1,055,800	3,426,555	3,881,141	267.6	13.3
Sales	968,602	3,118,928	3,640,420	275.8	16.7
Sales value	416,943	1,025,272	1,077,285	158.4	5.1
7. Rubber-Processing Chemicals					
Cyclic:					
Production	110,695	170,465	173,698	56.9	1.9
Sales	82,154	130,155	134,888	64.2	3.6
Sales value	43,607	84,563	89,188	104.5	5.5
Acyclic:					
Production	20,301	29,294	31,396	54.7	7.2
Sales	16,734	22,381	20,780	24.2	-7.2
Sales value	12,064	16,475	15,161	25.7	-8.0
8. Elastomers (Synthetic Rubbers)					
Cyclic:					
Production	1,228,997	2,283,190	2,117,859	72.3	-7.2
Sales	1,243,149	1,949,089	1,911,649	53.8	-1.9
Sales value	288,960	469,258	461,666	59.8	-1.6
Acyclic:					
Production	461,334	669,200	688,672	49.3	2.9
Sales	451,966	601,618	653,189	44.5	8.6
Sales value	177,098	229,163	254,934	44.0	11.2
9. Plasticizers					
Cyclic:					
Production	206,042	444,744	473,581	129.8	6.5
Sales	159,831	384,094	405,835	153.9	5.7
Sales value	54,381	103,308	106,119	95.1	2.7
Acyclic:					
Production	71,021	157,391	156,134	119.8	-.8
Sales	56,523	116,188	130,233	130.4	12.1
Sales value	23,557	45,296	48,495	105.9	7.1

TABLE 6.--*Synthetic organic chemicals: Summary of U.S. production and sales of intermediates and finished products, average 1950-54, annual 1960 and 1961*--Continued

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

Chemical	Average 1950-54	1960	1961	Increase, or decrease (-)	
				1961 over 1950-54	1961 over 1960
				Percent	*Percent*
10. Surface-Active Agents					
Cyclic:					
Production	510,747	977,197	1,149,519	125.1	17.6
Sales	418,230	927,300	1,085,581	159.6	17.1
Sales value	76,622	146,960	149,301	94.9	1.6
Acyclic:					
Production	300,822	555,030	579,786	92.7	4.5
Sales	262,223	472,120	497,868	89.9	5.5
Sales value	65,955	131,186	142,290	115.7	8.5
11. Pesticides and Other Organic Agricultural Chemicals					
Cyclic:					
Production	336,457	525,485	571,683	69.9	8.8
Sales	277,501	455,377	484,182	74.5	6.3
Sales value	103,029	202,870	237,586	130.6	17.1
Acyclic:					
Production	52,022	122,310	128,016	146.1	4.7
Sales	45,721	115,020	127,735	179.4	11.1
Sales value	17,794	58,919	65,369	267.4	10.9
12. Miscellaneous					
Cyclic:					
Production	321,654	792,906	769,135	139.1	-3.0
Sales	224,998	435,289	430,883	91.5	-1.0
Sales value	70,214	164,657	146,031	108.0	-11.3
Acyclic:					
Production	15,994,766	31,114,942	31,975,481	99.9	2.8
Sales	7,113,476	13,525,109	14,701,842	106.7	8.7
Sales value	1,019,035	1,860,833	2,175,886	113.5	16.9

The following tabulation shows, by chemical groups, the number of companies that reported production in 1961 of one or more of the chemicals included in the groups listed in table 6:

Chemical group	*Number of companies*
Intermediates	179
Dyes	52
Toners and lakes	42
Medicinal chemicals	115
Flavor and perfume materials	51
Plastics and resin materials	280
Rubber-processing chemicals	33
Elastomers (synthetic rubbers)	23
Plasticizers	54
Surface-active agents	161
Pesticides and other organic agricultural chemicals	81
Miscellaneous chemicals	299

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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, medicinal chemicals, elastomers (synthetic rubbers), pesticides, and plastics and resin materials. Some intermediates, however, are sold as end products without further processing. For example, refined naphthalene may be used as a raw material in the manufacture of 2-naphthol or of other more advanced intermediates, or it may be packaged and sold as a moth repellent or as a deodorant. In general, the way in which the greater part of the output of a given chemical is consumed determines its use classification in this report. Table 7A[1] gives statistics on production and sales of cyclic intermediates in 1961. 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 1961 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 1961--10,276 million pounds--was the largest on record, and was 10.7 percent larger than the output of 9,602 million pounds reported for 1960. The larger output of cyclic intermediates in 1961 was attributable to increased demand by a number of industries that consume large quantities of intermediates, particularly those industries that produce dyes and plasticizers. Sales of cyclic intermediates in 1961 amounted to 4,103 million pounds, valued at $621 million, compared with 3,964 million pounds, valued at $622 million, in 1960. In terms of quantity, sales of cyclic intermediates in 1961 were 3.5 percent larger than those in 1960 and, in terms of value, 0.3 percent smaller.

TABLE 7A.--*Cyclic intermediates: U.S. production and sales, 1961*

[Listed below are all cyclic intermediates for which any reported data on production or sales may be published. (Leaders are used where the reported data are accepted in confidence and may not be published or where no data were reported.) Table 7B in pt. III lists alphabetically all cyclic intermediates for which data on production or sales were reported and identifies the manufacturer of each. Appendix B lists alphabetically all the important common names of cyclic intermediates usually encountered in the trade and gives the corresponding standard *(Chemical Abstracts)* name under which data are presented in tables 7A and 7B]

Chemical	Production	Sales		
		Quantity	Value	Unit value[1]
	1,000 pounds	*1,000 pounds*	*1,000 dollars*	*Per pound*
Total	10,275,933	4,103,457	620,542	$0.15
Acetanilide, tech	2,252	1,849	559	.30
4'-Aminoacetanilide (Acetyl-p-phenylenediamine)	336	125	194	1.55
5-Amino-2-(p-aminoanilino)benzenesulfonic acid	12	...	...	...
2-(p-Aminoanilino)-5-nitrobenzenesulfonic acid	75	...	...	...
1-Aminoanthraquinone and salt	1,479	...	...	...
2-Aminoanthraquinone and salt	573	...	...	...
6-Amino-3,4'-azodi(benzenesulfonic acid)	78	...	...	...
1-Amino-4-benzamidoanthraquinone	43	...	...	...
6-(p-Aminobenzamido)-1-naphthol-3-sulfonic acid	20	...	...	...
1-Amino-4-bromo-2-anthraquinonesulfonic acid and sodium salt	219	88	350	3.98
2-Amino-1-bromo-3-chloroanthraquinone	27	...	...	...
1-Amino-2-bromo-4-hydroxyanthraquinone	69	...	...	...
1-Amino-5-chloroanthraquinone	104	...	...	...
2-Amino-3-chloroanthraquinone	40	...	...	...
o-(3-Amino-4-chlorobenzoyl)benzoic acid	68	...	...	...
6-Amino-4-chloro-1-phenol-2-sulfonic acid	33	...	...	...
2-Amino-5-chloro-p-toluenesulfonic acid [SO_3H=1]	1,059	...	...	...
6-Amino-4-chloro-m-toluenesulfonic acid [SO_3H=1]	...	177	221	1.25
1-Amino-2,4-dibromoanthraquinone	79	...	...	...

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 1959-61; and appendix B, which is a glossary of synonymous names of cyclic intermediates.

TABLE 7A.--*Cyclic intermediates: U.S. production and sales, 1961*--Continued

Chemical	Production	Sales		
		Quantity	Value	Unit value[1]
	1,000 pounds	*1,000 pounds*	*1,000 dollars*	*Per pound*
4'-Amino-N-methylacetanilide	14	...	...	...
2-Amino-1,5-naphthalenedisulfonic acid	43	...	...	...
3-Amino-1,5-naphthalenedisulfonic acid (Cassella acid)	189	...	...	...
6-Amino-1,3-naphthalenedisulfonic acid (Amino I acid)	614	...	...	...
7-Amino-1,3-naphthalenedisulfonic acid (Amino G acid)	574	23	24	$1.04
2-Amino-1-naphthalenesulfonic acid (Tobias acid)	2,235	...	...	...
5-Amino-1-naphthalenesulfonic acid (Laurent's acid)	47	...	...	...
5-Amino-2-naphthalenesulfonic acid (1,6-Cleve's acid)	120	...	...	...
6-Amino-2-naphthalenesulfonic acid (Broenner's acid)	61	...	...	...
8-Amino-1-naphthalenesulfonic acid (Peri acid)	266	...	...	...
8-Amino-2-naphthalenesulfonic acid (1,7-Cleve's acid)	220	...	...	...
8-Amino-2-naphthol	103	...	...	...
8-Amino-1-naphthol-3,6-disulfonic acid (H acid), monosodium salt	2,777	...	...	...
1-Amino-2-naphthol-4-sulfonic acid (1,2,4-acid)	1,129	...	...	...
6-Amino-1-naphthol-3-sulfonic acid (J acid), sodium salt	377	...	...	...
7-Amino-1-naphthol-3-sulfonic acid (Gamma acid), sodium salt	316	94	133	1.41
2-Amino-5-nitrobenzenesulfonic acid [SO_3H=1]	54	9	11	1.22
2-Amino-4-nitrophenol	60	...	...	...
2-Amino-1-phenol-4-sulfonamide	40	...	...	...
2-Amino-1-phenol-4-sulfonic acid	107	...	...	...
p-(p-Aminophenylazo)benzenesulfonic acid	227	...	...	...
1-(m-Aminophenyl)-5-oxo-2-pyrazoline-3-carboxylic acid	27	...	...	...
4-Amino-m-toluenesulfonic acid [SO_3H=1]	238	...	...	...
6-Amino-m-toluenesulfonic acid [SO_3H=1]	221	...	...	...
5-Amino-2-(p-toluidino)benzenesulfonic acid	32	...	...	...
2-Amino-3,5-xylenesulfonic acid [SO_3H=1]	131	...	...	...
Aniline (Aniline oil)	122,702	46,476	7,333	.16
Anilinomethanesulfonic acid and salt	241	...	...	...
8-Anilino-1-naphthalenesulfonic acid (Phenyl peri acid)	176	...	...	...
6-Anilino-1-naphthol-3-sulfonic acid (Phenyl J acid)	40	...	...	...
o-Anisidine	1,408	494	359	.73
o-Anisidinomethanesulfonic acid	305	...	...	...
Anthranilic acid (o-Aminobenzoic acid)	500	349	377	1.08
Anthraquinone, 100%	3,808	...	...	...
1,5-Anthraquinonedisulfonic acid	683	...	...	...
1,5(and 1,8)-Anthraquinonedisulfonic acid and salt	430	...	...	...
1,8-Anthraquinonedisulfonic acid, potassium salt	444	...	...	...
2,6-Anthraquinonedisulfonic acid and salt	419	...	...	...
1-Anthraquinonesulfonic acid and salt	2,583	...	...	...
N,N'-(1,5-Anthraquinonylene)dianthranilic acid	45	...	...	...
Anthrarufin (1,5-Dihydroxyanthraquinone)	190	...	...	...
Benzaldehyde, tech	3,025	2,765	1,143	0.41
1-Benzamido-5-chloroanthraquinone	66	...	...	...
7H-Benz[de]anthracen-7-one (Benzanthrone)	1,704	...	...	...
Benzidine hydrochloride and sulfate	909	...	...	...
Benzoic acid, tech	9,836	4,680	975	.21
o-Benzoylbenzoic acid	6,186	...	...	...
[4,4'-Bi-7H-benz[de]anthracen]-7,7'-dione	398	...	...	...
1,4-Bis[1-anthraquinonylamino]anthraquinone	105	...	...	...
4,4'-Bis[diethylamino]benzophenone (Ethyl ketone base)	87	...	...	...
4,4'-Bis[dimethylamino]benzophenone (Michler's ketone)	107	...	...	...
3-Bromo-7H-benz[de]anthracen-7-one (Bromobenzanthrone)	242	...	...	...
o-Chloroaniline	215	...	...	...
1-Chloroanthraquinone	242	...	...	...
2-Chloroanthraquinone	573	...	...	...
o-Chlorobenzaldehyde	409	...	...	...
Chlorobenzene, mono-	542,368	52,848	3,779	.07
o-(p-Chlorobenzoyl)benzoic acid	995	...	...	...
1-Chloro-2,4-dinitrobenzene (Dinitrochlorobenzene)	6,761	...	...	...
6-Chlorometanilic acid	19	...	...	...
1-Chloro-2-methylanthraquinone	232	...	...	...
2-Chloro-4-nitroaniline (o-Chloro-p-nitroaniline)	426	...	...	...
4-Chloro-2-nitroaniline (p-Chloro-o-nitroaniline)	315	180	149	.83
1-Chloro-5-nitroanthraquinone	131	...	...	...
1-Chloro-2-nitrobenzene (Chloro-o-nitrobenzene)	17,177	...	...	...

See footnotes at end of table.

TABLE 7A.--*Cyclic intermediates: U.S. production and sales, 1961*--Continued

Chemical	Production	Sales		
		Quantity	Value	Unit value[1]
	1,000 pounds	*1,000 pounds*	*1,000 dollars*	*Per pound*
1-Chloro-2(and 4)-nitrobenzene (Chloronitrobenzenes, o- and p-)	7,494	...	...	...
4-Chloro-3-nitrobenzenesulfonamide	139	...	...	...
2-Chloro-5-nitrobenzenesulfonic acid and sodium salt	245	...	...	...
4-Chloro-3-nitrobenzenesulfonic acid	180	...	...	...
4-Chloro-3-nitrobenzenesulfonyl chloride	129	...	...	...
o-(4-Chloro-3-nitrobenzoyl)benzoic acid	96	...	...	...
2-Chloroquinizarin	34	...	...	...
α-Chlorotoluene (Benzyl chloride)	24,159	5,492	1,135	$0.21
4-Chloro-o-toluidine [NH_2=1] and hydrochloride	116	...	...	...
5-Chloro-o-toluidine [NH_2=1] and hydrochloride	335	111	152	1.37
Cresols, total[2]	60,728	58,726	11,221	.19
o- and p-Cresols	18,619	17,425	5,666	.33
(m,p)-Cresol, total	27,580	25,530	3,444	.13
From coal tar	10,758	8,550	1,232	.14
From petroleum	16,822	16,980	2,212	.13
(o,m,p)-Cresol[3]	14,529	15,771	2,111	.13
Cresylic acid, refined, total[2]	61,251	45,194	5,213	.12
From coal tar	37,893	33,531	3,952	.12
From petroleum	23,358	11,663	1,261	.11
Cumene	292,362	...	...	...
Cyanuric chloride	6,819	...	...	...
Cyclohexane	700,969	439,615	22,136	.05
Cyclohexylamine	4,146	...	...	...
1,4-Diaminoanthraquinone	58	...	...	...
2,6-Diaminoanthraquinone	191	...	...	...
4,8-Diaminoanthrarufin	37	...	...	...
2,4-Diaminobenzenesulfonic acid [SO_3H=1]	96	...	...	...
4,4′-Diamino-2,2′-stilbenedisulfonic acid	1,535	...	...	...
2,4-Dianilino-1-hydroxyanthraquinone	29	...	...	...
4,5′-Dibenzamido-1,1′-iminodianthraquinone	147	...	...	...
1,5-Dibenzoylnaphthalene	162	...	...	...
3,9-Dibromo-7H-benz[de]anthracen-7-one	266	...	...	...
2,5-Dichloroaniline and hydrochloride [NH_2=1]	414	...	...	...
1,5-Dichloroanthraquinone	121	...	...	...
1,8-Dichloroanthraquinone	169	...	...	...
o-Dichlorobenzene	29,609	26,248	2,516	.10
p-Dichlorobenzene	81,979	62,844	6,116	.10
3,3′-Dichlorobenzidine base and salts	1,889	...	...	...
2,5-Dichloro-4-(3-methyl-5-oxo-2-pyrazolin-1-yl)benzenesulfonic acid	214	...	...	...
2,6-Dichloro-4-nitroaniline	56	...	...	...
1,4-Dichloro-2-nitrobenzene (Nitro-p-dichlorobenzene)	628	...	...	...
2,5-Dichlorosulfanilic acid [SO_3H=1]	55	...	...	...
Dicyclopentadiene and cyclopentadiene	16,877	...	...	...
N,N-Diethylaniline	1,164	888	497	.56
6,7-Dihydroxy-2-naphthalenesulfonic acid	473	414	1,104	2.67
16,17-Dihydroxyviolanthrone (Dihydroxydibenzanthrone)	375	...	...	...
m-Dimethoxybenzene	246	...	...	...
3,3′-Dimethoxybenzidine	367	343	694	2.02
N,N-Dimethylaniline	9,078	5,618	1,410	.25
2,2′-Dimethyl-1,1′-bianthraquinone	118	...	...	...
N,N-Dimethyl-p-nitrosoaniline	82	...	...	...
4,5-Dinitrochrysazin	106	...	...	...
2,4-Dinitrophenol, tech	945	...	...	...
4,4′-Dinitro-2,2′-stilbenedisulfonic acid	2,352	...	...	...
1,5-Diphenoxyanthraquinone	51	...	...	...
1,4-Di(p-toluidino)anthraquinone	59	...	...	...
Dodecylbenzene[4]	488,554	443,203	44,114	.10
N-Ethylaniline, refined	424	202	113	.56
2-(N-Ethylanilino)ethanol	37	...	...	...
α-(N-Ethylanilino)-p-toluenesulfonic acid	604	...	...	...

See footnotes at end of table.

TABLE 7A.--*Cyclic intermediates: U.S. production and sales, 1961*--Continued

Chemical	Production	Sales		
		Quantity	Value	Unit value[1]
	1,000 pounds	*1,000 pounds*	*1,000 dollars*	*Per pound*
Ethylbenzene	1,936,338	35,019	2,032	$0.06
N-Ethyl-N-phenylbenzylamine	747	...	...	...
o-Formylbenzenesulfonic acid (o-Sulfobenzaldehyde)	132	...	...	...
p-Hydrazinobenzenesulfonic acid	140	...	...	...
3-Hydroxy-2-naphthoic acid (B.O.N.)	3,138	...	...	...
N-(7-Hydroxy-1-naphthyl)acetamide	25	...	...	...
1,1'-Iminobis[4-aminoanthraquinone]	137	...	...	...
6,6'-Iminobis[1-naphthol-3-sulfonic acid]	14	...	...	...
1,1'-Iminobis[4-nitroanthraquinone]	120	...	...	...
1,1'-Iminodianthraquinone (Dianthrimide)	111	...	...	...
Isocyanic acid, 4-methyl-m-phenylene ester	68,405	67,791	44,780	.66
4,4'-Isopropylidenediphenol (Bisphenol A)	45,780	26,319	7,134	.27
Isoviolanthrone (Isodibenzanthrone)	69	...	...	...
Leuco-1,4-diaminoanthraquinone	251	...	...	...
Leuco quinizarin (1,4,9,10-Anthratetrol)	74	...	...	...
Leuco tetrahydroxyanthraquinone	73	...	...	...
Metanilic acid (m-Aminobenzenesulfonic acid)	900	...	...	...
1-Methylaminoanthraquinone	80	...	...	...
4,4'-Methylenebis[N,N-diethylaniline]	41	...	...	...
4,4'-Methylenebis[N,N-dimethylaniline] (Methane base)	1,160	...	...	...
2-Methyl-1-nitroanthraquinone	94	...	...	...
p-(3-Methyl-5-oxo-2-pyrazolin-1-yl)benzenesulfonic acid	98	14	29	2.07
3-Methyl-1-phenyl-2-pyrazolin-5-one (Developer Z)	274	226	401	1.77
α-Methylstyrene	9,900	2,917	426	.15
Naphthalene, solidifying at 79° C. or above (refined flake), total	56,662	...	...	...
From domestic crude naphthalene	25,015	9,281	1,407	.15
From imported crude naphthalene	31,647	...	...	...
1,5-Naphthalenedisulfonic acid	61	...	...	...
Naphthionic acid (4-Amino-1-naphthalenesulfonic acid)	509	...	...	...
2-Naphthol-6,8-disulfonic acid (G acid) and disodium salt	1,077	37	28	.76
2-Naphthol-6-sulfonic acid (Schaeffer's acid) and sodium salt	382	...	....	...
1-Naphthol-8-sulfonic acid sultone (1,8-Naphthosultone)	20	...	...	...
Naphth[1,2]oxadiazole-5-sulfonic acid	651	...	...	...
2-(Naphthylthio)acetic acid	38	...	...	...
Nicotinonitrile (3-Cyanopyridine)	1,799	...	...	...
m-Nitroaniline	148	...	...	...
4-Nitro-o-anisidine [NH_2=1]	...	11	22	2.00
5-Nitro-o-anisidine [NH_2=1]	131	...	...	...
1-Nitro-2-anthraquinonecarboxylic acid	28	...	...	...
5-Nitro-1-anthraquinonesulfonic acid	126	...	...	...
Nitrobenzene	184,558	6,686	730	.11
m-Nitrobenzenesulfonic acid	2,011	1,332	570	.43
7(and 8)-Nitronaphth[1,2]oxadiazole-5-sulfonic acid	497	...	...	...
5-Nitro-o-toluenesulfonic acid [SO_3H=1]	3,894	...	...	...
5-Nitro-o-toluidine [NH_2=1]	176	...	...	...
2-Nitro-p-toluidine [NH_2=1]	1,152	602	745	1.24
16-Nitroviolanthrone	48	...	...	...
Nonylphenol	50,939	17,242	2,743	.16
1-(7-Oxo-7H-benz[de]anthracen-3-ylamino)anthraquinone	235	...	...	...
1,1'-(7-Oxo-7H-benz[de]anthracen-3,9-ylenediimino)dianthraquinone	434	...	...	...
5-Oxo-1-phenyl-2-pyrazoline-3-carboxylic acid	73	...	...	...
5-Oxo-1-(p-sulfophenyl)-2-pyrazoline-3-carboxylic acid (Pyrazolone T)	22	...	...	...
Phenol, total[2]	778,989	334,135	48,174	.14
Natural, total	47,678	46,913	6,509	.14
From coal tar, total	35,192	34,768	4,786	.14
82%-84%	4,406	4,562	618	.14
Other	30,786	30,206	4,168	.14
From petroleum	12,486	12,145	1,723	.14
Synthetic, total	731,311	287,222	41,665	.14
From cumene	188,583	83,960	12,205	.15
Other synthetic	542,728	203,262	29,460	.14

See footnotes at end of table.

TABLE 7A.--*Cyclic intermediates: U.S. production and sales, 1961*--Continued

Chemical	Production	Sales		
		Quantity	Value	Unit value[1]
	1,000 pounds	*1,000 pounds*	*1,000 dollars*	*Per pound*
1-Phenol-4-sulfonic acid	3,641	5,013	937	$0.19
p-Phenylazoaniline (p-Aminoazobenzene) and hydrochloride	141	...	...	...
m-Phenylenediamine	1,408	...	...	...
Phthalic anhydride	379,847	224,713	39,621	.18
Picolines, total[5]	...	1,603	915	.57
2-Picoline (α-Picoline)	2,214	548	237	.43
All other	...	1,055	678	.64
Piperidine	289	...	...	...
Propiophenone	279	...	...	...
2° Pyridine[5]	3,176	2,899	2,239	.77
Quinaldine	12	...	...	...
Quinizarin	1,308	...	...	...
Salicylic acid, tech	...	1,968	745	.38
Styrene, all grades	1,761,584	996,001	106,369	.11
Terephthalic acid, dimethyl ester	...	70,151	25,387	.36
Tetrabromo-8,16-pyranthrenedione	38	...	...	...
3,3'-Thiobis[7H-benz[de]anthracen-7-one]	81	...	...	...
o(and p)-Toluenesulfonic acid	...	1,989	300	.15
o-(p-Toluoyl)benzoic acid	474	...	...	...
4-(o-Tolylazo)-o-toluidine (o-Aminoazotoluene)	449	...	...	...
α,α,α-Trichlorotoluene (Benzotrichloride)	372	423	86	.20
6,6'-Ureylenebis[1-naphthol-3-sulfonic acid](J acid urea)	228	...	...	...
Violanthrone (Dibenzanthrone)	285	...	...	...
o-Xylene	318,316	250,913	12,112	.05
p-Xylene	247,914	219,359	29,111	.13
All other cyclic intermediates	1,859,057	627,758	181,471	.29

[1] Unit values calculated from rounded figures.
[2] Includes data for coke ovens and gas-retort ovens, reported to the Division of Bituminous Coal, U.S. Bureau of Mines, Department of the Interior, and for tar and petroleum refineries and other producers, reported to the U.S. Tariff Commission.
[3] Includes some mixed cresols. Figures include (o,m,p)-cresol from coal tar and from petroleum.
[4] Includes 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, Department of the Interior, and for tar refineries and other producers, reported to the U.S. Tariff Commission.

In 1961, production of two of the largest volume intermediates exceeded 1 billion pounds each for the sixth successive year. The output of ethylbenzene totaled 1,936 million pounds (16.6 percent more than in 1960) and that of styrene, 1,762 million pounds (1.0 percent more than in 1960). Ethylbenzene is used almost entirely in the manufacture of styrene, which, in turn, is used almost entirely in the manufacture of plastics materials and synthetic rubber. The output of other large-volume intermediates in 1961 compared with the output in 1960 as follows: Cyclohexane, 24.3 percent larger; phenol, 0.8 percent larger; phthalic anhydride, 5.3 percent smaller; and monochlorobenzene, 10.4 percent smaller. Production of dodecylbenzene in 1961 was slightly smaller than in 1960; that of naphthalene was 8.8 percent smaller. Production of orthoxylene, which was first reported separately in 1959, amounted to 318 million pounds in 1961, compared with 139 million pounds in 1960--representing an increase of 129.5 percent.

Dyes

Dyes are synthetic organic chemicals derived from cyclic intermediates. About three-fourths of the dyes consumed in the United States are used by the textile industry to dye natural and synthetic fibers or fabrics; the rest are used chiefly by the industries that produce organic pigments, paper, and leather. Of the several thousand different synthetic dyes that are known, more than two thousand are manufactured by one or more domestic producers. The large number

of dyes results from the many different types of materials to which dyes are applied, the different conditions of service for which dyes are required, and the costs that a particular use can bear. Dyes are sold as pastes, powders, lumps, and solutions; concentrations vary from 6 percent to 100 percent. The concentration, form, and purity of a dye is determined largely by the use for which it is intended.

Table 8A[2] shows U.S. production and sales of dyes in 1961, total and by individual dyes, using the new *Colour Index* classification and terminology which was used for the first time in the Commission's 1958 report.

Total domestic production of dyes in 1961 amounted to 167 million pounds--6.8 percent more than the 156 million pounds produced in 1960, but 1.7 percent less than the 170 million pounds reported for 1959. Sales of dyes in 1961 amounted to 158 million pounds, valued at $213 million, compared with 148 million pounds, valued at $192 million, in 1960. In terms of quantity, sales of dyes in 1961 were 7.2 percent larger than those in 1960, and in terms of value, 10.9 percent larger.

For many important individual low- and medium-priced dyes for which statistics are given in table 8A, production was larger in 1961 than in 1960. The output of Direct Black 38 (Direct Black EW) was 6.0 million pounds in 1961, or 7.3 percent more than the 5.6 million pounds produced in 1960; that of Vat Green 1 was 4.9 million pounds, or 96.6 percent

TABLE 8A.--*Coal-tar dyes: U.S. production and sales, 1961*

[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	166,550	158,351	213,078	$1.35
ACID DYES				
Total	15,135	14,464	27,268	1.89
Acid yellow dyes, total	1,905	1,598	3,457	2.16
Acid Yellow 3	31	35	121	3.46
Acid Yellow 11	18	24	47	1.96
Acid Yellow 17	283	294	608	2.07
Acid Yellow 23	234	199	439	2.21
Acid Yellow 36	210	230	333	1.45
Acid Yellow 40	91	73	200	2.74
Acid Yellow 42	15	19	36	1.89
Acid Yellow 44	16	18	55	3.06
Acid Yellow 54	95	66	134	2.03
Acid Yellow 73	...	62	146	2.35
Acid Yellow 99	43	58	122	2.10
All other	869	520	1,216	2.34
Acid orange dyes, total	2,364	2,217	2,901	1.31
Acid Orange 1	25	24	55	2.29
Acid Orange 7	875	785	644	.82
Acid Orange 8	370	331	336	1.02
Acid Orange 10	280	280	365	1.30
Acid Orange 24	420	427	607	1.42
Acid Orange 60	...	17	44	2.59
Acid Orange 74	42	44	97	2.20
All other	352	309	753	2.44
Acid red dyes, total	2,153	1,878	3,633	1.93
Acid Red 1	301	360	382	1.06
Acid Red 4	57	69	121	1.75
Acid Red 14	55	49	72	1.47

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 1959-61.

TABLE 8A.--*Coal-tar dyes: U.S. production and sales, 1961*--Continued

Dye	Production	Sales		
		Quantity	Value	Unit value[1]
ACID DYES--Continued				
Acid red dyes--Continued	*1,000 pounds*	*1,000 pounds*	*1,000 dollars*	*Per pound*
Acid Red 17	...	31	41	$1.32
Acid Red 18	110	131	144	1.10
Acid Red 26	119	118	128	1.08
Acid Red 37	32	31	69	2.23
Acid Red 73	205	221	467	2.11
Acid Red 85	60	76	124	1.63
Acid Red 87	...	54	121	2.24
Acid Red 88	81	88	142	1.61
Acid Red 89	39	24	41	1.71
Acid Red 114	41	49	96	1.96
Acid Red 115	...	16	25	1.56
Acid Red 137	120	121	392	3.24
Acid Red 151	17	11	23	2.09
Acid Red 182	21	23	75	3.26
Acid Red 186	...	15	38	2.53
All other	895	391	1,132	2.90
Acid violet dyes, total	430	451	946	2.10
Acid Violet 1	23	36	65	1.81
Acid Violet 3	...	133	282	2.12
Acid Violet 7	68	91	128	1.41
Acid Violet 12	32	31	47	1.52
Acid Violet 17	57	47	106	2.26
Acid Violet 43	...	12	43	3.58
All other	250	101	275	2.72
Acid blue dyes, total	2,463	2,412	6,807	2.82
Acid Blue 7	117	105	331	3.15
Acid Blue 9	530	538	649	1.21
Acid Blue 22	...	29	103	3.55
Acid Blue 25	45	51	263	5.16
Acid Blue 40	...	12	47	3.92
Acid Blue 41	87	65	220	3.38
Acid Blue 43	33	27	148	5.48
Acid Blue 45	632	522	1,696	3.25
Acid Blue 59	...	17	60	3.53
Acid Blue 78	...	20	137	6.85
Acid Blue 90	...	14	147	10.50
Acid Blue 104	...	20	63	3.15
Acid Blue 158 and 158A	111	148	320	2.16
All other	908	844	2,623	3.11
Acid green dyes, total	638	607	1,577	2.60
Acid Green 3	120	153	189	1.24
Acid Green 9	32	23	99	4.30
Acid Green 12	20	...	...	...
Acid Green 16	171	140	432	3.09
Acid Green 20	...	38	72	1.89
Acid Green 25	106	101	364	3.60
Acid Green 50	...	46	78	1.70
All other	189	106	343	3.24
Acid brown dyes, total	754	666	1,443	2.17
Acid Brown 14	411	335	465	1.39
All other	343	331	978	2.95
Acid black dyes, total	4,428	4,635	6,504	1.40
Acid Black 1	1,959	2,033	2,296	1.13
Acid Black 24	98	102	174	1.71
Acid Black 48	35	37	193	5.22
Acid Black 52	332	...	...	...
All other	2,004	2,463	3,841	1.56

See footnotes at end of table.

TABLE 8A.--*Coal-tar dyes: U.S. production and sales, 1961*--Continued

Dye	Production	Sales		
		Quantity	Value	Unit value[1]
AZOIC DYES AND COMPONENTS	*1,000 pounds*	*1,000 pounds*	*1,000 dollars*	*Per pound*
Azoic Compositions				
Total	2,260	2,035	3,653	$1.80
Azoic Yellow 1	67	68	80	1.18
Azoic Yellow 2	59	53	104	1.96
Azoic Orange 3	89	73	137	1.88
Azoic red dyes, total	675	571	852	1.49
Azoic Red 1	130	118	199	1.69
Azoic Red 2	82	63	106	1.68
Azoic Red 6	298	231	288	1.25
Azoic Red 16	12	13	24	1.85
All other	153	146	235	1.61
Azoic Violet 1	42	33	123	3.73
Azoic blue dyes, total	128	131	242	1.85
Azoic Blue 3	54	50	76	1.52
All other	74	81	166	2.05
Azoic brown dyes, total	273	234	544	2.32
Azoic Brown 9	143	116	364	3.14
All other	130	118	180	1.53
Azoic black dyes	871	812	1,405	1.73
All other azoic compositions	56	60	166	2.77
Azoic Diazo Components, Bases (Fast Color Bases)				
Total	686	700	1,092	1.56
Azoic Diazo Component 4, base	38	...	...	...
Azoic Diazo Component 9, base	33	...	...	...
Azoic Diazo Component 12, base	59	57	64	1.12
Azoic Diazo Component 13, base	191	210	239	1.14
Azoic Diazo Component 28, base	...	58	139	2.40
Azoic Diazo Component 32, base	163	139	222	1.60
Azoic Diazo Component 48, base	43	49	99	2.02
All other azoic diazo components, bases	159	187	329	1.76
Azoic Diazo Components, Salts (Fast Color Salts)				
Total	1,776	1,709	1,987	1.16
Azoic Diazo Component 1, salt	9	10	13	1.30
Azoic Diazo Component 3, salt	368	346	262	.76
Azoic Diazo Component 5, salt	53	53	66	1.25
Azoic Diazo Component 6, salt	29	25	27	1.08
Azoic Diazo Component 8, salt	44	40	39	.98
Azoic Diazo Component 9, salt	131	132	90	.68
Azoic Diazo Component 11, salt	...	31	55	1.77
Azoic Diazo Component 12, salt	103	99	113	1.14
Azoic Diazo Component 13, salt	350	372	274	.74
Azoic Diazo Component 20, salt	19	19	58	3.05
Azoic Diazo Component 28, salt	203	194	215	1.11
Azoic Diazo Component 36, salt	133	136	246	1.81
Azoic Diazo Component 42, salt	10	7	20	2.86
Azoic Diazo Component 48, salt	70	61	84	1.38
Azoic Diazo Component 49, salt	65	53	159	3.00
All other azoic diazo components, salts	189	131	266	2.03

See footnotes at end of table.

TABLE 8A.--*Coal-tar dyes: U.S. production and sales, 1961*--Continued

Dye	Production	Sales		
		Quantity	Value	Unit value[1]
AZOIC DYES AND COMPONENTS--Continued				
Azoic Coupling Components (Naphthol AS and derivatives)	*1,000 pounds*	*1,000 pounds*	*1,000 dollars*	*Per pound*
Total	2,316	2,216	4,306	$1.94
Azoic Coupling Component 2	375	...	...	...
Azoic Coupling Component 3	12	16	47	2.94
Azoic Coupling Component 4	7	11	18	1.64
Azoic Coupling Component 5	68	65	182	2.80
Azoic Coupling Component 7	437	480	880	1.83
Azoic Coupling Component 12	80	87	266	3.06
Azoic Coupling Component 13	30	35	131	3.74
Azoic Coupling Component 14	129	106	202	1.91
Azoic Coupling Component 17	163	136	256	1.88
Azoic Coupling Component 18	530	486	596	1.23
Azoic Coupling Component 19	...	4	24	6.00
Azoic Coupling Component 20	71	50	100	2.00
Azoic Coupling Component 21	64	42	93	2.21
Azoic Coupling Component 29	...	19	53	2.79
Azoic Coupling Component 34	51	41	97	2.37
Azoic Coupling Component 35	33	34	134	3.94
All other azoic coupling components	266	604	1,227	2.03
BASIC DYES				
Total	7,396	6,372	14,824	2.33
Basic Yellow 2	635	549	1,211	2.21
Basic orange dyes, total	760	736	1,181	1.60
Basic Orange 1	130	144	153	1.06
Basic Orange 2	492	441	488	1.11
All other	138	151	540	3.58
Basic Red 2	153	158	461	2.92
Basic Violet 1	1,148	812	1,094	1.35
Basic Violet 3	986	943	1,812	1.92
Basic Violet 4	70	66	197	2.98
Basic blue dyes, total	962	733	2,288	3.12
Basic Blue 1	22	22	87	3.95
Basic Blue 7	140	103	368	3.57
Basic Blue 9	432	274	620	2.26
Basic Blue 26	58	62	189	3.05
All other	310	272	1,024	3.76
Basic Green 1	75	70	248	3.54
Basic Green 4	414	413	1,139	2.76
Basic Brown 1	244	222	300	1.35
Basic Brown 4	489	569	711	1.25
All other basic dyes	1,460	1,101	4,182	3.80
DIRECT DYES				
Total	22,818	23,404	35,144	1.50
Direct yellow dyes, total	4,075	4,015	7,612	1.90
Direct Yellow 4	320	333	683	2.05
Direct Yellow 5	...	89	406	4.56
Direct Yellow 6	801	827	1,311	1.59
Direct Yellow 8	...	22	71	3.23
Direct Yellow 11	558	566	691	1.22
Direct Yellow 12	337	303	723	2.39

See footnotes at end of table.

TABLE 8A.--*Coal-tar dyes: U.S. production and sales, 1961*--Continued

Dye	Production	Sales		
		Quantity	Value	Unit value[1]
DIRECT DYES--Continued	*1,000 pounds*	*1,000 pounds*	*1,000 dollars*	*Per pound*
Direct yellow dyes--Continued				
Direct Yellow 26	...	7	17	$2.43
Direct Yellow 28	223	216	432	2.00
Direct Yellow 29	65	68	95	1.40
Direct Yellow 44	407	366	645	1.76
Direct Yellow 50	188	199	364	1.83
All other	1,176	1,019	2,174	2.13
Direct orange dyes, total	1,548	1,477	3,622	2.45
Direct Orange 1	19	13	38	2.92
Direct Orange 8	123	95	140	1.47
Direct Orange 15	139	148	172	1.16
Direct Orange 26	19	27	59	2.19
Direct Orange 29	...	51	108	2.12
Direct Orange 34	104	94	217	2.31
Direct Orange 37	47	48	127	2.65
Direct Orange 39	62	56	126	2.25
Direct Orange 72	147	152	370	2.43
Direct Orange 73	101	93	308	3.31
Direct Orange 81	51	58	175	3.02
Direct Orange 102	158	136	382	2.81
All other	578	506	1,400	2.77
Direct red dyes, total	2,466	2,488	5,417	2.18
Direct Red 1	75	102	163	1.60
Direct Red 2	386	362	588	1.62
Direct Red 10	11	16	24	1.50
Direct Red 13	36	59	98	1.66
Direct Red 16	12	18	37	2.06
Direct Red 23	211	217	490	2.26
Direct Red 24	153	146	307	2.10
Direct Red 26	51	54	151	2.80
Direct Red 28	140	140	177	1.26
Direct Red 31	14	15	55	3.67
Direct Red 37	65	66	161	2.44
Direct Red 39	28	26	78	3.00
Direct Red 75	23	26	92	3.54
Direct Red 79	232	213	465	2.18
Direct Red 80	247	229	473	2.07
Direct Red 81	194	163	435	2.67
Direct Red 83	94	91	151	1.66
Direct Red 84	...	19	43	2.26
Direct Red 122	8	21	104	4.95
Direct Red 123	...	8	20	2.50
Direct Red 127 and 127A	...	4	14	3.50
Direct Red 149	11	17	54	3.18
Direct Red 152	10	7	33	4.71
All other	465	469	1,204	2.57
Direct violet dyes, total	190	177	529	2.99
Direct Violet 1	11	13	26	2.00
Direct Violet 9	74	66	165	2.50
Direct Violet 14	...	12	19	1.58
Direct Violet 22	...	7	12	1.71
All other	105	79	307	3.89
Direct blue dyes, total	4,088	4,305	6,161	1.43
Direct Blue 1	204	210	473	2.25
Direct Blue 2	1,423	1,587	1,402	.88
Direct Blue 6	359	345	199	.58
Direct Blue 8	45	52	104	2.00
Direct Blue 14	86	84	73	.87
Direct Blue 15	...	38	40	1.05
Direct Blue 22	14	18	44	2.44
Direct Blue 24	...	22	33	1.50

See footnotes at end of table.

TABLE 8A.--*Coal-tar dyes: U.S. production and sales, 1961*--Continued

Dye	Production	Sales		
		Quantity	Value	Unit value[1]
DIRECT DYES--Continued				
	1,000 pounds	*1,000 pounds*	*1,000 dollars*	*Per pound*
Direct blue dyes--Continued				
Direct Blue 25	17	30	78	$2.60
Direct Blue 26	...	4	6	1.50
Direct Blue 67	...	16	72	4.50
Direct Blue 71	45	56	151	2.70
Direct Blue 76	127	118	149	1.26
Direct Blue 78	42	56	159	2.84
Direct Blue 80	178	192	302	1.57
Direct Blue 86	553	520	922	1.77
Direct Blue 98	117	118	205	1.74
Direct Blue 120 and 120A	37	72	156	2.17
Direct Blue 126	58	80	202	2.52
Direct Blue 151	...	20	27	1.35
All other	783	667	1,364	2.04
Direct green dyes, total	786	805	1,553	1.93
Direct Green 1	142	117	129	1.10
Direct Green 6	356	434	511	1.18
Direct Green 38	...	9	36	4.00
All other	288	245	877	3.58
Direct brown dyes, total	1,400	1,552	2,201	1.42
Direct Brown 1 and 1A	291	333	344	1.03
Direct Brown 2	180	171	260	1.52
Direct Brown 6	28	39	42	1.08
Direct Brown 31	90	91	243	2.67
Direct Brown 74	43	45	69	1.53
Direct Brown 95	351	426	306	.72
Direct Brown 111	70	79	277	3.51
Direct Brown 154	135	145	207	1.43
All other	212	223	453	2.03
Direct black dyes, total	8,265	8,585	8,049	.94
Direct Black 4	219	243	226	.93
Direct Black 9	68	86	119	1.38
Direct Black 22	430	410	364	.89
Direct Black 37	...	8	11	1.38
Direct Black 38	5,963	6,231	4,979	.80
Direct Black 51	80	82	219	2.67
Direct Black 71	...	3	6	2.00
Direct Black 78	65	86	170	1.98
Direct Black 80	837	868	922	1.06
All other	603	568	1,033	1.82
DISPERSE DYES				
Total	7,970	7,183	17,354	2.42
Disperse yellow dyes, total	1,197	1,061	2,595	2.45
Disperse Yellow 3	391	375	788	2.10
Disperse Yellow 5	58	29	108	3.72
Disperse Yellow 33	101	106	169	1.59
Disperse Yellow 37	106	82	161	1.96
All other	541	469	1,369	2.92
Disperse orange dyes, total	551	512	944	1.84
Disperse Orange 3	82	68	114	1.68
Disperse Orange 5	54	55	118	2.15
Disperse Orange 17	177	148	161	1.09
All other	238	241	551	2.29
Disperse red dyes, total	1,141	1,057	3,002	2.84
Disperse Red 1	137	141	217	1.54
Disperse Red 5	34	42	49	1.17
Disperse Red 13	19	17	23	1.35

See footnotes at end of table.

TABLE 8A.--*Coal-tar dyes: U.S. production and sales, 1961*--Continued

Dye	Production	Sales		
		Quantity	Value	Unit value[1]
DISPERSE DYES--Continued	*1,000 pounds*	*1,000 pounds*	*1,000 dollars*	*Per pound*
Disperse red dyes--Continued				
Disperse Red 15	...	92	254	$2.76
Disperse Red 17	74	85	96	1.13
All other	877	680	2,363	3.48
Disperse violet dyes, total	292	259	762	2.94
Disperse Violet 1	40	25	93	3.72
Disperse Violet 4	30	39	146	3.74
All other	222	195	523	2.68
Disperse blue dyes, total	3,075	2,746	8,084	2.94
Disperse Blue 1	305	283	1,020	3.60
Disperse Blue 3	881	816	1,352	1.66
Disperse Blue 7	231	190	1,177	6.19
All other	1,658	1,457	4,535	3.11
Disperse Black 1	219	251	338	1.35
Disperse Black 9	1,122	1,043	1,039	1.00
All other disperse dyes	373	254	590	2.32
FIBER-REACTIVE DYES				
Fiber-reactive dyes, total	1,197	993	4,172	4.20
FLUORESCENT BRIGHTENING AGENTS				
Total	9,756	9,114	20,772	2.28
Fluorescent Brightening Agent 68	72	68	794	11.68
All other fluorescent brightening agents	9,684	9,046	19,978	2.21
FOOD, DRUG, AND COSMETIC COLORS				
Total	2,525	2,270	9,514	4.19
Food, Drug, and Cosmetic Dyes				
Total	2,254	2,020	8,418	4.17
FD&C Blue No. 1	48	45	557	12.38
FD&C Red No. 2	623	576	1,879	3.26
FD&C Red No. 3	43	38	610	16.05
FD&C Red No. 4	400	305	1,536	5.04
FD&C Yellow No. 5	595	554	1,855	3.35
FD&C Yellow No. 6	513	466	1,531	3.29
All other food, drug, and cosmetic dyes	32	36	450	12.50
Drug and Cosmetic and External Drug and Cosmetic Dyes				
Total	271	250	1,096	4.38
D&C Orange No. 4	...	8	40	5.00
D&C Red No. 7	8	8	28	3.50
D&C Red No. 19	19	16	71	4.44
D&C Red No. 21	...	44	155	3.52
D&C Red No. 36	12	12	41	3.42
D&C Yellow No. 5	...	19	47	2.47
All other drug and cosmetic and external drug and cosmetic dyes	232	143	714	4.99

See footnotes at end of table.

TABLE 8A.--*Coal-tar dyes: U.S. production and sales, 1961*--Continued

Dye	Production	Sales		
		Quantity	Value	Unit value[1]
MORDANT DYES	*1,000 pounds*	*1,000 pounds*	*1,000 dollars*	*Per pound*
Total	3,864	4,096	5,291	$1.29
Mordant yellow dyes, total	172	203	306	1.51
Mordant Yellow 1	41	41	52	1.27
Mordant Yellow 5	...	9	23	2.56
Mordant Yellow 8	...	10	16	1.60
Mordant Yellow 10	...	16	15	.94
Mordant Yellow 16	...	10	17	1.70
All other	131	117	183	1.56
Mordant orange dyes, total	62	77	137	1.78
Mordant Orange 1	35	27	43	1.59
All other	27	50	94	1.88
Mordant Red 3	11	12	36	3.00
Mordant Red 7	41	47	97	2.06
Mordant blue dyes, total	103	102	273	2.68
Mordant Blue 1	34	42	139	3.31
Mordant Blue 9	63	47	93	1.98
All other	6	13	41	3.15
Mordant brown dyes, total	213	258	573	2.22
Mordant Brown 1	25	57	127	2.23
Mordant Brown 33	...	35	64	1.83
Mordant Brown 40	7	14	38	2.71
All other	181	152	344	2.26
Mordant black dyes, total	3,210	3,327	3,637	1.09
Mordant Black 1	...	14	20	1.43
Mordant Black 11	1,964	2,231	2,130	.95
Mordant Black 13	96	78	218	2.79
Mordant Black 17	878	697	708	1.02
Mordant Black 38	25	24	89	3.71
All other	247	283	472	1.67
All other mordant dyes	52	70	232	3.31
SOLVENT DYES				
Total	6,477	5,550	9,210	1.66
Solvent yellow dyes, total	1,200	792	1,497	1.89
Solvent Yellow 2	22	30	48	1.60
Solvent Yellow 3	...	43	70	1.63
Solvent Yellow 14	911	531	648	1.22
Solvent Yellow 47	50	39	178	4.56
All other	217	149	553	3.71
Solvent orange dyes, total	252	235	553	2.35
Solvent Orange 3	18	13	31	2.38
Solvent Orange 7	103	104	170	1.63
All other	131	118	352	2.98
Solvent red dyes, total	957	752	1,693	2.25
Solvent Red 24	581	368	666	1.81
Solvent Red 26	234	239	435	1.82
Solvent Red 49	27	22	139	6.32
All other	115	123	453	3.68
Solvent Violet 8	258	226	363	1.61

See footnotes at end of table.

TABLE 8A.--*Coal-tar dyes: U.S. production and sales, 1961*--Continued

Dye	Production	Sales		
		Quantity	Value	Unit value[1]
	1,000 pounds	*1,000 pounds*	*1,000 dollars*	*Per pound*
SOLVENT DYES--Continued				
Solvent blue dyes, total	412	412	1,907	$4.63
Solvent Blue 4	66	...	...	...
Solvent Blue 38	137	156	763	4.89
All other	209	256	1,144	4.47
Solvent green dyes, total	73	68	318	4.68
Solvent Green 1	11	12	34	2.83
Solvent Green 3	44	38	204	5.37
All other	18	18	80	4.44
All other solvent dyes	3,325	3,065	2,879	.94
SULFUR DYES				
Total	34,055	32,362	8,673	.27
Solubilized Sulfur Yellow 2	18	10	5	.50
Sulfur Red 1	...	12	10	.83
Sulfur Red 6	54	41	76	1.85
Sulfur Blue 7	186	180	165	.92
Sulfur Blue 15	10	16	34	2.12
Sulfur Green 2	...	18	43	2.39
Sulfur Brown 10	73	61	78	1.28
Sulfur Black 1	1,540	1,575	569	.36
All other sulfur dyes	32,174	30,449	7,693	.25
VAT DYES				
Total	48,187	45,802	49,386	1.08
Vat yellow dyes, total	3,962	3,553	5,152	1.45
Vat Yellow 2, 8-1/2%	2,223	2,013	2,125	1.06
Vat Yellow 4, 12-1/2%	904	840	1,014	1.21
Solubilized Vat Yellow 4, 37-1/2%	8	6	40	6.67
All other	827	694	1,973	2.84
Vat orange dyes, total	2,572	2,123	5,404	2.55
Vat Orange 1, 20%	480	402	1,199	2.98
Solubilized Vat Orange 1, 26%	11	10	70	7.00
Vat Orange 2, 12%	465	378	892	2.36
Vat Orange 3, 13-1/2%	...	123	276	2.24
Vat Orange 4, 6%	65	47	149	3.17
Vat Orange 5, 10%	241	214	325	1.52
Solubilized Vat Orange 5, 30%	4	...	...	...
Vat Orange 9, 12%	238	111	298	2.68
Vat Orange 15, 10%	546	522	1,127	2.16
All other	522	316	1,068	3.38
Vat Red 1, 13%	486	380	668	1.76
Vat Red 13, 11%	88	96	293	3.05
Vat Red 15, 10%	...	173	163	.94
Vat Violet 1, 11%	504	442	1,000	2.26
Vat Violet 2, 20%	122	86	211	2.45
Vat Violet 9, 12%	154	113	431	3.81
Vat Violet 13, 6-1/4%	695	552	1,334	2.42
Vat Violet 17, 12-1/2%	103	53	180	3.40
Vat Blue 1, 20%	...	6,481	1,671	.26
Vat Blue 4, 10%	337	119	196	1.65
Vat Blue 5, 16%	366	359	336	.94
Vat Blue 6, 8-1/3%	2,390	2,422	2,868	1.18
Solubilized Vat Blue 6, 17-1/2%	24	...	...	...
Vat Blue 14, 8-1/3%	260	223	274	1.23
Vat Blue 18, 13%	745	704	1,221	1.73

See footnotes at end of table.

TABLE 8A.--*Coal-tar dyes: U.S. production and sales, 1961*--Continued

Dye	Production	Sales		
		Quantity	Value	Unit value[1]
VAT DYES--Continued	*1,000 pounds*	*1,000 pounds*	*1,000 dollars*	*Per pound*
Vat Blue 20, 14%	499	662	984	$1.49
Vat Green 1, 6%	4,899	4,978	3,547	.71
Solubilized Vat Green 1, 12-1/2%	40	...	...	...
Vat Green 3, 10%	2,729	2,395	1,753	.73
Solubilized Vat Green 3, 26%	10	10	62	6.20
Vat Green 8, 8-1/2%	2,167	1,203	1,204	1.00
Vat Green 9, 12-1/2%	812	743	690	.93
Vat brown dyes, total	3,912	3,802	6,807	1.79
Vat Brown 1, 11%	1,007	893	1,513	1.69
Vat Brown 3, 11%	1,264	1,249	1,932	1.55
Vat Brown 5, 13%	293	292	430	1.47
Vat Brown 20, 10-1/2%	73	131	288	2.20
All other	1,275	1,237	2,644	2.14
Vat black dyes, total	7,513	7,047	8,134	1.15
Solubilized Vat Black 1, 27-1/2%	...	6	39	6.50
Vat Black 25, 12-1/2%	3,447	2,984	2,758	.92
Vat Black 27, 12-1/2%	920	869	1,176	1.35
All other	3,146	3,188	4,161	1.31
All other vat dyes	12,798	7,083	4,803	.66
All other dyes[2]	132	81	432	5.33

[1] Calculated from rounded figures.
[2] Includes oxidation bases, ingrain dyes, and miscellaneous dyes.

more than the 2.5 million pounds reported for 1960. Other important dyes whose output was substantially larger in 1961 than in 1960 were Vat Green 8 (65.2 percent); Disperse Blue 3 (65.3 percent); Disperse Black 9 (47.8 percent); Mordant Black 17 (46.6 percent); Vat Black 25 (36.1 percent); Vat Yellow 2 (33.6 percent); Acid Black 1 (22.0 percent); and Basic Violet 1 (15.8 percent).

On the other hand, the output of a few important dyes was smaller in 1961 than in 1960. Production of Direct Blue 2 in 1961 was 1.4 million pounds--25.5 percent less than the 1.9 million pounds reported for 1960. The output of Vat Orange 15 was 26.9 percent smaller in 1961 than in 1960; that of Vat Black 27 was 22.1 percent smaller; that of Vat Brown 3 was 8.4 percent smaller; and that of Vat Green 3 was 5.8 percent smaller.

Table 9 summarizes production and sales of dyes in 1961, by class of application. Four classes of dyes accounted for 72.2 percent of the total output of dyes in 1961. Vat dyes accounted for 28.9 percent of the total; sulfur dyes, for 20.5 percent; direct dyes, for 13.7 percent; and acid dyes, for 9.1 percent. In 1961 the output of three of the four major classes was larger than that in 1960. Production of sulfur dyes was 9.8 percent larger; acid dyes, 5.8 percent larger; and vat dyes, 3.5 percent larger. Production of direct dyes was 1.1 percent smaller in 1961 than in 1960.

The output of two classes of dyes increased substantially in 1961. The production of fluorescent brightening agents was 9.8 million pounds in 1961, or 30 percent more than the output of 7.5 million pounds in 1960. Production of fiber-reactive dyes was 1.2 million pounds in 1961, or 311 percent more than the 291,000 pounds in 1960. Of the remaining classes, the output of disperse dyes was 21.7 percent larger in 1961 than in 1960; basic dyes, 9.6 percent larger; food, drug, and cosmetic dyes, 4.5 percent larger; and the azoic dyes and components, 1.8 percent larger. The output of mordant dyes, on the other hand, was 2.8 percent smaller in 1961 than in 1960. There was no significant change in the output of solvent dyes.

Table 10 shows production and sales of dyes in 1961 by chemical class. In 1961 four chemical classes of dyes accounted for more than 75 percent of all the dyes produced: Azo dyes

TABLE 9.--*Coal-tar dyes: U.S. production and sales, by class of application, 1961*

Class of application	Production	Sales		
		Quantity	Value	Unit value[1]
	1,000 pounds	*1,000 pounds*	*1,000 dollars*	*Per pound*
Total	166,550	158,351	213,078	$1.35
Acid	15,135	14,464	27,268	1.89
Azoic dyes and components:				
Azoic compositions	2,260	2,035	3,653	1.80
Azoic diazo components, bases (Fast color bases)	686	700	1,092	1.56
Azoic diazo components, salts (Fast color salts)	1,776	1,709	1,987	1.16
Azoic coupling components (Naphthol AS and derivatives)	2,316	2,216	4,306	1.94
Basic	7,396	6,372	14,824	2.33
Direct	22,818	23,404	35,144	1.50
Disperse	7,970	7,183	17,354	2.42
Fiber-reactive	1,197	993	4,172	4.20
Fluorescent brightening agents	9,756	9,114	20,772	2.28
Food, drug, and cosmetic colors	2,525	2,270	9,514	4.19
Mordant	3,864	4,096	5,291	1.29
Solvent	6,477	5,550	9,210	1.66
Sulfur	34,055	32,362	8,673	.27
Vat	48,187	45,802	49,386	1.08
All other[2]	132	81	432	5.33

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

TABLE 10.--*Coal-tar dyes: U.S. production and sales, by chemical class, 1961*

Chemical class	Production	Sales		
		Quantity	Value	Unit value[1]
	1,000 pounds	*1,000 pounds*	*1,000 dollars*	*Per pound*
Total	166,550	158,351	213,078	$1.35
Acridine	33	40	102	2.55
Aminoketone	69	47	280	5.96
Anthraquinone	38,937	35,144	60,291	1.72
Azo, total	44,929	44,549	74,426	1.67
Monoazo	14,445	13,945	26,837	1.92
Disazo	13,498	13,556	22,608	1.67
Trisazo	9,332	9,928	10,509	1.06
Polyazo	1,207	1,147	2,049	1.79
Not specified	6,447	5,973	12,423	2.08
Azoic	7,038	6,660	11,038	1.66
Indigoid	6,792	8,074	4,464	.55
Ketone imine	649	561	1,246	2.22
Nitro	484	438	905	2.07
Oxazine	80	53	183	3.45
Phthalocyanine	834	798	2,091	2.62
Quinoline	153	174	733	4.21
Stilbene	9,766	9,181	19,851	2.16
Sulfur[2]	34,055	32,362	8,673	.27
Thiazine	432	275	623	2.27
Thiazole	349	373	800	2.14
Triarylmethane	5,327	4,524	10,736	2.37
Xanthene	1,279	584	2,785	4.77
All other[3]	15,344	14,514	13,851	.95

[1] Calculated from rounded figures.
[2] Does not include vat sulfur dyes.
[3] Includes azine, coumarin, hydroxyketone, methine, nitroso, vat sulfur, and miscellaneous dyes. Statistics for these groups of dyes may not be published separately because publication would disclose information received in confidence.

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accounted for 27.0 percent of the total; anthraquinone dyes, for 23.4 percent; sulfur dyes (not including vat sulfur dyes), for 20.4 percent; and stilbene dyes, for 5.9 percent. The output of each of these four classes was larger in 1961 than in 1960; that of anthraquinone dyes was 14.9 percent larger; that of stilbene dyes, 13.3 percent larger; that of sulfur dyes, 9.8 percent larger; and that of azo dyes, 2.5 percent larger. Production of all but three of the remaining important chemical classes--the indigoid dyes, thiazole dyes, and nitro dyes--was larger in 1961 than in 1960. The output of phthalocyanine dyes was 71.3 percent larger in 1961 than in 1960; thiazine dyes, 60.6 percent larger; triarylmethane dyes, 11.7 percent larger; and xanthene dyes, 5.2 percent larger. In terms of value of sales, the most important classes of dyes in 1961 were the azo dyes ($74.4 million), the anthraquinone dyes ($60.3 million), the stilbene dyes ($19.9 million), and the azoic dyes ($11.0 million).

Toners and Lakes

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

Statistics on production and sales of all lakes and toners in 1961 are given in table 11A.[3] Statistics on sales of a few selected pigments by commercial forms (dry full-strength form, dry extended form, dry dispersions, aqueous dispersions, and flushed colors) are given in table 12. Individual lakes and toners are identified in this report by the names used in the second edition of the *Colour Index* rather than by their common names.[4]

Separate data were not collected for production and sales of extended toners in 1961. Instead, data were collected for production and sales of all toners, full-strength and extended, in terms of full-strength toner content. Because of this change, caution should be used in comparing data for 1961 with those for earlier years. Production of toners for 1961 should be compared with the total quantity of production of full-strength toners plus the toner content of production of extended toners for earlier years. Quantity of sales of toners for 1961 should be compared with the total quantity of sales of full-strength toners plus the estimated toner content of sales of extended toners for earlier years. Value data are not strictly comparable, since values of toners for 1961 exclude the value of any extenders, as well as any additional processing and packaging costs of the dry extended form over the dry full-strength form. Values of toners for 1961 should, therefore, be somewhat smaller than those reported for previous years. It is believed however, that any differences in value are relatively small, both in the overall totals and in the totals for individual toners, so that comparison should be valid in most instances.

Total production of lakes and toners in 1961, including toner content of extended toners, was 35.1 million pounds--3.2 percent less than the 36.2 million pounds produced in 1960 and 7.2 percent less than the 37.8 million pounds produced in 1959. Total sales of lakes and toners in 1961, including toner content of extended toners, amounted to 29.5 million pounds, valued at $66.3 million, compared with an estimated 28.8 million pounds, valued at $64.3 million, in 1960, and an estimated 28.9 million pounds, valued at $65.6 million, in 1959. In terms of quantity, sales of lakes and toners in 1961 were 2.2 percent larger than in 1960, and 1.9 percent larger than in 1959; in terms of value, sales in 1961 were 3.2 percent larger than in 1960, and 1.0 percent larger than in 1959.

Production of toners in 1961 amounted to 31.4 million pounds--2.0 percent less than the 32.0 million pounds reported for 1960. Sales in 1961 were 26.4 million pounds, valued at $63.2 million, compared with an estimated 25.7 million pounds, valued at $60.8 million, in 1960. Sales in 1961 were thus 2.6 percent larger than in 1960, in terms of quantity, and 4.0 percent larger, in terms of value. Production of red toners in 1961 amounted to 15.8 million pounds, or 50.5 percent of the total output of toners. The individual toners produced in the largest quantities in 1961 were Pigment Red 49, barium toner, 3.1 million pounds; Pigment Blue 15, alpha form, 2.6 million pounds; Pigment Yellow 12, 2.5 million pounds; Pigment Green 7, 2.3 million pounds; and Pigment Red 3, 2.1 million pounds.

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[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 lakes and toners during the years 1959-61.

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

Production of lakes totaled 3.7 million pounds in 1961, or 12.3 percent less than the 4.2 million reported for 1960. Sales of lakes in 1961 amounted to 3.1 million pounds, valued at $3.1 million, compared with sales in 1960 of 3.1 million pounds, valued at $3.5 million. Sales in 1961 were thus approximately the same as those in 1960, in terms of quantity, but 11.2 percent smaller, in terms of value. Pigment Blue 24, with an output of 1.9 million pounds, was the lake produced in largest quantity in 1961.

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

TABLE 11A.--*Toners and lakes: U.S. production and sales, 1961*

[Listed below are all toners and lakes for which any reported data on production or sales may be published. (Leaders are used where the reported data are accepted in confidence and may not be published or where no data were reported.) Table 11B in pt. III lists all toners and lakes for which data on production or sales were reported and identifies the manufacturer of each]

Product	Production	Sales		
		Quantity	Value	Unit value[1]
	1,000 pounds	*1,000 pounds*	*1,000 dollars*	*Per pound*
Grand total	35,062	29,472	66,322	$2.25
TONERS				
Total	31,366	26,355	63,223	2.40
Yellow toners, total	4,736	3,288	8,040	2.45
Hansa yellows, total	943	661	1,720	2.60
Pigment Yellow 1, C.I. 11 680	601	433	983	2.27
Pigment Yellow 3, C.I. 11 710	120	77	193	2.51
Other Hansa yellows	222	151	544	3.60
Benzidine yellows:				
Pigment Yellow 12, C.I. 21 090	2,541	1,674	3,620	2.16
Pigment Yellow 13, C.I. 21 100	70	32	99	3.09
Pigment Yellow 14, C.I. 21 095	945	739	1,855	2.51
Pigment Yellow 17, C.I. 21 105	168	151	507	3.36
All other	69	31	239	7.71
Orange toners, total	616	539	1,849	3.43
Pigment Orange 5, C.I. 12 075	154	147	234	1.59
Pigment Orange 13, C.I. 21 110	83	76	243	3.20
Pigment Orange 16, C.I. 21 160	123	110	324	2.95
All other	256	206	1,048	5.09
Red toners, total	15,835	13,409	25,330	1.89
Naphthol reds, total	636	463	1,694	3.66
Pigment Red 2, C.I. 12 310	50	38	98	2.58
Pigment Red 5, C.I. 12 490	91	37	193	5.22
Pigment Red 13, C.I. 12 395	6	6	21	3.50
Pigment Red 17, C.I. 12 390	72	62	190	3.06
Pigment Red 18, C.I. 12 350	10	10	34	3.40
Pigment Red 22, C.I. 12 315	123	119	350	2.94
Pigment Red 23, C.I. 12 355	108	94	355	3.78
Other naphthol reds	176	97	453	4.67
Pigment Red 1, C.I. 12 070, dark	238	213	269	1.26
Pigment Red 1, C.I. 12 070, light	390	346	427	1.23
Pigment Red 3, C.I. 12 120	2,071	1,424	2,326	1.63
Pigment Red 4, C.I. 12 085	303	279	383	1.37
Pigment Red 38, C.I. 21 120	107	89	400	4.49
Pigment Red 48, C.I. 15 865	1,844	1,715	3,208	1.87
Pigment Red 49, C.I. 15 630:				
Barium toner	3,077	2,806	2,787	.99
Calcium toner	1,317	1,250	1,274	1.02
Sodium salt	321	327	335	1.02
Pigment Red 52, C.I. 15 860	614	573	833	1.45
Pigment Red 53, C.I. 15 585, barium toner	1,585	1,323	1,664	1.26

See footnotes at end of table.

TABLE 11A.--*Toners and lakes: U.S. production and sales, 1961*--Continued

Product	Production	Sales		
		Quantity	Value	Unit value[1]
TONERS--Continued	*1,000 pounds*	*1,000 pounds*	*1,000 dollars*	*Per pound*
Red toners--Continued				
Pigment Red 54, C.I. 14 830, calcium toner	...	63	145	$2.30
Pigment Red 57, C.I. 15 850, calcium toner	681	660	1,004	1.52
Pigment Red 63, C.I. 15 880	40	36	70	1.94
Pigment Red 81, C.I. 45 160, PMA	121	124	731	5.90
Pigment Red 81, C.I. 45 160, PTA	123	103	662	6.43
Pigment Red 90, C.I. 45 380	1,126	585	1,065	1.82
All other	1,241	1,030	6,053	5.88
Violet toners, total	1,062	985	3,332	3.38
Pigment Violet 1, C.I. 45 170, PMA	64	61	181	2.97
Pigment Violet 1, C.I. 45 170, PTA	67	60	322	5.37
Pigment Violet 3, C.I. 42 535, fugitive	415	400	580	1.45
Pigment Violet 3, C.I. 42 535, PMA	318	278	856	3.08
Pigment Violet 3, C.I. 42 535, PTA	35	39	166	4.26
All other	163	147	1,227	8.35
Blue toners, total	6,193	5,484	16,515	3.01
Pigment Blue 1, C.I. 42 595, PMA	147	150	761	5.07
Pigment Blue 1, C.I. 42 595, PTA	32	31	177	5.71
Pigment Blue 2, C.I. 44 045, fugitive, PMA, and PTA	7	7	18	2.57
Pigment Blue 9, C.I. 42 025, PTA	11	11	72	6.55
Pigment Blue 14, C.I. 42 600, PMA	51	54	411	7.61
Pigment Blue 14, C.I. 42 600, PTA	...	11	109	9.91
Pigment Blue 15, C.I. 74 160, alpha form	2,609	2,162	6,199	2.87
Pigment Blue 15, C.I. 74 160, beta form	1,319	1,192	3,658	3.07
Pigment Blue 19, C.I. 42 750A	1,753	1,683	4,082	2.43
Pigment Blue 25, C.I. 21 180	48	...	...	...
All other	216	183	1,028	5.62
Green toners:				
Pigment Green 1, C.I. 42 040, PMA	10	8	44	5.50
Pigment Green 1, C.I. 42 040, PTA	7	7	26	3.71
Pigment Green 2, C.I. 42 040 and 49 005, PMA	54	49	245	5.00
Pigment Green 2, C.I. 42 040 and 49 005, PTA	44	51	337	6.61
Pigment Green 4, C.I. 42 000, fugitive, and PMA	11	10	32	3.20
Pigment Green 4, C.I. 42 000, PTA	5	5	32	6.40
Pigment Green 7, C.I. 74 260	2,316	2,126	6,416	3.02
Pigment Green 8, C.I. 10 006	255	204	286	1.40
Brown toners, total	73	47	156	3.32
Pigment Brown 3, C.I. 21 010, fugitive, and PMA	4	4	12	3.00
All other	69	43	144	3.35
All other toners[2]	149	143	583	4.08
LAKES				
Total	3,696	3,117	3,099	.99
Yellow lakes	169	169	233	1.38
Orange lakes	431	419	165	.39
Red lakes:				
Pigment Red 60, C.I. 16 105	171	143	220	1.54
Pigment Red 83, C.I. 58 000	69	64	218	3.41
(Acid red 26), C.I. 16 150	575	578	255	.44
Violet lakes, total	129	116	297	2.56
Pigment Violet 5, C.I. 58 055	122	111	285	2.57
All other	7	5	12	2.40
Blue lakes: Pigment Blue 24, C.I. 42 090	1,922	1,426	1,409	.99
Black lakes: (Natural black 3), C.I. 75 291	95	89	82	.92
All other lakes[3]	135	113	220	1.95

[1] Calculated from rounded figures.
[2] Includes all black toners and all other green toners.
[3] Includes all green lakes, all other blue lakes, and all other red lakes.

TABLE 12.--*U.S. sales of selected dry full-strength colors, dry extended colors, dry dispersions, aqueous dispersions, and flushed colors, 1961*

Selected pigments by commercial forms	Sales		
	Quantity[1]	Value	Unit value[2]
	1,000 pounds	*1,000 dollars*	*Per pound*
Pigment Yellow 12, C.I. 21 090, total	1,674	3,953	$2.35
Dry full-strength toner	687	1,377	2.00
Dry extended toner and dry dispersions[3]	50	179	3.58
Aqueous dispersions[4]	7	15	2.14
Flushed color	930	2,382	2.56
Pigment Yellow 13, C.I. 21 100; Pigment Yellow 14, C.I. 21 095; and Pigment Yellow 17, C.I. 21 105; total	922	2,507	2.72
Dry full-strength toner	663	1,798	2.71
Dry extended toner and dry dispersions[3]	41	131	3.20
Aqueous dispersions[4]	140	366	2.61
Flushed color	78	212	2.72
Pigment Red 3, C.I. 12 120, total	1,424	2,376	1.67
Dry full-strength toner and dry extended toner[3]	1,009	1,630	1.62
Aqueous dispersions[4]	46	97	2.11
Flushed color	369	649	1.76
Pigment Red 48, C.I. 15 865, total	1,715	3,377	1.97
Dry full-strength toner, dry extended toner, and dry dispersions[3]	1,647	3,236	1.96
Aqueous dispersions[4] and flushed color	68	141	2.07
Pigment Red 49, C.I. 15 630, barium toner, total	2,806	2,781	.99
Dry full-strength toner	1,905	1,866	.98
Dry extended toner, dry dispersions, and aqueous dispersions[3 4]	27	33	1.22
Flushed color	874	882	1.01
Pigment Red 49, C.I. 15 630, calcium toner, total	1,250	1,327	1.06
Dry full-strength toner and dry dispersions[3]	1,078	1,102	1.02
Aqueous dispersions[4] and flushed color[3]	172	225	1.31
Pigment Red 49, C.I. 15 630, sodium toner, total	327	347	1.06
Dry full-strength toner	243	250	1.03
Aqueous dispersions[4] and flushed color[3]	84	97	1.15
Pigment Red 53, C.I. 15 585, barium toner, total	1,323	1,718	1.30
Dry full-strength toner, dry extended toner, and dry dispersions[3]	935	1,173	1.25
Flushed color	388	545	1.40
Pigment Red 90, C.I. 45 380, total	585	1,094	1.87
Dry full-strength toner and dry extended toner[3]	77	133	1.73
Aqueous dispersions[4] and flushed color[3]	508	961	1.89
Pigment Violet 3, C.I. 42 535, fugitive, total	400	623	1.56
Dry full-strength toner and dry extended toner[3]	269	400	1.49
Aqueous dispersions[4] and flushed color[3]	131	223	1.70
Pigment Violet 3, C.I. 42 535, permanent (PMA and PTA), total	317	1,068	3.37
Dry full-strength toner	197	641	3.25
Dry extended toner	16	107	6.69
Dry dispersions and aqueous dispersions[3 4]	11	33	3.00
Flushed color	93	287	3.09
Pigment Blue 15, C.I. 74 160, alpha form, total	2,162	6,565	3.04
Dry full-strength toner	1,312	3,690	2.81
Dry extended toner and dry dispersions[3]	309	1,287	4.17
Aqueous dispersions[4]	385	1,110	2.88
Flushed color	156	478	3.06
Pigment Blue 15, C.I. 74 160, beta form, total	1,192	3,673	3.08
Dry full-strength toner, dry extended toner, and dry dispersions[3]	755	2,425	3.21
Aqueous dispersions[4] and flushed color[3]	437	1,248	2.86
Pigment Blue 19, C.I. 42 750A, total	1,683	4,209	2.50
Dry full-strength toner and dry extended toner[3]	143	361	2.52
Aqueous dispersions[4] and flushed color[3]	1,540	3,848	2.50

See footnotes at end of table.

Selected pigments by commercial forms	Sales		
	Quantity[1]	Value	Unit value[2]
	1,000 pounds	*1,000 dollars*	*Per pound*
Pigment Blue 24, C.I. 42 090, total	1,426	1,769	$1.24
Dry lake	186	176	.95
Aqueous dispersions[4] and flushed color[3]	1,240	1,593	1.28
Pigment Green 7, C.I. 74 260, total	2,126	7,156	3.37
Dry full-strength toner	1,294	3,893	3.01
Dry extended toner and dry dispersions[3]	506	2,179	4.31
Aqueous dispersions[4]	282	944	3.35
Flushed color	44	140	3.18

[1] Quantity of the various commercial forms is given in terms of dry full-strength toner (or dry lake) content.
[2] Calculated from rounded figures.
[3] Separate data on these commercial forms may not be published without revealing the operations of individual companies.
[4] Includes presscake.

Note.--The C.I. *(Colour Index)* numbers shown in this report are the identifying numbers given in the second edition of the *Colour Index*.
The abbreviations PMA and PTA stand for phosphomolybdic and phosphotungstic (including phosphotungstomolybdic) acids, respectively.

Medicinal Chemicals

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. For the purpose of this report, antibiotics prepared by synthetic or by biological processes are considered to be medicinal chemicals.

Statistics on the production of medicinal chemicals are in terms of 100-percent content of the medicinal chemical itself, exclusive of all diluents or other materials used in mixing or compounding tablets, solutions, and suspensions, for consumer use. Except for 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 1961 total production of all the medicinal chemicals covered in this report amounted to 117.5 million pounds (see table 13A[5]), or 3.3 percent more than the output of 113.8 million pounds reported for 1960. Total sales of medicinal chemicals in 1961 amounted to 92.5 million pounds, valued at $576.8 million, compared with sales in 1960 of 87.9 million pounds, valued at $556.9 million.

Production of all cyclic medicinal chemicals in 1961 amounted to 81.0 million pounds. Of this quantity, 53.0 million pounds consisted of benzenoid medicinal chemicals, and 27.9 million pounds of alicyclic and heterocyclic medicinal chemicals. Production of acyclic medicinal chemicals was 36.6 million pounds in 1961, compared with 37.3 million pounds in 1960. In terms of quantity, acetylsalicylic acid (aspirin) was the most important medicinal chemical produced in 1961. The output in that year was 22.7 million pounds, compared with 23.6 million pounds in 1960. Production of salicylic acid in 1961 amounted to 9.7 million pounds, compared with 9.3 million pounds in 1960. Sales of salicylic acid in 1961 amounted to 8.3 million pounds, valued at $3.3 million, compared with 7.9 million pounds, valued at $3.1 million, in 1960.

In terms of value, the antibiotics--as a group--were the most important medicinal chemicals produced in 1961. Total production in 1961 of antibiotics for human or veterinary use was 3.3 million pounds, or 11.5 percent more than the 3.0 million pounds reported for 1960. Sales of antibiotics for human or veterinary use in 1961--2.7 million pounds, valued at $313.3 million--were 17.4 percent larger than those in 1960, in terms of quantity, and 3.2 percent smaller, in terms of value. Production of penicillin salts for human or veterinary use in 1961 amounted to 649 trillion international units, compared with 498 trillion international units in 1960. Sales of such salts in 1961 totaled 520 trillion international units, valued at $58.3 million, compared with 387 trillion international units, valued at $53.4 million, in 1960. Production of dihydrostreptomycin amounted to 388,000 pounds in 1961, compared with 392,000 pounds in 1960; sales in 1961 were 418,000 pounds, valued at $7.9 million, compared with 363,000 pounds, valued at $8.2 million, in 1960. The output of streptomycin in 1961 amounted to 635,000 pounds, compared with 605,000 pounds reported for 1960. Production of neomycin base amounted to 40,000 pounds in 1961; sales were 41,000 pounds, valued at $4.4 million. Production of tetracycline was 391,000 pounds in 1961, compared with 287,000 pounds in 1960; sales were 276,000 pounds, valued at $68.7 million. Production in 1961 of antibiotics for animal feed supplements, food preservation, and crop spraying, totaled 1.8 million pounds, compared with the 1.2 million pounds reported for 1960. Sales of these products in 1961 amounted to 1.7 million pounds, valued at $45.4 million.

Among the other important groups of medicinal chemicals produced in 1961 were the vitamins. In 1961 the combined production of vitamins--as a group--was 12.6 million pounds, compared with 11.1 million pounds in 1960. Sales of all vitamins in 1961 totaled 10 million pounds, valued at $76.0 million, compared with 8.0 million pounds, valued at $68.7 million, in 1960. In terms of quantity, the 1961 output of some of the more important vitamins was as follows: Ascorbic acid and derivatives, 6.5 million pounds; niacin, 2.3 million pounds; pantothenic acid and derivatives, 1.1 million pounds; niacinamide, 724,000 pounds; riboflavin, 596,000 pounds; and vitamin A (alcohol and esters), 422,000 pounds (407 trillion 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 chemical in 1961 totaled 392,000 pounds, valued at $27.6 million. Sales of ascorbic acid were 3.7 million pounds, valued at $10.1 million; those of vitamin B_{12} were 1,310 pounds, valued at $9.7 million.

Production of sulfa drugs in 1961 amounted to 4.2 million pounds, compared with 5.1 million pounds in 1960, and 5.8 million pounds in 1959. Production of all tranquilizers was 1.4 million pounds in 1961--239,000 pounds more than the output in 1960. 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 1.0 million pounds, valued at $3.1 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 coal-tar medicinal chemicals and pharmaceuticals during the years 1959-61.

TABLE 13A.--*Medicinal chemicals: U.S. production and sales, 1961*

[Listed below are all synthetic organic medicinal chemicals for which any reported data on production or sales may be published. (Leaders are used where the reported data are accepted in confidence and may not be published or where no data were reported.) Table 13B in pt. III lists alphabetically all medicinal chemicals for which data on production or sales were reported and identifies the manufacturer of each]

Chemical	Production[1]	Sales[2]		
		Quantity	Value	Unit value[3]
	1,000 pounds	*1,000 pounds*	*1,000 dollars*	*Per pound*
Grand total	117,549	92,490	576,761	$6.24
MEDICINAL CHEMICALS, CYCLIC				
Total	80,973	61,322	540,592	8.82
Benzenoid				
Total	53,031	42,208	49,646	1.18
Acetylsalicylic acid (Aspirin)	22,668	20,113	10,969	.55
Acetylsalicylic acid, aluminum basic salt	...	22	49	2.23
Amino acids	1	1	15	15.00
Antihistamines	75	...	...	...
Bismuth subgallate	25	20	75	3.75
Dyes, medicinal	34	26	1,080	41.54
α,α'-Diethyl-4,4'-stilbenediol (Diethylstilbestrol)	...	7	237	33.86
4'-Hydroxyacetanilide	257	...	...	...
3-(o-Methoxyphenoxy-1,2-propanediol (Glyceryl guaiacyl ether)	14	...	...	...
Salicylic acid	9,723	8,292	3,266	.39
Salicylic acid salts	601	682	541	.79
Sulfa drugs, total	4,181	...	...	...
N-Sulfanilylacetamide (Sulfacetamide)	19	...	...	...
All other	4,162	...	...	...
Sympathomimetic (adrenergic) agents, total	231	163	3,500	21.47
N,α-Dimethylphenethylamine hydrochloride	3	1	8	8.00
d-N,α-Dimethylphenethylamine hydrochloride	...	6	88	14.67
α-(Isopropylaminomethyl)protocatechuyl alcohol	...	(4)	11	...
Methylaminoethanolcatechol, racemic	(5)	(5)	45	...
α-Methylphenethylamine (Amphetamine) base	36	...	...	...
Norephedrine (Phenylpropanolamine) hydrochloride	67	58	499	8.60
Phenylephrine hydrochloride	35	37	2,000	54.00
All other	90	61	849	13.92
3-o-Toloxy-1,2-propanediol (o-Cresyl α-glyceryl ether)	27	...	...	...
Vitamin K (Menadione)	15	4	35	8.75
All other benzenoid medicinal chemicals	15,179	12,878	29,879	2.32
Alicyclic and Heterocyclic				
Total	27,942	19,114	490,946	25.69
Alkaloids and related products	23	20	2,520	126.00
Antibiotics for human or veterinary use, total	3,311	2,734	313,297	114.59
Bacitracin	8	5	1,422	284.40
Dihydrostreptomycin	388	418	7,947	19.01
Neomycin, base	40	41	4,427	107.98
Penicillin salts, total[6]	1,102	907	58,255	.51
dl-α-Phenoxyethylpenicillin	24	...	...	...
Potassium penicillin G	285	216	12,482	(7)
Procaine penicillin G	614	551	12,159	(7)
Sodium penicillin G	37	34	900	(7)
All other	142	106	32,714	(7)
Streptomycin	635	438	7,856	17.94
Tetracycline	391	276	68,677	248.83
All other	747	649	164,713	253.80

See footnotes at end of table.

TABLE 13A.--*Medicinal chemicals: U.S. production and sales, 1961*-- Continued

Chemical	Production[1]	Sales[2]		
		Quantity	Value	Unit value[3]
MEDICINAL CHEMICALS, 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	1,819	1,667	45,416	$27.24
Procaine penicillin G	[8] 247	239	1,946	8.14
All other	1,572	1,428	43,470	30.44
Antihistamines, total	172	102	3,256	31.92
2-[p-Chloro-α-(2-dimethylaminoethyl)benzyl]pyridine maleate	14	7	579	82.71
2-[3-(Dimethylamino)-1-phenylpropyl]-pyridine maleate	8	8	373	46.63
All other	150	87	2,304	26.48
Barbituric acid derivatives, total	700	407	1,903	4.68
5-Allyl-5-(1-methylbutyl)barbituric acid (Secobarbital) and salt	...	25	168	6.72
5-Ethyl-5-isopentylbarbituric acid and salt	...	10	53	5.30
5-Ethyl-5-(1-methyl-n-butyl)barbituric acid (Pentobarbital)	...	6	34	5.67
5-Ethyl-5-(1-methyl-n-butyl)barbituric acid, sodium salt	...	25	148	5.92
5-Ethyl-5-phenylbarbituric acid (Phenobarbital) (Luminal)	227	228	629	2.76
5-Ethyl-5-phenylbarbituric acid, sodium salt	11	9	37	4.11
All other	462	104	834	8.02
Bile acids and salts, total	311	149	1,495	10.03
Ketocholanic acids	24	...	...	...
All other	287	149	1,495	10.03
Caffeine, natural and synthetic	2,130	1,983	4,444	2.24
Camphoric acid	11	...	...	...
5-Chloro-7-iodo-8-quinolinol (Iodochlorohydroxyquinoline)	20	8	34	4.25
Dihydrocodeinone bitartrate	...	1	237	237.00
5,7-Diiodo-8-quinolinol	36	16	55	3.44
Hormones:				
Hydrocortisone alcohol and acetate	13	8	3,024	378.00
Prednisone	4	1	601	601.00
Hydantoin derivatives	170	53	361	6.81
Imidazoline derivatives	1	1	51	51.00
Piperazine	1,549	1,042	1,461	1.40
Piperazine derivatives, total	2,564	2,505	2,755	1.10
Piperazine adipate	81	87	88	1.01
Piperazine citrate	157	171	193	1.13
Piperazine hydrochloride	581	534	690	1.29
Piperazine phosphate	218	194	291	1.04
All other	1,527	1,519	1,583	1.04
Theophylline base and derivatives, total	87	...	...	...
Theophylline ethylenediamine (Aminophylline)	42	...	...	...
All other	45	...	...	...
Tranquilizers	244	7	330	47.14
Vitamins, total	4,994	4,249	58,848	13.85
A (alcohol and esters), from all sources	[9] 422	[9] 392	27,600	70.41
B_2 (Riboflavin) (100%)	596	493	5,441	11.04
B_{12} All grades	[10] 1	[10] 1	9,739	9,739.00
D_2 (Irradiated ergosterol)	[11] 1	[11] 1	227	227.00
D_3 (Irradiated sterol)	[12] 3	[12] 1	388	388.00
Niacin (Nicotinic acid) including animal feed grade	2,307	1,979	2,766	1.40
Niacinamide	724	649	1,655	2.55
All other	940	733	11,032	15.05
All other alicyclic and heterocyclic medicinal chemicals	9,783	4,161	50,858	12.22

See footnotes at end of table.

TABLE 13A.--*Medicinal chemicals: U.S. production and sales, 1961*--Continued

Chemical	Production[1]	Sales[2]		
		Quantity	Value	Unit value[3]
MEDICINAL CHEMICALS, ACYCLIC	*1,000 pounds*	*1,000 pounds*	*1,000 dollars*	*Per pound*
Total	36,576	31,168	36,169	$1.16
Amino acids, total	5,945	5,105	7,305	1.43
l(+)-Lysine hydrochloride	...	296	1,282	4.33
All other	5,945	4,809	6,023	1.25
Choline bitartrate	172	161	146	.91
Choline chloride, for animal and poultry feed, and for use as an intermediate	18,687	16.959	3,771	.22
Choline dihydrogen citrate	65	64	60	.94
Gluconic acid salts: Calcium gluconate	767	586	345	.59
Pantolactone, racemic	142	...	...	...
Succinylcholine dichloride	4	...	...	...
Tranquilizers: 2-Methyl-2-n-propyl-1,3-propanediol dicarbamate	1,159	1,011	3,089	3.06
Vitamins, total	7,566	5,718	17,110	2.99
Ascorbic acid and derivatives, total	6,497	4,790	13,334	2.78
Ascorbic acid	5,174	3,682	10,134	2.75
All other	1,323	1,108	3,200	2.89
Pantothenic acid and derivatives, total	1,069	928	3,776	4.07
Pantothenic acid, dl-calcium salt	856	781	2,295	2.94
All other	213	147	1,481	10.07
All other acyclic medicinal chemicals	2,069	1,564	4,343	2.78

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

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

[3] Calculated from rounded figures.

[4] Sales of α-(isopropylaminomethyl)protocatechuyl alcohol amounted to 278 pounds.

[5] Production and sales of methylaminoethanolcatechol, racemic, totaled 340 pounds and 338 pounds, respectively.

[6] Reported production and sales in 1961 of penicillin salts in terms of international (U.S.P.) units are shown in the following tabulation (the conversions to international (U.S.P.) units for all penicillin salts, except procaine penicillin G, are based on the penicillin G standard established by the U.S. Food and Drug Administration, i.e., 1,667 units per milligram; procaine penicillin G conversion is based on 1,000 international (U.S.P.) units per milligram):

Chemical	Production	Sales		
		Quantity	Value	Unit value
	Billion international units	*Billion international units*	*1,000 dollars*	*Per billion international units*
Penicillin salts, total	648,578	519,923	58,255	$112.05
dl-α-Phenoxyethyl penicillin	17,981	...	...	...
Potassium penicillin G	215,186	163,342	12,482	76.42
Procaine penicillin G	278,369	250,095	12,159	48.62
Sodium penicillin	28,265	25,594	900	35.16
All other	108,777	80,892	32,714	404.42

[7] Commercial sales are based on international (U.S.P.) units.

[8] The reported production of procaine penicillin G, used principally for animal feed supplements, amounted to approximately 112 trillion units, in 1961.

[9] Quantities reported in units have been converted to pounds by using as a conversion factor the average number of international U.S.P. units per pound for the medicinal grade, as determined by the U.S. Food and Drug Administration. Production of vitamin A alcohol and esters from all sources totaled 407,000 billion U.S.P. units; sales totaled 377,000 billion U.S.P. units.

[10] Production of vitamin B_{12}, all grades, totaled 1,310 pounds; sales totaled 1,167 pounds.

[11] Production of vitamin D_2 totaled 12,480 billion U.S.P. units; sales totaled 10,832 billion U.S.P. units. Calculated at the rate of 18.14 billion units per pound, production totaled 688 pounds, and sales totaled 597 pounds.

[12] Production of vitamin D_3 totaled 53,465 billion U.S.P. units; sales totaled 21,634 billion U.S.P. units. Calculated at the rate of 18.14 billion units per pound, production totaled 2,947 pounds, and sales totaled 1,193 pounds.

Flavor and Perfume Materials

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

The flavor and perfume materials covered in this report are grouped as either cyclic or acyclic materials, according to their chemical structure. Cyclic materials are further classified as (1) benzenoid and naphthalenoid, and (2) terpenoid, heterocyclic, and alicyclic. Statistics on production and sales of flavor and perfume materials in 1961 are given in table 14A. [6]

Production of flavor and perfume materials in 1961 amounted to 64 million pounds--15 percent more than the output of 55 million pounds in 1960. Sales in 1961 amounted to 55 million pounds, valued at $68 million, compared with 47 million pounds, valued at $60 million, in 1960.

Production of cyclic flavor and perfume materials in 1961 amounted to 37 million pounds--11 percent more than the 33 million pounds reported for 1960. Sales of cyclic flavor and perfume materials in 1961 were 29 million pounds, valued at $40 million, compared with 26 million pounds, valued at $37 million, in 1960. The individual chemical in the cyclic group that was produced in the greatest volume in 1961 was methyl salicylate (4 million pounds).

The output of acyclic flavor and perfume materials in 1961 amounted to 27 million pounds--20 percent more than the 22 million pounds reported for 1960. By far the most important of the acyclic materials was monosodium glutamate, production of which totaled 26 million pounds. Sales of acyclic flavor and perfume materials in 1961 amounted to 26 million pounds, valued at $28 million, compared with 21 million pounds, valued at $23 million, in 1960.

TABLE 14A.--*Flavor and perfume materials: U.S. production and sales, 1961*

[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	63,561	54,690	67,832	$1.24
FLAVOR AND PERFUME MATERIALS, CYCLIC				
Total	36,746	28,581	40,148	1.40
Benzenoid and Naphthalenoid				
Total	17,544	15,816	18,183	1.15
Anethole (p-Propenylanisole)	1,082	1,109	629	.57
p-Anisaldehyde (p-Methoxybenzaldehyde)	494	418	649	1.55
Benzophenone[2]	...	271	262	.96
Benzyl acetate	1,175	1,050	482	.46
Benzyl alcohol[2 3]	1,476	1,429	632	.44
Benzyl cinnamate	5	3	9	3.44
Benzyl propionate	15	12	14	1.20
Cinnamaldehyde	871	689	494	.72
Cinnamyl acetate	8	6	16	2.41
Cinnamyl alcohol	206	147	205	1.39
Eugenol	263	233	460	1.97
Isobutyl phenylacetate	30	32	31	.98
Isoeugenol	97	81	242	3.00
Isopentyl salicylate (Amyl salicylate)	398	391	266	.68
p-Isopropyl-α-methylhydrocinnamaldehyde (Cyclamen aldehyde)	162	...	...	...
4'-Methoxyacetophenone	...	8	20	2.33
α-Methylbenzyl acetate	...	23	25	1.09
α-Methylcinnamaldehyde	14	9	16	1.77
Methyl salicylate (Synthetic wintergreen oil)	4,057	4,000	2,213	.55
α-Pentylcinnamaldehyde (α-Amylcinnamaldehyde)	406	367	538	1.47
Phenethyl acetate	48	50	56	1.13
Phenethyl isobutyrate	5	3	7	2.27
Phenethyl phenylacetate (Phenethyl α-toluate)	...	3	10	3.61
4-Propenylveratrole (Isoeugenyl methyl ether)	7	7	29	3.87
All other benzenoid and naphthalenoid materials	6,725	5,475	10,878	1.99

See footnotes at end of table.

[6] See also table 14B, pt. III, which lists these products alphabetically and identifies the manufacturers, and table 24 in appendix A, which shows imports of coal-tar flavor and perfume materials during the years 1959-61.

TABLE 14A.--*Flavor and perfume materials: U.S. production and sales, 1961*--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	19,202	12,765	21,965	$1.72
Cedrol	103	...	...	...
Cedryl acetate	87	74	169	2.29
Citral (Geranial)	89	86	416	4.83
Citronellol	493	349	655	1.88
Citronellyl acetate	11	10	20	1.89
Citronellyl formate	17	17	44	2.66
Coumarin	732	754	2,015	2.67
Essential oils, chemically modified, total	226	217	224	1.03
Ethyl oxyhydrate	33	33	31	.93
All other	193	184	193	1.05
Geraniol	578	517	670	1.29
Geranyl acetate	29	28	48	1.70
Hydrocoumarin (3,4-Dihydrocoumarin)	17	16	66	4.18
Hydroxycitronellal	265	274	1,182	4.31
Hydroxycitronellal, dimethyl acetal	5	4	22	5.41
Ionones	265	176	807	4.58
Isobornyl acetate	1,231	937	381	.41
Linalool	243	224	587	2.62
Linalyl acetate	269	212	648	3.05
Menthol, synthetic, tech. and U.S.P.	444	370	1,971	5.33
Methylionones	326	317	1,726	5.44
Nerol	...	13	90	6.96
Piperonal (Heliotropin)	234	207	483	2.33
Rhodinol	16	13	477	36.27
Terpineols	3,438	3,001	792	.26
Terpinyl acetate	624	586	295	.50
Vetivenyl acetate	19	12	304	25.27
All other terpenoid, heterocyclic, and alicyclic materials	9,441	4,351	7,873	1.81
FLAVOR AND PERFUME MATERIALS, ACYCLIC				
Total	26,815	26,109	27,684	1.06
Allyl hexanoate (Allyl caproate)	20	18	63	3.40
3,7-Dimethyl-1-octanol	6	3	8	2.66
Ethyl butyrate	246	203	143	.70
Glutamic acid, monosodium salt (Monosodium glutamate)	25,839	25,236	26,154	1.04
4-Hydroxyundecanoic acid, γ-lactone (γ-Undecalactone)	...	5	27	5.25
Isopentyl butyrate (Amyl butyrate)	42	45	37	.81
Octanal (Caprylaldehyde)	...	1	6	5.08
n-Octyl isobutyrate	...	6	8	1.27
All other acyclic materials	662	592	1,238	2.09

[1] Calculated from the unrounded figures.
[2] Includes some technical grade.
[3] Includes some medicinal grade.

Plastics and Resin Materials

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

Statistics on production and sales of plastics and resins in 1961 are given in table 15A[7] according to chemical composition, and in table 16 according to broad end uses. In 1961 total U.S. production of synthetic plastics and resin materials (except cellulosics) amounted to 6,710 million pounds, or 9 percent more than the 6,143 million pounds reported for 1960. Sales amounted to 5,989 million pounds, valued at $1,711 million, in 1961, compared with 5,347 million pounds, valued at $1,653 million, in 1960.

Total production of benzenoid plastics and resins was 2,829 million pounds in 1961--slightly larger than the output of 2,716 million pounds reported for 1960. Sales in 1961 amounted to 2,349 million pounds, valued at $634 million. Of the benzenoid group, styrene resins were produced in the largest volume in 1961, as in previous years. The output of styrene resins in 1961 was 1,145 million pounds; sales totaled 1,079 million pounds, valued at $282 million. Second in

TABLE 15A.--*Plastics and resin materials: U.S. production and sales, by chemical composition, 1961*

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

Material	Production	Sales		
		Quantity	Value	Unit value[1]
	1,000 pounds, dry basis[2]	*1,000 pounds, dry basis*[2]	*1,000 dollars*	*Per pound*
Grand total	6,709,750	5,989,346	1,710,879	$0.29
PLASTICS AND RESIN MATERIALS, BENZENOID				
Total	2,828,609	2,348,926	633,594	.27
Coumarone-indene and petroleum polymer resins	281,032	265,213	26,473	.10
Epoxy resins:				
Unmodified (condensation products of phenol and derivatives with epoxy compounds)	60,411	55,479	34,279	.62
Modified (with hardening agents and esterified with fatty acids)	9,691	1,723	1,112	.65
Phenolic and other tar-acid resins, total	665,092	544,178	149,375	.27
Unmodified, total	540,971	472,917	129,611	.27
Cresols-formaldehyde	14,883	13,322	4,094	.31
Cresylic acid-formaldehyde	11,079	4,166	1,606	.39
Phenol(and substituted phenols)-formaldehyde	465,801	421,805	112,778	.27
Resorcinol-formaldehyde	9,894	8,522	3,494	.41
All other	39,314	25,102	7,639	.30
Modified, total	124,121	71,261	19,764	.28
Phenol(and substituted phenols)-formaldehyde with modifiers (except rosin)	65,008	21,019	5,109	.24
Rosin and rosin esters modified with phenolic and other tar-acid resins (hard resins)	37,758	32,832	8,903	.27
All other	21,355	17,410	5,752	.33
Phthalic alkyd resins, total	447,554	200,335	65,001	.32
Unmodified	320,332	142,613	45,616	.32
Modified	127,222	57,722	19,385	.34
Polyester resins[3]	193,221	180,185	62,174	.34
Polyurethane and diisocyanate resins	11,646	9,050	6,242	.69
Styrene resins, total	1,145,421	1,079,090	281,756	.26
Polystyrene	743,587	721,044	156,569	.22
Styrene-alkyd polyesters (for protective coatings)	25,305	18,263	6,669	.37
Styrene-butadiene copolymer (containing 50% or more styrene), total	173,316	153,290	42,613	.28
Latexes	140,321	132,688	35,495	.27
Other	32,995	20,602	7,118	.35
Styrene-divinylbenzene copolymer	20,476	20,503	12,203	.60
All other styrene resins	182,737	165,990	63,702	.38
All other benzenoid plastics and resin materials[4]	14,541	13,673	7,182	.53

See footnotes at end of table.

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

TABLE 15A.--*Plastics and resin materials: U.S. production and sales, by chemical composition, 1961*--Continued

Material	Production	Sales		
		Quantity	Value	Unit value[1]
PLASTICS AND RESIN MATERIALS, NONBENZENOID	*1,000 pounds*	*1,000 pounds*	*1,000 dollars*	*Per pound*
Total	3,881,141	3,640,420	1,077,285	$0.30
Acetone-formaldehyde resins	511	462	154	.33
Alkyd resins, except phthalic, total	93,995	67,844	23,794	.35
Unmodified	38,506	29,665	12,742	.43
Modified, total	55,489	38,179	11,052	.29
Rosin and rosin esters, modified with maleic and fumaric acids only (hard resins)	43,655	29,959	8,154	.27
All other	11,834	8,220	2,898	.35
Dicyandiamide resins	1,789	1,866	623	.33
Polyamide resins	53,067	34,917	33,291	.95
Polyethylene resins, total	1,606,345	1,581,970	387,797	.25
High-pressure process	1,319,629	1,318,581	303,916	.23
Low-pressure process	286,716	263,389	83,881	.32
Polypropylene resins	96,760	57,386	21,782	.38
Rosin modifications, total	78,693	72,804	15,534	.21
Rosin adduct resins	2,327	1,624	370	.23
Rosin and rosin esters, unmodified (ester gums), total	58,787	54,876	11,588	.21
Esterified with glycerol	26,954	25,062	5,513	.22
Esterified with other alcohols (methanol, glycols, pentaerythritol, etc.)	31,833	29,814	6,075	.20
All other	17,579	16,304	3,576	.22
Silicone resins	7,791	6,629	16,888	2.55
Urea and melamine resins, total	439,991	383,593	107,372	.28
Melamine-formaldehyde type	134,485	118,603	50,755	.43
Urea-formaldehyde type	305,506	264,990	56,617	.21
Vinyl and vinyl copolymer resins (resin content), total	1,260,070	1,211,799	306,696	.25
Polyvinyl acetate	163,975	142,052	45,419	.32
Polyvinyl alcohol	31,783	26,566	16,673	.63
Polyvinyl chloride and copolymer resins (containing 50% or more polyvinyl chloride), total	977,254	965,810	186,741	.19
Polyvinyl chloride	677,500	668,201	119,567	.18
Polyvinyl chloride-acetate copolymer	283,403	286,860	64,700	.23
All other	16,351	10,749	2,474	.23
All other vinyl resins[5]	87,058	77,371	57,863	.63
All other nonbenzenoid plastics and resin materials[6]	242,129	221,150	163,354	.74

[1] Calculated from rounded figures.
[2] For the purposes of this report, "dry basis" is defined as the total weight of the material, *including* resin, plasticizers, fillers, extenders, colors, and stabilizers, and *excluding* water, solvents, and other liquid diluents.
[3] For the purposes of this report, polyester resins include unsaturated alkyds copolymerized with monomers such as styrene, and polyallyl resins such as diallyl phthalate and allyl diglycol carbonate. Styrene-alkyd polyesters for protective coatings are included under "Styrene resins."
[4] Includes data for aniline-formaldehyde, toluenesulfonamide, and other benzenoid plastics and resin materials not specifically classified.
[5] Includes data for polyvinyl alcohol, butyral, and formal, and for copolymers containing less than 50% polyvinyl chloride.
[6] Includes data for acrylic and other nonbenzenoid plastics and resin materials.

volume of output in the benzenoid group in 1961 were the phenolic and other tar-acid resins. Production of these resins in 1961 was 665 million pounds; sales amounted to 544 million pounds, valued at $149 million. The phthalic alkyd resins, used principally in the manufacture of protective coatings, were third in volume of production in the benzenoid group; production in 1961 amounted to 447 million pounds. The output of epoxy resins in 1961 was 70 million pounds; that of polyester resins was 193 million pounds.

Production of nonbenzenoid plastics and resins in 1961 amounted to 3,881 million pounds, compared with the 3,427 million pounds reported for 1960. Sales of these resins in 1961 amounted to 3,640 million pounds, valued at $1,077 million, compared with 3,119 million pounds valued at $1,025 million, in 1960. Of the nonbenzenoid group, polyethylene resins were produced

in the largest volume in 1961. The output of polyethylene resins amounted to 1,606 million pounds in 1961, compared with 1,337 million pounds in 1960. Sales of polyethylene resins in 1961 totaled 1,582 million pounds, valued at $388 million, compared with 1,195 million pounds, valued at $343 million, in 1960. 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 1961, which ranked next to that of polyethylene resins, amounted to 1,260 million pounds, compared with 1,203 million pounds in 1960. Sales of vinyl resins in 1961 totaled 1,212 million pounds, valued at $307 million, compared with 1,130 million pounds, valued at $329 million in 1960.

TABLE 16.--*Plastics and resin materials: U.S. production and sales, by classes and uses, 1961*

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

Material	Production	Sales
Cellulose plastics, total	147,750	144,292
Cellulose acetate and mixed esters:		
Sheets, continuous, under 0.003 gage	19,813	19,692
Sheets, continuous, 0.003 gage and over	29,806	28,388
All other sheets, rods, and tubes (including other cellulose plastics)	7,688	8,327
Molding and extrusion materials (including other cellulose plastics)	89,426	86,824
Nitrocellulose sheets, rods, and tubes	1,017	1,061
Phenolic and other tar-acid resins, total	665,092	544,178
Molding materials	213,653	195,842
Bonding and adhesive resins for--		
Laminating	78,843	47,390
Coated and bonded abrasives	16,638	14,571
Friction materials	20,451	18,140
Thermal insulation	87,001	44,886
Plywood	64,099	53,585
Fibrous and granulated wood	13,929	13,466
All other bonding and adhesive uses	68,153	66,206
Protective coatings:		
Unmodified	19,936	16,069
Modified, except by rosin	7,134	3,511
Rosin esters modified by phenolic and other tar-acid resins (hard resins)	26,378	23,885
Resins for all other uses	48,877	46,627
Urea and melamine resins, total	439,991	383,593
Textile-treating and textile-coating resins	52,633	47,236
Paper-treating and paper-coating resins	42,608	29,916
Bonding and adhesive resins for--		
Laminating	38,496	30,003
Plywood	99,282	93,001
All other bonding and adhesive uses	56,094	44,137
Protective coating resins, straight and modified	40,907	26,425
Resins for all other uses, including molding	109,971	112,875
Styrene resins, total	1,145,421	1,079,090
Molding materials:		
Straight polystyrene	375,581	312,810
All other	442,818	393,949
Protective coating resins, straight and modified[2]	79,644	65,236
Textile and paper treating and coating resins	70,642	58,210
Resins for all other uses	176,736	248,885
Vinyl and vinyl copolymer (resin content), total	1,260,070	1,211,799
Polyvinyl chloride and copolymer resins (containing 50% or more polyvinyl chloride) for--		
Film (under 0.010 gage)	...	89,945
Sheeting (0.010 gage and over)	...	147,480
Molding and extrusion	...	309,797
Textile and paper treating and coating	...	72,296
Flooring	...	184,916
Protective coatings	...	36,415
All other uses	...	124,961
All other vinyl resins for--		
Adhesives	...	74,391
Protective coatings	...	40,169
All other uses	...	131,429

See footnotes at end of table.

TABLE 16.--*Plastics and resin materials: U.S. production and sales, by classes and uses, 1961*--Continued

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

Material	Production	Sales
Alkyd resins, total	541,449	268,179
For protective coatings:		
Phthalic anhydride types:		
Unmodified	319,789	140,791
Modified	125,864	56,792
Polybasic acid types:		
Unmodified	12,334	4,611
Modified (except by rosin)	12,743	8,109
Rosin esters modified with maleic and fumaric acids only (hard resins)	42,591	29,960
For all other uses	28,128	27,916
Rosin esters:		
Unmodified (ester gums) for protective coatings	22,335	20,383
All other modifications for protective coatings and other uses	56,358	52,421
Coumarone-indene and petroleum polymer resins	281,032	265,213
Polyester resins, total	193,221	180,185
For protective coatings	3,817	3,627
For reinforced plastics	153,657	145,744
For all other uses	35,747	30,814
Polyethylene resins, total	1,606,345	1,581,970
For film and sheeting	...	544,559
Molding materials	...	252,313
Extrusion materials	...	181,457
For all other uses	...	290,618
For export	...	313,023
Polypropylene	96,760	57,386
Epoxy resins, total	70,102	57,202
For protective coatings	20,321	26,170
For all other uses, including reinforced plastics	49,781	31,032
Silicone resins	7,791	6,629
Miscellaneous plastics and resin materials[3]	323,683	281,118

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

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

[3] Includes data for acrylic, 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, the data 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 1962, which gave a summation of the data reported by months for 1961. Changes in classification and an increase in coverage on some products may result in differences between the detail figures given in the above table and those given in the January 1962 release.

The output of urea and melamine resins in 1961 was 440 million pounds. Sales of these resins amounted to 384 million pounds, valued at $107 million. Other important resins in the nonbenzenoid group are the acrylic, polyamide, polypropylene, silicone, and nonphthalic alkyd resins.

The statistics shown in table 16 for the production and sales of plastics and resins, by uses were compiled principally from the Tariff Commission's monthly surveys on production and sales of synthetic plastics and resin materials. The largest single use reported for plastics materials in 1961, 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 148 million pounds in 1961. Sales in 1961 were 144 million pounds, compared with 140 million pounds in 1960.

Rubber-Processing Chemicals

Rubber-processing chemicals are organic compounds that are added to natural and synthetic rubbers to give them qualities necessary for their conversion into finished rubber goods.

In this report, statistics are given for cyclic and acyclic compounds, by use--such as accelerators, antioxidants, and peptizers. Statistics on production and sales of rubber-processing chemicals in 1961 are given in table 17A.[8]

Production of rubber-processing chemicals as a group in 1961 amounted to 205 million pounds, or 2.7 percent more than the 200 million pounds reported for 1960. The larger total output of rubber-processing chemicals in 1961 is attributable principally to increased production of amino antioxidants. Sales of rubber-processing chemicals in 1961 amounted to 156 million pounds, valued at $104 million, compared with 153 million pounds, valued at $101 million, in 1960.

The output of cyclic rubber-processing chemicals in 1961 amounted to 174 million pounds, or 1.9 percent more than the 171 million pounds reported for 1960. Sales in 1961 were 135 million pounds, valued at $89 million, compared with 130 million pounds, valued at $85 million, in 1960. Of the total output of cyclic rubber-processing chemicals in 1961, accelerators accounted for 38.1 percent and antioxidants, for 46.8 percent. Production of antioxidants, which amounted to 81.3 million pounds in 1961, included 66.8 million pounds of amino compounds and 14.5 million pounds of hydroxy compounds. In 1960 the output of amino antioxidants amounted to 60.5 million pounds and that of hydroxy antioxidants, to 15.7 million pounds. Sales of amino antioxidants in 1961 were 55.9 million pounds, valued at $36.0 million; sales of hydroxy antioxidants were 10.0 million pounds, valued at $9.7 million.

Production of acyclic rubber-processing chemicals in 1961 amounted to 31.4 million pounds, compared with the 29.3 million pounds reported for 1960. Sales in 1961 totaled 20.8 million pounds, valued at $15.2 million, compared with 22.4 million pounds, valued at $16.5 million, in 1960. Accelerators, principally dithiocarbamic acid derivatives and tetramethylthiuram sulfides, accounted for about 55.7 percent of the output of acyclic rubber-processing chemicals in 1961. Peptizers and modifiers--chiefly dodecyl mercaptans--together with blowing agents and lubricating and conditioning agents, accounted for 44.3 percent of the output in the acyclic group.

TABLE 17A.--*Rubber-processing chemicals: U.S. production and sales, 1961*

[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	205,094	155,668	104,349	$0.67
RUBBER-PROCESSING CHEMICALS, CYCLIC				
Total	173,698	134,888	89,188	.66
Accelerators, total	66,213	44,548	27,434	.62
Aldehyde-amines	1,956	1,564	1,396	.89
Dithiocarbamic acid derivatives	319	209	343	1.64
Thiazole derivatives, total	55,274	34,484	19,008	.55
N-Cyclohexyl-2-benzothiazolesulfenamide	7,358	5,782	3,836	.66
2,2'-Dithiobis(benzothiazole)	16,694	9,822	4,923	.50
2-Mercaptobenzothiazole	6,442	4,108	1,698	.41
All other[2]	24,780	14,772	8,551	.58
All other accelerators	8,664	8,291	6,687	.81
Antioxidants (amino and hydroxy compounds), total[3]	81,337	65,923	45,744	.69
Amino compounds, total	66,868	55,881	36,034	.64
N,N'-Diphenyl-p-phenylenediamine	2,058	1,854	1,666	.90
All other	64,810	54,027	34,368	.64
Hydroxy compounds, total	14,469	10,042	9,710	.97
Phenol, alkylated	7,363	3,393	1,919	.57
All other	7,106	6,649	7,791	1.17
N-Nitrosodiphenylamine	2,148	1,787	1,023	.57
Peptizers	4,015	3,869	2,889	.75
All other cyclic rubber-processing chemicals[4]	19,985	18,761	12,098	.64

See footnotes at end of table.

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

TABLE 17A.--*Rubber-processing chemicals: U.S. production and sales, 1961*--Continued

Chemical	Production	Sales		
		Quantity	Value	Unit value[1]
RUBBER-PROCESSING CHEMICALS, ACYCLIC	*1,000 pounds*	*1,000 pounds*	*1,000 dollars*	*Per pound*
Total	31,396	20,780	15,161	$0.7
Accelerators, total	17,479	9,455	9,081	.9
Dithiocarbamic acid derivatives, total[5]	8,507	4,544	4,392	.9
Dibutyldithiocarbamic acid, zinc salt	776	...	...	...
Diethyldithiocarbamic acid, zinc salt	380	201	187	.9
Dimethyldithiocarbamic acid, potassium salt	242	...	...	...
Dimethyldithiocarbamic acid, sodium salt	...	423	199	.4
Dimethyldithiocarbamic acid, zinc salt[6]	1,099	1,075	816	.7
All other	6,010	2,845	3,190	1.1
Thiurams, total[7]	8,707	4,781	4,558	.9
Bis(dimethylthiocarbamoyl)disulfide	4,346	3,148	2,906	.9
Bis(dimethylthiocarbamoyl)sulfide	1,135	1,011	1,110	1.1
All other	3,226	622	542	.8
All other accelerators	265	130	131	1.0
Dodecyl mercaptans	11,295	9,256	4,147	.4
All other acyclic rubber-processing chemicals[8]	2,622	2,069	1,933	.9

[1] Calculated from rounded figures.
[2] Includes small quantities produced and sold for uses other than rubber processing.
[3] Data on production and sales of aldehyde and acetone amine antioxidants are included below in "All other cyclic rubber-processing chemicals."
[4] Includes aldehyde and acetone amines, blowing agents, inhibitors, modifiers, stabilizers, and tackifiers.
[5] Data on dithiocarbamates included in this table are for materials used chiefly in the processing of natural and synthetic rubbers. Data on dithiocarbamates which are used chiefly as fungicides are reported in the section "Pesticides and Other Organic Agricultural Chemicals."
[6] Includes material used as a pesticide (Ziram). Dimethyldithiocarbamic acid, zinc salt is chiefly used as an accelerator.
[7] Includes data for small amounts of tetramethylthiuram sulfides for uses other than in the processing of natural and synthetic rubbers.
[8] Includes blowing agents, peptizers, modifiers, and conditioning and lubricating agents.

Elastomers (Synthetic Rubbers)

The synthetic rubber industry in the United States had its beginning during World War II, and has continued to thrive since that time. The styrene-butadiene type, or S-type, rubber--which was the first to be developed--is a general-purpose material used in the manufacture of tires and other rubber goods; it is still the most important type of synthetic rubber, in terms of quantity produced. Several other types of synthetic rubbers are also produced in large quantities; among them are the polybutadiene-acrylonitrile, or N-type, the polybutadiene-isoprene type, or Butyl type, neoprene, and silicone elastomers. In 1961 the first significant production of stereo or synthetic natural, rubbers was reported.

The total output of all types of elastomers in the United States in 1961 amounted to 2,807 million pounds--slightly less than the 2,952 million pounds reported for 1960. Sales of elastomers covered by this report amounted to 2,565 million pounds, valued at $717 million, in 1961, compared with 2,551 million pounds, valued at $698 million, in 1960. Statistics on the production and sales of elastomers are given in table 18A[9].

Production of cyclic elastomers, which consisted chiefly of the polybutadiene-styrene type (S-type), amounted to 2,118 million pounds in 1961, compared with 2,283 million pounds in 196 Sales of these elastomers amounted to 1,912 million pounds, valued at $462 million, in 1961, compared with 1,949 million pounds, valued at $469 million, in 1960. Production of polyurethan type elastomers in 1961 amounted to 13 million pounds.

The output of acyclic elastomers, including N-type, neoprene, Butyl, silicone, and stereo rubbers, amounted to 689 million pounds in 1961, compared with the 669 million pounds reporte for 1960. Sales of these elastomers amounted to 653 million pounds, valued at $255 million, in 1961, compared with 602 million pounds, valued at $229 million, in 1960. The output of silicone elastomers in 1961 amounted to 5.7 million pounds.

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

TABLE 18A.--*Elastomers (synthetic rubbers):*[1] *U.S. production and sales, 1961*

[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	2,806,531	2,564,838	716,600	$0.28
ELASTOMERS, CYCLIC				
Total	2,117,859	1,911,649	461,666	.24
Polybutadiene-styrene type (S-type)	2,089,679	...	...	...
Polybutadiene-styrene-vinylpyridine type	15,121	...	...	...
Polyurethane type	13,059	...	...	...
ELASTOMERS, ACYCLIC				
Total	688,672	653,189	254,934	.39
Polybutadiene-acrylonitrile type (N-type)	91,235	78,928	38,761	.49
Polychloroprene type (Neoprene)	265,543	...	...	...
Polyisobutylene-isoprene type (Butyl)	200,274	...	...	...
Silicone elastomers	5,690	4,171	20,370	4.88
All other acyclic elastomers[4]	125,930	570,090	195,803	.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, will 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, and 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.

Plasticizers

Plasticizers are organic chemicals that are added to synthetic plastics and resin materials to (1) improve workability during fabrication; (2) extend or modify the natural properties of these resins; or (3) develop new, improved properties not present in the original resins. Plasticizers reduce the viscosity of the resins and make it easier to shape and form them at high temperatures and pressures. They also impart flexibility and other desirable properties to the finished product. Statistics on production and sales of plasticizers are given in table 19A.[10]

Total U.S. production of plasticizers in 1961 amounted to 630 million pounds--an increase of 4.6 percent over the output of 602 million pounds reported for 1960. Sales in 1961 of the plasticizers covered in this report amounted to 536 million pounds, valued at $155 million, compared with 500 million pounds, valued at $149 million, in 1960.

Production of cyclic plasticizers in 1961, which consisted chiefly of the esters of phthalic anhydride and phosphoric acid, amounted to 474 million pounds, compared with 445 million pounds in 1960. Sales of cyclic plasticizers in 1961 amounted to 406 million pounds, valued at $106 million, compared with 384 million pounds, valued at $104 million, in 1960.

Production of acyclic plasticizers in 1961 amounted to 156 million pounds, compared with 157 million pounds in 1960. Sales of acyclic plasticizers in 1961 amounted to 130 million pounds, valued at $48 million. Because of certain changes in reporting procedures, these figures are not strictly comparable with those for 1960 (116 million pounds, valued at $45 million). The principal products included in the acyclic class are the esters of adipic, azelaic, oleic, sebacic, and stearic acids, epoxidized products, and complex linear polymeric plasticizers.

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

TABLE 19A.--*Plasticizers: U.S. production and sales, 1961*

[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	629,715	536,068	154,614	$0.29
PLASTICIZERS, CYCLIC				
Total	473,581	405,835	106,119	.26
Phosphoric acid esters:				
Cresyl diphenyl phosphate[2]	12,956	13,293	3,411	.26
Tricresyl phosphate[2]	24,637	23,105	7,237	.31
Triphenyl phosphate	9,399	3,307	1,249	.38
Phthalic anhydride esters, total	376,511	321,583	79,404	.25
Butyl decyl phthalate	4,783	4,631	1,089	.24
Butyl octyl phthalate	15,997	14,360	3,421	.24
Dibutyl phthalate	15,178	13,435	3,665	.27
Dicyclohexyl phthalate	5,557	3,453	1,443	.42
Didecanoyl phthalate (Dicapryl phthalate)	3,431	2,917	720	.25
Diethyl phthalate	17,332	11,716	2,778	.24
Diisodecyl phthalate	48,345	36,936	8,896	.24
Dimethyl phthalate	4,121	3,289	834	.25
Dioctyl phthalates, total	181,506	161,535	37,461	.23
Di(2-ethylhexyl) phthalate	138,330	120,832	28,405	.24
Diiso-octyl and mixed octyl phthalates	43,176	40,703	9,056	.22
Ditridecyl phthalate	2,747	2,109	604	.29
Octyl decyl phthalates, total	16,987	15,145	4,130	.27
Iso-octyl isodecyl phthalate	4,235	3,750	947	.25
n-Octyl n-decyl phthalate	12,752	11,395	3,183	.28
All other phthalic anhydride esters	60,527	52,057	14,363	.28
All other cyclic plasticizers[3]	50,078	44,547	14,818	.33
PLASTICIZERS, ACYCLIC				
Total	156,134	130,233	48,495	.37
Adipic acid esters, total	25,742	20,538	7,518	.37
Di(2-ethylhexyl) adipate	8,478	4,766	1,681	.35
Diisobutyl adipate	520	113	44	.39
Diisodecyl adipate	5,514	5,130	1,871	.36
Diiso-octyl adipate	4,565	4,255	1,552	.36
Octyl decyl adipate	5,042	4,708	1,670	.35
All other	1,623	1,566	700	.45
Azelaic acid esters	7,335	5,972	2,488	.42
Complex linear polyesters and polymeric plasticizers	16,474	12,893	4,811	.37
Dibutyl maleate	5,372	3,433	918	.27
Epoxidized soya and tall oil and epoxy stearates	15,887	15,345	4,932	.32
Glycerol monoricinoleate	367	352	131	.37
Oleic acid esters, total	8,939	4,903	1,288	.26
Butyl oleate	1,827	916	201	.22
Methyl oleate	1,287	...	...	...
All other	5,825	3,987	1,087	.27
Phosphoric acid esters	10,623	8,443	3,403	.40
Sebacic acid esters, total	11,500	9,181	5,371	.59
Dibutyl sebacate	3,499	1,547	990	.64
Di(2-ethylhexyl) sebacate	7,434	7,085	4,061	.57
All other	567	549	320	.58

See footnotes at end of table.

TABLE 19A.--*Plasticizers: U.S. production and sales, 1961*--Continued

Chemical	Production	Sales		
		Quantity	Value	Unit value[1]
PLASTICIZERS, ACYCLIC--Continued	*1,000 pounds*	*1,000 pounds*	*1,000 dollars*	*Per pound*
Stearic acid esters, total	7,366	6,736	1,576	$0.23
n-Butyl stearate	3,150	2,784	681	.24
All other	4,216	3,952	895	.23
Triethylene glycol di(caprylate-caprate)	2,223	1,969	687	.35
All other acyclic plasticizers[4]	44,306	40,468	15,372	.38

[1] Calculated from rounded figures. [2] Includes material produced for use as motor-fuel additive.
[3] Includes data for toluenesulfonamides, tetrahydrofurfuryl oleate, and other cyclic plasticizers.
[4] Includes data for citric and acetylcitric, tartaric, and ricinoleic acid esters, and for butyl myristate, glycerol and glycol esters of certain fatty acids, glycerol tripropionate, and other acyclic plasticizers.

Surface-active Agents

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

Statistics on U.S. production and sales of surface-active agents in 1961 are given in table 20A.[11] Total production of surface-active agents in 1961 amounted to 1,729 million pounds--12.9 percent more than the 1,532 million pounds produced in 1960, and 15.0 percent more than the 1,504 million pounds produced in 1959. Sales in 1961 totaled 1,583 million pounds, valued at $292 million, compared with 1,399 million pounds, valued at $278 million, in 1960, and 1,372 million pounds, valued at $271 million, in 1959. Sales in 1961 were thus 13.2 percent larger than in 1960 and 15.4 percent larger than in 1959, in terms of quantity, and 4.8 percent larger than in 1960 and 7.5 percent larger than in 1959, in terms of value.

Production of anionic materials in 1961 amounted to 1,238 million pounds, or 71.6 percent of total production of surface-active agents; sales of anionic materials were 1,192 million pounds, valued at $173 million. Production of those surface-active agents which are generally considered nonionic amounted to 446 million pounds, or 25.8 percent of the total; sales were 349 million pounds, valued at $93 million. Production of cationic and amphoteric materials amounted to 37 million pounds and 8 million pounds, respectively; sales of these two classes totaled 43 million pounds, valued at $25 million.

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

Production of benzenoid surface-active agents in 1961 amounted to 1,150 million pounds, or 17.6 percent more than the 977 million pounds of cyclic surface-active agents reported for 1960. Sales of benzenoid surface-active agents in 1961 totaled 1,086 million pounds, valued at $149 million, compared with sales of cyclic surface-active agents in 1960 of 927 million pounds, valued at $147 million. Of the benzenoid surface-active agents for which individual statistics are shown in the table, those produced in largest quantity were dodecylbenzenesulfonic acid, sodium salt, 319 million pounds; lignosulfonic acid, calcium salt, 227 million pounds; and nonylphenoxypolyethoxyethanol, 108 million pounds.

Production of nonbenzenoid surface-active agents in 1961 amounted to 580 million pounds, or 4.5 percent more than the 555 million pounds of acyclic surface-active agents reported for 1960. Sales of nonbenzenoid surface-active agents in 1961 totaled 498 million pounds, valued at $142 million, compared with the 472 million pounds, valued at $131 million, reported for sales of acyclic surface-active agents in 1960. Of the nonbenzenoid surface-active agents for which individual statistics are shown in the table, those produced in largest quantity were glycerol monostearate, 31 million pounds; coconut oil acids-diethanolamine condensate (amine/acid ratio-1/1), 17 million pounds; and dodecyl sulfate, sodium salt, 13 million pounds.

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

TABLE 20A.--*Surface-active agents: U.S. production and sales, 1961*[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[1]	Sales		
		Quantity[1]	Value	Unit value[2]
	1,000 pounds	*1,000 pounds*	*1,000 dollars*	*Per pound*
Grand total	1,729,305	1,583,449	291,591	$0.18
Amphoteric	7,786	7,494	4,523	.60
Anionic	1,237,994	1,191,705	173,190	.15
Cationic	37,339	35,701	20,615	.58
Nonionic	446,186	348,549	93,263	.27
BENZENOID SURFACE-ACTIVE AGENTS				
Total	1,149,519	1,085,581	149,301	.14
Amides, amines, and quaternary ammonium salts, not sulfated or sulfonated, total	5,664	5,241	4,923	.94
Alkylbenzyldimethyloctadecylammonium salts, total	3,462	3,208	2,929	.91
Benzyldimethyloctadecylammonium chloride	...	103	107	1.04
Benzyldodecyldimethylammonium chloride	1,421	1,437	1,328	.92
Benzylhexadecyldimethylammonium chloride	671	657	709	1.08
All other	1,370	1,011	785	.78
Heterocyclic quaternary ammonium salts	398	315	357	1.13
All other	1,804	1,718	1,637	.95
Esters and ethers, not sulfated or sulfonated, total	186,305	152,689	30,936	.20
Dodecylphenoxypolyethoxyethanol	29,430	...	...	...
Iso-octylphenoxypolyethoxyethanol	1,768	1,708	383	.22
Nonylphenoxypolyethoxyethanol	107,670	82,544	15,782	.19
Phenoxypolyethoxyethanol	1,413	1,380	635	.46
All other[3]	46,024	67,057	14,136	.21
Sulfated and sulfonated benzenoid surface-active agents, total	957,550	927,651	113,442	.12
Benzenesulfonates, total	582,688	570,133	88,423	.16
Benzene-, toluene-, and xylenesulfonates, total	49,800	...	...	...
Toluenesulfonic acid, sodium salt	10,245	10,265	1,031	.10
Xylenesulfonic acid, sodium salt	19,357	18,435	1,787	.10
All other	20,198	...	...	...
Dodecylbenzenesulfonates, total	400,073	392,629	57,399	.15
Dodecylbenzenesulfonic acid	65,770	61,983	15,224	.25
Dodecylbenzenesulfonic acid, calcium salt	2,258	...	...	...
Dodecylbenzenesulfonic acid, isopropylamine salt	...	3,806	1,166	.31
Dodecylbenzenesulfonic acid, sodium salt	319,320	316,745	38,957	.12
Dodecylbenzenesulfonic acid, triethanolamine salt	2,196	2,093	642	.31
All other	10,529	8,002	1,410	.18
Other mono- and dialkylbenzenesulfonates, total	132,815	148,804	28,206	.19
Decylbenzenesulfonic acid	1,291	1,207	199	.16
All other[4]	131,524	147,597	28,007	.19
Lignosulfonates, total	325,743	313,148	10,499	.03
Lignosulfonic acid, calcium salt	226,852	216,537	6,904	.03
All other	98,891	96,611	3,595	.04
Naphthalenesulfonates, total	5,330	4,222	1,915	.45
Butylnaphthalenesulfonic acid and sodium salt	557	248	90	.36
Diisopropylnaphthalenesulfonic acid and sodium salt	780	397	210	.53
Isopropylnaphthalenesulfonic acid	428	300	144	.48
All other	3,565	3,277	1,471	.45
Phenols and ethoxylated phenols, sulfated, total	39,635	...	...	...
Nonylphenoxypolyethoxyethyl sulfate	22,038	20,565	4,619	.22
All other	17,597	...	...	...
All other benzenoid surface-active agents, sulfated and sulfonated[5]	4,154	19,583	7,986	.41

See footnotes at end of table.

TABLE 20A.--*Surface-active agents: U.S. production and sales, 1961*[1]--Continued

Chemical	Production[1]	Sales		
		Quantity[1]	Value	Unit value[2]
NONBENZENOID SURFACE-ACTIVE AGENTS	*1,000 pounds*	*1,000 pounds*	*1,000 dollars*	*Per pound*
Total	579,786	497,868	142,290	$0.29
Amides, amines, and quaternary ammonium salts, not sulfated or sulfonated, total	120,625	114,815	47,258	.41
Acylated amino acids and polypeptides, total	3,255	2,597	5,037	1.94
N-Lauroylsarcosine, sodium salt	1,782	1,780	4,636	2.60
All other	1,473	817	401	.49
Alkanolamides, total	86,945	83,076	28,707	.35
Coconut oil acids-diethanolamine condensate, total	26,747	24,270	10,922	.45
(Amine/acid ratio=1/1)	17,450	16,763	5,721	.34
(Amine/acid ratio=2/1)	4,269	2,692	928	.34
(All other ratios)	5,028	4,815	4,273	.89
Lauric acid-diethanolamine condensate	8,488	8,354	3,019	.36
Lauric acid-isopropanolamine condensate	1,603	...	...	...
Oleic acid-diethanolamine condensate	753	716	242	.34
Oleic acid-hydroxyethylethylenediamine condensate	2,602	...	...	...
Stearic acid-diethanolamine condensate	1,522	1,387	485	.35
Stearic acid-hydroxyethylethylenediamine condensate	2,193	2,750	1,805	.66
Stearic acid-monoethanolamine condensate	...	120	65	.54
All other	43,037	45,479	12,169	.27
Amides of ethylenediamine, diethylenetriamine, and tetraethylenepentamine, total	2,173	1,744	833	.48
Oleic acid-diethylenetriamine condensate	125	77	24	.31
All other	2,048	1,667	809	.49
Amine salts, total	2,708	2,625	1,070	.41
Amine acetates	2,228	2,187	810	.37
Oleic acid, triethanolamine salt	98	23	9	.39
All other	382	415	251	.60
Ethoxylated amides	1,242	...	...	...
Ethoxylated amines, total	...	5,152	2,419	.47
N-Polyethoxyethyl(mixed alkyl)amine	1,709	1,154	864	.75
N-Polyethoxyethylrosinamine	1,623	...	...	...
All other	...	3,998	1,555	.39
Heterocyclic amines and quaternary ammonium salts, total	2,019	1,844	876	.48
2-Heptadecenyl-1-hydroxyethyl-2-imidazoline	515	...	...	...
All other	1,504	1,844	876	48
Other amides, amines, and quaternary ammonium salts, total	18,951	17,777	8,316	.47
Alkylethyldimethylammonium bromide	84	84	102	1.21
Dodecyltrimethylammonium bromide and chloride	495	438	385	.88
Hexadecyltrimethylammonium bromide	83	82	197	2.40
All other[6]	18,289	17,173	7,632	.44
Carboxylic acid esters, not sulfated or sulfonated, total	90,115	79,043	26,311	.33
Ethylene glycol and diethylene glycol esters, total	2,670	2,150	684	.32
Diethylene glycol monolaurate	629	540	170	.31
Diethylene glycol mono-oleate	128	80	24	.30
Diethylene glycol monostearate	1,043	835	246	.29
Ethylene glycol monostearate	558	559	203	.36
All other	312	136	41	.30
Glycerol esters, total	48,776	45,919	12,863	.28
Glycerol monococate	445	404	102	.25
Glycerol mono-oleate	759	509	182	.36
Glycerol monostearate	31,356	28,959	7,617	.26
All other	16,216	16,047	4,962	.31
Polyethylene glycol esters, total	17,168	11,403	4,046	.35
Polyethoxyethyl dilaurate	490	452	183	.40
Polyethoxyethyl dioleate	1,790	638	226	.35
Polyethoxyethyl distearate	374	360	137	.38
Polyethoxyethyl monolaurate	2,433	1,791	751	.42
Polyethoxyethyl mono-oleate	3,261	1,948	731	.37
Polyethoxyethyl monostearate	2,806	2,172	888	.41
Polyethoxyethyl tall oil ester	4,589	3,066	718	.23
All other	1,425	976	412	.42

See footnotes at end of table.

TABLE 20A.--*Surface-active agents*: U.S. production and sales, 1961[1]--Continued

Chemical	Production[1]	Sales		
		Quantity[1]	Value	Unit value[2]
NONBENZENOID SURFACE-ACTIVE AGENTS--Continued				
Carboxylic acid esters, not sulfated or sulfonated,--Continued	*1,000 pounds*	*1,000 pounds*	*1,000 dollars*	*Per pound*
Other carboxylic acid esters, total	21,501	19,571	8,718	$0.45
Methoxypolyethoxyethyl coconut oil ester	45	43	23	.53
1,2-Propanediol monostearate	785	858	289	.34
All other[7]	20,671	18,670	8,406	.45
Ethers, not sulfated or sulfonated, total	85,918	36,954	10,703	.29
Polyethylene glycol ethers, total	60,168	14,640	4,851	.33
Polyethoxyethyl castor oil ether	1,801	1,484	497	.33
Polyethoxyethyl dodecyl ether	...	1,420	700	.49
Polyethoxyethyl octadecyl ether	49	35	31	.89
Polyethoxyethyl oleyl ether	2,634	2,323	1,174	.51
Polyethoxyethyl tridecyl ether	7,523	7,035	1,705	.24
All other	48,161	2,343	744	.32
All other ethers and thioethers	25,750	22,314	5,852	.26
Fatty acids, potassium and sodium salts, not sulfated or sulfonated, total	12,893	12,462	2,507	.20
Coconut oil acids, potassium salt	87	84	21	.25
Oleic acid, potassium salt	714	367	54	.15
Oleic acid, sodium salt	1,315	1,315	239	.18
Stearic acid, potassium salt	537	528	89	.17
Tall oil acids, potassium salt	3,883	3,873	677	.17
Tallow acids, sodium salt	2,670	2,665	282	.11
All other	3,687	3,630	1,145	.32
Phosphoric and polyphosphoric acid esters, not sulfated or sulfonated[8]	3,480	2,454	1,524	.62
Sulfated and sulfonated nonbenzenoid surface-active agents, total	266,755	252,140	53,987	.21
Dicarboxylic acid amides and esters, sulfated and sulfonated, total	4,900	4,580	2,950	.64
Di(2-ethylhexyl)sulfosuccinate	2,838	2,632	1,791	.68
All other	2,062	1,948	1,159	.59
Fats, oils, and waxes, sulfated and sulfonated, total	28,201	19,190	3,759	.20
Castor oil, sulfonated	7,174	3,897	1,126	.29
Coconut oil, sulfonated	806	483	133	.28
Cod oil, sulfonated	1,889	1,523	217	.14
Lard, sulfonated	60	...	...	...
Neatsfoot oil, sulfonated	1,051	607	122	.20
Peanut oil, sulfonated	1,396	1,304	368	.28
Rice-bran oil, sulfonated	679	213	50	.23
Soybean oil, sulfonated	293	267	84	.31
Sperm oil, sulfonated	5,002	2,537	464	.18
Tall oil, sulfonated	413	393	116	.30
Tallow, sulfonated	8,108	7,257	898	.12
All other	1,330	709	181	.26
Other nonbenzenoid surface-active agents, sulfated and sulfonated, total	233,654	228,370	47,278	.21
Coconut oil acids-monoethanolamine condensate, sulfated, potassium salt	91	89	87	.98

See footnotes at end of table.

Chemical	Production[1]	Sales		
		Quantity[1]	Value	Unit value[2]
NONBENZENOID SURFACE-ACTIVE AGENTS--Continued				
Sulfated and sulfonated nonbenzenoid surface-active agents--Continued				
Other nonbenzenoid surface-active agents, sulfated and sulfonated--Continued	*1,000 pounds*	*1,000 pounds*	*1,000 dollars*	*Per pound*
Dodecyl sulfate, ammonium salt	864	851	445	$0.52
Dodecyl sulfate, diethanolamine salt	734	660	604	.92
Dodecyl sulfate, sodium salt	12,752	11,364	6,362	.56
Dodecyl sulfate, triethanolamine salt	5,468	4,356	1,467	.34
Isopropyl sulfo-oleate	1,031	842	274	.33
N-Methyl-N-oleoyltaurine	2,340	2,225	1,236	.56
Oleic acid, sulfonated	2,378	1,345	501	.37
n-Propyl sulfo-oleate	781	724	197	.27
All other[9]	207,215	205,914	36,105	.18

[1] All quantities are given in terms of 100-percent organic surface-active ingredient.
[2] Calculated from rounded figures.
[3] Includes ethoxylated alkylphenols and small quantities of other benzenoid esters and ethers.
[4] Includes tridecylbenzenesulfonates and salts of all other benzene-, toluene-, and xylenesulfonates.
[5] Includes octylphenoxypolyethoxyethanesulfonic acid, sodium salt of water-soluble petroleumsulfonic acid, and sulfonated derivatives of biphenyl and of diphenyl ether.
[6] Includes production of all other ethoxylated amines and sales of ethoxylated amides and of rosinaminopolyethoxyethanol.
[7] Includes esters and ethoxylated esters of 1,2-propanediol and of polyhydric alcohols.
[8] Includes small quantities of benzenoid phosphates.
[9] Includes sulfated and sulfonated acids, alcohols, alkanes, amides, amines, esters, ethers, and quaternary ammonium compounds.

Pesticides and Other Organic Agricultural Chemicals

This section of the report covers pesticides (fungicides, herbicides, insecticides, and rodenticides) and other organic agricultural chemicals, such as plant hormones, seed disinfectants, soil conditioners, and soil fumigants. The data are given in terms of 100-percent active material; they thus exclude such materials as diluents, emulsifiers, synergists, and wetting agents. Statistics on production and sales of pesticides and other organic agricultural chemicals in 1961 are given in table 21A.[12]

Production of pesticides and other organic agricultural chemicals in 1961 amounted to 700 million pounds--about 8 percent more than the 648 million pounds reported for 1960. Sales in 1961 were 612 million pounds, valued at $303 million, compared with 570 million pounds, valued at $262 million, in 1960.

The output of cyclic pesticides and other chemicals included in the cyclic group amounted to 572 million pounds in 1961--about 9 percent more than the 526 million pounds produced in 1960. Sales in 1961 were 484 million pounds, valued at $238 million, compared with 455 million pounds, valued at $203 million, in 1960. The chemical in this group which was produced in the greatest quantity in 1961--as in each year since it was first separately reported in 1944--was the insecticide DDT. The output of this product in 1961 amounted to 171 million pounds, a record high.

Production of acyclic pesticides and other acyclic organic agricultural chemicals in 1961 amounted to 128 million pounds, compared with the 122 million pounds reported for 1960. Sales in 1961 were 128 million pounds, valued at $65 million, compared with 115 million pounds, valued at $59 million, in 1960.

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

TABLE 21A.--*Pesticides and other organic agricultural chemicals: U.S. production and sales, 1961*

[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	699,699	611,917	302,955	$0.50
PESTICIDES AND OTHER ORGANIC AGRICULTURAL CHEMICALS, CYCLIC				
Total	571,683	484,182	237,586	.49
Fungicides, total	83,130	65,563	21,985	.34
Mercury fungicides	996	900	2,352	2.61
Naphthenic acid, copper salt	1,551	1,539	475	.31
Pentachlorophenol and sodium salt	54,584	45,947	8,566	.19
2,4,5-Trichlorophenol and salts	10,866	2,877	1,910	.66
All other	15,133	14,300	8,682	.61
Herbicides and other plant hormones, total	120,608	69,218	64,192	.93
Phenoxyacetic acid derivatives:				
(2,4-Dichlorophenoxy)acetic acid (2,4-D)	43,392	16,735	5,147	.31
(2,4-Dichlorophenoxy)acetic acid esters and salts, total	36,780	27,630	11,802	.43
(2,4-Dichlorophenoxy)acetic acid, n-butyl ester	4,117	5,872	2,334	.40
(2,4-Dichlorophenoxy)acetic acid, dimethylamine salt	5,680	4,899	2,373	.48
(2,4-Dichlorophenoxy)acetic acid, iso-octyl ester	3,064	3,494	1,399	.40
(2,4-Dichlorophenoxy)acetic acid, isopropyl ester	7,260	3,929	1,384	.35
All other	16,659	9,436	4,312	.46
(2,4,5-Trichlorophenoxy)acetic acid (2,4,5-T)	6,909	2,637	2,410	.91
(2,4,5-Trichlorophenoxy)acetic acid esters and salts, total	7,795	5,229	5,086	.97
(2,4,5-Trichlorophenoxy)acetic acid, n-butyl ester	1,277	...	...	...
(2,4,5-Trichlorophenoxy)acetic acid, iso-octyl ester	843	1,583	1,489	.94
All other	5,675	3,646	3,597	.99
Phenylmercury acetate	547	470	2,630	5.60
All other	25,185	16,517	37,117	2.25
Insecticides and rodenticides, total	367,945	349,401	151,409	.43
Chlorinated insecticides, total	310,832	300,352	100,587	.33
Hexachlorocyclohexane (Benzene hexachloride) and lindane[2]	25,080	23,221	3,907	.17
1,1,1-Trichloro-2,2-bis(p-chlorophenyl)ethane (DDT)	171,438	162,641	28,853	.18
All other	114,314	114,490	67,827	.59
O,O-Diethyl O-(p-nitrophenyl) phosphorothioate (Parathion)	8,423	7,423	5,152	.69
O,O-Dimethyl O-(p-nitrophenyl) phosphorothioate (Methyl parathion)	18,527	14,265	10,965	.77
All other[3]	30,163	27,361	34,705	1.27
PESTICIDES AND OTHER ORGANIC AGRICULTURAL CHEMICALS, ACYCLIC				
Total	128,016	127,735	65,369	.51
Fungicides and soil fumigants, total	84,516	89,355	34,012	.38
Bromomethane (Methyl bromide)	12,892	11,769	5,149	.44
1,2-Dibromo-3-chloropropane	1,170	1,721	956	.56
Dimethyldithiocarbamic acid, ferric salt (Ferbam)	3,091	2,565	857	.33
Ethylene bis(dithiocarbamic acid), disodium salt (Nabam)	3,675	3,738	1,205	.32
Ethylene bis(dithiocarbamic acid), zinc salt (Zineb)	8,313	7,773	4,489	.58
All other[4]	55,375	61,789	21,356	.35
Herbicides: Methanearsonic acid, disodium salt	345	321	330	1.03
Insecticides	22,865	19,696	17,784	.90
All other	20,290	18,363	13,243	.72

[1] Calculated from rounded figures.

[2] Production of the gamma isomer content in benzene hexachloride and lindane totaled 7.7 million pounds; sales amounted to 6.4 million pounds.

[3] Includes some insect attractants and nematocides.

[4] Data on Ziram (dimethyldithiocarbamic acid, zinc salt) are shown in table 17A, Rubber-Processing Chemicals. The 1961 production of Ziram was 1,099,000 pounds; sales amounted to 1,075,000 pounds, valued at $816,000.

Miscellaneous Synthetic Organic Chemicals

As used in this report, the term "miscellaneous synthetic organic chemicals" refers to those products that are not included in the use groups covered in the preceding sections of the report. These miscellaneous chemicals, which account for about three-fifths of the output of all synthetic organic chemicals, include products that are employed in a great variety of uses; the number of chemicals used exclusively for only one purpose is not large. Among the products covered are those used for gasoline and lubricating oil additives, paint driers, photographic chemicals, tanning materials, flotation reagents, refrigerants, textile polymers, sequestering agents, organic fertilizers, antifreeze chemicals, solvents, and acyclic intermediates.

Production of miscellaneous chemicals in 1961 amounted to 32.7 billion pounds, or 2.6 percent more than the output of 31.9 billion pounds reported for 1960. Sales of miscellaneous chemicals in 1961 amounted to 15.1 billion pounds, valued at $2.3 billion, compared with 14.0 billion pounds, valued at $2.0 billion, in 1960. Statistics on production and sales of miscellaneous chemicals in 1961 are given in table 22A.[13]

The total output of miscellaneous cyclic chemicals in 1961 was 769 million pounds, or 3.0 percent less than the output of 793 million pounds reported for 1960. Sales in 1961 totaled 431 million pounds, valued at $146 million, compared with 435 million pounds, valued at $165 million, in 1960. The most important subgroup of cyclic compounds was the lubricating oil additives, the output of which was 348 million pounds in 1961.

Total production of miscellaneous acyclic chemicals in 1961 was 32.0 billion pounds--2.8 percent more than the output of 31.1 billion pounds reported for 1960. Sales in 1961 totaled 14.7 billion pounds, valued at $2.2 billion, compared with 13.5 billion pounds, valued at $1.9 billion, in 1960.

Production of alcohols and halogenated hydrocarbons in 1961 each exceeded that of any of the use groups of synthetic organic chemicals except cyclic intermediates and plastics and resin materials. Production of monohydric, unsubstituted alcohols totaled 6.2 billion pounds in 1961, or 1.0 percent more than the 6.1 billion pounds reported for 1960. Alcohols are used as solvents, intermediates, and antifreeze materials, and for other purposes. Production of halogenated hydrocarbons totaled 5.4 billion pounds in 1961, about the same as in 1960. Halogenated hydrocarbons are used as solvents, intermediates, refrigerants, and aerosol propellants, and for other purposes.

Individual miscellaneous chemicals the output of which exceeded 1 billion pounds in 1961 were synthetic methanol (2.0 billion pounds in both 1961 and 1960); formaldehyde (1.8 billion pounds, compared with 1.9 billion pounds in 1960); urea (1.8 billion pounds, compared with 1.5 billion pounds in 1960); ethyl alcohol (1.7 billion pounds in each year); ethylene oxide (1.4 billion pounds, compared with 1.5 billion pounds); dichloroethane (1.4 billion pounds, compared with 1.3 billion pounds); acetic anhydride (1.3 billion pounds, compared with 1.1 billion pounds); isopropyl alcohol (1.2 billion pounds in each year); ethylene glycol (1.2 billion pounds, compared with 1.3 billion pounds); and vinyl chloride monomer (1.0 billion pounds in each year).

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

TABLE 22A. --*Miscellaneous chemicals: U.S. production and sales, 1961*

[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	32,744,616	15,132,725	2,321,917	$0.15
MISCELLANEOUS CHEMICALS, CYCLIC				
Total	769,135	430,883	146,031	.34
Benzoic acid salts: Sodium benzoate, tech. and U.S.P	5,652	5,297	1,810	.34
Benzoyl peroxide	3,189	2,392	2,315	.97
Cyclopropane	191	166	2,502	15.07
2,6-Di-tert-butyl-p-cresol, total	17,616	14,824	7,949	.54
Food grade	4,487	4,270	2,625	.61
Tech	13,129	10,554	5,324	.50
Flotation reagents	6,033	...	...	...
Gasoline additives, total[2]	8,952	8,064	8,204	1.02
N,N-Di-sec-butyl-p-phenylenediamine	4,638	4,775	4,709	.99
N,N'-Disalicylidene-1,2-propanediamine	1,376	1,064	1,928	1.81
All other	2,938	2,225	1,567	.70
Hexamethylenetetramine, tech	28,253	13,732	2,734	.20
Lubricating oil and grease additives, total	347,995	197,970	41,167	.21
Oil soluble petroleum sulfonate, barium salt	44,967	...	...	...
Oil soluble petroleum sulfonate, calcium salt	107,215	...	...	...
Oil soluble petroleum sulfonate, sodium salt	73,238	51,170	6,925	.14
All other	122,575	146,800	34,242	.23
Naphthenic acid salts, total [3] [4]	13,300	11,148	4,482	.40
Calcium naphthenate	1,162	1,035	457	.44
Cobalt naphthenate	2,837	2,176	1,497	.69
Iron naphthenate	106	116	38	.33
Lead naphthenate	7,109	6,104	1,754	.29
Manganese naphthenate	1,215	888	373	.42
Zinc naphthenate	559	544	206	.38
All other	312	285	157	.55
Photographic chemicals, total	6,311	6,170	9,918	1.61
Benzotriazole	18	18	93	5.17
p-Diethylaminobenzenediazonium chloride (p-Diazo-N,N-diethylaniline)-zinc chloride	127	125	290	2.32
All other	6,166	6,027	9,535	1.58
Rosin acid salts[3]	750	261	107	.41
Salicylanilide	192	...	...	...
Tall oil salts, total[3]	6,454	5,864	2,075	.35
Calcium tallate	259	247	91	.37
Cobalt tallate	2,012	1,839	929	.51
Copper tallate	86	89	20	.22
Lead tallate	2,831	2,541	706	.28
Manganese tallate	734	646	198	.31
Zinc tallate	30	21	6	.29
All other	502	481	125	.26
Tanning materials, synthetic, total	34,966	34,127	6,955	.20
2-Naphthalenesulfonic acid, formaldehyde condensate and salts	31,274	30,155	5,477	.18
All other	3,692	3,972	1,478	.37

See footnotes at end of table.

TABLE 22A.--*Miscellaneous chemicals: U.S. production and sales, 1961*--Continued

Chemical	Production	Sales		
		Quantity	Value	Unit value[1]
MISCELLANEOUS CHEMICALS, CYCLIC--Continued	*1,000 pounds*	*1,000 pounds*	*1,000 dollars*	*Per pound*
Textile chemicals other than surface-active agents	2,765	1,313	1,642	$1.25
All other miscellaneous cyclic chemicals	286,516	129,555	54,171	.42
MISCELLANEOUS CHEMICALS, ACYCLIC				
Total	31,975,481	14,701,842	2,175,886	.15
Acetaldehyde	...	78,393	6,518	.08
Acetic acid, synthetic 100%	764,023	161,249	13,433	.08
Acetic acid salts, total	18,570	17,496	3,747	.21
Ammonium acetate	1,120	1,048	393	.37
Copper acetate	105	102	66	.65
Potassium acetate	1,676	1,587	326	.21
All other	15,669	14,759	2,962	.20
Acetic anhydride, 100%, from all sources	1,259,474	...	...	...
Acetone, total	749,575	458,400	28,519	.06
From isopropyl alcohol	591,373	321,397	20,775	.06
All other	158,202	137,003	7,744	.06
Acrylic acid	12,188	...	...	...
Acrylonitrile	249,527	157,361	27,632	.18
Adipic acid	...	49,896	14,203	.28
Alcohols, monohydric, unsubstituted, total	6,174,125	3,139,891	219,118	.07
Alcohols C_9 or lower, total	5,892,650	3,034,321	199,132	.07
Amyl alcohols, unmixed	1,466	1,597	399	.25
Butyl alcohols, total	599,693	244,473	30,932	.13
Normal (n-Propylcarbinol)	283,278	176,095	23,801	.13
All other	316,415	68,378	7,131	.10
Ethyl alcohol, synthetic[5]	1,685,261	935,406	57,116	.06
Fusel oil, refined	476	318	58	.18
Iso-octyl alcohols	59,324	51,011	8,712	.17
Isopropyl alcohol	1,188,672	443,820	26,591	.06
Methanol, synthetic	2,039,829	1,155,746	41,564	.03
1- and 2-Octanol	6,867	3,780	770	.20
All other	311,062	198,170	32,990	.17
Alcohols C_{10} and higher, total	281,475	105,570	19,986	.19
Decyl alcohol	67,193	48,540	8,505	.18
1-Octadecanol (Stearyl alcohol)	12,594	3,411	877	.26
All other	201,688	53,619	10,604	.20
Amines, total	426,031	117,305	42,109	.36
Butylamine	1,013	594	328	.55
Coconut oil amine	892	1,036	497	.48
Diethylamine	5,135	...	...	...
Dimethylamine	43,128	22,885	5,581	.24
Dodecylamine	1,280	1,135	762	.67
Methylamine, mono-	8,951	8,603	1,608	.19
Octadecylamine	582	...	...	...
Tallow amine	2,057	1,879	625	.33
Tallow amine, dihydrogenated	1,709	...	...	...
Tallow amine, hydrogenated	1,338	1,223	455	.37
Trimethylamine	10,393	...	...	...
All other	349,553	79,950	32,253	.40
Amyl acetates, 90%	9,515	6,850	1,172	.17
Bis(2-chloroethyl) ether (Dichlorodiethyl ether)	...	8,861	195	.02
2-Butanone oxime	2,080	2,117	1,743	.82
Butyl acetates, 90%, total	114,576	98,014	12,725	.13
Iso	...	18,083	2,100	.12
Normal	77,522	70,879	9,556	.13
All other	37,054	9,052	1,069	.12

See footnotes at end of table.

TABLE 22A.--*Miscellaneous chemicals: U.S. production and sales, 1961*--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	...	466	145	$0.31
Carbon disulfide	545,686	440,382	19,296	.04
Cellulose esters and ethers, total	767,409	225,799	93,972	.42
Cellulose acetate	535,697	...	...	...
Sodium carboxymethylcellulose, 100%	47,604	41,665	18,984	.46
All other	184,108	184,134	74,988	.41
Chloral (Trichloroacetaldehyde)	71,207	...	...	...
Chloroacetic acid, mono-	55,248	...	...	...
Chloroacetic acid, ethyl ester	1,477	...	...	...
2-Chloro-N,N-dimethylethylamine (Dimethylaminoethyl chloride) hydrochloride	140	46	76	1.65
3-Chloro-1,2-propanediol (Glycerol α-chlorohydrin)	20	...	...	...
Dibutyl fumarate	3,918	...	...	...
Didodecyl 3,3′-thiodipropionate	432	314	479	1.52
Diethylene glycol	107,483	74,547	9,436	.13
Diethyl malonate (Malonic ester)	...	438	324	.74
2-Dimethylaminoethanol	894	829	593	.71
Dipropylene glycol	24,552	20,458	2,697	.13
Dodecenylsuccinic anhydride	1,380	598	288	.48
Epichlorohydrin	...	20,121	4,966	.25
Ethanolamines, total	131,208	112,572	23,163	.21
2-Aminoethanol (Monoethanolamine)	44,916	41,128	8,197	.20
2,2′-Iminodiethanol (Diethanolamine)	51,642	38,359	8,406	.22
2,2′,2′′-Nitrilotriethanol (Triethanolamine)	34,650	33,085	6,560	.20
2-Ethoxyethanol (Ethylene glycol monoethyl ether)	...	31,629	5,666	.18
Ethyl acetate, 85%	102,325	86,075	9,835	.11
Ethyl acrylate	62,644	19,671	6,290	.32
Ethylene glycol	1,183,268	817,505	88,724	.11
Ethylene oxide	1,355,957	128,072	17,025	.13
Ethyl ether, all grades	91,004	83,008	5,645	.07
Ethyl formate	122	154	50	.32
2-Ethylhexanoic acid (α-Ethylcaproic acid) salts, total	2,861	1,720	1,295	.75
Calcium 2-ethylhexanoate	...	101	61	.60
Cobalt 2-ethylhexanoate	527	433	349	.81
Lead 2-ethylhexanoate	246	214	94	.44
Zinc 2-ethylhexanoate	132	95	46	.48
All other	1,956	877	745	.85
2-Ethyl-1-hexyl acetate	...	712	239	.33
Ethyl propionate	24	...	...	...
Fatty acid esters, not included with plasticizers or surface-active agents, total	3,254	2,818	974	.34
Isopropyl myristate	1,179	1,183	452	.38
Isopropyl oleate	145	...	...	...
Isopropyl palmitate	678	639	214	.33
All other	1,252	996	308	.31
Formaldehyde (37% by weight)	1,752,395	723,254	23,633	.03
Formic acid, 90%	16,689	16,059	2,313	.14
Formic acid salts	23,225	...	...	...
Fumaric acid	20,591	18,840	4,073	.22
Halogenated hydrocarbons, total	5,361,846	2,810,107	327,337	.12
1-Bromobutane (n-Butyl bromide)	12	...	...	...
Bromoethane (Ethyl bromide)	852	754	292	.39
Carbon tetrachloride	383,836	335,324	24,648	.07
Chlorinated paraffins, total	37,363	36,424	4,821	.13
35%-64% Chlorine	28,453	27,621	3,447	.12
All other	8,910	8,803	1,374	.16

See footnotes at end of table.

TABLE 22A.--*Miscellaneous chemicals: U.S. production and sales, 1961*--Continued

Chemical	Production	Sales		
		Quantity	Value	Unit value[1]
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued				
Halogenated hydrocarbons--Continued	*1,000 pounds*	*1,000 pounds*	*1,000 dollars*	*Per pound*
Chlorodifluoromethane	...	24,459	17,133	$0.70
Chloroethane (Ethyl chloride)	496,767	185,225	14,254	.08
Chloroform, total	77,315	54,716	5,501	.10
Tech	76,496	...	...	...
U.S.P	819	...	...	...
Chloromethane (Methyl chloride)	105,118	45,413	4,913	.11
Dichlorodifluoromethane	173,481	171,979	51,345	.30
1,2-Dichloroethane (Ethylene dichloride)	1,368,467	442,747	20,941	.05
Dichloromethane (Methylene chloride)	115,819	114,375	10,862	.09
1,2-Dichloropropane (Propylene dichloride)	37,746	22,442	766	.03
Dichlorotetrafluoroethane	8,955	8,893	5,392	.61
Tetrachloroethylene (Perchloroethylene)	225,120	225,399	22,116	.10
Trichloroethylene	309,171	325,600	32,931	.10
Trichlorofluoromethane	90,934	87,210	19,439	.22
1,2,3-Trichloropropane	2,552	...	...	...
Vinyl chloride, monomer (Chloroethylene)	1,043,983	424,303	34,229	.08
All other	884,355	304,844	57,754	.19
Isoascorbic acid	247	...	...	...
Isoascorbic acid, sodium salt	1,562	1,088	2,333	2.14
Isopropyl acetate	38,803	32,429	3,547	.11
Isopropyl ether	6,371	3,755	239	.06
Lactic acid, 100%, total	5,485	5,437	2,255	.41
Edible and medicinal	4,195	4,027	1,858	.46
Technical	1,290	1,410	397	.28
Linoleic acid salts, total[3]	492	481	152	.32
Calcium linoleate	145	146	28	.19
Lead linoleate	11	...	...	...
All other	336	335	124	.37
Lubricating oil additives, total	261,187	107,056	24,219	.23
Phosphorodithioates (Dithiophosphates)	80,053	27,108	8,009	.30
Sulfurized lard oil	1,053	...	...	...
Sulfurized sperm oil	18,264	2,808	503	.18
All other	161,817	77,140	15,707	.20
Maleic anhydride	77,661	41,838	9,070	.22
Mercaptoacetic (Thioglycolic) acid derivatives, total	1,940	1,655	1,800	1.09
Ammonium mercaptoacetate (Ammonium thioglycolate)	1,241	...	...	...
All other	699	1,655	1,800	1.09
2-Methoxyethanol (Ethylene glycol monomethyl ether)	17,709	11,853	2,202	.19
Methyl acetate	19,837	19,788	902	.05
Octanoic acid (Caprylic acid) salts	372	350	605	1.73
2-Octanone (Hexyl methyl ketone)	315	...	...	...
Oleic acid salts[6]	329	310	219	.71
Oxalic acid	18,664	19,353	3,434	.18
Oxalic acid salts	5,177	5,206	1,292	.25
Pentaerythritol	62,350	50,345	14,392	.28
Pentaerythritol tetranitrate	3,661	2,110	1,676	.79
Phosgene (Carbonyl chloride)	57,875	...	...	...
Phosphorus acid esters, not elsewhere specified, total	13,554	8,287	4,265	.51
Tributyl phosphate	3,287	2,807	1,352	.48
All other	10,267	5,480	2,913	.53
Polyacrylic acid salts	1,457	1,205	1,569	1.30
Polyethylene glycol	31,447	26,662	6,670	.25
Polypropylene glycol	54,863	32,007	6,926	.22
Propionic acid	30,634	9,979	1,665	.17

See footnotes at end of table.

TABLE 22A.--*Miscellaneous chemicals: U.S. production and sales, 1961*--Continued

Chemical	Production	Sales		
		Quantity	Value	Unit value[1]
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued	*1,000 pounds*	*1,000 pounds*	*1,000 dollars*	*Per pound*
Propionic acid salt: Sodium propionate	4,555	4,695	1,354	$0.29
Propylene glycol (1,2-Propanediol)	160,341	122,141	14,702	.12
Propylene oxide	374,153	35,655	4,768	.13
Sequestering agents, total	22,354	18,515	6,915	.37
(Ethylenedinitrilo)tetraacetic acid (Ethylenediamine-tetraacetic acid).	2,756	1,564	774	.49
(Ethylenedinitrilo)tetraacetic acid, monosodium iron salt.	578	630	462	.73
(Ethylenedinitrilo)tetraacetic acid, tetrasodium salt	11,072	9,015	3,108	.34
(N-Hydroxyethylethylenedinitrilo)triacetic acid, trisodium salt.	4,553	4,418	1,366	.31
All other	3,395	2,888	1,205	.42
Sodium formaldehydesulfoxylate	5,493	5,259	1,096	.21
Sodium methoxide (Sodium methylate)	4,268	3,585	1,062	.30
Stearic acid salts, total[7]	27,299	23,158	8,739	.38
Aluminum stearates, total	5,298	4,578	1,741	.38
Aluminum distearate	4,273	3,722	1,397	.37
Aluminum stearate, other	1,025	856	344	.40
Ammonium stearate	321	323	49	.15
Barium stearate	294	248	96	.39
Calcium stearate	8,433	7,591	2,449	.32
Lead stearate	441	364	133	.36
Lithium stearate	261	254	123	.48
Magnesium stearate	1,088	1,027	430	.42
Zinc stearate	7,705	6,283	2,416	.38
All other	3,458	2,490	1,302	.52
Tallow amide, hydrogenated	1,382	...	...	...
Triethylene glycol	30,183	23,984	4,029	.17
Urea in compounds or mixtures (100% basis), total[8]	1,843,573	1,771,965	[9]76,173	.04
In feed compounds	203,010	214,769	9,359	.04
In liquid fertilizer	626,311	585,920	24,651	.04
In solid fertilizer	842,670	829,559	36,191	.04
All other	171,582	141,717	5,972	.04
Vinyl acetate, monomer	273,491	168,903	24,880	.15
Zinc formaldehydesulfoxylate	1,223	1,183	495	.42
All other miscellaneous acyclic chemicals	7,048,231	2,209,578	922,593	.42

[1] Calculated from rounded figures.
[2] Statistics exclude production and sales of tricresyl phosphate. Statistics on tricresyl phosphate are given in the section "Plasticizers."
[3] Quantities are given on the basis of solid naphthenate, resinate, tallate, or linoleate content.
[4] Statistics exclude production and sales of copper naphthenate. Statistics on copper naphthenate are given in the section "Pesticides and Other Organic Agricultural Chemicals."
[5] Statistics on production of ethyl alcohol from natural sources by fermentation are issued by the Alcohol Tax Unit, U.S. Internal Revenue Service.
[6] Statistics exclude production and sales of potassium and sodium oleate. Statistics on these oleates are included in the section "Surface-Active Agents."
[7] Statistics exclude production and sales of potassium and sodium stearates. Statistics on these stearates are included in the section "Surface-Active Agents."
[8] Production of urea in primary solution totaled 1,829,338 thousand pounds.
[9] Includes estimated values for sales of urea in nitrogen compounds.

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

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

Each table in part III lists alphabetically the individual items in each group for which data on production or sales were reported for 1961. The tables include data on only those chemicals for which the volume of production or sales in 1961 exceeded 1,000 pounds or for which the value of sales exceeded $1,000. Where separate statistics for an item are given in the tables in part I or part II, an asterisk (*) precedes the name of the item in the tables in part III. The manufacturers of each product are indicated by identification codes which are listed in the Directory of Manufacturers (table 23). A few companies, however, have specifically requested that they not be identified as having produced or sold certain items. These manufacturers are indicated by a small letter "x" in the tables.

Tar Crudes

TABLE 4B.--*Tar crudes for which U.S. production or sales were reported, identified by manufacturer, 1961*

[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.
*Toluene, specification and other grades	ACP, ACY, COS, KPP.
*Xylene, all grades	ACP, ACY, KPP.
*Solvent naphtha	ACY, KPT, NEV, PAI.
All other light-oil distillates	ACP, KPP, NEV, PAI.
*Pyridine: Crude bases	ACP, KPT.
*Naphthalene, crude, solidifying at--	
*Less than 74° C	COP, CRT.
*74° C. to less than 76° C	KPT, NEV, PAI.
*76° C. to less than 79° C	ACP, ACY, ASH, KPT, PRD, RIL, RUR, TAR.
Crude tar-acid oils having a tar-acid content of--	
5% to less than 24%	ACP, ACY, COP, RIL.
24% to 51%	ACP, KPT, NEV, RIL, TAR.
Cresylic acid, crude	ACP, KPT, PRD.
*Creosote oil (Dead oil):	
*Distillate as such	ACP, ACY, CBT, COP, CRT, KPT, RIL, RUR, TAR.
*Creosote in coal-tar solution	ACP, HUS, JEN, KPT, RIL, RUR, TAR.
All other distillate products	ACP, KPT, PAI.
*Tar, road	ACP, JEN, KPT, OLC, RIL, TAR.
*Tar for other uses:	
Crude	KPT, OLC, RIL, TAR.
Refined	ACP, KPT, RIL, RUR, TAR.
Pitch of tar:	
*Soft and medium (water softening points less than 110° F., and 110° F. to 160° F.).	ACP, CBT, COP, JEN, KPT, RIL, RUR, TAR,
*Hard (water softening point above 160° F.)	ACP, KPT, RIL, TAR.
*Pitch-of-tar coke and pitch emulsion	JEN, KPT, 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 Mineral Industry Survey, July 1962, entitled "Coke Producers in 1961."

Crude Products From Petroleum and Natural Gas for Chemical Conversion

TABLE 5B. -- *Crude products from petroleum and natural gas for chemical conversion for which U.S. production or sales were reported, identified by manufacturer, 1961*

[Crude products from petroleum and natural gas for chemical conversion for which separate statistics are given in table 5A are marked below with an asterisk (*); products not so marked do not appear in table 5A because the reported data are accepted in confidence and may not be published. Manufacturers' identification codes shown below are taken from table 23. An x signifies that the manufacturer did not consent to his identification with the designated product]

Product	Manufacturers' identification codes (according to list in table 23)
AROMATICS AND NAPHTHENES	
*Alkyl aromatics, distillates, and solvents	ACC, AMO, CCP, CSD, DUP, ELP, ENJ, FG, GOC, JCC, OMC, PAS, PLC, SM, SNT, VPT, WYN.
*Benzene (except motor grade):	
*Benzene, 1°	APR, ASH, ATR, CCP, COS, CSD, DLH, DXS, ELP, ENJ, GOC, GRS, PLC, PLP, PRO, RIC, SHO, SNT, SOG, STH, SUN, VPT, TOC, TX.
*Benzene, 2°	AMO, CO, DOW, SHO, SOC, SOI, UCC.
*Cresylic acid, crude	ATR, PRD, PRO, RIC, SHO, SOI, UOC.
*Naphthenic acids:	
Acid number less than 150	SM, SUN, TX.
*Acid number 150-199	ENJ, RIC, SM, SOC, SUN.
Acid number 200-224	RIC, SM, SOC.
*Acid number 225-249	NOP, RIC, SHO, SM, SOC.
Sodium carbolate and phenate, crude	ATR, GOC.
*Toluene:	
*Nitration grade, 1°	ASH, ATR, COS, DLH, ENJ, GOC, GRS, LEN, PRO, RIC, SHC, SHO, SIN, SNT, SOG, SUN, TOC, VPT.
*Pure commercial grade, 2°	CSD, DOW, MON, SHO, SOG.
Solvent grade	ASH, CO, FG, PLP, SOI, TX, UCC.
All other	DLH, DXS, ELP, ENJ, SOC, SUN, TOC, VEL.
*Xylenes, mixed:	
Aviation grade	CSD, SOC, SOG.
*3° and 5°	ASH, CCP, DLH, ENJ, PRO, SIN, SNT, SUN.
All other	AMO, COS, DLH, ELP, ENJ, GRS, SHO, SOC, SOG, SOI, SUN, TOC, VPT.
All other aromatics and naphthenes	ENJ, LEN, MON, PLC, SHC, SM.
ALIPHATIC HYDROCARBONS	
C_1 hydrocarbon: Methane	CCP, PAN, SOI.
*C_2 hydrocarbons:	
*Acetylene	ACY, DOW, G, MON, PPG, UCC, x.
*Ethane	CCP, ENJ, PAN, PLC, SHC, SOI, TX, UCC, USI.
*Ethylene	CCP, DOW, DUP, EKX, ELP, ENJ, GOC, JCC, KPP, MON, OMC, PET, PLC, RIC, SHC, SM, SOI, TX, UCC, USI.
C_2 and C_3 hydrocarbons, mixed	ENJ, SM.
C_3 hydrocarbons:	
*Propane	AMO, ASH, CCP, CSD, DLH, DXS, ENJ, OMC, PAN, PLC, PLP, PRO, RIC, SHO, SIN, SM, SNT, SOG, SOI, UCC, UOC, USI.
Propane-propylene mixture	ELP, GOC, PLC, TX.
*Propylene	ACP, ASH, CCP, DOW, EKX, ELP, ENJ, JCC, MON, PET, PLC, RIC, SHC, SHO, SIN, SM, SOI, SUN, TXB, UCC, UOC.
*C_4 hydrocarbons:	
*1,3-Butadiene, grade for rubbers (elastomers)	CPY, DOW, DUP, ELP, ENJ, FRS, GGC, PET, PLC, PTT, SHC, SM, SOC, TUS, TXB, UCC.
*Butadiene and butylene fractions	ACP, DOW, MON, PLC, SHC, SHO, SIN, SOC.
*n-Butane	CSD, DXS, ELP, OMC, PAN, PLC, PLP, PRO, SHO, SM, SNT, SOC, SOG, SOI, UCC, USI.

TABLE 5B. -- ***Crude products from petroleum and natural gas for chemical conversion for which U.S. production or sales were reported, identified by manufacturer, 1961*** --Continued

Product	Manufacturers' identification codes (according to list in table 23)
ALIPHATIC HYDROCARBONS--Continued	
*C_4 hydrocarbons--Continued	
*1-Butene	ELP, PLC, PTT, TXB.
2-Butene	PLC, PTT, TXB.
*1-Butene and 2-butene mixture	AMO, CCP, ENJ, GOC, PLC, PRO, PTT, SHO, SOC, SOI, TX, TXB.
*Isobutane (2-Methylpropane)	CCP, DXS, ELP, OMC, PAN, PLC, SHO, SOI, UCC, USI, x.
*Isobutylene (2-Methylpropene)	CCP, ENJ, PTT, SIN.
All other	JCC, OMC, PLC, SM, SOI, UCC, USI.
*C_5 hydrocarbons:	
Isopentane (2-Methylbutane)	CCP, CSD, PLC, SOI, STH.
Isoprene (2-Methyl-1,3-butadiene)	ENJ, PLC, SHC.
n-Pentane	PLC.
All other	ACP, ENJ, PAS, PLC, SOI, USI.
C_6 hydrocarbons:	
Diisopropyl (2,3-Dimethylbutane)	PLC.
Hexane	ENJ, PLC, SOG.
Neohexane (2,2-Dimethylbutane)	PLC.
All other	PLC.
C_7 hydrocarbons:	
n-Heptane	EKX, ENJ, PLC.
Heptenes	CSD, ENJ, GOC, SOG.
All other	PLC.
C_8 hydrocarbons:	
*Diisobutylene (Diisobutene)	ATR, PTT, SHC, TX.
n-Octane	ENJ, PLC.
2,2,4-Trimethylpentane (Iso-octane)	ENJ, PLC.
All other	PLC.
Hydrocarbons, C_9 and above:	
*1-Dodecene (Tetrapropylene)	ACC, AMO, CO, DXS, ENJ, GOC, MON, RIC, SNT, SOC, SUN, TX.
Eicosane	ATR.
*Nonene (Tripropylene)	AMO, ENJ, GOC, RIC, SUN.
*Polybutene	CSD, SOC, SOI, TX.
Triisobutylene	ATR, PTT.
All other	ACC, CO, DXS, EKX, ENJ, GOC, KEN, PLC, SNT, SOC, SOI.
*Hydrocarbon derivatives:	
tert-Butyl mercaptan (2-Methyl-2-propanethiol)	PAS, PLC.
Di-tert-butyl disulfide	PLC.
Ethyl mercaptan (Ethanethiol)	CSD, PAS, PLC, SOC.
Isopropyl mercaptan	SOC.
Methyl mercaptan (Methanethiol)	ACC, PAS.
tert-Octyl mercaptan	PLC.
All other	CSD, EKX, PAS, PLC, SOC.

Cyclic Intermediates

TABLE 7B. --*Cyclic intermediates for which U.S. production or sales were reported, identified by manufacturer, 1961*

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

Chemical	Manufacturers' identification codes (according to list in table 23)
Aceanthra[2,1-a]aceanthrylene-5,13-dione	AHC.
8-Acetamido-1-(4-acetamido-2-hydroxy-5-nitrophenylazo)-2-naphthol.	TRC.
2-Acetamido-3-chloroanthraquinone	AHC, G.
*Acetanilide, tech	EKT, MRK, SW.
Acetic acid, phenylester	KF.
Acetoacetanilide	FMP, UCC.
Acetoacet-o-anisidide	UCC.
o-Acetoacetotoluidide	FMP, UCC.
Acetone phenylhydrazone	DUP.
p-Acetophenetidide	KPC.
Acetophenone, tech	ACP, UCC.
p-Acetotoluidide	ACY, SDH.
3-(2-Acetamido-4-aminophenylazo)-1,5-naphthalenedisulfonic acid.	TRC.
N-Acetylanthranilic acid	DUP.
N-Acetylsulfanilyl chloride	ACY, MRK.
Alkylbenzene	ATR.
α-dl-5-Allyl-6-imino-1-methyl-5-(1-methyl-2-pentynyl)-barbituric acid.	LIL.
N-Amidinoalanine	EK.
Amino-aceanthra[2,1-a]aceanthrylene-5,13-dione	AHC.
3'-Aminoacetanilide	TRC.
*4'-Aminoacetanilide (Acetyl-p-phenylenediamine)	DUP, G, JTC, NAC, TRC.
3'-Aminoacetophenone	SDH.
4'-Aminoacetophenone	NES.
*5-Amino-2-(p-aminoanilino)benzenesulfonic acid	CMG, DUP, TRC, YAW.
5(and 8)-Amino-8(and 5)-p-aminophenylazo-2-naphthalenesulfonic acid.	TRC.
1-Amino-4-(3-amino-4-sulfoanilino)-2-anthraquinonesulfonic acid.	TRC.
1-Amino-4-(4-amino-3-sulfoanilino)-2-anthraquinonesulfonic acid.	TRC.
1-Amino(2-amino-7-sulfo-5-hydroxy-6-naphthylazo)-6-nitro-2-naphthol-4-sulfonic acid.	TRC.
5-Amino-2-anilinobenzenesulfonic acid	DUP, NAC.
*2-(p-Aminoanilino)-5-nitrobenzenesulfonic acid	ALT, CMG, DUP, NAC, TRC, VPC.
3-Amino-p-anisamide	G.
3-Amino-p-anisanilide	PCW.
*1-Aminoanthraquinone and salt	ACY, AHC, CMG, DUP, G, KPC, MAY, NAC, TRC.
*2-Aminoanthraquinone and salt	ACY, DUP, G, NAC, TRC.
1-Amino-2-anthraquinonecarboxylic acid	DUP.
1-Amino-2-anthraquinonesulfonic acid	G.
5(and 8)-Amino-1-anthraquinonesulfonic acid	TRC.
N-(4-Amino-1-anthraquinonyl)anthranilic acid	G.
N-(5-Amino-1-anthraquinonyl)anthranilic acid	DUP.
N-(8-Amino-1-anthraquinonyl)anthranilic acid	DUP.
4-Aminoantipyrine	SDW.
*6-Amino-3,4'-azodi(benzenesulfonic acid)	CMG, G, KPC, MEE, NAC, TRC.
8-Aminobenz[a]acridin-7(12H)-one	NAC.
*1-Amino-4-benzamidoanthraquinone	ACY, DUP, G, MAY, NAC, TRC.

TABLE 7B. --*Cyclic intermediates for which U.S. production or sales were reported, identified by manufacturer, 1961* --Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
1-Amino-5-benzamidoanthraquinone	AHC, DUP, G, NAC, TRC.
6-[p-(p-Aminobenzamido)benzamido]-1-naphthol-3-sulfonic acid.	DUP.
6-(m-Aminobenzamido)-1-naphthol-3-sulfonic acid	TRC.
*6-(p-Aminobenzamido)-1-naphthol-3-sulfonic acid	DUP, G, NAC, VPC.
2-Amino-p-benzenedisulfonic acid[SO_3H=1]	DUP, NAC, TRC.
5-Amino-2(3H)-benzimidazolinone	DUP.
p-Aminobenzoic acid, tech	DUP, G, NAC.
p-Aminobenzoic acid, diethylaminoethyl ester	SDW.
2-Amino-6-benzothiazolecarboxylic acid	DUP.
2-(m-Aminobenzoyl)-o-acetanisidide	G.
2-Amino-1-(p-benzylthiophenyl)-1,3-propanediol	x.
5(and 8)-Amino-8(and 5)-bromo-1,6(and 1,7)-anthraquinonedisulfonic acid.	TRC.
*1-Amino-4-bromo-2-anthraquinonesulfonic acid and sodium salt.	AHC, DUP, G, KPC, NAC, TRC.
*2-Amino-1-bromo-3-chloroanthraquinone	AHC, KPC, MAY.
*1-Amino-2-bromo-4-hydroxyanthraquinone	DUP, G, KPC, TRC.
1-Amino-4-bromo-2-methylanthraquinone	AHC.
1-Amino-2-bromo-4-(p-toluidino)anthraquinone	AHC.
4-Aminocarvacrol	FIN.
*1-Amino-5-chloroanthraquinone	ACY, AHC, DUP, G, MAY, NAC, TRC.
1-Amino-5(and 8)-chloroanthraquinone	ACY, DUP.
1-Amino-8-chloroanthraquinone	DUP.
2-Amino-1-chloroanthraquinone	DUP.
*2-Amino-3-chloroanthraquinone	AHC, G, KPC, MAY.
4-Amino-6-chloro-m-benzenedisulfonamide	ABB, TRC.
2-Amino-5-chlorobenzophenone	LIL.
2-Amino-6-chlorobenzothiazole hydrochloride	DUP.
2-Amino-5-chlorobenzoxazole	x.
*o-(3-Amino-4-chlorobenzoyl)benzoic acid	AHC, G, KPC, MAY.
2-Amino-5-chloro-4-ethylbenzene	ACY.
2-Amino-4-chlorophenol	G, MEE.
*6-Amino-4-chloro-1-phenol-2-sulfonic acid	CMG, G, NAC, TRC.
3-Amino-6-chloropyridazine	ACY.
*2-Amino-5-chloro-p-toluenesulfonic acid [SO_3H=1]	ACY, HCC, SUC, SW.
*6-Amino-4-chloro-m-toluenesulfonic acid [SO_3H=1]	DUP, G, HCC, SW.
2-Amino-p-cresol	TRC.
*1-Amino-2,4-dibromoanthraquinone	AHC, DUP, G, KPC, NAC, TRC.
4'-Amino-2',5'-diethoxybenzanilide	G.
5-Amino-2-(2,3-dihydro-2-oxobenzimidazol-5-ylamino)-benzenesulfonic acid.	DUP.
4'-Amino-2',5'-dimethoxybenzanilide	G.
3-Amino-N,N-dimethyl-p-toluenesulfonamide	G.
2-Amino-3,5-dinitro-N-ethylbenzenesulfonamide	EKT.
3-Amino-6-ethoxypyridazine	ACY.
3-Amino-9-ethylcarbazole	KPC.
p-Amino-N-ethyl-N-1-naphthylbenzamide	G.
2-Amino-N-ethyl-5-nitrobenzenesulfonanilide	G.
2-Amino-5-ethyl-1,3,4-thiadiazole	ACY.
3-(2-Aminoethyl)-2-thiohydantoin	BPC.
5-Amino-8-(p-hydroxyanilino)-2-naphthalenesulfonic acid	DUP.
1-Amino-4-hydroxyanthraquinone	G.
3-Amino-2-hydroxyanthraquinone	G, NAC.
2-Amino-4-hydroxybenzenearsonic acid	SDW.
8-[4-(8-Amino-1-hydroxy-3,6-disulfo-2-naphthylazo)-5-methoxy-o-tolylazo]-1-naphthol-3,6-disulfonic acid, benzenesulfonate.	TRC.
3-Amino-6-hydroxy-2-methylphenazine (Tolazine base)	NAC.

TABLE 7B. -- ***Cyclic intermediates for which U.S. production or sales were reported, identified by manufacturer, 1961*** --**Continued**

Chemical	Manufacturers' identification codes (according to list in table 23)
2-Amino-1'-hydroxy-5'-nitroacetanilide	TRC.
6-Amino-5-(2-hydroxy-4-nitrophenylazo)-2-naphthalene-sulfonic acid.	TRC.
5-Aminoisophthalic acid	G.
5-Amino-2-(p-methoxyanilino)benzenesulfonic acid	G.
N-(1-Amino-2-methoxy-4-anthraquinonyl)-p-toluene-sulfonamide.	G.
N-(4-Amino-3-methoxy-1-anthraquinonyl)-p-toluene-sulfonamide.	DUP.
5-Amino-6-methoxy-2-naphthalenesulfonic acid	NAC, TRC.
m-(4-Amino-3-methoxyphenylazo)benzenesulfonic acid	DUP, TRC.
3-Amino-6-methoxypyridazine	ACY.
1-Amino-2-methoxy-4-(p-toluenesulfonamido)anthraquinone	KPC.
7-(4-Amino-5-methoxy-o-tolylazo)-1,3-naphthalenedisulfonic acid.	TRC.
8-(4-Amino-5-methoxy-o-tolylazo)-1-naphthol-3,6-disulfonic acid, benzenesulfonate.	TRC.
*4'-Amino-N-methylacetanilide	CMG, G, NAC.
1-Amino-2-methylanthraquinone	AHC, DUP.
4'-Amino-6'-methyl-m-benzanisidide	G.
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-toluene-sulfonic acid.	G.
8-Amino-7-methyl-2-phenazinol	DUP.
2-Amino-N-methyl-1-phenol-4-sulfonamide	TRC.
2-Amino-4-methylpyridine	RIL.
2-Amino-5-methylpyridine	RIL.
2-Amino-6-methylpyridine	RIL.
2-Amino-4-methylpyrimidine (2-Amino-4-methyldiazine)	ACY.
2-Amino-5-methyl-1,3,4-thiadiazole	ACY.
1-Amino-2-methyl-4-(p-toluidino)anthraquinone	AHC.
1-Aminonaphth[2,3-c]acridan-5,8,14-trione	DUP.
4-Aminonaphth[2,3-c]acridan-5,8,14-trione	DUP.
6-Aminonaphth[2,3-c]acridan-5,8,14(13H)trione	G.
1(and 4)-Aminonaphth[2,3-c]acridine-5,8,14(13H)trione	DUP.
*2-Amino-1,5-naphthalenedisulfonic acid	ACY, SDH, SW.
*3-Amino-1,5-naphthalenedisulfonic acid (Cassella acid)	G, NAC, TRC.
3-Amino-2,7-naphthalenedisulfonic acid	TRC.
4-Amino-1,5-naphthalenedisulfonic acid	NAC.
4-Amino-1,6-naphthalenedisulfonic acid	DUP.
4-Amino-1,7-naphthalenedisulfonic acid	BL.
*6-Amino-1,3-naphthalenedisulfonic acid (Amino I acid)	ACY, ALT, CMG, DUP, G, NAC, TRC.
*7-Amino-1,3-naphthalenedisulfonic acid (Amino G acid)	ACY, DUP, G, NAC, TRC.
1-Amino-2-naphthalenesulfonic acid (o-Naphthionic acid)	DUP.
*2-Amino-1-naphthalenesulfonic acid (Tobias acid)	ACY, SUC, SW, x.
4(and 5)-Amino-1-naphthalenesulfonic acid	ACY, TRC.
*5-Amino-1-naphthalenesulfonic acid (Laurent's acid)	DUP, G, NAC.
*5-Amino-2-naphthalenesulfonic acid (1,6-Cleve's acid)	ALL, DUP, G, NAC, TRC.
5(and 8)-Amino-2-naphthalenesulfonic acid (Cleve's acid, mixed).	ALL, DUP, G, NAC.
*6-Amino-2-naphthalenesulfonic acid (Broenner's acid)	KLS, NAC, SNA, SW.
6(and 7)-Amino-1-naphthalenesulfonic acid	DUP.
*8-Amino-1-naphthalenesulfonic acid (Peri acid)	DUP, G, NAC, SDC, TRC.
*8-Amino-2-naphthalenesulfonic acid (1,7-Cleve's acid)	ALL, DUP, G, NAC, TRC.

TABLE 7B. -- *Cyclic intermediates for which U.S. production or sales were reported, identified by manufacturer, 1961*--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
7-Amino-1,3,6-naphthalenetrisulfonic acid	DUP.
8-Amino-1,3,6-naphthalenetrisulfonic acid (Koch's acid)	DUP, MEE, NAC.
4-Amino-1,3,5-naphthalenetrisulfonic acid, 4,5-sultam, trisodium salt.	DUP.
8-Amino-1-naphthoic acid	G.
5-Amino-1-naphthol	NAC.
5-Amino-2-naphthol	SDH.
5(and 8)-Amino-2-naphthol	G.
*8-Amino-2-naphthol	ALL, CMG, DUP, G, SDH, TRC, VPC.
8-Amino-1-naphthol-3,6-disulfonic acid, benzenesulfonate	TRC.
7-Amino-1-naphthol-3,6-disulfonic acid (2R acid), monosodium salt.	DUP, NAC.
*8-Amino-1-naphthol-3,6-disulfonic acid (H acid), monosodium salt.	DUP, MON, NAC.
8-Amino-1-naphthol-5,7-disulfonic acid (Chicago acid) (2S acid), monosodium salt.	DUP, NAC.
*1-Amino-2-naphthol-4-sulfonic acid (1,2,4-acid)	ACY, DUP, G, NAC, TRC, VPC.
*6-Amino-1-naphthol-3-sulfonic acid (J acid), sodium salt	ACY, BL, CMG, DUP, G, NAC, TRC.
*7-Amino-1-naphthol-3-sulfonic acid (Gamma acid), sodium salt.	DUP, G, NAC, TRC.
8-Amino-1-naphthol-5-sulfonic acid (S acid), sodium salt	NAC.
3-Amino-5-(m-nitrobenzamido)-p-toluenesulfonic acid	G.
*2-Amino-5-nitrobenzenesulfonic acid [SO_3H=1]	ACY, DUP, NAC, TRC.
*2-Amino-4-nitrophenol	DUP, G, NAC, TRC, VPC.
2-Amino-5-nitrophenol	NAC.
4-Amino-2-nitrophenol	VPC.
6-Amino-4-nitro-1-phenol-2-sulfonic acid	CMG, TRC.
ℓ-2-Amino-1-(p-nitrophenyl)-1,3-propanediol	PD.
4-Amino-4'-nitro-2,2'-stilbenedisulfonic acid	NAC, TRC.
2-Amino-5-nitrothiazole	EKT.
3'-Aminooxanilic acid	CMG.
4'-Aminooxanilic acid	DUP.
p-Aminophenethyl alcohol	EKT.
5-Amino-2-o-phenetidinobenzenesulfonic acid	NAC.
o-Aminophenol	VPC.
p-Aminophenol	DUP, SDC, VPC.
6-Amino-1-phenol-2,4-disulfonic acid	TRC.
2-Amino-1-phenol-4-methylsulfone	TRC.
*2-Amino-1-phenol-4-sulfonamide	CMG, DUP, NAC, TRC.
*2-Amino-1-phenol-4-sulfonic acid	CWN, DUP, NAC, TRC.
α-Aminophenylacetic acid	ICO.
m-(p-Aminophenylazo)benzenesulfonic acid	KPC, TRC.
*p-(p-Aminophenylazo)benzenesulfonic acid	ACY, CMG, DUP, G, MEE, NAC, TRC, VPC.
7-(4-Aminophenylazo)-1,3-naphthalenedisulfonic acid	TRC.
5-(p-Aminophenylazo)salicylic acid	TRC.
2-(p-Aminophenyl)-6-methylbenzothiazole	DUP, NAC.
2-(p-Aminophenyl)-6-methyl-7-benzothiazolesulfonic acid and salt.	DUP, TRC.
*1-(m-Aminophenyl)-5-oxo-2-pyrazoline-3-carboxylic acid	DUP, TRC, VPC.
2-Aminopyridine	NEP, RIL.
2-Aminopyrimidine	ACY.
5-Aminosalicylic acid	KPC.
N-(4-Amino-3-sulfoanthraquinonyl)anthranilic acid	G.
2-Amino-5-(p-sulfophenylazo)benzenesulfonic acid	DUP.
2-Aminothiazole	ACY.
1-Amino-4-(p-toluenesulfonamido)-2-anthraquinonesulfonic acid.	G, KPC, TRC.

TABLE 7B. --*Cyclic intermediates for which U.S. production or sales were reported, identified by manufacturer, 1961*--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
1-Amino-4-(p-toluenesulfonamido)-2-anthraquinonesulfonic acid, sodium salt.	DUP.
5-Amino-o-toluenesulfonanilide	G.
*4-Amino-m-toluenesulfonic acid [SO_3H=1]	ACY, DUP, G, MEE, NAC, SNA.
*6-Amino-m-toluenesulfonic acid [SO_3H=1]	DUP, NAC, SDH, SW.
*5-Amino-2-(p-toluidino)benzenesulfonic acid	DUP, NAC, TRC.
7-(4-Amino-o-tolylazo)-1,3-naphthalenedisulfonic acid	TRC.
7-(4-Amino-o-tolylazo)-1,5-naphthalenedisulfonic acid	TRC.
4-(4-Amino-m-tolylazo)-m-toluenesulfonic acid	DUP, VPC.
N-(4-Amino-m-tolyl)-p-benzoquinoneimine	DUP.
16-Aminoviolanthrone	ACY, G, TRC.
*2-Amino-3,5-xylenesulfonic acid [SO_3H=1]	ALT, DUP, NAC, SDH, STG, WJ.
*Aniline (Aniline oil)	ACY, DOW, DUP, NAC.
Aniline hydrochloride	ACY.
1-Anilino-2-anthraquinonecarboxylic acid	DUP, NAC.
2-Anilinoethanol (Phenylethanolamine)	UCC.
8-Anilino-5-(p-hydroxyanilino)-1-naphthalenesulfonic acid.	DUP.
*Anilinomethanesulfonic acid and salt	ACY, DUP, KPC, MEE, NAC, TRC, VPC.
*8-Anilino-1-naphthalenesulfonic acid (Phenyl peri acid)	CMG, DUP, G, NAC, SDC.
*6-Anilino-1-naphthol-3-sulfonic acid (Phenyl J acid)	ALT, CMG, DUP, G, KPC, NAC, TRC.
7-Anilino-1-naphthol-3-sulfonic acid (Phenyl gamma acid).	ACY, CMG, DUP, NAC.
m-Anilinophenol	G.
o-Anisaldehyde	ASL.
Anisic acid	HN.
o-Anisic acid	ACY.
*o-Anisidine	ALL, DUP, KPC, MON.
p-Anisidine	DUP, MON.
o-Anisidine nitrate	G.
*o-Anisidinomethanesulfonic acid	DUP, G, KPC, NAC, TRC, VPC.
Anisole, tech	DUP, GIV, LIL.
Anthracene, refined	ACP.
Anthraflavic acid (2,6-Dihydroxyanthraquinone)	DUP, G.
*Anthranilic acid (o-Aminobenzoic acid)	DOW, DUP, MEE, NAC.
Anthranilic acid, sodium salt	MEE.
Anthra[1,9]pyrazol-6(2H)-one (Pyrazoleanthrone)	DUP, TRC.
*Anthraquinone, 100%	ACY, DUP, TRC.
2-Anthraquinonecarboxylic acid	ACY, NAC.
N,N'-(1,5-Anthraquinone)dioxamic acid	G, MEE.
*1,5-Anthraquinonedisulfonic acid	ACY, AHC, DUP, G, TRC.
1,5-Anthraquinonedisulfonic acid, disodium salt	DUP.
*1,5(and 1,8)-Anthraquinonedisulfonic acid and salt	AHC, CMG, DUP, TRC.
1,8-Anthraquinonedisulfonic acid	DUP.
*1,8-Anthraquinonedisulfonic acid, potassium salt	AHC, G, NAC, TRC.
*2,6-Anthraquinonedisulfonic acid and salt	ACY, AHC, DUP, G, KPC, NAC, TRC, VPC.
*1-Anthraquinonesulfonic acid and salt	ACY, AHC, DUP, G, KPC, MAY, MEE, NAC, TRC.
2-Anthraquinonesulfonic acid and salt (Silver salt)	ACY, DUP, KPC.
9-(1-Anthraquinonylamino)-3-[5(and 8)-(1-anthraquinonylamino)-1-anthraquinonylamino]-7H-benz[de]-anthracen-7-one.	DUP.
1,1'-[1,5(and 1,8)-Anthraquinonylenediamino]bisnaphth-[2,3-c]acridan-5,8,14-trione.	DUP.
*N,N'-(1,5-Anthraquinonylene)dianthranilic acid	ACY, AHC, DUP, TRC.
1-(1-Anthraquinonyl)-1,2-hydrazinedisulfonic acid, disodium salt.	DUP.
*Anthrarufin (1,5-Dihydroxyanthraquinone)	ACY, CMG, DUP, G, NAC, TRC.
Anthrone	AHC.

TABLE 7B.--*Cyclic intermediates for which U.S. production or sales were reported, identified by manufacturer, 1961*--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
Arsanilic acid and salt, tech	ABB, WHL.
4',4'''-Azobis[4-biphenylcarboxylic acid]	DUP.
4,4-Azobis[p-phenylbenzoic acid]	G.
3,3'-Azoxydianiline	VPC.
Barbituric acid	KF.
*Benzaldehyde, tech	BPC, HN, TNP.
Benzamide	MAY.
4-(4-Benzamido-1-anthraquinonylamino)naphth[2,3-c]acridan-5,8,14-trione.	DUP.
1-Benzamido-4-bromoanthraquinone	KPC.
1-Benzamido-4-chloroanthraquinone	DUP, G, TRC.
*1-Benzamido-5-chloroanthraquinone	ACY, AHC, DUP, MAY, NAC, TRC.
1-(4-Benzamido-2,5-diethoxyphenyl)-3-(methyl-3-(2-sulfethyl)triazone).	G.
2-(3-(4-Benzamido-2,5-dimethoxyphenyl)-1-methyldiazoamide)	G.
[3-(4-Benzamido-6-methoxy-m-tolyl)-1-methyltriazen-3-yl]-acetic acid.	G.
8-Benzamido-1-naphthol-3,5-disulfonic acid	G.
8-Benzamido-1-naphthol-3,6-disulfonic acid	TRC.
3-Benzamido-1-naphthol-3-sulfonic acid	TRC.
1-Benzamido-4-(p-toluenesulfonamido)anthraquinone	AHC.
Benzanilide	DUP.
*7H-Benz[de]anthracen-7-one (Benzanthrone)	ACY, AHC, ATL, DUP, G, KPC, MAY, NAC, PCO, TRC.
m-Benzenedisulfonic acid	KPC.
Benzenesulfonamide	NES.
Benzenesulfonic acid	UPF.
Benzenesulfonic acid, n-propyl ester	NES.
Benzenesulfonyl chloride	NES.
Benzenethiol	EVN.
Benzhydrol (Diphenylmethanol)	HEX.
Benzidine base	NAC.
*Benzidine hydrochloride and sulfate	CWN, FIN, NAC, x.
Benzil (Bibenzoyl)	LEM.
Benzilic acid	BPC, LEM.
2-Benzofuranacetonitrile	EK.
*Benzoic acid, tech	ACC, HK, HN, KLK, MON, TNP.
Benzoin	BPC, LEM.
Benzonitrile	TNP.
1,2,3-Benzotriazin-4(1H)-one	MEE.
1H-Benzotriazole	MEE.
2-Benzoyl-o-acetanisidide	EK.
Benzoylacetic acid, ethyl ester	FMP.
*o-Benzoylbenzoic acid	ACY, DUP, G, NAC.
Benzoyl chloride	HK, TNP.
2-Benzoylpyridine	RIL.
2-Benzoyl-4-sulfobenzoic acid	DUP.
2-Benzoyl-4'-(p-toluenesulfonamido)acetanilide	EK.
Benzylamine	ICO, MLS.
Benzyl disulfide	CCW.
Benzylethanolamine	MLS.
Benzyl ether (Dibenzyl ether)	BPC, TBK.
4-(N-Benzyl-N-ethylamino)-o-toluenesulfonic acid	NAC.
N-Benzyl-N-ethyl-m-toluidine	DUP, NAC.
4-Benzylidineiminoantipyrine	SDW.
N-Benzylmethylamine	ABB.
p-(Benzyloxy)phenol	EK.

TABLE 7B. --*Cyclic intermediates for which U.S. production or sales were reported, identified by manufacturer, 1961* --Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
Benzyl polysulfide	HK.
Benzyltrimethyl ammonium hydroxide	MLS.
4',4'''-Bi-o-acetoacetotoluidide	SDH.
3,3'-Bianthra[1,9]pyrazole-6,6'(2H,2'H)-dione (Pyrazoleanthrone yellow).	DUP, G, TRC.
[3,3'-Bi-7H-benz[de]anthracen]-7,7'-dione	DUP.
*[4,4'-Bi-7H-benz[de]anthracen]-7,7'-dione	ACY, AHC, DUP, G, MAY, NAC, TRC.
endo-cis-Bicyclo[2,2,1]hept-5-ene-2,3-dicarboxylic anhydride.	NAC.
[1,1'-Binaphthalene]-8,8'dicarboxylic acid	DUP, G.
Biphenyl	DOW, MON, UCC.
2,2'-Biquinoline	EK.
*1,4-Bis[1-anthraquinonylamino]anthraquinone	ACY, AHC, G, MAY, TRC.
1,4-Bis[1-anthraquinonylamino]anthraquinone and 1,4-Bis[5-chloro-1-anthraquinonylamino]anthraquinone (mixed).	TRC.
1,5-Bis[1-anthraquinonylamino]anthraquinone	DUP.
$\alpha^2\alpha^6$-Bis[5-tert-butyl-6-hydroxy-m-tolyl]mesitol	ACY.
N,N'-Bis[1-chloro-2-anthraquinonyl]-4',4'''-azobis-[4-biphenylcarboxamide].	G.
4,4'-Bis[diethylamino]benzhydrol	G, TRC.
4,4'-Bis[diethylamino]benzhydrol, 2,6-naphthalenedi-sulfonate.	G.
4,4'-Bis[diethylamino]benzhydrol salt, 2,7-naphthalene-disulfonic acid mixture.	DUP.
*4,4'-Bis[diethylamino]benzophenone (Ethyl ketone base)	DSC, DUP, SDH.
4-[Bis(p-diethylaminophenyl)methyl]-2,7-naphthalene-disulfonic acid, leuco form.	TRC.
4,4'-Bis[dimethylamino]benzhydrol (Michler's hydrol)	DSC, DUP, G, SDH.
*4,4'-Bis[dimethylamino]benzophenone (Michler's ketone)	DSC, DUP, NAC, SDH.
Bis[p-dimethylaminophenyl]methanesulfonic acid and salt	NAC.
1,5-Bis[2,4-dinitrophenoxy]-4,8-dinitroanthraquinone	DUP.
1,5(and 1,8)-Bis[2,4-dinitrophenoxy]-4,8(and 4,5)-di-nitroanthraquinone.	DUP.
N,N'-Bis[2-hydroxyethyl]aniline	TRC.
N,N'-Bis[2-hydroxyethyl]-m-toluidine	TRC.
1,3-Bis[hydroxymethyl]-4-imidazolin-2-one	MRA.
4,4'-Bis[p-hydroxyphenylazo]-2,2'-stilbenedisulfonic acid	TRC.
4,4'-Bis[p-hydroxyphenyl]valeric acid	JNS.
Bis[p-nitrophenyl] ether	x.
Bis[m-phenoxyphenyl] ether	EK.
m-Bis[m-phenoxyphenoxy]benzene	EK.
2-Bromoacetophenone	EK.
o-Bromoaniline	EK.
p-Bromoaniline	EK.
4-Bromoanisole	ICO.
*3-Bromo-7H-benz[de]anthracen-7-one (Bromobenzanthrone)	ACY, AHC, DUP, G, MAY, NAC, TRC.
Bromobenzene, mono	DOW.
p-Bromobenzenesulfonyl chloride	EK.
4-Bromobenzophenone	ICO.
Bromochlorobenzene	DOW.
6-Bromo-5-chlorobenzoxazolone	MEE.
2-Bromo-6-chloro-4-nitroaniline	KPC.
2-Bromodibenzofuran	G.
2-Bromo-3'-hydroxyacetophenone	SDH.
5-Bromoisatin	G.

TABLE 7B. -- *Cyclic intermediates for which U.S. production or sales were reported, identified by manufacturer, 1961*--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
1-Bromo-4-(N-methylacetamido)anthraquinone	G.
1-Bromo-4-methylaminoanthraquinone	DUP, G.
2-Bromo-3-methylanthraquinone	DUP.
3'-Bromo-4'-methyl-2-biphenylcarboxylic acid	DUP.
6-Bromo-3-methyl-7H-dibenz[f,ij]isoquinoline-2,7(3H)-dione.	G.
1-Bromonaphthalene	EK.
4-Bromonaphthalic anhydride	G.
2-Bromo-4'nitroacetophenone	NES.
1-(9-Bromo-7-oxo-7H-benz[de]anthracen-3-ylamino)-anthraquinone.	DUP.
m-Bromophenol	EK.
p-Bromophenyl hexyl ether	ABB.
p-Bromophenyl methyl sulfide	EVN.
2-Bromopyridine	RIL.
3-Bromopyridine	RIL.
α-Bromotoluene	EK.
m-Bromotoluene	EK.
o-Bromotoluene	EK.
p-Bromotoluene	EK.
1-Bromo-2,4,6-triethylbenzene	DUP.
N-Butylacetanilide	UCC.
p-n-Butylaminobenzoic acid, ethyl ester	ICO.
p-Butylaniline	DUP.
2-tert-Butylanthraquinone	DUP.
n-Butylbenzene	PLC.
sec-Butylbenzene	PLC.
tert-Butylbenzene	PLC.
p-tert-Butylbenzoic acid	SHC.
o-(p-tert-Butylbenzoyl)benzoic acid	DUP.
6-Butyl-m-cresol [OH=1]	KPT.
2-tert-Butyl-p-cresol	ACY.
2'-tert-Butyl-4',6'-dimethylacetophenone	GIV.
2-tert-Butyl-4-ethylphenol	ACY.
2-tert-Butyl-5-methylanisole	GIV.
o-sec-Butylphenol	DOW.
p-sec-Butylphenol	DOW.
o-tert-Butylphenol	TNA.
p-tert-Butylphenol	DOW, KPT, UCP.
Butylphenols, mixed	UCP.
p-tert-Butyltoluene	GIV, SHC.
5-tert-Butyl-1,2,3-trimethylbenzene	GIV.
5-tert-Butyl-m-xylene	GIV.
Carbazole, refined	SDC.
p-(3-Carbazolylamino)phenol	DUP.
1-(4-Carbonyl-o-anisyl)-3-methyl-3-(2-sulfethyl)triazene	G.
N,N'-Carbonylbis[4-methoxymetanilic acid]	G.
N,N'-Carbonylbis[4-methoxy-6-nitrometanilic acid]	G.
6(and 2)-Carboxybenzene-2(and 4)-diazo-1-oxide	DUP.
5'-(o-Carboxybenzoyl)-2-chlorooxanilic acid	G.
3-Carboxy-2(and 4)-hydroxybenzenediazonium sulfate	G, NAC.
3-Carboxymethyl-1-(4-chloro-o-tolyl)-3-ethyltriazene	G.
3-Carboxymethyl-1-(5-chloro-o-tolyl)-3-methyltriazene	G.
o-(Carboxymethylthio)benzoic acid	G.
5-(o-Carboxyphenylsulfamoyl)anthranilic acid	TRC.
3-(2-Carboxy-4-sulfophenyl)-1-(2,5-dichlorophenyl)-3-ethyltriazene.	G.

TABLE 7B. --*Cyclic intermediates for which U.S. production or sales were reported, identified by manufacturer, 1961*--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
Chelidamic acid	SDW.
Chlorendic acid	HK.
2'-Chloroacetoacetanilide	FMP, UCC.
4'-Chloroacetophenone	LIL, MEE.
4'-(Chloroacetyl)acetanilide	DUP.
m-Chloroaniline	DUP, G.
*o-Chloroaniline	DUP, MON, NAC, VPC.
p-Chloroaniline	DUP, MON.
2-(Chloroanilino)ethanol	EKT.
3-(o-Chloroanilino)propionitrile	DUP.
5-Chloro-o-anisidine [NH_2=1] (4-Chloro-o-anisidine [OCH_3=1]).	BUC, DUP, VPC.
5-Chloro-o-anisidine hydrochloride	G.
4-Chloroanthranilic acid	DUP.
*1-Chloroanthraquinone	ACY, AHC, DUP, G, MAY, NAC, TRC.
*2-Chloroanthraquinone	ACY, G, NAC, TRC.
1-Chloro-2-anthraquinonecarboxylic acid	DUP.
3-Chloro-2-anthraquinonecarboxylic acid	G.
*o-Chlorobenzaldehyde	HN, NAC, SDH.
p-Chlorobenzaldehyde	HN.
Chloro-7H-benz[de]anthracen-7-one (Chlorobenzanthrone)	ACY, TRC.
*Chlorobenzene, mono	ACS, DOW, DUP, GGY, HK, HKD, MON, MTO, OMC, PPG.
1-Chlorobenzene-4-methylsulfone	TRC.
4-Chlorobenzenesulfinic acid	TRC.
p-Chlorobenzenesulfonamide	ACY.
p-Chlorobenzenesulfonic acid	G.
4-Chlorobenzenesulfonyl chloride	TRC.
p-Chlorobenzenethiol	EVN, OTH.
o-Chlorobenzoic acid	HN, SDH.
p-Chlorobenzoic acid	HN.
5-Chloro-2-benzoxazolinone	x.
*o-(p-Chlorobenzoyl)benzoic acid	AHC, DUP, G, NAC, TRC.
p-Chlorobenzoyl chloride	HN.
α-(p-Chlorobenzyl)-4-diethylaminoethoxy-4'-methyl-benzhydrol.	x.
4,4'-(o-Chlorobenzylidene)di-2,5-xylidine	G.
2-p-Chlorobenzylpyridine	RIL.
2'-Chloro-2,4'-carbonyldibenzoic acid	G.
2-Chloro-5-(o-carboxyphenylsulfamoyl)benzoic acid	TRC.
Chloro-(p-chlorophenyl, phenyl)methane	OPC, TBK.
2-Chloro-5-(chlorosulfonyl)benzoic acid	TRC.
2-Chloro-1,4-dibutoxy-5-nitrobenzene	G, MEE.
3-Chloro-2,4-diethoxyaniline	KPC.
2-Chloro-1,4-diethoxy-5-nitrobenzene	G.
2-Chloro-N,N-diethyl-4-nitroaniline	DUP.
N-(3-Chloro-9,10-dihydroxy-2-anthryl)acetamide-bis [acid sulfate].	G.
4'-Chloro-2',5'-dimethoxyacetoacetanilide	PCW.
4-Chloro-2,5-dimethoxyaniline	PCW.
5-Chloro-2,4-dimethoxyaniline	G, KLS, PCW.
5-Chloro-4,7-dimethyl-3(2H)-thianaphthenone	NAC.
*1-Chloro-2,4-dinitrobenzene (Dinitrochlorobenzene)	DUP, KPC, NAC, SDC.
1-Chloro-2,4-dinitrobenzene and 2-chloro-1,3-dinitrobenzene mixture.	DUP.
4-Chloro-2,5-dinitro-α,α,α-trifluorotoluene	MEE.
3-Chlorodiphenylamine	SK.
Chlorodiphenylmethane	TBK.

TABLE 7B. --*Cyclic intermediates for which U.S. production or sales were reported, identified by manufacturer, 1961*--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
α-Chloro-o(and/or p)-dodecyltoluene [CH_3=1]	ORO.
N-(2-Chloroethyl)-N-ethylaniline	DUP.
2-Chloro-N-ethyl-5-nitrobenzenesulfonanilide	G.
α-Chloro(ethyl)toluene	BPC.
4-Chloro-3-hydrazinobenzenesulfonic acid	G.
4'-Chloro-2-hydroxy-4-methoxybenzophenone	ACY
5'-Chloro-3-hydroxy-2-naphthol-o-anisidide	SDH.
5-Chloro-4-isopropylmetanilic acid	SW.
4-Chlorometanilic acid	DUP.
5-Chlorometanilic acid	DUP, NAC.
*6-Chlorometanilic acid	DUP, NAC, SW.
5-Chloro-2-methoxybenzenediazonium chloride	G.
N-(5-Chloro-2-methoxyphenylazo)sarcosine	ATL, SDH.
*1-Chloro-2-methylanthraquinone	ACY, AHC, CMG, DUP, G, KPC, NAC, TRC.
6-Chloro-4-methylbenzo-1,3-thiaza-2-thionium chloride	DUP.
6-Chloro-2-methyl-7-chlorosulfamoyl-2H-1,2,4-benzothiadiazin-3(4H)-one, 1,1-dioxide.	ABB.
4-(Chloromethyl)-1,2-dimethylbenzene	BPC.
6-Chloro-2-methyl-7-(N-methylsulfamoyl)-2H-1,2,4-benzothiadiazin-3(4H)-one, 1,1-dioxide.	ABB.
4-Chloro-N-methyl-3-nitrobenzenesulfonamide	TRC.
2-Chloro-5-(N-methylsulfamoyl)sulfanilamide	ABB.
4-Chloro-3-(3-methyl-5-oxo-2-pyrazolin-1-yl)benzenesulfonic acid.	DUP, G.
α-Chloro-o-methyltoluene	BPC.
α-Chloro-o(and p)-methyltoluene	BPC.
α-Chloro-p-methyltoluene	BPC.
Chloronaphthalenes	ACY, KPT.
8-Chloro-1-naphthol-3,6-disulfonic acid (Chloro H acid)	G.
9-Chloronaphtho[1,2-b]thiophen-3(2H)-one	G.
*2-Chloro-4-nitroaniline (o-Chloro-p-nitroaniline)	ACY, DOW, DUP, SUC.
*4-Chloro-2-nitroaniline (p-Chloro-o-nitroaniline)	DOW, DUP, KPC, NAC, VPC.
4-Chloro-2-nitroanisole	DUP, VPC.
*1-Chloro-5-nitroanthraquinone	ACY, DUP, G, MAY, NAC, TRC.
1-Chloro-5(and 8)-nitroanthraquinone	DUP.
1-Chloro-8-nitroanthraquinone	DUP.
*1-Chloro-2-nitrobenzene (Chloro-o-nitrobenzene)	DUP, KPC, MON.
*1-Chloro-2(and 4)-nitrobenzene (Chloronitrobenzenes, o- and p-).	DUP, KPC, SDC.
1-Chloro-3-nitrobenzene (Chloro-m-nitrobenzene)	DUP, G, MON,
1-Chloro-4-nitrobenzene (Chloro-p-nitrobenzene)	DUP, G, KPC, MON.
2-Chloro-5-nitrobenzenesulfonamide	KPC.
*4-Chloro-3-nitrobenzenesulfonamide	DUP, EKT, ICC, KPC, TRC.
4-Chloro-3-nitrobenzenesulfonanilide	TRC.
*2-Chloro-5-nitrobenzenesulfonic acid	ACY, CMG, KPC, NAC, TRC.
*2-Chloro-5-nitrobenzenesulfonic acid, sodium salt	DUP.
*4-Chloro-3-nitrobenzenesulfonic acid	KPC, NAC, TRC.
*4-Chloro-3-nitrobenzenesulfonyl chloride	CMG, DUP, EKT, KPC, TRC.
2-Chloro-5-nitrobenzoic acid	TRC.
4-Chloro-3-nitrobenzoic acid	PCW.
*o-(4-Chloro-3-nitrobenzoyl)benzoic acid	AHC, G, KPC, NAC.
4-Chloro-2-nitrophenol	DUP, G.
4-Chloro-6-nitro-1-phenol-2-sulfonic acid	G, TRC.
4-Chloro-3-nitrophenyl methyl sulfone	TRC.
2-Chloro-4-nitrotoluene	DUP.
2-Chloro-6-nitrotoluene	DUP.

TABLE 7B. -- ***Cyclic intermediates for which U.S. production or sales were reported, identified by manufacturer, 1961*** --Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
4-Chloro-2-nitrotoluene	DUP, KPC.
4-Chloro-3-nitrotoluene	DUP.
m-Chlorophenol	EK.
o-Chlorophenol	DOW, MON.
p-Chlorophenol	DOW, MON.
p-Chlorophenylacetonitrile	TBK.
4-Chloro-α-phenyl-o-cresol	MON.
4-Chloro-o-phenylenediamine	FMT.
1-(m-Chlorophenyl)-3-methyl-2-pyrazolin-5-one	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	AHC, HSH, NAC, TRC.
7-Chloro-4-quinolinol	SDW.
4-[(7-Chloro-4-quinolyl)amino]-α-diethylamino-o-cresol hydrochloride.	PD.
6-Chloroquinophthalone	DUP.
4-Chlororesorcinol	G, KPC.
2-Chloro-5-sulfamoylbenzoic acid	TRC.
8-Chlorotheophylline	MAL.
2-Chlorothiaxanthenone	KF.
m-Chlorotoluene	HK.
o-Chlorotoluene	HN.
p-Chlorotoluene	HN.
*α-Chlorotoluene (Benzyl chloride)	BPC, HK, HN, MON, TNP.
1-Chloro-5-p-toluenesulfonamidoanthraquinone	AHC.
3-Chloro-o-toluidine [NH_2=1]	DUP.
3-Chloro-p-toluidine [NH_2=1]	DUP.
*4-Chloro-o-toluidine [NH_2=1] and hydrochloride	ACY, KPC, NAC, PCW.
*5-Chloro-o-toluidine [NH_2=1] (4-Chloro-o-toluidine [CH_3=1])-	BUC, DUP, KPC, NAC, SDH.
*5-Chloro-o-toluidine hydrochloride [NH_2=1]	ALL, ATL, AUG, BUC, DUP, KLS, SDH.
5-Chloro-o-toluidine sulfate [NH_2=1]	NAC.
N-(5-Chloro-o-tolylazo)sarcosine	ATL, BUC.
o-(3-Chloro-p-tolyl)benzoic acid	G.
4-Chloro-o-tolylethyl xanthate	G.
(4-Chloro-o-tolylthio)acetic acid	ACY, NAC.
3-Chloro-α,α,α-trifluoro-6-nitrotoluene	MEE.
4-Chloro-α,α,α-trifluoro-3-nitrotoluene	G, KPC, MEE.
p-Chloro-α,α,α-trifluorotoluene	HK.
4-Chloro-α,α,α-trifluoro-m-toluidine	KPC.
Chlorotriphenylmethane	EK.
2-Chloro-p-xylene	DUP.
4-Chloro-2,5-xylenesulfonyl chloride	G, NAC.
4-Chloro-3,5-xylenol	OTA.
4-Chloro-2,5-xylylthioacetic acid	G, NAC.
Chrysazin (1,8-Dihydroxyanthraquinone)	DUP, G.
Cinnamoyl chloride	TBK.
s-Collidine (2,4,6-Trimethylpyridine)	KPT, RIL.
*Cresols:[1]	
m-Cresol	KPT.
*o-Cresols:	
From coal tar	KPT, PRD.
From petroleum	MER, PRD, SW.
*p-Cresol	ACY, HPC, SW.

See footnote at end of table.

TABLE 7B. -- *Cyclic intermediates for which U.S. production or sales were reported, identified by manufacturer, 1961* --Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
Cresols, mixed:[1]	
*(m,p)-Cresol:	
*From coal tar	ACP, KPT, PRD.
*From petroleum	MER, PIT, PRD.
*(o,m,p)-Cresol:	
From coal tar	ACP, KPT.
From petroleum	PIT, PRD.
2,3-Cresotic acid	DOW.
*Cresylic acid, refined:[1]	
*From coal tar	ACP, ACY, KPT, PRD.
*From petroleum	MER, PIT, PRD, SHO, SM.
*Cumene	ACP, DOW, HPC, PLC, SHC, SOC, TX.
4-[(2-Cyanoethyl)ethylamino]-o-tolualdehyde	DUP.
p-[(2-Cyanoethyl)methylamino]benzaldehyde	DUP.
8-Cyano-1-naphthalenesulfonic acid	DUP, G.
Cyanuric acid (s-Triazene-2,4,6-triol)	ACY.
*Cyanuric chloride	ACY, GGY, NIL.
*Cyclohexane	CO, DUP, ENJ, GOC, PLC, PLP.
1,4-Cyclohexanedicarboxylic acid, dimethyl ester	DUP.
1,2-Cyclohexanedicarboxylic anhydride	NAC.
Cyclohexanol	CS, DOW, DUP, MON, NAC.
Cyclohexanone	CS, DUP, NAC.
Cyclohexanone oxime	NAC, x.
Cyclohexene	KF, PLC.
4-Cyclohexene-1,2-dicarboximide	CHO.
4-Cyclohexene-1,2-dicarboxylic anhydride	NAC.
*Cyclohexylamine	ABB, EKT, MON, x.
Cyclohexyl-2-propanone	TBK, GIV.
Cyclopentene	PLC.
(2-Cyclopenten-1-yl)acetone	LIL.
p-Cymene	GLD, HNW, HPC.
Decylbenzene	NAC.
1,5(and 1,8)-Diacetamidoanthraquinone	KPC.
N,N-Diallylcamphoramic acid	WYT.
N^2,N^2-Diallylmelamine	ACY.
*1,4-Diaminoanthraquinone	DUP, G, NAC, TRC.
1,5-Diaminoanthraquinone	ACY, DUP, G, TRC.
1,5(and 1,8)-Diaminoanthraquinone	ACY, KPC.
*2,6-Diaminoanthraquinone	ACY, AHC, DUP, G, KPC, NAC, TRC, VPC.
1,4-Diamino-2,3-anthraquinonedicarbonitrile	DUP.
1,4-Diamino-2,3-anthraquinonedicarboximide	DUP.
*4,8-Diaminoanthrarufin	DUP, G, ICC, NAC.
3,3'-Diaminobenzanilide	TRC.
3,4-Diaminobenzanilide	DUP.
*2,4-Diaminobenzenesulfonic acid [SO_3H=1]	DUP, G, NAC, TRC.
2,5-Diaminobenzenesulfonic acid [SO_3H=1]	TRC.
4,4'-Diamino-2,2'-biphenyldisulfonic acid	TRC.
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.
3,6-Diamino-2,7-dimethylacridine	DUP.
3,6-Diamino-2,7-dimethylacridine sulfate	DUP.
4,4'-Diamino-5,5'-dimethyl-2,2' biphenyldisulfonic acid	KPC, TRC.
4,4'-Diamino-3,3'-dimethyltriphenylmethane	ACY.

See footnote at end of table.

TABLE 7B.--*Cyclic intermediates for which U.S. production or sales were reported, identified by manufacturer, 1961*--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
5,6-Diamino-1-naphthalenesulfonic acid	G.
1,4-Diamino-5-nitroanthraquinone	G.
2,4-Diamino-6-phenyl-s-triazene	RH, TNP.
2,6-Diaminopyridine	NEP, RIL.
*4,4'-Diamino-2,2'-stilbenedisulfonic acid	ACY, DUP, G, NAC, SDH, TRC, VPC.
3,5-Diamino-p-toluenesulfonic acid [SO_3H=1]	G.
4,6-Diamino-m-toluenesulfonic acid [SO_3H=1]	NAC.
2,4-Diaminotolylmethylmethane	VPC.
1,5-Dianilino-2,6-anthraquinonedicarboxylic acid	G, NAC.
*2,4-Dianilino-1-hydroxyanthraquinone	AHC, G, TRC.
o-Dianisidine	ALL.
1,2-Dianthronyl-1,2-ethanediol	AHC.
Diarylguanidine	DUP.
1,5-Dibenzamidoanthraquinone	G, TRC.
4,9-Dibenzamido-3',4',6',7'-diphthaloylcarbazole	AHC.
*4,5'-Dibenzamido-1,1'-iminodianthraquinone	ACY, AHC, DUP, G, MAY, NAC, TRC.
5,5'-Dibenzamido-1,1'-iminodianthraquinone	ACY.
4,5'-Dibenzamido-4'-methoxy-1,1'-iminodianthraquinone	G.
5',5''-Dibenzamido-1,1',4,1''-trianthrimide	AHC.
2-Dibenzofuranol	G.
Dibenzothiophene	EVN.
*1,5-Dibenzoylnaphthalene	AHC, DUP, G, HST, KPC, TRC.
1',2',6',7'-Dibenzpyrene-7,14-quinone	AHC.
Dibenzylamine	MLS.
N,N'-Dibenzylethylenediamine	WYT.
N,N'-Dibenzylethylenediamine diacetate	WYT.
2,4'-Dibromoacetophenone	EK.
*3,9-Dibromo-7H-benz [de] anthracen-7-one	AHC, DUP, G, MAY, NAC, TRC.
m-Dibromobenzene	EK.
o-Dibromobenzene	EK.
p-Dibromobenzene	DOW.
2,6-Dibromo-1,5-naphthalenediol	EK.
2,6-Dibromo-4-nitrophenol	MEE.
X,Y-Dibromothianthrene	TRC.
p-Dibutoxybenzene	MEE.
1,4-Dibutoxy-2-morpholino-5-nitrobenzene	x.
2,4-Di-tert-butylphenol	DOW.
*2,5-Dichloroaniline and hydrochloride [NH_2=1]	ALL, DUP, NAC, SDH, VPC.
3,4-Dichloroaniline	DUP, MON.
*1,5-Dichloroanthraquinone	ACY, AHC, DUP, G, NAC, TRC.
1,5(and 1,8)-Dichloroanthraquinone	AHC, DUP, NAC.
*1,8-Dichloroanthraquinone	AHC, G, TRC.
4,5-Dichloro-1,8-anthraquinonedisulfonic acid	G.
3-(3,4-Dichlorobenzamido)-1-phenyl-2-pyrazolin-5-one	EK.
m-Dichlorobenzene	EK.
*o-Dichlorobenzene	ACS, CPD, DOW, DUP, DVC, MON, OMC, PPG, SCC, SVT, WOI.
o(and p)-Dichlorobenzene	GGY, HKD.
*p-Dichlorobenzene	ACS, CPD, DOW, DUP, DVC, HK, MON, MTO, PPG, SCC, SVT, WOI.
*3,3'-Dichlorobenzidine base and salts	ALL, CWN, KLS, NAC, SDH, x.
2,4-Dichlorobenzoic acid	HN.
2,4-Dichlorobenzoyl chloride	HN.
2,3-Dichloro-5,6-dicyanobenzoquinone	LIL.
8,18-Dichloro-5,15-diethyl-5,15-dihydroindolo(3,2-b:3',2'-m) triphenodioxazine.	KPC.
Dichlorodiphenylsilane	DCC, UCS.
2',7'-Dichlorofluorescein	EK.

TABLE 7B. --*Cyclic intermediates for which U.S. production or sales were reported, identified by manufacturer, 1961*--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
2,5-Dichloro-4-hydrazinobenzenesulfonic acid	G.
7,16-Dichloroindanthrene	AHC.
Dichloroisoviolanthrone	AHC.
4,4′-Dichloro-α-methylbenzhydrol	HEX.
*2,5-Dichloro-4-(3-methyl-5-oxo-2-pyrazolin-1-yl)benzenesulfonic acid.	ACY, CMG, DUP, G,, TRC, VPC.
Dichloromethylphenylsilane	DCC.
*2,6-Dichloro-4-nitroaniline	DUP, EKT, G, KPC.
1,2-Dichloro-4-nitrobenzene	DUP, MON.
*1,4-Dichloro-2-nitrobenzene (Nitro-p-dichlorobenzene)	DUP, G, KPC, NAC, VPC.
2,4-Dichlorophenol	DOW, MON.
3,6-Dichloropyridazine	ACY.
4,7-Dichloroquinoline	SDW.
*2,5-Dichlorosulfanilic acid [SO_3H=1]	CMG, DUP, G.
2,5-Dichloro-4-sulfobenzenediazonium sulfate	TRC.
p,α-Dichlorotoluene	HN.
α,α-Dichlorotoluene (Benzal chloride)	HK.
2,6-Dichlorotoluene	DUP.
2,4-Dichloro-5-(p-toluenesulfonamido)-1-naphthol	EK.
Dicyclohexylamine	ABB, MON.
Dicyclohexyl-carbodiimide	KK.
*Dicyclopentadiene and cyclopentadiene	ENJ, SHC, UCC.
Dicyclopentadiene dioxide	UCC.
2,4-Di(1,1-dimethylpropyl)phenol (Di-tert-amylphenol)	PAS.
2,5-Diethoxyaniline	ALL.
2′,5′-Diethoxybenzanilide	G.
p-Diethoxybenzene	G.
1,4-Diethoxy-2-morpholino-5-nitrobenzene	x.
2′,5′-Diethoxy-4′-nitrobenzanilide	G.
1,4-Diethoxy-2-nitrobenzene	G.
p-Diethylaminobenzaldehyde	G, NAC.
4-Diethylaminoethoxy-4′-methylbenzophenone	x.
α-(2-Diethylaminoethyl)-α-phenylcyclohexane methanol, hydrochloride.	ACY.
α-Diethylamino-4′-hydroxy-m-acetotoluidide	PD.
m-Diethylaminophenol (N,N-Diethyl-3-aminophenol)	ACY, DUP.
3-Diethylaminopropiophenone	ACY.
4-Diethylamino-o-tolualdehyde	DUP.
*N,N-Diethylaniline	ACY, DSC, DUP, NAC, SDH.
N,N-Diethyl-m-anisidine	DUP.
Diethylbenzene	DOW, KPP.
N,N-Diethylcyclohexylamine	DUP.
N,N-Diethylmetanilic acid	DUP, G.
N^1,N^1-Diethyl-4-methoxymetanilamide	G, PCW.
N,N-Diethyl-1-naphthylamine	DUP.
N,N-Diethyl-p-nitrosoaniline	G.
N,N-Diethyl-4-nitroso-m-anisidine hydrochloride	DUP.
N,N-Diethyl-4-nitroso-m-phenetidine	G.
N,N-Diethyl-m-phenetidine	G.
N,N-Diethyl-p-phenylenediamine	DUP.
N,N-Diethyl-m-toluidine	DUP, NAC.
6,15-Dihydroanthraquinonazine	TRC.
2,3-Dihydro-4H-pyran	QKO.
1,5(and 1,8)-Dihydroxyanthraquinone	DUP, NAC.
3,4-Dihydroxybenzoic acid	AMB.
2,4-Dihydroxybenzophenone	EK.
Dihydroxydinitroanthraquinone	DUP.

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TABLE 7B. --*Cyclic intermediates for which U.S. production or sales were reported, identified by manufacturer, 1961*--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
1,5-Dihydroxy-4,8-dinitroanthraquinone	AHC.
2,2′-Dihydroxy-4-methoxybenzophenone	ACY.
4,5-Dihydroxy-2,7-naphthalenedisulfonic acid (Chromotropic acid).	HSH, NAC.
*6,7-Dihydroxy-2-naphthalenesulfonic acid	FMT, G, IDC, NAC.
2,2′-Dihydroxy-4-(octadecyloxy)benzophenone	ACY.
Dihydroxyphenylsulfonic acid	WTU.
*16,17-Dihydroxyviolanthrone (Dihydroxydibenzanthrone)	ACY, AHC, DUP, G, MAY, NAC, TRC.
N,N′-Diisopropyl-p-phenylenediamine	DUP.
2′,4′-Dimethoxyacetophenone	DUP.
2,5-Dimethoxyaniline	EKT, KLS.
2,5-Dimethoxybenzaldehyde	CWN.
2′,5′-Dimethoxybenzanilide	G.
*m-Dimethoxybenzene	ACY, DUP, G, ICO, KPC.
p-Dimethoxybenzene	DUP, G.
*3,3′-Dimethoxybenzidine	ALL, CWN, DUP, NAC, SDH.
3,3′-Dimethoxybenzidine hydrochloride	CWN.
2,4-Dimethoxybenzoic acid	ACY, DUP.
1,1-(3,3′-Dimethoxy-4,4′-biphenylene)bis[3-methyl-3-(2-sulfoethyl)triazene].	G.
1,4-Dimethoxy-2-nitrobenzene	EKT.
3,4-Dimethoxyphenethylamine (Homoveratrylamine)	LIL.
(3,4-Dimethoxyphenyl)acetic acid	LIL.
(3,4-Dimethoxyphenyl)acetonitrile	LIL.
16,17-Dimethoxyviolanthrone	AHC, KPC, MAY, TRC.
p-Dimethylaminobenzaldehyde	FIN.
o-Dimethylaminoethylphenol	RH.
2-[(2-Dimethylaminoethyl)thenylamino]pyridine (non-medicinal grade).	ABB.
o-(Dimethylaminomethyl)-p-butylphenol	RH.
m-Dimethylaminophenol	ACY.
N-(p-Dimethylaminophenyl)-1,4-naphthoquinoneimine	NAC.
6-Dimethylaminoquinaldine	EK.
*N,N-Dimethylaniline	ACY, DSC, DUP, NAC, SDH.
7,12-Dimethylbenz[a]anthracene	EK.
N,N-Dimethylbenzylamine	ICO, MLS, RH.
*2,2′-Dimethyl-1,1′-bianthraquinone	ACY, AHC, CMG, DUP, G, KPC, NAC, TRC.
2,4-Di(1-methylbutyl)phenol	PAS.
5,5-Dimethyl-1,3-cyclohexanedione	EKT.
N,N-Dimethylcyclohexylamine	DUP, MON.
2′,7′-Dimethylfluoran	WLM.
Dimethylhydantoin	GLY.
2,8-Dimethyl-13β-hydroxy-9(13β)-ceroxenone	WLM.
2,3-Dimethylindole	DUP.
*N,N-Dimethyl-p-nitrosoaniline	ACY, DUP, NAC.
N,N-Dimethyl-3-nitro-p-toluenesulfonamide	G.
α,α-Dimethylphenethylamine	x.
α,α-Dimethylphenethylamine hydrochloride	x.
N,N-Dimethyl-p-phenylenediamine	NAC.
N,N-Dimethyl-p-phenylenediamine monohydrochloride	EK.
N,N-Dimethyl-p-phenylenediamine sulfate	EK.
2,5-Dimethyl-1-phenylpyrrole	x.
2,5-Dimethyl-1-phenyl-3-pyrrolecarboxyaldehyde	x.
1,4-Dimethylpiperazine	JCC.
p-(1,1-Dimethylpropyl)phenol	PAS.
N,N-Dimethylsulfanilic acid	G.

TABLE 7B.--*Cyclic intermediates for which U.S. production or sales were reported, identified by manufacturer, 1961*--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
2,4-Dinitroaniline	ACY, KPC.
p-(2,4-Dinitroanilino)phenol	DUP, G, NAC.
1,5(and 1,8)-Dinitroanthraquinone	ACY, KPC.
2,4-Dinitro-N,N′-(1,5-anthraquinone)dioxamic acid	TRC.
3,4′-Dinitrobenzanilide	DUP.
m-Dinitrobenzene	DUP, NAC.
2,4-Dinitrobenzenesulfonic acid	G, TRC.
3,5-Dinitrobenzoic acid	ACY, DUP, GAM.
3,5-Dinitrobenzoyl chloride	EK.
Dinitro(3,3′-bi-7H-benz[de]anthracen)-7,7′-dione	DUP, MAY.
*4,5-Dinitrochrysazin	AHC, DUP, EKT, G.
2,4-Dinitrocumene	DUP.
4,4′-Dinitrodibenzyl-2,2′-disulfonic acid, disodium salt	DUP.
3′,5′-Dinitro-2′-hydroxyacetanilide	TRC.
*2,4-Dinitrophenol, tech	DUP, KPC, NAC, SDC.
2,4-Dinitrophenylhydrazine	EK.
3,5-Dinitrosalicylic acid	EK.
p-Dinitrosobenzene	FIN.
*4,4′-Dinitro-2,2′-stilbenedisulfonic acid	ACY, DUP, G, NAC, SDH, TRC.
2,4-Dinitrotoluene	DUP, NAC.
2,4(and 2,6)-Dinitrotoluene	DUP.
3,5-Dinitro-p-toluenesulfonic acid	G.
Dipentene	GLD, HNW.
*1,5-Diphenoxyanthraquinone	AHC, DUP, G.
1,5(and 1,8)-Diphenoxyanthraquinone	DUP.
1,8-Diphenoxyanthraquinone	AHC, EKT, G.
Diphenylacetic acid	BPC.
Diphenylacetonitrile, tech	KF.
Diphenylamine	ACY, DOW, DUP.
6,8-Diphenylamino-1-naphthalenesulfonic acid	NAC.
2,8-Diphenylanthraquinone-1′(S)2′,5′(S)6′-dithiazole	AHC.
Diphenylcarbamoyl chloride	EK.
α-d-1,2-Diphenyl-4-dimethylamino-2-hydroxy-3-methylbutane, camphor sulfonate.	LIL.
N,N′-Diphenylethylenediamine	DUP, RPC.
2,5-Diphenyloxazole	EK.
1,3-Diphenyl-1,3-propanedione	EK.
1,3-Diphenyltriazene	NAC.
2,5-Dithiobiurea	ACY.
Dithiodibenzoic acid	MEE.
*1,4-Di(p-toluidino)anthraquinone	AHC, CMG, G, NAC, TRC.
1,5-Di(p-toluidino)anthraquinone	AHC.
1,8-Di(p-toluidino)anthraquinone	AHC.
Divinylbenzene	DOW, KPP.
1,3-Di-2,6-xylylguanidine	ACY.
*Dodecylbenzene (includes keryl-type benzenes)	ATR, CO, MON, NAC, SOC.
Dodecylmethylbenzene	RH.
Dodecylmethylbenzyl chloride	RH.
Dodecylphenol	G, RH, x.
Ethanediylidenetetraphenol (Tetraphenolethane)	SHC.
o-Ethoxybenzoic acid	ACY.
(o-Ethoxybenzoyl)acetonitrile	ACY.
6-Ethoxy-2-mercaptobenzothiazole	DUP.
2-Ethoxynaphthalene	NAC.
N^1-(6-Ethoxy-3-pyridazinyl)sulfanilamide	ACY.
3-Ethylamino-p-cresol	DUP.
3-Ethylamino-p-toluenesulfonic acid [SO_3H=1]	DUP.

TABLE 7B. -- ***Cyclic intermediates for which U.S. production or sales were reported, identified by manufacturer, 1961*** --Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
*N-Ethylaniline, refined	ACY, DUP, NAC, SDH.
*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	G, ICC, NAC, SDH, TRC, VPC, WJ.
N-Ethyl-p-anisidine	EKT.
N-Ethylanthranilic acid	G, SDH.
2-Ethylanthraquinone	NAC.
*Ethylbenzene	ACP, DOW, FG, KPP, MON, SHC, SNT, TOC, UCC.
o-(p-Ethylbenzoyl)benzoic acid	G, NAC.
N-Ethylcyclohexen-1-ylamine	MLS.
1-Ethyl-2,4-dinitrobenzene	DUP.
2-Ethyl-2-N-ethylanilinoethanol	RBC.
N-Ethyl-1-naphthylamine	DSC, DUP, NAC.
N-Ethyl-N-1-naphthyl-p-nitrobenzamide, ethanol	G.
9-Ethyl-3-nitrocarbazole	KPC.
Ethyl β-oxoarachidate	x.
p-Ethylphenol	ACY.
*N-Ethyl-N-phenylbenzylamine	DUP, NAC, SDH.
2-Ethyl-2-phenylmalonic acid, diethyl ester	BPC, MAL.
1-(o-Ethylphenyl)-3-methyl-2-pyrazolin-5-one	TRC.
5-Ethyl-2-picoline (2-Methyl-5-ethylpyridine) (MEP)	UCC.
N-Ethyl-5-sulfoanthranilic acid	G, SDH.
6-Ethyl-1,1,4,4-tetramethyl-1,2,3,4-tetrahydronaphthalene	GIV.
N-Ethyl-m-toluidine	DUP, NAC.
N-Ethyl-o-toluidine	DUP.
3-(N-Ethyl-m-toluidino)-1,2-propanediol	EKT.
3-(N-Ethyl-m-toluidino)propionitrile	DUP, EKT.
α-(N-Ethyl-m-toluidino)-m-toluenesulfonic acid	DUP.
1-Ethynylcyclohexanol	AIR.
Fluoren-9-one	EK.
1-Fluoro-2,4-dinitrobenzene	EK.
4-Formyl-m-benzenedisulfonic acid	G, SDH.
m-Formylbenzenesulfonic acid, sodium salt	G.
*o-Formylbenzenesulfonic acid (o-Sulfobenzaldehyde)	G, ICC, NAC, SDH, VPC.
Furan	DUP.
Furfuryl alcohol	QKO.
Glycouril	FIN.
Hexachlorobenzene	DA, KPT, SCC.
Hexachlorocyclopentadiene	HK, VEL.
Hexachlorophenyl ether	DOW.
Hexamethylbenzene	EK.
2,2′,4,4′,6,6′-Hexanitrodiphenylamine	EK.
*p-Hydrazinobenzenesulfonic acid	ACY, DUP, G, SDH, STG.
3-Hydrazino-5-nitro-p-toluenesulfonic acid [SO_3H=1]	WJ.
4-Hydrazino-m-toluenesulfonic acid	G.
Hydroabietyl alcohol	HPC.
Hydrobenzamide	DUP.
Hydroquinone, tech	CRS, EKT.
2′-Hydroxyacetophenone	KF, PRR.
3′-Hydroxyacetophenone	SDH.
4′-Hydroxyacetophenone	PRR.
3′-Hydroxyacetophenone benzoate	SDH.
1-Hydroxyanthraquinone	TRC.
N-(3-Hydroxy-2-anthraquinonyl)-1-nitro-2-anthraquinone carboxamide.	G.

TABLE 7B.--*Cyclic intermediates for which U.S. production or sales were reported, identified by manufacturer, 1961*--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
3-Hydroxy-2-anthroic acid	G.
2-Hydroxy-11H-benzo[a]carbazole-3-carboxylic acid	G.
p-Hydroxybenzoic acid	HN.
p-Hydroxybenzoic acid, butyl ester	HN.
p-Hydroxybenzoic acid, ethyl ester	HN.
p-Hydroxybenzoic acid, methyl ester	HN.
p-Hydroxybenzoic acid, propyl ester	HN.
4-Hydroxycoumarin	ABB.
3-(N-2-Hydroxyethylanilino)propionitrile	ICC.
3-(N-2-Hydroxyethylanilino)propionitrile acetate	EKT.
N-β-Hydroxyethyl-o-toluidine	EKT.
2-Hydroxy-α^1,α^3-mesitylenediol	ACY.
2-Hydroxy-4-methoxybenzophenone	ACY.
2-Hydroxy-4-methoxy-5-sulfobenzophenone trihydrate	ACY.
4-Hydroxy-4'-methylbenzophenone	x.
2-Hydroxy-3-methylcinchoninic acid	G.
3-Hydroxy-2-methylcinchoninic acid	DUP.
N-Hydroxymethylphthalamide	ACY.
7-Hydroxy-1-naphthalenecarbamic acid, methyl ester	TRC.
3-Hydroxy-2-naphthanilide	PCW.
1-Hydroxy-2-naphthoic acid	G, NAC.
2-Hydroxy-1-naphthoic acid	BL.
*3-Hydroxy-2-naphthoic acid (B.O.N.)	AUG, DUP, HN, NAC, PCW, SW.
1-Hydroxy-2-naphthoic acid, phenyl ester	EK.
3-Hydroxy-3-naphtho-o-toluidide	KPC.
N-(2-Hydroxy-1-naphthyl)acetamide	TRC.
*N-(7-Hydroxy-1-naphthyl)acetamide	CMG, G, TRC.
2-Hydroxy-4-n-octoxybenzophenone	ACY.
2-Hydroxy-4-sulfo-1-naphthalenediazonium hydroxide, inner salt.	ACY.
4-Imidazolin-2-one	MRA.
*1,1'-Iminobis[4-aminoanthraquinone]	ACY, AHC, CMG, DUP, G, MAY, NAC, TRC.
1,1'-Iminobis[4-benzamidoanthraquinone]	ACY, MAY.
1,1'-Iminobis[5-benzamidoanthraquinone]	AHC, G, TRC.
*6,6'-Iminobis[1-naphthol-3-sulfonic acid]	DUP, G, NAC, TRC.
*1,1'-Iminobis[4-nitroanthraquinone]	ACY, AHC, DUP, MAY, TRC.
*1,1'-Iminodianthraquinone (Dianthrimide)	ACY, AHC, CMG, DUP, MAY, NAC, TRC.
2,2'-Iminodipyridine	RIL.
1,3-Indandione	PIC.
1-Indanone	EK.
1-Iodonaphthalene	EK.
Isatin	NAC.
Isatoic anhydride	MEE.
Isocyanic acid, 3,3'-dimethoxy-4,4'-biphenylene ester	CWN.
Isocyanic acid, 3,3'-dimethyl-4,4'-biphenylene ester	CWN, NAC.
Isocyanic acid, 4-(p-isocyanatophenoxy)-m-phenylene ester	DUP.
Isocyanic acid, methylenebis[m-methyl-p-phenylene ester]	NAC.
Isocyanic acid, methylenedi-p-phenylene ester	MOB, NAC.
*Isocyanic acid, 4-methyl-m-phenylene ester	DUP, MOB, NAC.
Isocyanic acid, phenyl ester	OTC.
Isocyanic acid, polymethylene-polyphenylene ester	CWN.
Isocyanic acid, m-tolylene ester	OTC.
Isonicotinic acid, methyl ester	RIL.
Isonitrosopropiophenone	ICO.
Isophorone	UCC.
Isophthalic acid (1,3-Benzenedicarboxylic acid)	ACC, SOC.
*4,4'-Isopropylidenediphenol (Bisphenol A)	DOW, MON, SHC.

TABLE 7B.--*Cyclic intermediates for which U.S. production or sales were reported, identified by manufacturer, 1961*--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
o-Isopropylphenol	TNA.
4-Isopropyl-m-phenylenediamine	DUP.
Isothiocyanic acid, phenyl ester	EK.
*Isoviolanthrone (Isodibenzanthrone)	ACY, AHC, DUP, G, MAY, TRC.
*Leuco-1,4-diaminoanthraquinone	ACY, AHC, DUP, G, ICC, MAY, TRC.
*Leuco quinizarin (1,4,9,10-Anthratetrol)	ACY, HSH, ICC, KPC, NAC, TRC.
*Leuco tetrahydroxyanthraquinone	G, ICC, TRC.
2,4-Lutidine	ACP, KPT.
2,6-Lutidine	RIL.
Mandelonitrile	KF.
Melamine	ACY, RCI.
o-Mercaptobenzoic acid	MED.
*Metanilic acid (m-Aminobenzenesulfonic acid)	ACY, CMG, DUP, G, NAC, TRC.
1-Methoxyanthraquinone	G.
4-Methoxymetanilic acid	ATL, G, PCO, VPC.
N-(2-Methoxy-1-naphthyl)acetamide	TRC.
4-Methoxy-3-nitrobenzanilide	PCW.
4-Methoxy-6-nitrometanilic acid	DUP.
p-(3-Methoxy-4-nitrophenylazo)aniline	KPC.
p-Methoxyphenylacetic acid	OPC, TBK.
5-Methoxy-m-phenylenediamine (m-Diaminoanisole)	VPC.
5-Methoxy-m-phenylenediamine sulfate	VPC.
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-pentahydroxyhexyl)triazene.	DUP.
*1-Methylaminoanthraquinone	ACY, DUP, G, KPC.
1-Methylamino-4-(p-toluidino)anthraquinone	G.
N-Methylaniline	ACY, DUP.
2-(N-Methylanilino)ethanol	G.
3-(N-Methylanilino)propionitrile	DUP.
5-Methyl-o-anisidine [NH_2=1]	BUC, DUP, TRC.
N-Methylanthranilic acid	G.
2-Methylanthraquinone	ACY, DUP, NAC.
1-(3-Methyl-2-anthraquinonylamino)-5-(7-oxo-7H-benz[de]-anthracen-3-ylamino)anthraquinone.	DUP.
3-Methylbenzo[f]quinoline	ACY, G.
2-Methylbenzothiazole	G.
3-Methylbenzo[f]quinoline-8,10-disulfonic acid	DUP.
N-Methylbenzylamine	MLS.
Methyl benzyl ether	UCC.
3-Methylcholanthrene	EK.
Methylcyclohexane	DOW, PLC.
Methylcyclohexenes, mixed	PLC.
N-Methylcyclohexylamine	DUP.
N-Methyleneaniline	DUP.
4,4'-Methylenebis[2-chloroaniline]	DUP.
*4,4'-Methylenebis[N,N-diethylaniline]	DSC, DUP, G, SDH, TRC.
*4,4'-Methylenebis[N,N-dimethylaniline] (Methane base)	ACY, DUP, G, KLK, NAC, SDH.
5,5'-Methylenebis[toluene-2,4-diamine]	DUP, NAC.
Methylenedianiline	ACY, DOW, NAC.
Methylenedisalicylic acid	HN.
1-Methyl-2-heptadecylbenzimidazole	TRC.
Methylnaphthalene, crude	KPT, VEL.
2-Methylnaphthalene	RIL.
N-Methyl-4'-nitroacetanilide	G, NAC.

TABLE 7B. -- ***Cyclic intermediates for which U.S. production or sales were reported, identified by manufacturer, 1961*** **--Continued**

Chemical	Manufacturers' identification codes (according to list in table 23)
N-Methyl-p-nitroaniline	G.
4-Methyl-2-nitroanisole	DUP.
N-(5-Methyl-4-nitro-o-anisyl)-p-toluenesulfonamide	G.
*2-Methyl-1-nitroanthraquinone	AHC, DUP, G, KPC, NAC, TRC.
N-Methyl-2-nitro-1-phenol-4-sulfonamide	TRC.
N-Methyl-N-nitroso-p-toluenesulfonamide	EK.
2-Methyl-5-norbornene-2,3-dicarboxylic anhydride	NAC.
m-(3-Methyl-5-oxo-2-pyrazolin-1-yl)benzenesulfonamide	CMG, TRC.
m-(3-Methyl-5-oxo-2-pyrazolin-1-yl)benzenesulfonic acid	TRC.
*p-(3-Methyl-5-oxo-2-pyrazolin-1-yl)benzenesulfonic acid	ACY, ALT, CMG, DUP, G, KPC, TRC.
3-(3-Methyl-5-oxo-2-pyrazolin-1-yl)-1,5-naphthalene-disulfonic acid.	TRC.
4-(3-Methyl-5-oxo-2-pyrazolin-1-yl)-m-toluenesulfonic acid [SO_3 H=1].	CMG.
1-Methyl-1-phenylhydrazine	EK.
5-Methyl-3-phenyl-isoxaldecarboxylic acid (crude)	BPC.
5-Methyl-3-phenyl-4-isoxazolecarboxylic acid	ICO.
5-Methyl-3-phenyl-4-isoxazolecarboxylic acid hydrochloride	ICO.
*3-Methyl-1-phenyl-2-pyrazolin-5-one (Developer Z)	DOW, DUP, NAC, SDW, TRC, VPC.
Methylpropylcarbinylbarbituric acid	LIL.
4'-(4-Methyl-2-pyrimidinylsulfamoyl)acetanilide	ACY.
1-Methylpyrrole	ASL.
*α-Methylstyrene	ACP, DOW, HPC.
2-Methylsulfonyl-4-nitroaniline	EKT.
4-(Methylsulfonyl)-2-nitrophenol	TRC.
Methyltetrahydrobenzaldehyde	UCC.
5-Methyl-p-toluenesulfon-o-anisidide	G.
3-Methyl-6-(p-toluidino)-7H-dibenz[f,ij]isoquinoline-2,7(3H)-dione.	G.
3-Methyl-1-(p-tolyl)-2-pyrazolin-5-one	VPC.
6'-Methyl-4'-p-tolylsulfonamido-m-benzanisidide	G.
Naphth[2,3-C]acridine-5,8,14(13H)trione	DUP.
*Naphthalene, solidifying at 79° C. or above (refined flake):	
*From domestic crude naphthalene	ACY, DUP, KPT, RIL, STN, SW.
*From imported crude naphthalene	ACP, ACY, KPT, SW.
1,3-Naphthalenediol	EK.
1,5-Naphthalenediol (1,5-Dihydroxynaphthalene)	NAC.
*1,5-Naphthalenedisulfonic acid	G, NAC, TRC.
2,7-Naphthalenedisulfonic acid	DUP, NAC.
1-Naphthalenesulfonic acid, sodium salt	TRC.
2-Naphthalenesulfonic acid	ACY, NAC.
2-Naphthalenesulfonic acid, sodium salt	ACY.
2-Naphthalenesulfonyl chloride	DUP, G.
1,4,5,8-Naphthalenetetracarboxylic acid	G, KPC.
1,3,6-Naphthalenetrisulfonic acid	G, TRC.
Naphthalic anhydride	DUP, NAC.
Naphthalimide	DUP, NAC.
*Naphthionic acid (4-Amino-1-naphthalenesulfonic acid)	ACY, DUP, NAC.
Naphthionic acid, sodium salt	DUP, NAC.
1-Naphthol (α-Naphthol)	DUP, NAC.
2-Naphthol, tech. (β-Naphthol)	ACY, NAC, SW.
p-Naphtholbenzein	EK.
1-Naphthol-3,6-disulfonic acid, monosodium salt	NAC, TRC.
1-Naphthol-3,8-disulfonic acid	NAC.
2-Naphthol-3,6-disulfonic acid (R acid)	ATL.
2-Naphthol-3,6-disulfonic acid, disodium salt	ACY, G, NAC, WJ.

TABLE 7B. -- *Cyclic intermediates for which U.S. production or sales were reported, identified by manufacturer, 1961*--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
*2-Naphthol-6,8-disulfonic acid (G acid)	ATL, DUP, TRC.
2-Naphthol-6,8-disulfonic acid, dipotassium salt	G.
*2-Naphthol-6,8-disulfonic acid, disodium salt	ACY, NAC, TRC.
2-Naphthol-6-sulfonamide	DUP.
2-Naphthol-6-sulfonamide, p-toluenesulfonate	DUP.
1-Naphthol-2-sulfonic acid, potassium salt	EK.
1-Naphthol-4-sulfonic acid (Nevile & Winther's acid)	DUP, NAC.
1-Naphthol-5-sulfonic acid	NAC, TRC.
1-Naphthol-8-sulfonic acid	G, VPC.
*2-Naphthol-6-sulfonic acid (Schaeffer's acid)	ACY, NAC, TRC.
*2-Naphthol-6-sulfonic acid, sodium salt	SW, TMS, WJ.
2-Naphthol-7-sulfonic acid	DUP, SW.
*1-Naphthol-8-sulfonic acid sultone (1,8-Naphthosultone)	ACY, CMG, DUP, TRC.
1,4-Naphthoquinone	NAC.
Naphthostyril	DUP.
*Naphth[1,2]oxadiazole-5-sulfonic acid	CMG, DUP, G, NAC, TRC.
1-Naphthylamine (α-Naphthylamine)	DUP, NAC.
2-Naphthylamine (β-Naphthylamine)	AUG, KLS.
p-2-Naphthylaminophenol (N-(p-Hydroxyphenyl)-2-naphthylamine).	G, NAC.
*2-(Naphthylthio)acetic acid	ACY, G, KPC, VPC.
*Nicotinonitrile (3-Cyanopyridine)	MON, NEP, RIL.
Nitro-aceanthra[2,1-a]aceanthrylene-5,13-dione	AHC.
3'-Nitroacetanilide	KPC, TRC.
4'-Nitroacetanilide	G, MON, TRC.
4'-Nitro-o-acetanisidide	DUP.
2-Nitro-p-acetanisidide	DUP, SDH.
3'-Nitroacetophenone	ACY, SDH.
4'-Nitroacetophenone	NES.
5'-Nitro-o-acetotoluidide	DUP.
*m-Nitroaniline	AUG, ACY, DUP, NAC, TRC.
o-Nitroaniline	KPC, MON.
p-Nitroaniline	KPC, MON, SDC.
3-Nitro-p-anisamide	G.
2-Nitro-p-anisidine [NH_2=1]	DUP, G.
*4-Nitro-o-anisidine [NH_2=1]	DUP, KPC, SDH.
*5-Nitro-o-anisidine [NH_2=1]	ACY, AUG, BUC, DUP, G, KLS.
5-Nitro-o-anisidine sulfate [NH_2=1]	DUP.
o-Nitroanisole	DUP, MON.
p-Nitroanisole	DUP.
1-Nitroanthraquinone	DUP.
1'-Nitroanthraquinone-2'-carboxyaminoaceanthra[2,1-a]-aceanthrylene-5,13-dione.	AHC.
*1-Nitro-2-anthraquinonecarboxylic acid	DUP, G, NAC, TRC.
*5-Nitro-1-anthraquinonesulfonic acid	DUP, G, MAY, NAC, TRC.
5(and 8)-Nitro-1-anthraquinonesulfonic acid	DUP.
8-Nitro-1-anthraquinonesulfonic acid	NAC, TRC.
8-Nitro-1-anthraquinonesulfonic acid, sodium salt	DUP, TRC.
2-(1-Nitro-2-anthraquinonyl)anthra[2,3]oxazole-5,10-dione	G, NAC.
m-Nitrobenzaldehyde	DUP, SDH, NAC.
6-[p-(p-Nitrobenzamido)benzamido]-1-naphthol-3-sulfonic acid.	DUP.
6-(m-Nitrobenzamido)-1-naphthol-3-sulfonic acid	TRC.
6-(p-Nitrobenzamido)-1-naphthol-3-sulfonic acid	DUP.
4'-Nitrobenzanilide	G.
*Nitrobenzene	ACY, DUP, G, MON, NAC.

TABLE 7B. --*Cyclic intermediates for which U.S. production or sales were reported, identified by manufacturer, 1961* --**Continued**

Chemical	Manufacturers' identification codes (according to list in table 23)
m-Nitrobenzenesulfonamide	TRC.
*m-Nitrobenzenesulfonic acid	ACY, CMG, DUP, G, KPC, MAY, MEE, NAC.
p-Nitrobenzenesulfonic acid	MRA.
5'-Nitro-o-benzenesulfonotoluidide	DUP.
m-Nitrobenzenesulfonyl chloride	G.
p-Nitrobenzenesulfonyl chloride	EK.
5-Nitro-2(3H)-benzimidazolone	DUP.
m-Nitrobenzoic acid	HK, SDH.
p-Nitrobenzoic acid	DUP.
p-Nitrobenzoic acid, propyl ester	ICO.
m-Nitrobenzoyl chloride	HK.
p-Nitrobenzoyl chloride	DUP, HK.
m-Nitrobenzyl alcohol	DUP.
4'-Nitro-4-biphenylcarboxylic acid	DUP, G, TRC.
3-Nitro-4-chloro-N,N-dimethylbenzenesulfonamide	EKT.
2-Nitro-p-cresol	DUP, SW, TRC.
Nitrocyclohexane	x.
Nitrodiphenylamine	ACY.
4-Nitro-6-(5-hydroxy-3-methyl-1-phenyl-4-pyrazolylazo)-1-phenol-2-sulfonic acid.	TRC.
1-Nitronaphthalene	DUP, NAC.
3-Nitro-1,5-naphthalenedisulfonic acid	G, TRC.
8-Nitro-1-naphthalenesulfonic acid	G.
8(and 5)-Nitro-1(and 2)-naphthalenesulfonic acid	G.
*7(and 8)-Nitronaphth[1,2]oxadiazole-5-sulfonic acid	G, NAC, TRC.
4'-Nitrooxanilic acid	DUP.
p-Nitrophenethyl acetate	EKT.
Nitrophenethyl alcohol	EKT.
p-Nitrophenetole	DUP.
m-Nitrophenol	EK.
o-Nitrophenol	DUP, VPC.
p-Nitrophenol	DUP, G, MON, SDC, UPM.
p-Nitrophenylacetic acid	BPC.
4'-(p-Nitrophenyl)acetophenone	DUP.
4-Nitro-o-phenylenediamine	DUP.
p-Nitrophenylhydrazine	EK.
1-(m-Nitrophenyl)-5-oxo-2-pyrazoline-3-carboxylic acid	DUP.
4-Nitrophthalimide	DUP.
3(and 5)-Nitrosalicylic acid	EK, G.
2-Nitroso-1-naphthol	EK.
p-Nitrosophenol	ACY, DUP, NAC, USR.
p-Nitrostyrene	CWN.
2-[4-(4-Nitro-2-sulfostyryl)-3-sulfophenyl]-2H-naphtho-[1,2]triazole-5-sulfonic acid.	TRC.
m-Nitrotoluene	DUP.
o-Nitrotoluene	DUP, NAC.
p-Nitrotoluene	DUP, NAC.
Nitrotoluene mixtures	DUP, NAC.
5-Nitro-o-toluenesulfonanilide	G.
3-Nitro-p-toluenesulfonic acid [SO_3H=1]	CMG, TRC.
*5-Nitro-o-toluenesulfonic acid [SO_3H=1]	ACY, DUP, G, KPC, NAC, SDH, TRC.
4'-Nitro-p-toluenesulfono-o-toluidide	G.
5-Nitro-o-toluenesulfonyl chloride	G.
4-Nitro-o-toluidine [NH_2=1]	DUP, G, KPC.
*5-Nitro-o-toluidine [NH_2=1]	DUP, KLS, KPC, SDH.
*2-Nitro-p-toluidine [NH_2=1]	ACY, DUP, NAC, SDH, SW.

TABLE 7B.--*Cyclic intermediates for which U.S. production or sales were reported, identified by manufacturer, 1961*--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
5-Nitro-2-p-toluidinobenzenesulfonic acid	DUP.
*16-Nitroviolanthrone	ACY, G, MAY, TRC.
4-Nitro-m-xylene	DUP.
2-Nitro-p-xylene	SDH.
Nitroxylenes, mixed	DUP, NAC.
2-tert-Nonyl-p-cresol	USR.
Nonyl-dinonylphenol, mixture	JCC.
*Nonylphenol	ENJ, G, JCC, KLK, MON, RH, UCP, UPM, USR.
Octylphenol	DOW, 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, G, TRC.
*1,1'-(7-Oxo-7H-benz[de]anthracen-3,9-ylenediimino)-dianthraquinone.	ACY, AHC, DUP, G, MAY, NAC, TRC.
*5-Oxo-1-phenyl-2-pyrazoline-3-carboxylic acid	NAC, SDW, VPC.
5-Oxo-1-phenyl-2-pyrazoline-3-carboxylic acid, ethyl ester	G.
*5-Oxo-1-(p-sulfophenyl)-2-pyrazoline-3-carboxylic acid (Pyrazolone T).	ALT, G, KPC.
4,4'-Oxydianiline	x.
Pentadecyltoluene	CO.
1,1,3,3,5-Pentamethylindan	GIV.
Pentylnaphthalenes (Amylnaphthalenes)	PAS.
o-Pentylphenol (o-Amylphenol)	PAS.
p-tert-Pentylphenol	KPT.
3,4,9,10-Perylenetetracarboxylic acid	DUP.
3,4,9,10-Perylenetetracarboxylic diimide	DUP.
Phenethylamine	MLS.
Phenethylamine sulfate	MLS.
o-Phenetidine	MON.
p-Phenetidine	DOW, DUP, KPC, MON.
*Phenol:	
*Natural:	
*From coal tar:[1]	
U.S.P	SDW.
39° C., m.p	KPT, PRD.
*82%-84%	ACP, KPT, PRD.
All other	ACP, ACY, KPT, PRD.
*From petroleum	MER, PIT, PRD, SW.
*Synthetic:	
By caustic fusion:	
U.S.P	MAL, MON, RCI.
From chlorobenzene by liquid-phase hydrolysis: U.S.P	DOW, HKD.
From chlorobenzene by vapor-phase hydrolysis: U.S.P	UCP.
*From cumene	ACP, HPC, SHC, SOC.
*1-Phenol-4-sulfonic acid	DOW, MON, UPF.
1-(Phenothiazin-2-yl)-1-propanone	WYT.
2-Phenoxypropionic acid	OPC.
α-Phenoxypropionyl chloride	ICO, OPC.
Phenylacetamide	BPC.
Phenylacetic acid (α-Toluic acid)	BPC, GIV, TBK.
Phenylacetic acid, ethyl ester, tech	BPC, MAL, TBK.
Phenylacetic acid, potassium salt	BPC, MON, OPC, TBK.
Phenylacetic acid, sodium salt	BPC.
Phenylacetonitrile (α-Tolunitrile)	BPC, OPC, SDW, TBK.
4'-Phenylacetophenone	DUP, EK, G.

See footnote at end of table.

TABLE 7B.--*Cyclic intermediates for which U.S. production or sales were reported, identified by manufacturer, 1961*--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
N-Phenylanthranilic acid	ABB.
2-Phenylanthr[2,3]oxazole-5,10-dione	G.
*p-Phenylazoaniline (p-Aminoazobenzene) and hydrochloride	ACY, DUP, G, KPC, NAC.
p-Phenylazobenzoyl chloride	EK.
4-Phenylazodiphenylamine	EK.
4-Phenylazo-1-naphthylamine	DUP.
α-Phenyl-o-cresol	RBC.
N-Phenyldibenzylamine	DUP.
Phenyl disulfide	EK.
N,N'-p-Phenylenebis[acetamide]	ACY.
*m-Phenylenediamine	ACY, DUP, G, NAC, PDC.
o-Phenylenediamine	FMT, MEE, MRT, TRC.
p-Phenylenediamine	ACY, BFG, SW.
Phenyl ether (Diphenyl oxide)	DOW.
Phenylglycine, sodium salt	DUP, NAC
5-Phenylhydantoin	ABB.
Phenylhydrazine	DOW.
Phenylhydrazine hydrochloride	EK, FIN, G.
2,2'-(Phenylimino)diethanol (Phenyldiethanolamine)	DUP, EKT, KPC, UCC.
Phenylmalonic acid, diethyl ester	BPC.
o-Phenylphenol	DOW, RCI.
o-Phenylphenol, chlorinated	DOW.
o-Phenylphenol, sodium salt	DOW, RCI.
p-Phenylphenol	DOW.
N-Phenyl-p-phenylenediamine	DUP, USR.
Phenylphosphorous acid	VIC.
Phenylphosphorous acid, sodium salt	VIC.
Phenyl-2-propanone	ORT, SK.
Phenyl tetramer	SPD.
1-Phenyl-2-thiourea	EK.
Phloroglucinol	MRT.
Phthalazinone	KPC.
Phthalic acid	KF, MEE.
Phthalic acid, disodium salt	MEE.
*Phthalic anhydride	ACC, ACP, ACY, KPT, MON, NAC, PCC, RCI, SOC, SW, WTC.
Phthalic anhydride residue	SOC, SW.
Phthalide	NAC.
Phthalimide	DOW, DUP, MEE, NAC, SFA.
Phthalimide, potassium salt	EK.
Phthalocyanine, iron derivative	DUP.
Phthalocyaninedisulfonic acid, copper derivative	TRC.
Phthalonitrile	ACP, G.
Phthaloyl chloride (Phthalyl chloride)	MON.
*Picolines:[1]	
*2-Picoline (α-Picoline)	ACP, KPT, RIL, UCC.
3-Picoline (β-Picoline)	RIL.
4-Picoline (γ-Picoline)	RIL, UCC.
Picoline (3,4-mixture)	ACP, KPT.
Picolinic acid	NEP.
3-Picolylamine	RIL.
Picramic acid and salt	DUP.
Picric acid (Trinitrophenol)	DUP, NAC, SDC.
Piperazine mixture, crude	JCC.
*Piperidine	ABB, DUP, MRK, RIL.
3-Piperidinopropiophenone hydrochloride	ACY.
Polychlorobiphenyl	MON.

See footnote at end of table.

TABLE 7B.--*Cyclic intermediates for which U.S. production or sales were reported, identified by manufacturer, 1961*--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
Polydodecylbenzene	CO.
Polyethylbenzene (80% Diethylbenzene)	UCC.
Polypentadecyltoluene	CO.
Potassium phenoxide	DUP.
Primuline base	DUP.
*Propiophenone	KPC, LIL, OPC, TBK.
n-Propylbenzene	EK.
Pyranthrone	AHC.
Pyridine, refined:[1]	
*2° Pyridine	ACP, KPT, RIL.
Other grades	KPT.
2,5-Pyridinedicarboxylic acid, di-n-propyl ester	ASL.
Pyridine hydrochloride	EK.
2-Pyridinemethanol	RIL.
2-Pyridinol	NEP.
3-Pyridinol	NEP.
2(1H)-Pyridone	FMT.
2-Pyrimidinol	GGY.
4'-(Pyrimidinylsulfamoyl)acetanilide	ACY.
Pyromellitic acid	DUP.
Pyromellitic dianhydride	DUP.
Pyrrole	ASL.
Pyrrolidine	ASL.
2-Pyrrolidinone	G.
*Quinaldine	ACY, DUP, KPT.
*Quinizarin	ACY, AHC, CMG, DUP, EKT, G, HSH, ICC, JTC, KPC, MAY, NAC, TRC.
2-Quinizarinsulfonic acid	NAC, PAT.
Quinoline: 1° and 2° Quinoline	ACP, EK, KPT.
2,4-Quinolinediol	DUP.
Quinoline yellow, base	G, NAC.
Quinophthalone	DUP.
Resorcinol, tech.	KPC.
Resorcinol, monoacetate	KPC.
β-Resorcylic acid	ACY, KPC, MEE.
Rhodanine	EK.
Salicylaldehyde	HN.
*Salicylic acid, tech	DOW, HN, MON, PCW.
Salicylic acid, ammonium chromium complex	TRC.
Salicylic acid, sodium salt (crude)	DOW.
Salicylideneaminoguanidine oleate	DUP.
Sodium phenoxide	DUP, FIN.
Styphnic acid, lead salt	REM.
*Styrene, all grades	CSD, DOW, ELP, FG, KPP, MON, SHC, UCC.
4'-Sulfamoylacetanilide	ACY.
5-Sulfamoylanthranilic acid	TRC.
Sulfanilic acid (p-Aminobenzenesulfonic acid) and salt	ACY, DUP, NAC.
4-Sulfoanthranilic acid	CMG, G, TRC.
5-Sulfoisophthalic acid, dimethyl ester	x.
4,4'-Sulfonyldianiline	DUP.
4,4'-Sulfonyldiphenol (4,4'-Dihydroxydiphenylsulfone)	G, MON, UPF.
4-Sulfophthalic acid	CWN.
Terephthalic acid	ACC, DUP, SOC.
Terephthalic acid dihydrazide	DUP.
*Terephthalic acid, dimethyl ester	ACC, DUP, HPC.

See footnote at end of table.

TABLE 7B. --*Cyclic intermediates for which U.S. production or sales were reported, identified by manufacturer, 1961*--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
Terephthalonitrile	EK.
Terphenyl (Phenylbiphenyl)	ARA, MON.
Tetraaminophthalocyanine, copper derivative	DUP.
Tetrabromophthalic anhydride	MCH.
*Tetrabromo-8,16-pyranthrenedione	G, NAC, TRC.
1,3,6,8-Tetrabromopyrene	G.
1,4,5,8-Tetrachloroanthraquinone	AHC, DUP, G, NAC.
1,2,4,5-Tetrachlorobenzene	DOW, HK.
Tetrachlorodiphenol	MON.
Tetrachloronitrobenzene	SDH.
Tetrachloropyrene	KPC.
α,α,2,6-Tetrachlorotoluene	DUP.
Tetrachloroviolanthrone	AHC.
Tetrahydrofuran	DUP.
Tetrahydro-2-methylfuran	QKO.
Tetrahydrophthalic anhydride	PTT.
1,2,3,4-Tetrahydroquinoline	EK.
1,4,5,8-Tetrahydroxyanthraquinone	ACY.
1,4,5,8-Tetrakis[1′,1″,1‴,1⁗-anthraquinonylamino]-anthraquinone (Pentanthrimide).	AHC, DUP, NAC.
Tetramethylbisphenol	ARK.
p-(1,1,3,3-Tetramethylbutyl)phenol	G.
1,1,3,3-Tetramethyl-2-thiourea	DUP.
Tetranitrophthalocyanine, copper derivative	DUP.
2,4,8,10-Tetraoxaspiro-5,5-undecane	EK.
2-(2-Thenylamino)pyridine	ABB.
Thianthrene	TRC.
Thianthrene-X,Y-dicarboxylic acid	TRC.
Thianthrene-X,Y-dinitrile	TRC.
p-Thioanisidine	RBC.
Thioanisole	EVN, GAM.
*3,3′-Thiobis[7H-benz[de]anthracen-7-one]	ACY, AHC, DUP, G, TRC.
4,4′-Thiodianiline	DUP.
6,6′-Thiodimetanilic acid	NAC.
2-Thiophenecarboxaldehyde	ABB.
o-Tolidine	DUP, NAC.
o-Tolidine hydrochloride	DUP, EK.
Toluene-2,4-diamine (4-m-Tolylenediamine)	ACY, BL, DUP, G, NAC, SDC, TRC.
Toluene-2,4-disulfonic acid	G.
o-Toluenesulfonamide	MON.
o(and p)-Toluenesulfonamide	ACY.
p-Toluenesulfonamide	MON.
*o(and p)-Toluenesulfonic acid	MON, NAC, NES, SW, TN, UPF.
p-Toluenesulfonic acid	ACY.
p-Toluenesulfonic acid, 2-chloroethyl ester	G.
p-Toluenesulfonic acid, ethyl ester	ACY, ATL, NAC, VPC.
p-Toluenesulfonic acid, methyl ester	AHC, MON, VPC.
p-Toluenesulfonic acid monohydrate	UPF.
p-Toluenesulfono-o-toluidide	G.
o-Toluenesulfonyl chloride	MON.
p-Toluenesulfonyl chloride	MON.
α-Toluenethiol	RBC.
p-Toluhydroquinone (Methylhydroquinone)	EKT.
m-Toluic acid	CWL.
o-Toluic acid	CWL.

TABLE 7B. -- *Cyclic intermediates for which U.S. production or sales were reported, identified by manufacturer, 1961*--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
p-Toluic acid	CWL.
m-Toluidine	DUP, NAC.
o-Toluidine	DUP, NAC.
o-Toluidine hydrochloride	ACY.
p-Toluidine	DUP, NAC.
p-Toluidine hydrochloride	EK.
Toluidines, mixed	DUP.
m-Toluidinomethanesulfonic acid	TRC, VPC.
o-Toluidinomethanesulfonic acid	DUP.
8-(p-Toluidino)-1-naphthalenesulfonic acid	NAC.
*o-(p-Toluoyl)benzoic acid	ACY, DUP, NAC, TRC.
*4-(o-Tolylazo)-o-toluidine (o-Aminoazotoluene)	ACY, DUP, G, KPC, NAC, SDH.
4-(o-Tolylazo)-o-toluidine hydrochloride	G.
2,2′-(m-Tolylimino)diethanol	EKT, G.
2,4,6-Tribromophenol	DOW.
Tribromosalicylanilide	MEE.
1,2,3(and 1,2,4)-Trichlorobenzene	SVT.
1,2,4-Trichlorobenzene	DOW, HK.
N,2,6-Trichloro-p-benzoquinone imine	EK.
1,2,4-Trichloro-5-nitrobenzene	ALL.
2,4,6-Trichlorophenylhydrazine	MEE.
1-(2,4,6-Trichlorophenyl)-3-(4-nitroanilino)-2-pyrazolin-5-one.	EK.
Trichlorophenylsilane	UCS.
*α,α,α-Trichlorotoluene (Benzotrichloride)	HK, HN, TNP.
α,2,4-Trichlorotoluene	HN.
α,2,4(and α,2,6)-Trichlorotoluene	BPC.
1,3,5-Triethylbenzene	DUP, SVT.
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.
α,α,α-Trifluoro-o-toluidine	MEE.
3,4,5-Trimethoxybenzoic acid	ICO.
2,4,5-Trimethylaniline (Pseudocumidine)	NAC.
2,4,6-Trimethylaniline	ACY.
1,2,4-Trimethylbenzene (Pseudocumene)	ENJ, PLC.
1,3,3-Trimethyl-$\Delta^{2,\alpha}$-indolineacetaldehyde	DUP.
1,3,3-Trimethyl-2-methyleneindoline	DUP.
Trimethylphenylammonium iodide	EK.
1,3,5-Trinitrobenzene	EK.
Triphenylmethanol	EK.
2,4,6-Tris[dimethylaminomethyl]phenol	RH.
Tris(2-methyl-1-aziridinyl)phosphine oxide	ICC.
*6,6′-Ureylenebis[1-naphthol-3-sulfonic acid] (J acid urea)	ACY, ATL, BL, CMG, DUP, G, NAC, PCO, TRC, VPC.
Veratraldehyde (3,4-Dimethoxybenzaldehyde)	GIV, SLV.
p-Vinylbenzenesulfonic acid, sodium salt	DUP.
2-Vinylcyclohexene	PLC.
2,2′-Vinylenebis[benzimidazole]	TRC.
5-Vinyl-2-picoline (MVP)	PLC.
2-Vinylpyridine	RIL.
4-Vinylpyridine	RIL.
*Violanthrone (Dibenzanthrone)	ACY, AHC, DUP, G, MAY, TRC.
9-Xanthenecarboxylic acid	MAL.
m-Xylene	PLC, SOC.

TABLE 7B.--*Cyclic intermediates for which U.S. production or sales were reported, identified by manufacturer, 1961*--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
*o-Xylene	ASH, CCP, CSD, DLH, ENJ, GRS, KPC, PLC, SIN, SNT, SOC, TOC.
*p-Xylene	CSD, ENJ, SIN, SOC.
2,5-Xylenesulfonic acid	EK.
Xylenol crystals	ACP, KPT.
Xylenols:	
Low b.p	PIT, PRD.
Medium b.p	KPT, PIT, PRD.
Not classified as to b.p	PCC, PRD.
Xylidines:	
2,4-Xylidine (m-4-Xylidine)	DUP, NAC.
2,5-Xylidine (p-Xylidine)	DUP.
Original mixture	ACY, DUP, NAC.
4-(2,4-Xylylazo)-o-toluidine	NAC.
4-(2,5-Xylylazo)-o-toluidine	ACY.
4-(2,4-Xylylazo)-2,5-xylidine	NAC.
All other cyclic intermediates	ACY, GAM, ICC, MED, MON, NAC.

[1] Does not include manufacturers' identification codes for producers that report to the Division of Bituminous Coal, U.S. Bureau of Mines. These producers are listed in the U.S. Bureau of Mines Mineral Industry Survey *Coke Producers in 1961*, July 1962.

Dyes

TABLE 8B.--*Coal-tar dyes for which U.S. production or sales were reported, identified by manufacturer, 1961*

[Dyes for which separate statistics are given in table 8A are marked below with an asterisk (*); dyes not so marked do not appear in table 8A because the reported data are accepted in confidence and may not be published. Manufacturers' identification codes shown below are taken from table 23. An x signifies that the manufacturer did not consent to his identification with the designated product]

Dye	Manufacturers' identification codes (according to list in table 23)
ACID DYES	
*Acid yellow dyes:	
Acid Yellow 1	ACY, NAC.
Acid Yellow 2	DUP.
*Acid Yellow 3	ACY, DUP, G, NAC.
Acid Yellow 4	SDH.
Acid Yellow 7	NAC.
Acid Yellow 9	ACY.
*Acid Yellow 11	CMG, DUP, VPC.
Acid Yellow 14	TRC.
*Acid Yellow 17	ACY, BKS, CMG, DUP, G, NAC, PCO, SDH, TRC, VPC.
*Acid Yellow 23	ACY, G, KPC, MRX, NAC, SDH, TRC, VPC.
Acid Yellow 25	G, VPC.
Acid Yellow 29	G, NAC, TRC.
Acid Yellow 34	G, NAC.
Acid Yellow 35	VPC.
*Acid Yellow 36	DUP, G, NAC, TRC.
Acid Yellow 38	NAC.
*Acid Yellow 40	ACY, DUP, G, NAC, TRC, VPC.
*Acid Yellow 42	ACY, G, KPC, TRC, VPC.
Acid Yellow 43	ATL.
*Acid Yellow 44	G, KPC, NAC, TRC, VPC.
*Acid Yellow 54	ACY, BKS, CMG, G, NAC, TRC, VPC.
Acid Yellow 60	NAC.
Acid Yellow 63	KPC, NAC.
Acid Yellow 65	TRC.
*Acid Yellow 73	NAC, NYC, SDH, SNA.
Acid Yellow 76	TRC.
Acid Yellow 90	NAC.
Acid Yellow 95	CMG.
*Acid Yellow 99	CMG, G, NAC, TRC, VPC.
Acid Yellow 113	TRC.
Acid Yellow 114	CMG, NAC, TRC.
Acid Yellow 124	DUP.
Acid Yellow 127	TRC.
Acid Yellow 128	TRC.
Other acid yellow dyes	ACY, ALT, BL, DUP, G, VPC.
*Acid orange dyes:	
*Acid Orange 1	ALT, BKS, G, NAC.
Acid Orange 2	NAC, TRC.
Acid Orange 5	ACY.
Acid Orange 6	NAC.
*Acid Orange 7	ACY, ATL, G, KPC, NAC, TRC, YAW, x.
*Acid Orange 8	ACY, DUP, G, NAC, TRC.
*Acid Orange 10	ACY, ATL, DUP, G, NAC, TRC, YAW.
Acid Orange 12	NAC.
Acid Orange 19	G.

TABLE 8B. ***--Coal-tar dyes for which U.S. production or sales were reported, identified by manufacturer, 1961*****--Continued**

Dye	Manufacturers' identification codes (according to list in table 23)
ACID DYES--Continued	
*Acid orange dyes--Continued	
Acid Orange 20	NAC.
*Acid Orange 24	ACY, DUP, G, NAC, TRC, YAW.
Acid Orange 28	NAC.
Acid Orange 31	KPC.
Acid Orange 32	VPC.
Acid Orange 34	ACY.
Acid Orange 45	NAC, TRC.
Acid Orange 49	TRC.
Acid Orange 50	KPC.
Acid Orange 51	CMG, NAC, TRC.
Acid Orange 56	G.
*Acid Orange 60	CMG, DUP, G.
Acid Orange 62	TRC.
Acid Orange 63	G, TRC.
Acid Orange 64	DUP, NAC.
Acid Orange 69	ACY.
Acid Orange 72	G.
*Acid Orange 74	CMG, G, NAC, TRC, VPC.
Acid Orange 76	TRC.
Acid Orange 86	NAC, TRC.
Other acid orange dyes	ACY, ALT, ATL, TRC, VPC.
*Acid red dyes:	
*Acid Red 1	ACY, BKS, DUP, G, KPC, NAC, TRC, VPC, YAW.
*Acid Red 4	ATL, CMG, DUP, G, TRC, VPC, YAW.
Acid Red 12	G, NAC.
*Acid Red 14	DUP, G, NAC, TRC.
*Acid Red 17	ACY, NAC, TRC, YAW.
*Acid Red 18	ACY, DUP, G, NAC, TRC.
*Acid Red 26	ACY, ATL, G, NAC, x.
Acid Red 27	NAC, TRC.
Acid Red 32	G, NAC.
Acid Red 33	NAC, YAW.
Acid Red 34	DUP, NAC.
Acid Red 35	G, KPC.
*Acid Red 37	CMG, DUP, G, NAC, TRC.
Acid Red 39	NAC.
Acid Red 42	G.
Acid Red 51	NYC, SDH.
Acid Red 52	G.
Acid Red 57	TRC.
Acid Red 60	TRC.
Acid Red 66	KPC, NAC.
*Acid Red 73	ACY, DUP, G, NAC, TRC.
Acid Red 76	NAC.
Acid Red 80	AHC, G.
*Acid Red 85	ACY, ALT, ATL, CMG, DUP, G, NAC, TRC, VPC, YAW.
*Acid Red 87	AMS, NAC, NYC, SDH.
*Acid Red 88	ACY, ATL, DUP, G, NAC, TRC, YAW.
*Acid Red 89	G, KPC, TRC, VPC.
Acid Red 92	NAC, NYC, VPC.
Acid Red 94	NYC.
Acid Red 97	G, TRC.
Acid Red 99	CMG, NAC, TRC, VPC.
Acid Red 106	YAW.

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TABLE 8B. ***--Coal-tar dyes for which U.S. production or sales were reported, identified by manufacturer, 1961***--Continued

Dye	Manufacturers' identification codes (according to list in table 23)
ACID DYES--Continued	
*Acid red dyes--Continued	
Acid Red 109	VPC.
Acid Red 113	DUP.
*Acid Red 114	ATL, DUP, G.
*Acid Red 115	G, NAC, TRC.
Acid Red 119	NAC.
Acid Red 133	G.
Acid Red 134	TRC, VPC.
*Acid Red 137	ACY, DUP, G, NAC, TRC.
*Acid Red 151	ACY, KPC, TRC, YAW.
Acid Red 162	VPC.
Acid Red 165	VPC.
Acid Red 167	BKS, NAC, TRC.
Acid Red 175	DUP.
Acid Red 178	DUP.
Acid Red 179	CMG, TRC.
*Acid Red 182	ACY, CMG, DUP, G, NAC.
Acid Red 183	CMG, TRC.
Acid Red 184	TRC.
*Acid Red 186	ACY, BKS, CMG, G, TRC.
Acid Red 189	ACY.
Acid Red 190	ACY.
Acid Red 191	TRC.
Acid Red 194	TRC.
Acid Red 197	DUP, TRC.
Acid Red 207	NAC.
Acid Red 212	TRC.
Acid Red 213	TRC.
Other acid red dyes	ACY, ALT, TRC, VPC.
*Acid violet dyes:	
*Acid Violet 1	CMG, G, NAC, TRC.
*Acid Violet 3	ACY, DUP, NAC, TRC.
Acid Violet 5	VPC.
Acid Violet 6	NAC.
*Acid Violet 7	CMG, DUP, G, KPG, NAC, TRC.
Acid Violet 9	NAC.
Acid Violet 11	G.
*Acid Violet 12	DUP, G, TRC.
Acid Violet 13	DUP.
Acid Violet 14	TRC.
*Acid Violet 17	DUP, G, SDH, TRC.
Acid Violet 21	DUP.
Acid Violet 29	HSH.
Acid Violet 34	AHC, NAC.
*Acid Violet 43	AHC, DUP, HSH, NAC.
Acid Violet 49	ACY, NAC, SDH.
Acid Violet 56	G.
Acid Violet 58	G.
Acid Violet 76	NAC.
Other acid violet dyes	ALT, CMG, DUP.
*Acid blue dyes:	
Acid Blue 1	G, NAC, SDH.
*Acid Blue 7	ACY, G, NAC, SDH.
*Acid Blue 9	G, NAC, SDH, VPC.
Acid Blue 10	KPC, NAC.

TABLE 8B.--*Coal-tar dyes for which U.S. production or sales were reported, identified by manufacturer, 1961*--Continued

Dye	Manufacturers' identification codes (according to list in table 23)
ACID DYES--Continued	
*Acid blue dyes--Continued	
Acid Blue 13	DUP.
Acid Blue 15	DUP, G.
Acid Blue 18	G.
Acid Blue 20	ACY, NAC.
*Acid Blue 22	ACY, G, NYC.
Acid Blue 23	NAC, TRC.
*Acid Blue 25	CMG, DUP, G, NAC, TRC.
Acid Blue 26	NAC.
Acid Blue 27	G.
Acid Blue 29	PDC, YAW.
Acid Blue 34	NAC.
Acid Blue 35	NAC.
*Acid Blue 40	AHC, G, NAC, TRC.
*Acid Blue 41	CMG, G, NAC.
*Acid Blue 43	ACY, G, NAC, TRC.
*Acid Blue 45	ACY, CMG, DUP, G, NAC, TRC.
Acid Blue 47	AHC, DUP.
Acid Blue 48	SUC.
Acid Blue 58	DUP.
*Acid Blue 59	G, NAC, TRC.
Acid Blue 62	G, VPC.
Acid Blue 63	NAC.
Acid Blue 67	CMG, NAC.
Acid Blue 69	DUP, G.
Acid Blue 74	DUP, NAC.
*Acid Blue 78	AHC, DUP, G, ICC.
Acid Blue 79	DUP.
Acid Blue 80	TRC.
Acid Blue 81	AHC.
Acid Blue 83	G.
Acid Blue 89	NAC.
*Acid Blue 90	G, NAC, TRC.
Acid Blue 92	NAC.
Acid Blue 93	SUC.
Acid Blue 102	G, NAC, TRC.
*Acid Blue 104	DUP, G, NAC.
Acid Blue 110	NYC.
Acid Blue 113	CMG, DUP, G.
Acid Blue 118	G, NAC.
Acid Blue 120	G, KPC, NAC.
Acid Blue 122	DUP.
Acid Blue 129	NAC.
Acid Blue 137	NAC.
Acid Blue 145	DUP.
Acid Blue 154	TRC.
*Acid Blue 158 and 158A	ACY, BKS, CMG, DUP, G, NAC, TRC, VPC.
Acid Blue 159	G.
Acid Blue 165	DUP.
Acid Blue 179	G.
Other acid blue dyes	ALT, TRC, VPC.
*Acid green dyes:	
Acid Green 1	ACY, NAC.
*Acid Green 3	ACY, DUP, G, NAC, SDH, TRC, VPC.
Acid Green 5	G.
*Acid Green 9	ACY, DUP, G, NAC, VPC.

TABLE 8B.--*Coal-tar dyes for which U.S. production or sales were reported, identified by manufacturer, 1961*--Continued

Dye	Manufacturers' identification codes (according to list in table 23)
ACID DYES--Continued	
*Acid green dyes--Continued	
*Acid Green 12	G, NAC, TRC.
*Acid Green 16	DUP, G, NAC, SDH, TRC.
*Acid Green 20	ATL, CMG, DUP, NAC, TRC, VPC.
Acid Green 22	G, NAC.
*Acid Green 25	AHC, CMG, G, KPC, NAC, TRC, VPC.
Acid Green 35	TRC.
Acid Green 41	AHC, VPC.
Acid Green 44	VPC.
*Acid Green 50	ACY, G, NAC, VPC.
Other acid green dyes	ALT, DUP, TRC, VPC.
*Acid brown dyes:	
Acid Brown 1	G.
Acid Brown 2	KPC.
Acid Brown 6	G.
*Acid Brown 14	ACY, DUP, G, KPC, NAC, TRC, YAW.
Acid Brown 19	TRC.
Acid Brown 22	DUP.
Acid Brown 28	TRC.
Acid Brown 29	DUP, NAC.
Acid Brown 31	G.
Acid Brown 42	NAC.
Acid Brown 45	TRC.
Acid Brown 96	ACY.
Acid Brown 97	ACY.
Acid Brown 98	ACY, TRC.
Acid Brown 152	G.
Acid Brown 158	G.
Acid Brown 223	G.
Acid Brown 273	ACY.
Other acid brown dyes	ALT, DUP, G, VPC.
*Acid black dyes:	
*Acid Black 1	ACY, ATL, BKS, CMG, DUP, G, KPC, NAC, SDH, TRC, YAW.
Acid Black 2	ACY, NAC.
Acid Black 12	NAC.
Acid Black 16	NAC.
Acid Black 18	NAC.
*Acid Black 24	CMG, DUP, G, NAC.
Acid Black 26, 26A, and 26B	DUP, NAC, TRC.
Acid Black 41	G, NAC.
*Acid Black 48	ACY, AHC, CMG, DUP, G, NAC, TRC.
*Acid Black 52	BKS, G, NAC, TRC, VPC.
Acid Black 53	NAC.
Acid Black 58	TRC.
Acid Black 60	TRC.
Acid Black 92	ACY.
Acid Black 140	G.
Other acid black dyes	ALT, BL, CMG, DUP, G, TRC, VPC.
AZOIC DYES AND COMPONENTS	
Azoic Compositions	
Azoic yellow dyes:	
*Azoic Yellow 1	ALL, ATL, BUC, G, HST, VPC.
*Azoic Yellow 2	ALL, BUC, G, HST, x.
Azoic Yellow 3	ATL, G.
Other azoic yellow dyes	BUC.

TABLE 8B. --*Coal-tar dyes for which U.S. production or sales were reported, identified by manufacturer, 1961*--Continued

Dye	Manufacturers' identification codes (according to list in table 23)
AZOIC DYES AND COMPONENTS--Continued	
Azoic Compositions--Continued	
Azoic orange dyes:	
*Azoic Orange 3	ALL, ATL, BUC, G, HST, SNA, x.
Azoic Orange 4	G.
*Azoic red dyes:	
*Azoic Red 1	ALL, ATL, BUC, DUP, G, HST, VPC, x.
*Azoic Red 2	ATL, AUG, BUC, DUP, G, x.
*Azoic Red 6	ACY, ALL, ATL, AUG, BUC, DUP, G, HST, SNA, VPC, x.
Azoic Red 13	G.
Azoic Red 14	G.
Azoic Red 15	G.
*Azoic Red 16	ATL, AUG, G.
Azoic Red 73	G.
Azoic Red 74	G.
Other azoic red dyes	ATL, BUC, G, VPC.
Azoic violet dyes:	
*Azoic Violet 1	ATL, G, HST, SNA, VPC, x.
Other azoic violet dyes	G.
*Azoic blue dyes:	
Azoic Blue 2	G.
*Azoic Blue 3	ALL, ATL, BUC, DUP, G, x.
Azoic Blue 4	G.
Azoic Blue 5	G, HST.
Azoic Blue 6	ATL, G.
Azoic Blue 7	G.
Other azoic blue dyes	VPC.
Azoic green dyes:	
Azoic Green 1	ATL, G.
Other azoic green dyes	VPC.
*Azoic brown dyes:	
Azoic Brown 7	ATL.
*Azoic Brown 9	ATL, BUC, G, HST, VPC, x.
Azoic Brown 10	ATL, BUC, G.
Azoic Brown 26	G.
Other azoic brown dyes	ATL, BUC, G, VPC.
*Azoic black dyes:	
Azoic Black 1	G, HST
Azoic Black 2	ATL, DUP.
Azoic Black 4	ALL, ATL, G.
Azoic Black 15	G.
Other azoic black dyes	ALL, ATL, G, VPC.
All other azoic compositions	x.
Azoic Diazo Components, Bases (Fast Color Bases)	
Azoic Diazo Component 1, base	SDH.
Azoic Diazo Component 2, base	ATL, KPC.
Azoic Diazo Component 3, base	SDH.
*Azoic Diazo Component 4, base	ALL, G, SDH.
Azoic Diazo Component 5, base	AUG, G, SDH.
Azoic Diazo Component 8, base	DUP, KPC.
*Azoic Diazo Component 9, base	DUP, KPC, VPC.

TABLE 8B. ***--Coal-tar dyes for which U.S. production or sales were reported, identified by manufacturer, 1961*--Continued**

Dye	Manufacturers' identification codes (according to list in table 23)
AZOIC DYES AND COMPONENTS--Continued	
Azoic Diazo Components, Bases (Fast Color Bases)--Continued	
Azoic Diazo Component 10, base	AUG, G, VPC.
*Azoic Diazo Component 12, base	ALL, DUP, KPC, SDH, VPC.
*Azoic Diazo Component 13, base	ALL, AUG, DUP, G, KPC, SDH.
Azoic Diazo Component 20, base	ALL, G.
*Azoic Diazo Component 28, base	ALL, AUG, G, KPC.
*Azoic Diazo Component 32, base	ALL, ATL, AUG, BUC, DUP, G, KPC, SDH, SNA.
Azoic Diazo Component 34, base	G.
Azoic Diazo Component 37, base	KPC.
Azoic Diazo Component 41, base	ALL, G.
Azoic Diazo Component 42, base	ALL, G.
*Azoic Diazo Component 48, base	ALL, CWN, DUP, G, SNA.
Other azoic diazo components, bases	VPC.
Azoic Diazo Components, Salts (Fast Color Salts)	
*Azoic Diazo Component 1, salt	AUG, G, KPC.
Azoic Diazo Component 2, salt	ALL, G.
*Azoic Diazo Component 3, salt	ALL, ATL, AUG, G, KPC, NAC, SDH, VPC.
Azoic Diazo Component 4, salt	ALL, DUP.
*Azoic Diazo Component 5, salt	AUG, G, KPC, NAC, SDH, VPC.
*Azoic Diazo Component 6, salt	AUG, G, KPC.
*Azoic Diazo Component 8, salt	ALL, AUG, G, KPC, SDH.
*Azoic Diazo Component 9, salt	ALL, AUG, G, KPC, NAC, SDH, VPC.
Azoic Diazo Component 10, salt	G, SDH.
*Azoic Diazo Component 11, salt	ALL, ATL, G, KPC, VPC.
*Azoic Diazo Component 12, salt	ALL, AUG, G, KPC, SDH, VPC.
*Azoic Diazo Component 13, salt	ALL, AUG, G, KPC, NAC, SDH, VPC.
*Azoic Diazo Component 20, salt	ALL, G, SDH.
*Azoic Diazo Component 28, salt	ALL, AUG, G, KPC, NAC, VPC.
Azoic Diazo Component 32, salt	ALL, NAC.
Azoic Diazo Component 34, salt	G.
Azoic Diazo Component 35, salt	G.
*Azoic Diazo Component 36, salt	ALL, G, KPC, NAC.
Azoic Diazo Component 37, salt	G, KPC.
Azoic Diazo Component 41, salt	ALL, G.
*Azoic Diazo Component 42, salt	ALL, G, VPC.
Azoic Diazo Component 44, salt	G.
*Azoic Diazo Component 48, salt	ALL, G, KPC, NAC, VPC.
*Azoic Diazo Component 49, salt	G, KPC, SDH.
Other azoic diazo components, salts	BUC, G.
Azoic Coupling Components (Naphthol AS and Derivatives)	
Azoic Coupling Component 1	AUG.
*Azoic Coupling Component 2	ACY, AUG, BUC, DUP, G, NAC, PCW.
*Azoic Coupling Component 3	AUG, BUC, G, KPC, PCW.
*Azoic Coupling Component 4	AUG, G, KPC, PCW, SDH.
*Azoic Coupling Component 5	ALL, G, KPC, PCW, SDH.
*Azoic Coupling Component 7	AUG, BUC, G, KPC, PCW.
Azoic Coupling Component 8	G, KPC, PCW.

TABLE 8B. ***--Coal-tar dyes for which U.S. production or sales were reported, identified by manufacturer, 1961***--Continued

Dye	Manufacturers' identification codes (according to list in table 23)
AZOIC DYES AND COMPONENTS--Continued	
Azoic Coupling Components (Naphthol AS and Derivatives)--Continued	
Azoic Coupling Component 10	PCW.
Azoic Coupling Component 11	G, KPC, PCW, SDH.
*Azoic Coupling Component 12	ALL, AUG, BUC, G, KPC, PCW.
*Azoic Coupling Component 13	ALL, G, KPC, PCW, SDH.
*Azoic Coupling Component 14	ALL, ATL, AUG, BUC, G, KPC, NAC, PCW.
Azoic Coupling Component 15	G.
Azoic Coupling Component 16	G, SDH.
*Azoic Coupling Component 17	ACY, ALL, AUG, BUC, G, KPC, PCW.
*Azoic Coupling Component 18	ACY, ATL, AUG, BUC, DUP, G, KPC, NAC, PCW.
*Azoic Coupling Component 19	G, KPC, PCW, SDH.
*Azoic Coupling Component 20	ALL, ATL, AUG, BUC, G, KPC, PCW.
*Azoic Coupling Component 21	ALL, ATL, AUG, BUC, KPC, PCW.
Azoic Coupling Component 23	G, PCW.
Azoic Coupling Component 24	G, VPC.
*Azoic Coupling Component 29	ATL, BUC, G, KPC, PCW.
Azoic Coupling Component 33	G.
*Azoic Coupling Component 34	ALL, ATL, BUC, G, PCW.
*Azoic Coupling Component 35	ALL, G, KPC, PCW.
Azoic Coupling Component 36	G.
Azoic Coupling Component 43	ALL, G.
Other azoic coupling components	ATL, G, PCO.
BASIC DYES	
Basic yellow dyes:	
Basic Yellow 1	DUP.
*Basic Yellow 2	ACY, DUP, NAC.
Basic Yellow 5	NAC.
Basic Yellow 10	G.
Basic Yellow 11	DUP, G.
Basic Yellow 13	DUP, G.
Basic Yellow 15	DUP.
Basic Yellow 16	NAC.
Basic Yellow 26	ACY.
Basic Yellow 27	ACY.
Other basic yellow dyes	G.
*Basic orange dyes:	
*Basic Orange 1	ACY, DUP, G, NAC.
*Basic Orange 2	ACY, DUP, G, NAC.
Basic Orange 10	VPC.
Basic Orange 14	G, VPC.
Basic Orange 17	NAC.
Basic Orange 21	DUP, G, NAC.
Basic Orange 24	DUP.
Basic Orange 25	DUP.
Basic Orange 26	DUP.
Basic Orange 31	ACY.
Other basic orange dyes	G.
Basic red dyes:	
Basic Red 1	DUP, G.
*Basic Red 2	DUP, G, NAC.
Basic Red 9	ACY, SUC, SW.
Basic Red 13	G.

TABLE 8B. ***--Coal-tar dyes for which U.S. production or sales were reported, identified by manufacturer, 1961*** **--Continued**

Dye	Manufacturers' identification codes (according to list in table 23)
BASIC DYES--Continued	
Basic red dyes--Continued	
Basic Red 14	DUP, G, NAC.
Basic Red 15	DUP, G.
Basic Red 16	DUP.
Basic Red 17	DUP.
Basic Red 18	DUP.
Basic Red 20	DUP.
Basic Red 30	ACY.
Basic violet dyes:	
*Basic Violet 1	ACY, DSC, G, NAC, SUC.
Basic Violet 2	ACY.
*Basic Violet 3	DSC, DUP, G, NAC, SDH.
*Basic Violet 4	DSC, DUP, G, NAC.
Basic Violet 5	NAC.
Basic Violet 7	G.
Basic Violet 10	ACY, DUP, G, NAC.
Basic Violet 13	DSC.
Basic Violet 14	ACY, NYC.
Basic Violet 15	DUP.
Basic Violet 16	DUP.
Basic Violet 18	DUP.
Other basic violet dyes	ACY, G.
*Basic blue dyes:	
*Basic Blue 1	DSC, G, NAC, SDH.
Basic Blue 3	G.
Basic Blue 4	DUP.
Basic Blue 5	DSC, SDH.
Basic Blue 6	ACY, NAC.
*Basic Blue 7	DSC, DUP, G, NAC, SDH.
*Basic Blue 9	ACY, G, NAC, SDH.
Basic Blue 11	DSC, DUP.
Basic Blue 21	DUP.
Basic Blue 22	DUP.
*Basic Blue 26	DSC, DUP, G, NAC, SDH.
Basic Blue 35	DUP.
Basic Blue 36	DUP.
Basic Blue 38	DUP.
Basic Blue 39	DUP.
Other basic blue dyes	ACY.
Basic green dyes:	
*Basic Green 1	ACY, DSC, DUP, NAC, SDH.
Basic Green 3	DUP.
*Basic Green 4	ACY, DSC, DUP, NAC, SDH.
Basic Green 5	ACY.
Other basic green dyes	DUP.
Basic brown dyes:	
*Basic Brown 1	ACY, DUP, G, NAC, TRC.
Basic Brown 2	G, NAC.
*Basic Brown 4	ACY, DUP, G, NAC, TRC.
Other basic brown dyes	DUP.
Basic black dye: Basic Black 3	G.

TABLE 8B. ***--Coal-tar dyes for which U.S. production or sales were reported, identified by manufacturer, 1961*****--Continued**

Dye	Manufacturers' identification codes (according to list in table 23)
DIRECT DYES	
*Direct yellow dyes:	
*Direct Yellow 4	ACY, DUP, G, NAC, TRC.
*Direct Yellow 5	ACY, G, NAC.
*Direct Yellow 6	ACY, DUP, G, NAC, TRC.
Direct Yellow 7	PCO.
*Direct Yellow 8	G, NAC, TRC.
Direct Yellow 9	DUP.
*Direct Yellow 11	ACY, DUP, G, NAC, TRC.
*Direct Yellow 12	BKS, DUP, G, NAC, TRC.
Direct Yellow 19	TRC.
Direct Yellow 20	TRC.
Direct Yellow 23	DUP.
*Direct Yellow 26	ALT, DUP, G, NAC.
Direct Yellow 27	G, NAC.
*Direct Yellow 28	DUP, G, NAC, PCO, TRC.
*Direct Yellow 29	DUP, G, PCO.
Direct Yellow 39	TRC.
Direct Yellow 41	ALT, TRC.
*Direct Yellow 44	ALT, BKS, CMG, DUP, G, NAC, PCO, TRC, VPC.
*Direct Yellow 50	BKS, BL, DUP, G, NAC, PCO, TRC, VPC.
Direct Yellow 59	DUP, NAC, PCO.
Direct Yellow 62	G, NAC.
Direct Yellow 63	DUP.
Direct Yellow 64	TRC.
Direct Yellow 81	BKS, TRC.
Direct Yellow 84	G, TRC.
Direct Yellow 107	G.
Direct Yellow 114	ACY.
Other direct yellow dyes	ACY, ALT, ATL, BKS, DUP, G, NAC, PCO, TRC, VPC.
*Direct orange dyes:	
*Direct Orange 1	BKS, CMG, KPC, NAC, TRC, VPC.
Direct Orange 6	KPC, NAC.
*Direct Orange 8	DUP, G, NAC, TRC.
Direct Orange 10	KPC, NAC.
Direct Orange 11	G.
*Direct Orange 15	ACY, DUP, G, NAC, TRC.
*Direct Orange 26	ACY, CMG, DUP, G, TRC, VPC.
*Direct Orange 29	ATL, BKS, NAC, TRC.
*Direct Orange 34	ACY, CMG, DUP, G, NAC.
*Direct Orange 37	ACY, CMG, DUP, G, TRC.
Direct Orange 38	NAC.
*Direct Orange 39	BKS, CMG, DUP, G, TRC.
Direct Orange 40	DUP.
Direct Orange 42	TRC.
Direct Orange 48	DUP.
Direct Orange 55	DUP, NAC.
Direct Orange 59	G, DUP.
Direct Orange 61	TRC.
Direct Orange 64	VPC.
Direct Orange 67	NAC, VPC.
Direct Orange 70	TRC.
*Direct Orange 72	ACY, ATL, BKS, BL, NAC, PCO, TRC, VPC.
*Direct Orange 73	DUP, G, NAC, TRC, VPC.
Direct Orange 74	DUP, G.
Direct Orange 76	DUP, NAC.

TABLE 8B.--*Coal-tar dyes for which U.S. production or sales were reported, identified by manufacturer, 1961*--Continued

Dye	Manufacturers' identification codes (according to list in table 23)
DIRECT DYES--Continued	
*Direct orange dyes--Continued	
Direct Orange 78	DUP, VPC.
Direct Orange 79	DUP.
Direct Orange 80	DUP, VPC.
*Direct Orange 81	DUP, G, NAC, VPC.
Direct Orange 83	G, NAC.
Direct Orange 88	DUP.
*Direct Orange 102	ACY, DUP, G.
Other direct orange dyes	ALT, ATL, BKS, BL, DUP, PCO, TRC, VPC.
*Direct red dyes:	
*Direct Red 1	ATL, DUP, G, KPC, NAC, TRC, YAW.
*Direct Red 2	ATL, DUP, NAC, TRC.
Direct Red 4	ALT, NAC, TRC, VPC.
Direct Red 5	NAC.
Direct Red 7	YAW.
*Direct Red 10	ACY, ATL, KPC, NAC.
*Direct Red 13	ATL, DUP, G, KPC, NAC, TRC, YAW.
*Direct Red 16	ATL, G, KPC, NAC, TRC.
Direct Red 20	G, NAC.
*Direct Red 23	ATL, BKS, CMG, DUP, G, KPC, NAC, TRC.
*Direct Red 24	ATL, BKS, BL, KPC, NAC, PCO, TRC, VPC.
*Direct Red 26	DUP, G, NAC, PCO, TRC, VPC.
*Direct Red 28	ATL, BKS, DUP, NAC, TRC.
Direct Red 30	VPC.
*Direct Red 31	ATL, DUP, G, NAC, TRC.
Direct Red 32	NAC.
*Direct Red 37	ACY, ATL, G, KPC, NAC, TRC, YAW.
*Direct Red 39	ATL, G, NAC, TRC, YAW.
Direct Red 45	PCO.
Direct Red 46	TRC.
Direct Red 47	PCO.
Direct Red 53	NAC.
Direct Red 62	TRC.
Direct Red 72	ACY, G, TRC.
Direct Red 73	DUP.
*Direct Red 75	ACY, CMG, DUP, G, NAC, VPC.
Direct Red 76	NAC.
*Direct Red 79	BKS, CMG, G, KPC, NAC, PCO, TRC, VPC.
*Direct Red 80	BKS, BL, CMG, DUP, G, KPC, NAC, TRC, VPC.
*Direct Red 81	ACY, ALT, BL, CMG, DUP, G, KPC, NAC, TRC, VPC, YAW.
*Direct Red 83	ALT, ATL, BKS, CMG, DUP, G, NAC, TRC.
*Direct Red 84	G, NAC, TRC.
Direct Red 94	DUP, NAC.
Direct Red 99	NAC.
Direct Red 100	TRC.
Direct Red 111	G.
Direct Red 117	DUP.
Direct Red 120	G.
*Direct Red 122	CMG, DUP, G, NAC, TRC, VPC.
*Direct Red 123	G, KPC, NAC, VPC.
*Direct Red 127 and 127A	DUP, G, NAC, TRC.
Direct Red 139	NAC, VPC.
Direct Red 148	DUP, G, TRC.
*Direct Red 149	CMG, DUP, G, KPC, NAC, TRC.
*Direct Red 152	CMG, DUP, NAC.

TABLE 8B. ***--Coal-tar dyes for which U.S. production or sales were reported, identified by manufacturer, 1961*--Continued**

Dye	Manufacturers' identification codes (according to list in table 23)
DIRECT DYES--Continued	
*Direct red dyes--Continued	
Direct Red 153	NAC, VPC.
Direct Red 155	G, VPC.
Direct Red 209	TRC.
Other direct red dyes	ALT, BL, DUP, G, PCO, TRC.
*Direct violet dyes:	
*Direct Violet 1	DUP, KPC, NAC, TRC.
Direct Violet 7	G, NAC.
*Direct Violet 9	ATL, DUP, G, KPC, NAC, TRC.
*Direct Violet 14	ATL, NAC, TRC.
*Direct Violet 22	DUP, NAC, TRC.
Direct Violet 30	KPC.
Direct Violet 47	DUP, G.
Direct Violet 48	DUP, NAC, TRC.
Direct Violet 49	NAC.
Direct Violet 51	DUP, NAC.
Direct Violet 60	NAC.
Direct Violet 67	DUP, NAC.
Direct Violet 68	DUP.
Other direct violet dyes	ALT.
*Direct blue dyes:	
*Direct Blue 1	ACY, ATL, BKS, BL, DUP, G, KPC, NAC, TRC, VPC, YAW.
*Direct Blue 2	ACY, ATL, BL, DUP, G, KPC, NAC, TRC, VPC, YAW.
Direct Blue 3	NAC.
*Direct Blue 6	ACY, ATL, BL, DUP, G, KPC, NAC, TRC, YAW.
*Direct Blue 8	ACY, ATL, DUP, G, NAC, TRC, YAW.
Direct Blue 10	DUP.
*Direct Blue 14	ATL, DUP, NAC, TRC.
*Direct Blue 15	ATL, DUP, G, NAC, TRC.
Direct Blue 18	G.
Direct Blue 21	TRC.
*Direct Blue 22	ATL, DUP, NAC, TRC.
*Direct Blue 24	BKS, DUP, NAC, TRC, YAW.
*Direct Blue 25	DUP, G, NAC, TRC, YAW.
*Direct Blue 26	ATL, DUP, TRC.
Direct Blue 27	DUP.
Direct Blue 34	VPC.
Direct Blue 47	ACY.
Direct Blue 52	NAC.
Direct Blue 55	NAC.
Direct Blue 61	YAW.
Direct Blue 66	DUP, VPC.
*Direct Blue 67	DUP, NAC, TRC, VPC.
*Direct Blue 71	DUP, G, NAC, TRC, VPC.
Direct Blue 74	DUP.
Direct Blue 75	TRC.
*Direct Blue 76	ATL, BKS, BL, DUP, G, NAC, TRC, VPC.
*Direct Blue 78	ATL, CMG, DUP, G, NAC, TRC, VPC.
Direct Blue 79	TRC.
*Direct Blue 80	ALT, ATL, BKS, BL, DUP, G, NAC, TRC.
Direct Blue 84	DUP.
*Direct Blue 86	ACY, ATL, BL, CMG, DUP, G, ICC, KPC, NAC, TMS, TRC, VPC.
*Direct Blue 98	ACY, ALT, ATL, BKS, G, ICC, KPC, NAC, STD, TRC, VPC.
Direct Blue 99	BL, G.

TABLE 8B. ***--Coal-tar dyes for which U.S. production or sales were reported, identified by manufacturer, 1961*--Continued**

Dye	Manufacturers' identification codes (according to list in table 23)
DIRECT DYES--Continued	
*Direct blue dyes--Continued	
Direct Blue 100	BKS, NAC, TRC.
Direct Blue 102	CMG.
Direct Blue 104	DUP.
*Direct Blue 120 and 120A	ATL, BKS, DUP, G, TRC.
*Direct Blue 126	DUP, G, NAC, TRC, VPC.
Direct Blue 130	NAC.
Direct Blue 133	G.
Direct Blue 136	G.
Direct Blue 138	G.
Direct Blue 143	DUP.
*Direct Blue 151	ATL, G, NAC, TRC.
Direct Blue 180	BKS, TRC.
Direct Blue 199	G.
Direct Blue 218	KPC.
Other direct blue dyes	ACY, ALT, ATL, BL, DUP, G, NAC, TRC, VPC.
*Direct green dyes:	
*Direct Green 1	ACY, ATL, BKS, DUP, G, KPC, NAC, TRC, YAW.
*Direct Green 6	ACY, ATL, BKS, DUP, G, KPC, NAC, TRC, YAW.
Direct Green 8	NAC, TRC, YAW.
Direct Green 11	NAC.
Direct Green 12	DUP, NAC, TRC.
Direct Green 14	NAC.
Direct Green 15	DUP.
Direct Green 26	NAC, TRC.
Direct Green 27	ATL, NAC, TRC.
Direct Green 28	TRC.
*Direct Green 38	DUP, G, TRC.
Direct Green 39	G.
Direct Green 41	DUP.
Direct Green 45	VPC.
Direct Green 47	DUP, G.
Other direct green dyes	ACY, ALT, ATL, x.
*Direct brown dyes:	
*Direct Brown 1	ACY, ATL, BKS, DUP, G, NAC.
*Direct Brown 1A	TRC, YAW.
*Direct Brown 2	ACY, ATL, BKS, DUP, G, KPC, NAC, TRC, YAW.
*Direct Brown 6	ATL, DUP, G, KPC, NAC, TRC.
Direct Brown 11	NAC.
Direct Brown 21	DUP.
Direct Brown 25	DUP, NAC.
Direct Brown 27	G.
Direct Brown 29	NAC.
*Direct Brown 31	DUP, G, KPC, NAC, PCO, YAW.
Direct Brown 33	DUP, NAC.
Direct Brown 35	NAC.
Direct Brown 40	DUP, KPC.
Direct Brown 44	G, YAW.
Direct Brown 48	KPC.
Direct Brown 59	ACY.
*Direct Brown 74	DUP, KPC, NAC.
*Direct Brown 95	ALT, ATL, DUP, G, KPC, NAC, PCO, TRC, YAW.
Direct Brown 101	G.
Direct Brown 105	DUP.

TABLE 8B. ***--Coal-tar dyes for which U.S. production or sales were reported, identified by manufacturer, 1961*--Continued**

Dye	Manufacturers' identification codes (according to list in table 23)
DIRECT DYES--Continued	
*Direct brown dyes--Continued	
Direct Brown 106	G, NAC.
*Direct Brown 111	DUP, G, TRC, VPC.
Direct Brown 112	NAC.
Direct Brown 125	G.
*Direct Brown 154	DUP, G, TRC, YAW.
Other direct brown dyes	ALT, ATL, BL, DUP, NAC, TRC, VPC, YAW.
*Direct black dyes:	
Direct Black 3	DUP.
*Direct Black 4	ATL, BKS, DUP, G, NAC, TRC, YAW.
Direct Black 8	TRC.
*Direct Black 9	BKS, DUP, G, NAC, TRC.
Direct Black 17	G, NAC.
Direct Black 19	BKS, G, NAC, TRC.
*Direct Black 22	ATL, BKS, CMG, DUP, G, KPC, NAC, TRC, VPC, YAW.
Direct Black 36	KPC.
*Direct Black 37	DUP, KPC, NAC.
*Direct Black 38	ACY, ATL, BKS, BL, DUP, G, KPC, NAC, TRC, YAW.
Direct Black 41	G.
Direct Black 44	TRC.
Direct Black 45	TRC.
*Direct Black 51	DUP, G, KPC, NAC, TRC.
Direct Black 55	DUP.
Direct Black 56	NAC, TRC.
Direct Black 61	TRC.
Direct Black 67	DUP, NAC.
*Direct Black 71	ATL, CMG, NAC.
Direct Black 74	NAC.
Direct Black 75	G.
*Direct Black 78	BKS, DUP, NAC, TRC.
*Direct Black 80	ATL, BKS, BL, G, KPC, NAC, PCO, TRC, VPC, YAW.
Direct Black 109	G.
Direct Black 123	G.
Other direct black dyes	ACY, ALT, ATL, BL, G, NAC, YAW.
DISPERSE DYES	
*Disperse yellow dyes:	
Disperse Yellow 1	G.
Disperse Yellow 2	DUP.
*Disperse Yellow 3	DUP, EKT, G, HSH, ICC, KPC, NAC, SDH, STD, TRC.
*Disperse Yellow 5	EKT, G, ICC.
Disperse Yellow 8	DUP, TRC.
Disperse Yellow 11	NAC.
Disperse Yellow 17	KPC.
Disperse Yellow 23	DUP, EKT.
Disperse Yellow 28	KPC.
Disperse Yellow 31	G.
Disperse Yellow 32	DUP.
*Disperse Yellow 33	EKT, ICC, KPC.
Disperse Yellow 34	EKT.
*Disperse Yellow 37	EKT, KPC, TRC.
Disperse Yellow 42	DUP.
Disperse Yellow 45	G.
Disperse Yellow 54	DUP.
Other disperse yellow dyes	DUP, EKT, G, ICC, KPC.

TABLE 8B.--*Coal-tar dyes for which U.S. production or sales were reported, identified by manufacturer, 1961*--Continued

Dye	Manufacturers' identification codes (according to list in table 23)
DISPERSE DYES--Continued	
*Disperse orange dyes:	
*Disperse Orange 3	DUP, EKT, G, ICC, KPC, STD, TRC.
*Disperse Orange 5	EKT, G, KPC.
Disperse Orange 6	KPC.
Disperse Orange 16	KPC.
*Disperse Orange 17	EKT, HSH, ICC, STD.
Disperse Orange 21	TRC.
Disperse Orange 25	DUP.
Disperse Orange 26	DUP.
Other disperse orange dyes	EKT, ICC, NAC.
*Disperse red dyes:	
*Disperse Red 1	DUP, EKT, G, ICC, KPC, SDH, STD, TRC.
Disperse Red 4	G, ICC.
*Disperse Red 5	EKT, G, HSH, ICC, KPC, NAC, STD, TRC.
Disperse Red 7	KPC.
Disperse Red 9	ACY, DUP, KPC.
Disperse Red 11	DUP, G, KPC.
*Disperse Red 13	DUP, G, ICC, KPC.
Disperse Red 14	KPC.
*Disperse Red 15	G, HSH, ICC, KPC, NAC, TRC.
*Disperse Red 17	EKT, G, HSH, ICC, KPC, SDH, STD, TRC.
Disperse Red 20	NAC.
Disperse Red 21	EKT.
Disperse Red 22	KPC.
Disperse Red 30	EKT, TRC.
Disperse Red 31	ICC.
Disperse Red 32	G.
Disperse Red 59	DUP, G.
Disperse Red 60	DUP.
Disperse Red 61	DUP.
Disperse Red 62	DUP.
Disperse Red 65	DUP.
Other disperse red dyes	DUP, EKT, ICC, TRC.
*Disperse violet dyes:	
*Disperse Violet 1	DUP, G, ICC, KPC, STD, TRC.
*Disperse Violet 4	DUP, G, ICC, KPC, NAC.
Disperse Violet 8	G.
Disperse Violet 11	EKT, NAC.
Disperse Violet 14	DUP.
Disperse Violet 18	DUP.
Disperse Violet 26	DUP.
Disperse Violet 27	DUP.
Other disperse violet dyes	EKT, G, ICC.
*Disperse blue dyes:	
*Disperse Blue 1	G, KPC, TRC.
*Disperse Blue 3	EKT, G, HSH, ICC, KPC, NAC, STD, TRC.
*Disperse Blue 7	G, ICC, KPC, NAC, TRC.
Disperse Blue 8	DUP.
Disperse Blue 9	G, ICC.
Disperse Blue 19	KPC.
Disperse Blue 27	EKT.
Disperse Blue 59	DUP.
Disperse Blue 60	DUP.
Disperse Blue 61	DUP.

TABLE 8B.--*Coal-tar dyes for which U.S. production or sales were reported, identified by manufacturer, 1961*--Continued

Dye	Manufacturers' identification codes (according to list in table 23)
DISPERSE DYES--Continued	
*Disperse blue dyes--Continued	
Disperse Blue 62	DUP.
Disperse Blue 63	DUP.
Disperse Blue 64	DUP.
Disperse Blue 67	DUP.
Other disperse blue dyes	EKT, G, ICC, NAC, VPC.
Disperse brown dyes	DUP, EKT, ICC.
Disperse black dyes:	
*Disperse Black 1	DUP, G, KPC, TRC.
Disperse Black 2	DUP, KPC, TRC.
Disperse Black 6	DUP, KPC.
Disperse Black 7	G, YAW.
*Disperse Black 9	DUP, EKT, G, KPC, NAC.
Other disperse black dyes	DUP, EKT, ICC, YAW.
FIBER-REACTIVE DYES	
Reactive yellow dyes:	
Reactive Yellow 2	TRC.
Reactive Yellow 3	TRC.
Reactive Yellow 6	TRC.
Other reactive yellow dyes	AHC, HST.
Reactive orange dyes:	
Reactive Orange 2	TRC.
Other reactive orange dyes	AHC, HST.
Reactive red dyes:	
Reactive Red 4	TRC.
Other reactive red dyes	AHC, HST.
Reactive violet dyes:	
Reactive Violet 2	TRC.
Other reactive violet dyes	HST.
Reactive blue dyes:	
Reactive Blue 2	TRC.
Reactive Blue 5	TRC.
Reactive Blue 7	TRC.
Other reactive blue dyes	AHC, HST.
Reactive brown dye: Reactive Brown 1	TRC.
Reactive black dyes:	
Reactive Black 1	TRC.
Other reactive black dyes	HST.
FLUORESCENT BRIGHTENING AGENTS	
Fluorescent Brightening Agent 1	GGY.
Fluorescent Brightening Agent 2	FBC.
Fluorescent Brightening Agent 4	ACY.
Fluorescent Brightening Agent 6	ACY.
Fluorescent Brightening Agent 8	ACY.
Fluorescent Brightening Agent 9	ACY, TRC.
Fluorescent Brightening Agent 22	GGY.
Fluorescent Brightening Agent 24	GGY.
Fluorescent Brightening Agent 25	G.
Fluorescent Brightening Agent 28	ACY, DUP.
Fluorescent Brightening Agent 30	DUP, G.
Fluorescent Brightening Agent 33	G.

TABLE 8B.--*Coal-tar dyes for which U.S. production or sales were reported, identified by manufacturer, 1961*--Continued

Dye	Manufacturers' identification codes (according to list in table 23)
FLUORESCENT BRIGHTENING AGENTS--Continued	
Fluorescent Brightening Agent 34	DUP.
Fluorescent Brightening Agent 37	TRC.
Fluorescent Brightening Agent 45	TRC.
Fluorescent Brightening Agent 46	GGY.
Fluorescent Brightening Agent 49	S.
Fluorescent Brightening Agent 52	S.
Fluorescent Brightening Agent 54	GGY.
Fluorescent Brightening Agent 65	TRC.
Fluorescent Brightening Agent 66	SDH.
Fluorescent Brightening Agent 67	FBC, G.
*Fluorescent Brightening Agent 68	ACY, CCW, SDH.
Fluorescent Brightening Agent 71	ACY, G.
Fluorescent Brightening Agent 75	G.
Fluorescent Brightening Agent 102	DUP.
Fluorescent Brightening Agent 103	DUP.
Fluorescent Brightening Agent 125	ACY.
Other fluorescent brightening agents	ACY, CCW, G, GGY, S, TRC, VPC.
FOOD, DRUG, AND COSMETIC COLORS	
Food, Drug, and Cosmetic Dyes	
*FD&C Blue No. 1	BAT, KON, NAC, SDH, WJ.
FD&C Blue No. 2	KON, NAC.
FD&C Green No. 1	KON, NAC, WJ.
FD&C Green No. 2	NAC, SDH, WJ.
FD&C Green No. 3	WJ.
*FD&C Red No. 2	BAT, KON, NAC, SDH, STG, WJ.
*FD&C Red No. 3	BAT, KON, NAC, SDH, STG.
*FD&C Red No. 4	BAT, KON, NAC, SDH, STG, WJ.
FD&C Violet No. 1	KON, NAC.
*FD&C Yellow No. 5	KON, NAC, SDH, STG, WJ.
*FD&C Yellow No. 6	BAT, KON, NAC, SDH, STG, WJ.
Drug and Cosmetic Dyes	
D&C Black No. 1	KON, NAC, YAW.
D&C Blue No. 1	KON.
D&C Blue No. 6	KON, NAC.
D&C Blue No. 7	KON.
D&C Blue No. 9	NAC.
D&C Green No. 5	KON.
D&C Green No. 6	HSH, KON.
D&C Green No. 8	KON, SDH.
D&C Orange No. 3	KON.
*D&C Orange No. 4	KON, SNA, TMS.
D&C Orange No. 5	KON, TMS.
D&C Orange No. 10	TMS.
D&C Orange No. 14	TMS.
D&C Orange No. 15	SNA.
D&C Orange No. 17	KON, SNA.
D&C Red No. 2	KON, SNA.
D&C Red No. 3	KON, SNA.
D&C Red No. 6	SNA, TMS.

TABLE 8B.--*Coal-tar dyes for which U.S. production or sales were reported, identified by manufacturer, 1961*--Continued

Dye	Manufacturers' identification codes (according to list in table 23)
FOOD, DRUG, AND COSMETIC COLORS--Continued	
Drug and Cosmetic Dyes--Continued	
*D&C Red No. 7	KON, SNA, TMS.
D&C Red No. 8	KON, SNA.
D&C Red No. 9	KON, SNA, TMS.
D&C Red No. 10	KON, SNA.
D&C Red No. 11	KON, SNA.
D&C Red No. 12	KON, SNA, TMS.
D&C Red No. 13	KON, SNA.
*D&C Red No. 19	KON, SNA, TMS.
*D*C Red No. 21	KON, SNA, TMS.
D&C Red No. 22	KON.
D&C Red No. 27	SNA, TMS.
D&C Red No. 28	KON.
D&C Red No. 30	KON.
D&C Red No. 31	KON, SNA.
D&C Red No. 34	KON, SNA, TMS.
D&C Red No. 35	SNA.
*D&C Red No. 36	KON, SNA, TMS.
D&C Violet No. 2	KON.
*D&C Yellow No. 5	KON, SNA, TMS.
D&C Yellow No. 6	KON.
D&C Yellow No. 7	KON, TMS.
D&C Yellow No. 10	NAC.
D&C Yellow No. 11	KON.
Drug and Cosmetic Dyes, External	
Ext. D&C Orange No. 3	KON.
Ext. D&C Red No. 2	TMS.
Ext. D&C Red No. 8	KON.
Ext. D&C Red No. 13	KON.
Ext. D&C Red No. 15	KON, NAC.
Ext. D&C Violet No. 2	HSH, KON.
Ext. D&C Yellow No. 1	KON.
Ext. D&C Yellow No. 5	KON.
Ext. D&C Yellow No. 7	KON.
INGRAIN DYES	
Ingrain Blue 2	VPC.
MORDANT DYES	
*Mordant yellow dyes:	
*Mordant Yellow 1	ACY, ATL, G, PDC, TRC.
Mordant Yellow 3	NAC.
*Mordant Yellow 5	DUP, NAC, TRC.
*Mordant Yellow 8	DUP, G, NAC.
*Mordant Yellow 10	DUP, NAC, TRC.
Mordant Yellow 14	NAC, TRC.
*Mordant Yellow 16	ACY, DUP, NAC.
Mordant Yellow 18	PDC.
Mordant Yellow 20	NAC, TRC.

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TABLE 8B. ***--Coal-tar dyes for which U.S. production or sales were reported, identified by manufacturer, 1961***--Continued

Dye	Manufacturers' identification codes (according to list in table 23)
MORDANT DYES--Continued	
*Mordant yellow dyes--Continued	
Mordant Yellow 26	NAC, VPC.
Mordant Yellow 29	G.
Mordant Yellow 30	TRC.
Mordant Yellow 36	G.
Other mordant yellow dyes	G.
*Mordant orange dyes:	
*Mordant Orange 1	ACY, G, KPC, PDC, TRC.
Mordant Orange 4	G, VPC.
Mordant Orange 6	G, TRC.
Mordant Orange 8	NAC, TRC.
Mordant Orange 30	NAC.
Mordant red dyes:	
*Mordant Red 3	ACY, G, KPC, NAC.
Mordant Red 5	NAC.
Mordant Red 6	G.
*Mordant Red 7	ACY, CMG, G, NAC, TRC, VPC.
Mordant Red 9	G, MRX, NAC, TRC.
Mordant Red 11	ACY, KPC, NAC.
Mordant Red 36	TRC.
Mordant Red 59	TRC.
Mordant violet dyes:	
Mordant Violet 5	NAC.
Mordant Violet 11	G.
Mordant Violet 20	G.
*Mordant blue dyes:	
*Mordant Blue 1	DUP, G, KPC, NAC, TRC.
Mordant Blue 3	G, NAC.
Mordant Blue 7	TRC.
*Mordant Blue 9	G, NAC, TRC.
Mordant Blue 13	HSH, NAC.
Mordant Blue 32	CMG.
Mordant green dyes:	
Mordant Green 9	NAC.
Mordant Green 11	ACY.
Mordant Green 17	G.
Mordant Green 36	DUP, PDC.
Other mordant green dyes	NAC.
*Mordant brown dyes:	
*Mordant Brown 1	ACY, CMG, DUP, G, KPC, NAC, TRC, YAW.
Mordant Brown 12	PDC.
Mordant Brown 13	NAC.
Mordant Brown 15	G, VPC.
Mordant Brown 17	G, NAC.
Mordant Brown 18	DUP, NAC.
Mordant Brown 19	G, TRC.
Mordant Brown 21	G.
*Mordant Brown 33	DUP, NAC, TRC.
*Mordant Brown 40	CMG, DUP, G, NAC, TRC, VPC.
Mordant Brown 50	TRC.
Mordant Brown 63	TRC.
Mordant Brown 70	DUP, PDC.

TABLE 8B. --*Coal-tar dyes for which U.S. production or sales were reported, identified by manufacturer, 1961*--Continued

Dye	Manufacturers' identification codes (according to list in table 23)
MORDANT DYES--Continued	
*Mordant black dyes:	
*Mordant Black 1	G, NAC, TRC.
Mordant Black 3	G, NAC, TRC.
Mordant Black 5	G, NAC, TRC.
Mordant Black 7	G.
Mordant Black 8	VPC.
Mordant Black 9	G, NAC, VPC.
*Mordant Black 11	ATL, G, NAC, TRC, VPC.
*Mordant Black 13	AHC, G, HSH, KPC, NAC, TRC.
Mordant Black 16	G, NAC.
*Mordant Black 17	ACY, CMG, DUP, G, NAC, TRC.
Mordant Black 26	TRC.
Mordant Black 33	HSH.
*Mordant Black 38	CMG, DUP, G, NAC, TRC, VPC.
OXIDATION BASES	
Oxidation Base 8 and 8A	ACY.
Oxidation Base 22	ACY.
Oxidation Base 25	ACY.
Other oxidation bases	ACY, CMG, PDC.
SOLVENT DYES	
*Solvent yellow dyes:	
Solvent Yellow 1	ACY.
*Solvent Yellow 2	ACY, DUP, FH, G, KPC, NAC, PAT.
Solvent Yellow 3	DUP, G, KPC, NAC, SDH.
Solvent Yellow 13	ACY, G, TRC.
*Solvent Yellow 14	ACY, DUP, FH, G, KPC, NAC, PAT, SDH, TRC.
Solvent Yellow 19	G.
Solvent Yellow 29	G, NAC.
Solvent Yellow 33	ACY, NAC.
Solvent Yellow 34	DUP.
Solvent Yellow 40	NAC.
Solvent Yellow 42	NAC.
Solvent Yellow 43	G.
Solvent Yellow 44	G.
Solvent Yellow 45	DUP, NAC.
*Solvent Yellow 47	ACY, DUP, G.
Solvent Yellow 66	ACY.
Other solvent yellow dyes	ACY, DSC, DUP, PAT.
*Solvent orange dyes:	
Solvent Orange 2	NAC.
*Solvent Orange 3	ACY, G, NAC.
Solvent Orange 5	G, TRC.
*Solvent Orange 7	ACY, G, NAC.
Solvent Orange 20	ACY, G, NAC.
Solvent Orange 23	NAC.
Solvent Orange 24	DUP.
Solvent Orange 25	DUP.
Solvent Orange 31	NAC.
Other solvent orange dyes	ACY, DSC, DUP, FH, KPC, PAT.

TABLE 8B.--*Coal-tar dyes for which U.S. production or sales were reported, identified by manufacturer, 1961*--Continued

Dye	Manufacturers' identification codes (according to list in table 23)
SOLVENT DYES--Continued	
*Solvent red dyes:	
Solvent Red 8	G.
Solvent Red 22	G.
*Solvent Red 24	ACY, DUP, FH, G, NAC, PAT, SDH.
*Solvent Red 26	ACY, KPC, NAC.
Solvent Red 27	NAC.
Solvent Red 33	DUP.
Solvent Red 34	DUP.
Solvent Red 35	G.
Solvent Red 40	G.
*Solvent Red 49	ACY, DUP, G, NAC.
Solvent Red 52	G, KPC.
Solvent Red 60	NAC.
Solvent Red 63	NAC.
Solvent Red 65	NAC.
Solvent Red 68	NAC.
Solvent Red 69	DUP.
Solvent Red 80	ACY.
Other solvent red dyes	ACY, DSC, DUP, FH, G, PAT, VPC.
Solvent violet dyes:	
*Solvent Violet 8	ACY, DSC, NAC.
Solvent Violet 9	DSC.
Solvent Violet 13	HSH, KPC, NAC.
Solvent Violet 14	AHC.
Other solvent violet dyes	DSC, PAT.
*Solvent blue dyes:	
*Solvent Blue 4	DSC, DUP, G, NAC, NYC, SDH.
Solvent Blue 5	DSC.
Solvent Blue 7	ACY, NAC.
Solvent Blue 9	G.
Solvent Blue 11	G.
Solvent Blue 12	DUP, NAC.
Solvent Blue 16	NAC.
Solvent Blue 30	NAC.
Solvent Blue 31	NAC.
Solvent Blue 32	KPC.
Solvent Blue 34	DUP.
Solvent Blue 36	DUP, NAC.
Solvent Blue 37	DUP.
*Solvent Blue 38	ACY, CMG, DUP, NAC.
Solvent Blue 43	NAC.
Other solvent blue dyes	ACY, DSC, G, KPC, NAC, PAT.
*Solvent green dyes:	
*Solvent Green 1	ACY, DSC, SDH.
Solvent Green 2	G.
*Solvent Green 3	ACY, AHC, G, HSH, KPC, NAC
Solvent Green 10	DUP.
Solvent Green 11	DUP.
Other solvent green dyes	DSC, NAC.
Solvent brown dyes:	
Solvent Brown 11	G.
Solvent Brown 12	G.
Solvent Brown 17	DUP.
Solvent Brown 19	DUP.
Solvent Brown 20	ACY, DUP.
Solvent Brown 21	NAC.
Other solvent brown dyes	ACY, DSC, FH, PAT.

TABLE 8B. ***--Coal-tar dyes for which U.S. production or sales were reported, identified by manufacturer, 1961*****--Continued**

Dye	Manufacturers' identification codes (according to list in table 23)
SOLVENT DYES--Continued	
Solvent black dyes:	
Solvent Black 3	NAC.
Solvent Black 5	ACY, NAC.
Solvent Black 7	ACY, NAC.
Solvent Black 12	NAC.
Solvent Black 13	NAC.
Solvent Black 17	DUP.
Solvent Black 19	G.
Solvent Black 24	DUP.
Other solvent black dyes	ACY, DSC, FH.
All other solvent dyes	PAT.
SULFUR DYES	
Sulfur yellow dyes:	
Sulfur Yellow 2	ACY, NAC.
*Solubilized sulfur Yellow 2	ACY, AUG, NAC.
Sulfur Yellow 3	AUG.
Sulfur Yellow 4	DUP, SDC.
Sulfur orange dye: Sulfur Orange 1	SDC.
Sulfur red dyes:	
*Sulfur Red 1	ACY, DUP, NAC.
*Sulfur Red 6	ACY, DUP, NAC.
Sulfur Red 8	DUP.
Sulfur blue dyes:	
Sulfur Blue 5	ACY.
*Sulfur Blue 7	ACY, DUP, NAC, SDC.
Solubilized Sulfur Blue 7	ACY, NAC, SDC.
Sulfur Blue 9	ACY, NAC.
Sulfur Blue 10	TRC.
Sulfur Blue 11	DUP, NAC.
Sulfur Blue 13	ACY, NAC.
Solubilized Sulfur Blue 13	ACY.
*Sulfur Blue 15	ACY, DUP, NAC.
Other sulfur blue dyes	NAC.
Sulfur green dyes:	
Sulfur Green 1	NAC.
*Sulfur Green 2	DUP, NAC, SDC.
Solubilized Sulfur Green 2	SDC.
Sulfur Green 3	NAC.
Sulfur Green 8	AUG.
Sulfur Green 11	DUP.
Sulfur Green 14	DUP.
Sulfur Green 16	AUG.
Sulfur Green 28	AUG.
Sulfur brown dyes:	
Sulfur Brown 3	SDC.
Solubilized Sulfur Brown 3	SDC.
*Sulfur Brown 10	AUG, DUP, NAC, SDC.
Solubilized Sulfur Brown 10	SDC.
Sulfur Brown 14	ACY.
Sulfur Brown 20	DUP.
Sulfur Brown 26	NAC.
Sulfur Brown 30	ACY.

TABLE 8B.--*Coal-tar dyes for which U.S. production or sales were reported, identified by manufacturer, 1961*--Continued

Dye	Manufacturers' identification codes (according to list in table 23)
SULFUR DYES--Continued	
Sulfur brown dyes--Continued	
Sulfur Brown 33	ACY.
Sulfur Brown 37	SDC.
Solubilized Sulfur Brown 37	SDC.
Sulfur Brown 39	DUP.
Sulfur Brown 40	DUP.
Sulfur Brown 43	NAC.
Solubilized Sulfur Brown 43	NAC.
Sulfur Brown 44	NAC.
Solubilized Sulfur Brown 44	NAC.
Sulfur Brown 45	NAC.
Sulfur Brown 50	NAC.
Sulfur Brown 76	ACY.
Other sulfur brown dyes	ACY.
Sulfur black dyes:	
*Sulfur Black 1	ACY, DUP, NAC, SDC.
Solubilized Sulfur Black 1	ACY, NAC, SDC.
Sulfur Black 2	DUP, NAC.
Solubilized Sulfur Black 2	ACY, NAC.
Sulfur Black 6	G.
Solubilized Sulfur Black 6	NAC.
Sulfur Black 10	ACY, DUP.
Solubilized Sulfur Black 10	ACY, NAC.
Sulfur Black 11	G, SDC.
Solubilized Sulfur Black 11	SDC.
VAT DYES	
*Vat yellow dyes:	
Vat Yellow 1, 12-1/2%	NAC.
*Vat Yellow 2, 8-1/2%	ACY, AHC, ATL, DUP, G, HST, KPC, NAC, PCO, TRC, VPC.
Solubilized Vat Yellow 2, 25%	AHC, G.
Vat Yellow 3, 12-1/2%	DUP, KPC, NAC.
*Vat Yellow 4, 12-1/2%	ACY, AHC, CMG, G, HST, KPC, NAC, TRC, VPC.
*Solubilized Vat Yellow 4, 37-1/2%	AHC, G, HST.
Vat Yellow 10, 10%	G.
Vat Yellow 13, 6-1/2%	AHC.
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.
Vat Yellow 34	DUP.
Vat Yellow 41	ACY.
Other vat yellow dyes	G, MAY, NAC, TRC, VPC.
*Vat orange dyes:	
*Vat Orange 1, 20%	AHC, CMG, G, HST, NAC, TRC, VPC.
*Solubilized Vat Orange 1, 26%	AHC, G, HST.
*Vat Orange 2, 12%	ACY, AHC, CMG, DUP, G, KPC, NAC, TRC.
*Vat Orange 3, 13-1/2%	ACY, AHC, CMG, DUP, G, KPC, MAY, NAC, TRC.
*Vat Orange 4, 6%	ACY, CMG, DUP, G, NAC.
*Vat Orange 5, 10%	ACY, DUP, HST, KPC.
*Solubilized Vat Orange 5, 30%	AHC, G, HST.
Vat Orange 7, 11%	G, HST, TRC.

TABLE 8B.--*Coal-tar dyes for which U.S. production or sales were reported, identified by manufacturer, 1961*--Continued

Dye	Manufacturers' identification codes (according to list in table 23)
VAT DYES--Continued	
*Vat orange dyes--Continued	
*Vat Orange 9, 12%	ACY, AHC, CMG, DUP, G, KPC, NAC, TRC.
Vat Orange 11, 6%	DUP, NAC.
*Vat Orange 15, 10%	ACY, AHC, DUP, G, KPC, NAC, TRC, VPC.
Vat Orange 23	DUP.
Vat Orange 24	DUP.
Other vat orange dyes	DUP, VPC.
Vat red dyes:	
*Vat Red 1, 13%	ACY, DUP, HST, KPC, NAC.
Solubilized Vat Red 1, 37%	G, HST.
Vat Red 10, 18%	G, NAC, TRC.
Solubilized Vat Red 10, 31%	G.
Vat Red 12, 8-1/2%	DUP.
*Vat Red 13, 11%	DUP, G, MAY, NAC, TRC.
Vat Red 14, 10%	G, HST.
*Vat Red 15, 10%	G, HST, KPC, TRC.
Vat Red 16, 11%	DUP.
Vat Red 17, 10%	G.
Vat Red 27, 7-1/2%	DUP.
Vat Red 29, 18%	G, NAC.
Vat Red 32, 20%	G, NAC.
Vat Red 35, 12-1/2%	G, NAC, TRC.
Vat Red 41, 20%	HST.
Vat Red 44, 17%	TRC.
Vat Red 52	DUP.
Vat Red 53	DUP.
Other vat red dyes	DUP, G.
Vat violet dyes:	
*Vat Violet 1, 11%	ACY, AHC, DUP, G, MAY, NAC, TRC.
Solubilized Vat Violet 1, 26%	AHC, G.
*Vat Violet 2, 20%	ACY, DUP, G, HST, NAC, VPC.
Vat Violet 3, 15%	G, HST, NAC.
Solubilized Vat Violet 3, 43%	G.
*Vat Violet 9, 12%	AHC, DUP, G, MAY, NAC, TRC.
Vat Violet 12, 10%	DUP.
*Vat Violet 13, 6-1/4%	ACY, AHC, DUP, G, NAC, TRC.
Vat Violet 14, 12-1/2%	DUP, NAC.
*Vat Violet 17, 12-1/2%	DUP, G, NAC.
Other vat violet dyes	NAC.
Vat blue dyes:	
*Vat Blue 1, 20%	DOW, DUP, NAC.
Solubilized Vat Blue 1, 25%	G.
Vat Blue 3, 16%	HST.
*Vat Blue 4, 10%	ACY, DUP, G.
*Vat Blue 5, 16%	ATL, DUP, HST, NAC, VPC.
Solubilized Vat Blue 5, 38%	AHC, G, HST.
*Vat Blue 6, 8-1/3%	ACY, AHC, DUP, G, KPC, MAY, NAC, TRC, VPC.
*Solubilized Vat Blue 6, 17-1/2%	AHC, G, HST.
Vat Blue 7, 12-1/2%	NAC.
Solubilized Vat Blue 9, 35%	G.
*Vat Blue 14, 8-1/3%	DUP, G, NAC, TRC.
Vat Blue 16, 16%	ACY, DUP, NAC.
*Vat Blue 18, 13%	ACY, AHC, DUP, G, KPC, MAY, TRC.
*Vat Blue 20, 14%	ACY, AHC, DUP, G, KPC, MAY, NAC, PCO, TRC.
Vat Blue 35, 20%	DUP.

TABLE 8B.--*Coal-tar dyes for which U.S. production or sales were reported, identified by manufacturer, 1961*--Continued

Dye	Manufacturers' identification codes (according to list in table 23)
VAT DYES--Continued	
Vat blue dyes--Continued	
Vat Blue 39, 12%	G.
Vat Blue 43	DUP, SDC.
Vat Blue 60	DUP.
Vat Blue 61	DUP.
Other vat blue dyes	DUP, G, NAC.
Vat green dyes:	
*Vat Green 1, 6%	ACY, AHC, DUP, G, KPC, MAY, NAC, TRC.
*Solubilized Vat Green 1, 12-1/2%	AHC, G, HST.
*Vat Green 3, 10%	ACY, AHC, DUP, G, KPC, MAY, NAC, TRC.
*Solubilized Vat Green 3, 26%	AHC, G, HST.
*Vat Green 8, 8-1/2%	AHC, DUP, G, NAC,
*Vat Green 9, 12-1/2%	ACY, DUP, G, KPC, MAY, NAC, SDC, TRC.
Vat Green 15	NAC.
Vat Green 18, 8%	DUP.
Vat Green 19, 13%	DUP.
Vat Green 20, 6%	DUP.
*Vat brown dyes:	
*Vat Brown 1, 11%	ACY, AHC, DUP, G, KPC, MAY, NAC, TRC.
Solubilized Vat Brown 1, 17%	AHC, G.
*Vat Brown 3, 11%	ACY, AHC, DUP, G, KPC, MAY, NAC, TRC, VPC.
Solubilized Vat Brown 3, 17%	AHC.
*Vat Brown 5, 13%	ACY, DUP, G, HST, KPC, NAC, VPC.
Solubilized Vat Brown 5, 17%	G.
Vat Brown 6	TRC.
Vat Brown 11, 12%	MAY.
Vat Brown 12, 12-1/2%	DUP, NAC.
Vat Brown 13, 17%	MAY.
Vat Brown 14, 12%	HST.
*Vat Brown 20, 10-1/2%	CMG, DUP, G, KPC, NAC.
Vat Brown 25, 11-1/2%	G.
Vat Brown 29, 13%	ACY.
Vat Brown 31, 28%	KPC.
Vat Brown 38, 20%	AHC.
Vat Brown 40, 14%	DUP.
Vat Brown 51	DUP.
Other vat brown dyes	DUP, KPC, MAY, NAC, SDC, TRC, VPC.
*Vat black dyes:	
Vat Black 1	G.
*Solubilized Vat Black 1, 27-1/2%	AHC, G, HST.
Vat Black 9, 16%	ACY, G, NAC, TRC.
Vat Black 11, 17-1/2%	ACY.
Vat Black 13, 14%	DUP, NAC.
Vat Black 14, 11-1/2%	DUP.
Vat Black 17, 16%	ACY.
Vat Black 18, 15-1/2%	G, NAC.
Vat Black 21, 18-1/2%	ACY.
Vat Black 22, 19%	ACY.
*Vat Black 25, 12-1/2%	ACY, AHC, CMG, DUP, G, KPC, MAY, NAC, TRC.
Vat Black 26, 24%	NAC.
*Vat Black 27, 12-1/2%	ACY, AHC, CMG, DUP, G, KPC, MAY, NAC, TRC.
Vat Black 29, 12-1/2%	TRC.
Vat Black 30	TRC.
Vat Black 36	DUP.
Other vat black dyes	ACY, AHC, DUP, G, NAC, SDC, TRC, VPC.
All other dyes	WLM, x.

Toners and Lakes

TABLE 11B.--*Toners and lakes for which U.S. production or sales were reported, identified by manufacturer, 1961*

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

See note at end of table for definition of abbreviations.

TABLE 11B.--*Toners and lakes for which U.S. production or sales were reported, identified by manufacturer, 1961*--Continued

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

See note at end of table for definition of abbreviations.

TABLE 11B.--*Toners and lakes for which U.S. production or sales were reported, identified by manufacturer, 1961*--Continued

Product	Manufacturers' identification codes (according to list in table 23)
TONERS--Continued	
*Red toners--Continued	
*Pigment Red 90, C.I. 45 380	ACY, AMS, FCL, ICC, IMP, LVY, NYC, SDH, SNA.
Pigment Red 123	HAR.
(Vat Red 10), C.I. 67 000	HAR.
(Vat Red 29), C.I. 71 140	HAR.
All other	DUP, HAM, HAR, HCC, SW, x.
*Violet toners:	
Pigment Violet 1, C.I. 45 170, fugitive	BLN, UHL.
*Pigment Violet 1, C.I. 45 170, PMA	ADC, BLN, CC, IMP, LVR, MRX, NYC.
*Pigment Violet 1, C.I. 45 170, PTA	ACY, AMS, BLN, CC, CIK, DUP, EAL, FCL, HCC, IMP, KON, MGR, MRX, S, SDH, SNA.
*Pigment Violet 3, C.I. 42 535, fugitive	ACY, ADC, AMS, BLN, HCC, IMP, KON, LVY, MGR, NYC, SDH, SUC, UHL.
*Pigment Violet 3, C.I. 42 535, PMA	AMS, BLN, CC, CIK, DUP, EAK, HCC, IMP, KON, LVR, LVY, MGR, MRX, NYC, PPG, SDH, SNA, SUC, SW, UHL.
*Pigment Violet 3, C.I. 42 535, PTA	ACY, AMS, CC, HCC, IMP, KON, MRX, SNA, SW.
(Vat Violet 1), C.I. 60 010	DUP.
(Vat Violet 2), C.I. 73 385	HAR.
(Vat Violet 3), C.I. 73 395	HAR.
All other	ACY, G, HAR, ICC, SW.
*Blue toners:	
*Pigment Blue 1, C.I. 42 595, PMA	ADC, BLN, CC, DUP, EAK, HCC, IMP, KON, LVR, LVY, MGR, MRX, NYC, SDH, SNA, SW, UHL.
*Pigment Blue 1, C.I. 42 595, PTA	AMS, CC, HAR, IMP, MGR, SNA, SW.
*Pigment Blue 2, C.I. 44 045, fugitive	BLN, MGR, MRX.
*Pigment Blue 2, C.I. 44 045, PMA	CC, LVR.
*Pigment Blue 2, C.I. 44 045, PTA	HAM.
Pigment Blue 3, C.I. 42 140, PMA	MGR.
Pigment Blue 3, C.I. 42 140, PTA	MRX.
Pigment Blue 9, C.I. 42 025, PMA	IMP, MRX, NYC.
*Pigment Blue 9, C.I. 42 025, PTA	BLN, CC, IMP, MGR, MRX, SDH.
Pigment Blue 10, C.I. 44 040, PMA	IMP, LVR, SDH.
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	CC, DUP, NYC.
*Pigment Blue 15, C.I. 74 160, alpha form	ACY, AHC, DUP, G, HAR, ICC, IMP, PCC, SNA, SUC, SW, TMS, TRC.
*Pigment Blue 15, C.I. 74 160, beta form	ACY, ADC, DUP, IMP, KON, LVY, SNA, SUC, SW, TMS.
*Pigment Blue 19, C.I. 42 750A	ACY, ERD, NYC, SUC, SW.
Pigment Blue 22, C.I. 69 810	DUP, IMP, TRC.
*Pigment Blue 25, C.I. 21 180	DUP, G, HAR, ICC.
(Basic Blue 7), C.I. 42 595, PTA	DUP.
(Vat Blue 6), C.I. 69 825	DUP, TRC.
(Vat Blue 21), C.I. 67 920	HAR.
All other	HAR, ICC, SDH, x.
Green toners:	
*Pigment Green 1, C.I. 42 040, PMA	BLN, CC, IMP, MGR, MRX, NYC, UHL.
*Pigment Green 1, C.I. 42 040, PTA	BLN, IMP, MGR, SDH.
*Pigment Green 2, C.I. 42 040 and C.I. 49 005, PMA	ADC, CC, CIK, IMP, LVY, MGR, MRX, SDH, SNA, UHL.
*Pigment Green 2, C.I. 42 040 and C.I. 49 005, PTA	ACY, AMS, BLN, CC, DUP, IMP, KON, MGR, MRX, SDH.
*Pigment Green 4, C.I. 42 000, fugitive	BLN, CC.
*Pigment Green 4, C.I. 42 000, PMA	ADC, BLN.
*Pigment Green 4, C.I. 42 000, PTA	ACY, AMS, IMP, MGR, SNA.

See note at end of table for definition of abbreviations.

TABLE 11B.--*Toners and lakes for which U.S. production or sales were reported, identified by manufacturer, 1961*--Continued

Product	Manufacturers' identification codes (according to list in table 23)
TONERS--Continued	
Green toners--Continued	
*Pigment Green 7, C.I. 74 260	ACY, DUP, G, HAR, PCC, SNA, SUC, SW, TMS.
*Pigment Green 8, C.I. 10 006	DUP, EAK, G, HSH, IMP, KCW, SNA, SW.
Pigment Green 10, C.I. 12 775	DUP.
*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, fugitive	KON.
*Pigment Brown 3, C.I. 21 010, PMA	BLN, HAR, KCW.
Pigment Brown 5, C.I. 15 800	HAR, SNA.
(Vat Brown 3), C.I. 69 015	G.
All other	HAR, HSH, ICC, MGR, SDH, SW.
Black toners:	
Pigment Black 1, C.I. 50 440	SNA.
All other	BLN, CC, HAM, UHL.
LAKES	
*Yellow lakes:	
(Acid Yellow 1), C.I. 10 316	CPC, IMP.
(Acid Yellow 3), C.I. 47 005	IMP, LVR.
(Acid Yellow 23), C.I. 19 140	HAR, IMP, KON, MGR, MRX.
(Natural Yellow 10), C.I. 75 720	IMP.
*Orange lakes:	
Pigment Orange 17, C.I. 15 510	CIK, CPC, IMP, KCW, MGR.
(Acid Orange 8), C.I. 15 575	IMP.
All other	APC, HAM.
Red lakes:	
*Pigment Red 60, C.I. 16 105	BLN, DUP, HCC, HSH, KON, MRX, SNA, SW.
*Pigment Red 83, C.I. 58 000	IMP, KON, MRX, PPG, SNA, SW, UHL.
(Acid Red 17), C.I. 16 180	IMP, PPG, WDC.
(Acid Red 25), C.I. 16 050	KON.
*(Acid Red 26), C.I. 16 150	CPC, EAK, HAM, IMP, KCW, SNA, UHL.
(Acid Red 27), C.I. 16 185	KON.
(Natural Red 4), C.I. 75 470	KON.
(Natural Red 24), C.I. 75 280	IMP.
All other	APC, S, x.
*Violet lakes:	
*Pigment Violet 5, C.I. 58 055	BLN, DUP, HAR, HSH, IMP, SNA.
Pigment Violet 20, C.I. 58 225	SW.
(Acid Violet 17), C.I. 42 650	BLN, HCC.
Blue lakes:	
Pigment Blue 17, C.I. 74 180	BLN, CPC.
*Pigment Blue 24, C.I. 42 090	ADC, AMS, BLN, CIK, ICC, IMP, KON, LVY, MGR, SDH, SNA.
(Acid Blue 104), C.I. 42 735	CPC, KCW.
All other	LVR.
Green lakes:	
(Acid Green 3), C.I. 42 085	BLN, CPC.
All other	APC.
*Black lakes: (Natural Black 3), C.I. 75 291	CPC, KON, NYC.

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

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

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

Medicinal Chemicals

TABLE 13B.--*Medicinal chemicals for which U.S. production or sales were reported, identified by manufacturer, 1961*

[Medicinal chemicals for which separate statistics are given in table 13A in pt. II are marked below with an asterisk (*); medicinal chemicals not so marked do not appear in table 13A because the reported data are accepted in confidence and may not be published. Manufacturers' identification codes shown below are taken from table 23. An x signifies that the manufacturer did not consent to his identification with the designated product]

Chemical	Manufacturers' identification codes (according to list in table 23)
MEDICINAL CHEMICALS, CYCLIC	
Benzenoid	
3-Acetamido-4-hydroxydithiobenzenearsenous acid, 3-hydroxypropylene ester.	EN.
Acetarsone (N-Acetyl-4-hydroxy-m-arsanilic acid) (Stovarsol).	SDW.
Acetylglycol salicylate	ICO.
*Acetylsalicylic acid (Aspirin)	CFC, DOW, MLS, MON, NOR, SDG.
*Acetylsalicylic acid, aluminum basic salt	ABB, SCH, SFA.
*Amino acids:	
3,5-Diiodotyrosine	EK.
dl-Phenylalanine	SDW.
l-Tyrosine	PFN.
p-Aminobenzoic acid and derivatives:	
p-Aminobenzoic acid	LEM, PYL.
Benzocaine (Ethyl p-aminobenzoate)	ABB, LEM, MTL.
Benzocaine, ethoxylated	BPC.
Butacaine base	ABB.
Butacaine sulfate	ABB.
n-Butyl p-aminobenzoate	ABB, ICO.
Di(n-butyl p-aminobenzoate)trinitrophenol	ABB.
2-Diethylaminoethyl 4-amino-2-propoxybenzoate hydrochloride.	SDW.
Isobutyl p-aminobenzoate (Cycloform)	ICO.
Procaine base and salts:	
Procaine acetate	RIK.
Procaine base	LEM, MTL.
Procaine hydrochloride	ABB, LEM.
Propyl p-aminobenzoate	ICO.
Tetracaine (2-Dimethylaminoethyl p-butylaminobenzoate) base.	ICO.
Tetracaine hydrochloride	ICO, SDW.
p-Aminobenzoic acid salts:	
Potassium p-aminobenzoate	GAN, LEM.
Sodium p-aminobenzoate	GAN, LEM.
4-Aminosalicylic acid	MLS, PD.
4-Aminosalicylic acid salts:	
Calcium 4-aminosalicylate	MLS.
Potassium 4-aminosalicylate	HEX, MLS.
Sodium 4-aminosalicylate	MLS.
p-Anisoin (4,4'-Dimethoxybenzoin)	SPC.
Anthranilic acid, cadmium salt	MAL.

TABLE 13B. --*Medicinal chemicals for which U.S. production or sales were reported, identified by manufacturer, 1961*--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
MEDICINAL CHEMICALS, CYCLIC--Continued	
Benzenoid--Continued	
*Antihistamines:	
2-(Benzhydryloxy)-N,N-dimethylethylamine hydrochloride	PD.
Bromodiphenhydramine hydrochloride	PD.
1-(p-Chlorobenzhydryl)-4-(3-methylbenzyl)piperazine (Meclizine) dihydrochloride.	PFZ.
N,N-Dimethyl-2-(o-methyl-α-phenylbenzyloxy)ethylamine citrate.	RIK.
N,N-Dimethyl-2-(o-methyl-α-phenylbenzyloxy)ethylamine hydrochloride.	RIK.
N,N-Dimethyl-2-(α-phenyl-o-tolyloxy)ethylamine dihydrogen citrate.	BRS.
Benzaldehyde	HN.
Benzoic acid	MON.
Benzoic acid salt: Lithium benzoate	MYW.
*Bismuth subgallate	BKC, MAL, PEN.
Bismuth subsalicylate	MAL, NOR, PEN.
N,N'-Bis(3-nitrobenzenesulfonyl)ethylenediamine	SAL.
Bis(3-nitrophenyl) disulfide	ACY.
1-Butyl-3-p-tolylsulfonylurea	HST, x.
Carbamic acid, β-hydroxyphenethyl ester	ARP.
Carbamic acid, 2-hydroxy-2-phenylbutyl ester	ARP.
p-Carbamidobenzenearsonic acid	LIL, PYL, RSA, WHL.
Chloramine B (N-Chlorobenzenesulfonamide, sodium derivative).	NES.
Chloramine T (N-Chloro-p-toluenesulfonamide, sodium derivative).	MON.
2-(2-Chlorophenyl)-2-(4-chlorophenyl)-1,1-dichloroethane	EDC.
3-(p-Chlorophenylsulfonyl)-1-propylurea	PFZ.
Chlorothymol	OPC.
1-Cyclohexyl-3-diethylamino-1-phenyl-1-propanol ethiodide	ACY.
Desoxyanisoin	SPC.
2,5-Diaminotoluene sulfate	EK.
4,5-Dichloro-m-benzenedisulfonamide	MRK.
α-Diethylamino-2,6-acetoxylidide	AST.
1-[p-(β-Diethylaminoethoxy)phenyl]-1-p-tolyl-2-(p-chlorophenyl)ethanol.	BKC.
2-Diethylaminoethyl 4-ethoxybenzoate hydrochloride	ICO.
2-Diethylaminoethyl fluorene-9-carboxylate hydrochloride	SRL.
2-Diethylaminopropiophenone	BKC.
3,4-Dihydroxyphenylacetic acid	LIL.
trans-α-(4-Dimethylaminocyclohexyl)-α,α-di(2-thienyl)-methanol methobromide.	SCH.
4-Dimethylamino-2,2-diphenylbutyramide ethobromide	ICO.
α-d-4-Dimethylamino-1,2-diphenyl-3-methyl-2-propoxybutane hydrochloride.	LIL.
4-(2-Dimethylaminoethoxy)-N-(3,4,5-trimethoxybenzoyl)-benzylamine hydrochloride.	HOF.
N,2-Dimethyl-2-phenylsuccinimide	PD.
Dimethyl-p-toluidine	EK, PYL.
3,5-Dinitrobenzamide	SAL.
Diphenylacetyldiethylaminoethanol hydrochloride	CBP.

TABLE 13B. --*Medicinal chemicals for which U.S. production or sales were reported, identified by manufacturer, 1961*--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
MEDICINAL CHEMICALS, CYCLIC--Continued	
Benzenoid--Continued	
Dipropylene glycol salicylate	CP.
p-(Di-N-propylsulfamyl)benzoic acid	MRK.
*Dyes, medicinal:	
Acriflavine (3,6-Diamino-10-methylacridine chloride)	NAC.
2,4-Diamino-4'-ethoxyazobenzene hydrochloride	KON.
Gentian violet	NAC, SDH.
Merbromin (Dibromohydroxymercurifluorescein, sodium salt)	HYN.
Methylene blue	ACY, NAC.
Pyrvinium chloride pamoate	x.
Pyrvinium methyl sulfate	x.
Scarlet red (Phenol red)	NAC.
Other	NAC.
Estrogens, nonsteroid:	
3,4-Bis(p-acetoxyphenyl)-2,4-hexadiene	SCH.
3,4-Bis(p-hydroxyphenyl)-2,3-hexadiene diacetate	MLS.
Chlorotrianisene	BKC.
4,4'-(1,2-Diethylethylene)diphenol	SPC.
*α,α'-Diethyl-4,4'-stilbenediol (Diethylstilbestrol)	ABB, LIL, SPC.
N-Ethyl-3,3-diphenyldipropylamine	SPC.
N-Ethyl-3,3'-diphenyldipropylamine citrate	SPC.
N-Ethyl-3,3-diphenyldipropylamine hydrochloride	SPC.
Ethylmercurithiosalicylic acid	LIL.
Ethylmercurithiosalicylic acid, sodium salt	LIL, PYL.
α-Ethyl-α-methylsuccinimide	PD.
α-Ethyl-α-phenylglutarimide (Doriden)	CBP.
Ethyl salicylate carbonate	ICO, PD.
Gallic acid	MAL.
Glycol monosalicylate	ICO, RDA.
Guaiacol, liquid and crystalline	HN, MON.
Hexylresorcinol	HEX, MRK.
*4'-Hydroxyacetanilide	ABB, MLS, NEP.
p-Hydroxybenzoic acid esters:	
n-Butyl p-hydroxybenzoate (Butoben)	HN, ICO.
Ethyl p-hydroxybenzoate	HN.
Methyl p-hydroxybenzoate	HN, ICO, PYL.
Propyl p-hydroxybenzoate	HN, ICO, PYL.
o-(p-Hydroxybenzoyl)benzoic acid	LIL.
N-(2-Hydroxyethyl)gentisamide	ICO.
2,2'-(2-Hydroxyethylimino)bis[N-(α,α-dimethylphenethyl)-N-methylacetamide].	WYT.
Hydroxymercuri-4-nitro-o-cresol anhydride	ABB.
4-Hydroxy-3-nitrobenzenearsonic acid	SAL.
Mandelic acid (Phenylglycolic acid)	MAL.
Mandelic acid, calcium salt	MAL.
2-Methoxyethyl p-methoxycinnamate	GIV.
*3-(o-Methoxyphenoxy)-1,2-propanediol (Glyceryl guaiacyl ether).	GAN, HEX, ICO.
2-(p-Methoxyphenyl)-1,3-indandione	SCH.
N-Methyl-2-phenylsuccinimide	PD.
2-Naphthol (β-Naphthol)	ACY.
Neostigmine bromide	HEX, MED.

TABLE 13B. --***Medicinal chemicals for which U.S. production or sales were reported, identified by manufacturer, 1961***--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
MEDICINAL CHEMICALS, CYCLIC--Continued	
Benzenoid--Continued	
Neostigmine methyl sulfate	HEX, MED.
p-Nitrobenzenearsonic acid	SAL.
Phenacaine [(Di-p-ethoxyphenyl)acetamidine] hydrochloride	GAN, SDW.
Phenacetin (Acetophenetidin)	DOW, MON.
Phenacetylurea	ABB.
Phenolphthalein	MON.
Phenolsulfonic acid salts:	
Aluminum phenolsulfonate	MAL.
Ammonium phenolsulfonate	SAL.
Calcium phenolsulfonate	MAL.
Sodium phenolsulfonate	MAL, SAL.
Zinc phenolsulfonate	MAL.
2-Phenyl-tert-butylamine resin complex	x.
2-Phenylethylhydrazine dihydrogen sulfate	NEP.
Phenylhendecenoic acid	EK.
2-Phenyl-1,3-indandione	GAN, SPC.
β-Phenylisopropylhydrazine hydrochloride	LKL.
Phenyl mercuric derivatives:	
o-Chloromercuriphenol (o-Hydroxyphenylmercuric chloride)	MTL.
Phenylmercuric acetate	WRC.
Phenylmercuric benzoate	MTL, WRC.
Phenylmercuric borate	WRC.
Phenylmercuric nitrate	MTL, WRC.
1-(2H)-Phthalazone	NAC, SDH.
Pyrogallic acid	MAL.
Resorcinol	LEM.
Resorcinol, bismuth salt	NEP.
Resorcinol, dimethyl ether	ASL.
Resorcinol monoacetate	EK, FIN.
Resorcinol monobenzoate	EKT.
Roentgenographic contrast media:	
3-Acetamido-2,4,6-triiodobenzoic acid and sodium salt (Acetrizoate sodium).	MAL.
3-(3-Amino-2,4,6-triiodophenyl)-2-ethylpropionic acid (Iodopanoic acid).	SDW.
3,5-Diacetamido-2,4,6-triiodobenzoic acid, sodium salt (Sodium diatrizoate).	SDW.
3,5-Dipropionamido-2,4,6-triiodobenzoic acid and sodium salt (Sodium diprotrizoate).	MAL.
Ethyl (iodophenyl)hendecanoate	x.
Sodium o-iodohippurate dihydrate	MAL.
Salicylamide	CFC, x.
*Salicylic acid	CFC, DOW, HN, MON, SDH.
*Salicylic acid salts:	
Calcium salicylate	DOW.
Magnesium salicylate	MAL.
Mercuric salicylate	MAL, MTL.
Potassium salicylate	x.
Sodium salicylate	DOW, HN, MON.
Strontium salicylate	MAL.
Salol (Phenyl salicylate)	DOW, MAL, PEN.

TABLE 13B. --*Medicinal chemicals for which U.S. production or sales were reported, identified by manufacturer, 1961*--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
MEDICINAL CHEMICALS, CYCLIC--Continued	
Benzenoid--Continued	
Sodium antimony(III)-bis(catechol-2,4-disulfonate) (Fouadin).	SDW.
Sodium benzyl succinate	LEM.
8-Succinoylfluoranthene	SRL.
*Sulfa drugs:	
6-Acetamido-4-hydroxy-3-(4'-sulfamoylphenylazo)-2,7-naphthalenedisulfonic acid, disodium salt.	SDW.
N^1-Acetyl-3,4-dimethyl-5-sulfanilamidoisoxazole	HOF.
N^1-Acetylsulfamethoxypyridazine	ACY.
4'-(Acetylsulfamoyl)phthalanilic acid	LEM, MRK.
Benzoylsulfanilamide	ACY.
Benzoylsulfanilamide, sodium salt	ACY.
p-Benzylaminobenzenesulfonamide	SDW.
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-3-isoxazolyl)sulfanilamide	HOF.
N^1-(5-Methyl-1,3,4-thiadiazol-2-yl)sulfanilamide	ACY.
4'-(p-Nitrophenylsulfamoyl)acetanilide (N^4-Acetyl-N^1-(4-nitrophenyl)sulfanilamide).	SAL.
p-Nitrosulfathiazole	SDW.
Sulfabromomethazine, sodium salt	MRK.
Sulfadiazine	ACY.
Sulfadiazine, sodium salt	ACY.
Sulfaguanidine	ACY.
Sulfamerazine	ACY.
Sulfamerazine, sodium salt	ACY.
Sulfamethazine	ACY.
Sulfamethoxypyridazine	ACY.
Sulfanilamide (p-Aminobenzenesulfonamide)	MRK.
Sulfanilanilide	SAL.
*N-Sulfanilylacetamide (Sulfacetamide)	ACY, LEM, PYL, SCH.
N-Sulfanilylacetamide, sodium salt	LEM, SCH.
Sulfapyridine	ACY, MRK.
Sulfapyridine, sodium salt	ACY, MRK.
Sulfaquinoxaline	MRK.
Sulfasuxidine (Succinylsulfathiazole)	MRK.
Sulfathiazole	ACY, MRK.
Sulfathiazole, sodium salt	ACY, MRK.
[Sulfonylbis(p-phenylenimino)]dimethanesulfinic acid, disodium salt.	ABB.
4'-(2-Thiazolylsulfamoyl)phthalanilic acid	LEM.
*Sympathomimetic (Adrenergic) agents:	
d-N-Benzyl-N,α-dimethylphenethylamine hydrochloride	x.
3,4-Dihydroxynorephedrine (3,4-Dihydroxyphenylpropanolamine) hydrochloride.	SDW.
N,α-Dimethylphenethylamine (Desoxyephedrine) base	HEX, PRR.
l-N,α-Dimethylphenethylamine	ABB.
*N,α-Dimethylphenethylamine hydrochloride	GAN, HEX, PRR.
*d-N,α-Dimethylphenethylamine hydrochloride	ABB, GAN, HEX.
*α-(Isopropylaminomethyl)protocatechuyl alcohol (Isoproterenol).	ABB, GAN, SPC.

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TABLE 13B. --*Medicinal chemicals for which U.S. production or sales were reported, identified by manufacturer, 1961*--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
MEDICINAL CHEMICALS, CYCLIC--Continued	
Benzenoid--Continued	
*Sympathomimetic (Adrenergic) agents--Continued	
o-Methoxy-N,α-dimethylphenethylamine [1-(o-Methoxyphenyl)-2-methylaminopropane] hydrochloride (Methoxyphenamine).	MLS.
*Methylaminoethanolcatechol, racemic	DOD, SDW, VB.
α-(1-Methylaminoethyl)benzyl alcohol (Pseudoephedrine) hydrochloride.	BUR, GAN.
α-(1-Methylaminoethyl)benzyl alcohol sulfate	GAN, MRK.
N-[2-(3,4-Methylenedioxyphenyl)isopropyl]-α-aminomethyl-protocatechuyl alcohol hydrochloride.	LKL.
*α-Methylphenethylamine (Amphetamine) base	HEX, ORT, PRR, SK.
α-Methylphenethylamine salts:	
α-Methylphenethylamine hydrochloride	HEX.
α-Methylphenethylamine sulfate	HEX.
α-Methylphenethylamine tannate	PRR.
d-α-Methylphenethylamine (Dextroamphetamine) base	HEX.
d-α-Methylphenethylamine salts:	
d-α-Methylphenethylamine hydrochloride	PRR.
d-α-Methylphenethylamine phosphate	PRR.
d-α-Methylphenethylamine sulfate	HEX, PRR, SK.
*Norephedrine (Phenylpropanolamine) hydrochloride	GAM, HEX, ICO, NEP, ORT.
trans-2-Phenylcyclopropylamine sulfate	x.
l-Phenylephrine base	GAN.
*Phenylephrine hydrochloride	GAN, HEX, SDW, SPC.
l-Phenylephrine tannate	x.
Tannin albuminate (Tannalbin)	PYL.
Thiosalicylic acid	LIL.
Thymol	GIV, HNW, OPC.
Thymol iodide	MAL.
*3-o-Toloxy-1,2-propanediol (o-Cresyl α-glyceryl ether)	BKL, HEX, ICO.
Vitamins:	
K_1 (2-Methyl-3-phytyl-1,4-naphthoquinone)	MRK.
*K_3 (Menadione) (2-Methyl-1,4-naphthoquinone)	ABB, HET, HFT.
K_3 (Menadione sodium bisulfite)	ABB, HET.
K_4 (2-Methyl-1,4-naphthalenediol diacetate and diphosphate, tetrasodium salt).	HOF.
K_5 (4-Amino-2-methyl-1-naphthol)	PD.
Alicyclic and Heterocyclic	
2-Acetamido-5-nitrothiazole	ACY, PYL.
5-Acetamido-1,3,4-thiadiazole-2-sulfonamide	ACY.
Adenine (6-Aminopurine)	ACY, KF.
Adenine hydrochloride	SBR.
Adenine sulfate	KF.
Adenosine	SBR.
Adenosine-5-phosphoric acid	PBS, SBR.
Adenosinetriphosphoric acid	SBR.
Adenosinetriphosphoric acid, salt	PBS, SBR.
Adenylic acid	SBR.
*Alkaloids and related products:	
Berberine hydrochloride	ABB, PEN.
Colchicine	ABB, PEN.

TABLE 13B.--*Medicinal chemicals for which U.S. production or sales were reported, identified by manufacturer, 1961*--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
MEDICINIAL CHEMICALS, CYCLIC--Continued	
Alicyclic and Heterocyclic--Continued	
*Alkaloids and related products--Continued	
Digitalis glucoside: Digitonin	PEN.
Eserine salicylate	PEN.
Ethylmorphine hydrochloride	MAL, MRK.
Homatropine	HEX, SPC.
Homatropine hydrobromide	SPC.
Homatropine methyl bromide	EN, HEX, SPC.
Hydrastine	PEN.
Hydrastine hydrochloride	PEN.
Lobelia sulfate	ABB.
d-3-Methoxy-N-methylmorphinan hydrobromide	HOF.
Quinidine sulfate	HEX.
Rauwolfia serpentina (Alseroxylon) fraction	RIK.
Reserpine	PEN.
Tubocurarine	ABB, OMS.
Veratrum viride (Alkavervir)	PEN, RIK.
Amino acids:	
dl-Acetyltryptophane	SDW.
dl-Tryptophane	SDW.
3-(2-Aminobutyl)indole acetate	x.
2-Amino-5-nitrothiazole	ACY.
3-Amino-2-oxazolidinone	NOR.
1-[(4-Amino-2-propyl-5-pyrimidinyl)methyl]-2-picolinium chloride hydrochloride.	MRK.
2-Aminopurine-6-thiol	BUR.
*Antibiotics for human or veterinary use:	
*Bacitracin	COM, PBS, PEN, PFZ.
Chloramphenicol	PD.
7-Chloro-6-demethyltetracycline	ACY.
Chlortetracycline hydrochloride	ACY.
Cycloheximide	UPJ.
Cycloserine	COM.
*Dihydrostreptomycin	LIL, MRK, OMS, PFZ.
Erythromycin	ABB, LIL.
Fumagillin	ABB.
Gramicidin	BAX, PEN.
*Neomycin, base	ACY, MRK, OMS, PEN, PFZ, UPJ.
Novobiocin	MRK, x.
Nystatin	OMS.
Oleandomycin	PFZ.
Oleandomycin triacetate	PFZ.
Oxytetracycline hydrochloride	PFZ.
Paromomycin	x.
*Penicillin salts:	
Benzathine penicillin G	PFZ, WYT.
Benzathine penicillin V	WYT.
Chloroprocaine penicillin O	UPJ.
Hydrabamine penicillin V	ABB.
Penicillin V	LIL.
*dl-α-Phenoxyethylpenicillin	BRS, OMS, PFZ.
*Potassium penicillin G	ABB, BRS, LIL, MRK, OMS, PFZ, WYT.

TABLE 13B.--*Medicinal chemicals for which U.S. production or sales were reported, identified by manufacturer, 1961*--**Continued**

Chemical	Manufacturers' identification codes (according to list in table 23)
MEDICINAL CHEMICALS, CYCLIC--Continued	
Alicyclic and Heterocyclic--Continued	
*Antibiotics for human or veterinary use--Continued	
*Penicillin salts--Continued	
Potassium penicillin V	ABB, LIL.
*Procaine penicillin G	ABB, LIL, MRK, OMS, PFZ, WYT.
Sodium 2,6-dimethoxyphenylpenicillin	BRS.
Sodium methylphenylisoxazolylpenicillin	BRS.
*Sodium penicillin G	MRK, OMS, PFZ.
Sodium penicillin O	UPJ.
Polymixin B sulfate	PFZ.
Ristocetin	ABB.
*Streptomycin	LIL, MRK, OMS, PFZ.
*Tetracycline	ACY, BRS, PFZ.
Thiostrepton	OMS.
Tyrothricin	BAX, PEN.
Viomycin	PFZ.
Other	BRS, LIL, OMS.
*Antibiotics for animal feed supplements, food preservation, and crop spraying:	
Aterrimin	IMC.
Bacitracin	COM, GPR, IMC, PBS, PEN.
Chlortetracycline hydrochloride	ACY.
Hygromycin B	LIL.
Novobiocin mixture	x.
Oxytetracycline hydrochloride	PFZ.
Penicillin salts:	
Benzathine penicillin G	PFZ
*Procaine penicillin G	ABB, LIL, MRK, OMS, PFZ.
Streptomycin	MRK, PFZ.
*Antihistamines:	
2-(Benzhydryloxy)-N,N-dimethylethylamine 8-chlorotheophyllinate.	SRL.
2-[Benzyl(2-dimethylaminoethyl)amino]pyridine citrate	CBP.
2-[Benzyl(2-dimethylaminoethyl)amino]pyridine hydrochloride.	CBP.
2-[1-(p-Bromophenyl)-3-dimethylaminopropyl]pyridine (Parabromidylamine) maleate.	SCH.
1-(4-Chlorobenzhydryl)-4-(p-tert-butylbenzyl)piperazine dihydrochloride.	PFZ.
1-(4-Chlorobenzhydryl)-4-methylpiperazine hydrochloride	ABB, BUR.
2-[p-Chloro-α-(2-dimethylaminoethoxy)benzyl]pyridine maleate.	SCH.
2-[p-Chloro-α-(2-dimethylaminoethoxy)benzyl]pyridine tartrate.	x.
*2-[p-Chloro-α-(2-dimethylaminoethyl)benzyl]pyridine maleate.	HEX, SCH, x.
d-2-[p-Chloro-α-(2-dimethylaminoethyl)benzyl]pyridine maleate.	SCH.
1-(p-Chlorophenyl)-2-phenyl-4-pyrrolidyl-1-butene diphosphate, hydrobromide and hydrochloride.	LIL.
2-[α-(2-Dimethylaminoethoxy)-α-methylbenzyl]pyridine succinate (2-(Methyl-2'-dimethylaminoethoxybenzyl)-pyridine succinate).	BKC.

TABLE 13B.--*Medicinal chemicals for which U.S. production or sales were reported, identified by manufacturer, 1961*--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
MEDICINAL CHEMICALS, CYCLIC--Continued	
Alicyclic and Heterocyclic--Continued	
*Antihistamines--Continued	
2-(1-[2-(2-Dimethylaminoethyl)inden-3-yl]ethyl)pyridine maleate.	CBP.
2-[(2-Dimethylaminoethyl) (p-methoxybenzyl)amino]pyridine maleate.	MRK.
2-[(2-Dimethylaminoethyl) (p-methoxybenzyl)amino] pyrimidine (N,N-Dimethyl-N'-p-methoxybenzyl-N,2-pyrimidylethylenediamine).	NEP.
2-[(2-Dimethylaminoethyl)thenylamino]pyridine fumarate (N,N-Dimethyl-N',2-pyridyl-N',2-thenylethylenediamine fumarate).	ABB, MON.
2-[(2-Dimethylaminoethyl)thenylamino]pyridine hydrochloride (N,N-Dimethyl-N',2-pyridyl-N',2-thenylethylenediamine hydrochloride).	ABB, SDW.
2-[(2-Dimethylaminoethyl)thenylamino] pyridine o-(p-hydroxybenzoyl)benzoate.	LIL.
*2-[3-(Dimethylamino)-1-phenylpropyl] pyridine maleate------	HEX, SCH, x.
10-(2-Dimethylaminopropyl)phenothiazine hydrochloride-----	MON, WYT.
N,N-Dimethyl-N'-(2-pyridyl)-N'-(5-chloro-2-thenyl)-ethylenediamine citrate.	ACY.
Phenindamine----------	HOF.
Bacterial and fungal enzymes----------	BAX.
*Barbituric acid derivatives:	
5-Allyl-5-sec-butylbarbituric acid----------	SDW.
5-Allyl-5-(2-cyclopenten-1-yl)barbituric acid and salt----	GAN.
5-Allyl-5-isobutylbarbituric acid and salt----------	GAN.
*5-Allyl-5-(1-methylbutyl)barbituric acid (Secobarbital) and salt.	BLS, BPC, GAN, LIL.
5-Allyl-5-(1-methylbutyl)-2-thiobarbituric acid, sodium salt (Thiamylal).	PD.
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---------	SDW.
5-(1-Cyclohexen-1-yl)-1,5-dimethylbarbituric acid, sodium salt.	SDW.
5-(1-Cyclohexen-1-yl)-5-ethylbarbituric acid and salt-----	SDW.
5,5-Diethylbarbituric acid (Barbital)----------	GAN.
5,5-Diethylbarbituric acid, sodium salt----------	GAN.
5,5-Diethyl-1-methylbarbituric acid----------	ABB.
*5-Ethyl-5-isopentylbarbituric acid and salt----------	BPC, GAN, LIL.
5-Ethyl-5-isopropylbarbituric acid and salt----------	ABB.
5-Ethyl-5-(1-methyl-1-butenyl)barbituric acid----------	x.
*5-Ethyl-5-(1-methyl-n-butyl)barbituric acid (Pentobarbital).	ABB, BPC, GAN.
*5-Ethyl-5-(1-methyl-n-butyl)barbituric acid, sodium salt--	ABB, BPC, GAN.
5-Ethyl-5-(1-methyl-n-butyl)-2-thiobarbituric acid and salt.	ABB.
5-Ethyl-1-methyl-5-phenylbarbituric acid (Mephobarbital)--	SDW.
5-Ethyl-5-n-pentylbarbituric acid, sodium salt----------	BPC.
*5-Ethyl-5-phenylbarbituric acid (Phenobarbital)----------	ABB, BPC, GAN, MAL, SDW.
*5-Ethyl-5-phenylbarbituric acid, sodium salt----------	BPC, GAN, MAL, SDW.
1-[2-(Benzylcarbamoyl)ethyl]-2-isonicotinoylhydrazine-------	PFZ.

TABLE 13B.--*Medicinal chemicals for which U.S. production or sales were reported, identified by manufacturer, 1961*--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
MEDICINAL CHEMICALS, CYCLIC--Continued	
Alicyclic and Heterocyclic--Continued	
3-Benzyl-3,4-dihydro-6-(trifluoromethyl)-2H-1,2,4-benzothiadiazine-7-sulfonamide, 1,1-dioxide (Benzhydroflumethiazide).	QMS.
3-Benzylthiomethyl-6-chloro-2H-1,2,4-benzothiadiazine-7-sulfonamide, 1,1-dioxide.	PFZ.
*Bile acids and salts:	
Bile salts, natural conjugated, unoxidized	LIL.
Bilirubin	PFN.
Cholic acid	DRG, SRL, WIL.
Dihydrocholic acid	MRK, WIL.
Dihydrocholic acid, sodium salt	WIL.
Desoxycholic acid	DRG, MRK, WIL.
*Ketocholanic acids	MRK, SRL, WIL.
Ox bile extract	ABB.
N-[Bis(2,2-dimethyl-1-aziridinyl)phosphinyl] carbamate, ethyl ester.	x.
Bromocamphor, mono	DOW, MAL, PEN.
4-[3-(p-Butoxyphenoxy)propyl] morpholine hydrochloride (Pramoxine).	ABB.
α-Butyloxycinchoninic acid diethylethylenediamide and hydrochloride.	CBP.
4-n-Butyl-2-p-hydroxyphenyl-1-phenyl-3,5-pyrazolidinedione	GGY.
*Caffeine, natural	GNF, MYW.
*Caffeine, synthetic	MON, PFZ.
Caffeine derivatives, natural and synthetic:	
Caffeine citrate	MAL, MRK.
Caffeine sodium benzoate	MAL.
Camphor, synthetic, U.S.P	HNW.
*Camphoric acid	FIN, PRR, PYL.
Camphoric anhydride	FIN.
Camphosulfonic acid	PRR, PYL.
Camphosulfonic acid, calcium salt	PYL.
Carboxymethylcellulose, sodium salt	CBP.
N-[3-(Carboxymethylmercaptomercuri)-2-methoxypropyl] - α-camphoramate, disodium salt.	WYT.
Cellulose, oxidized	EKT.
6-Chloro-2H-1,2,4-benzothiadiazine-7-sulfonamide, 1,1-dioxide.	MRK.
5-Chloro-2-benzoxazolinone	x.
6-Chloro-3-(chloromethyl)-3,4-dihydro-2-methyl-2H-1,2,4-benzothiadiazine-7-sulfonamide, 1,1-dioxide.	ABB.
6-Chloro-3-dichloromethyl-3,4-dihydro-1,2,4-benzothiadiazine-7-sulfonamide, 1,1-dioxide.	SCH.
7-Chloro-4-(4-diethylamino-1-methylbutylamino)quinoline	SDW.
6-Chloro-3,4-dihydro-2H-1,2,4-benzothiadiazine-7-sulfonamide, 1,1-dioxide.	CBP, MRK.
6-Chloro-3,4-dihydro-2-methyl-3-(2,2,2-trifluoroethylthiomethyl)-1,2,4-benzothiadiazine-7-sulfonamide, 1,1-dioxide.	PFZ.
7-Chloro-4-(4-[ethyl(2-hydroxyethyl)amino]-1-methylbutylamino)quinoline sulfate.	SDW.
*5-Chloro-7-iodo-8-quinolinol (Iodocholorohydroxyquinoline)	CBP, LEM, MTL, PYL.
7-Chloro-3-methyl-1,2,4-benzothiadiazine, 1,1-dioxide	SCH.

TABLE 13B. ***--Medicinal chemicals for which U.S. production or sales were reported, identified by manufacturer, 1961*--Continued**

Chemical	Manufacturers' identification codes (according to list in table 23)
MEDICINAL CHEMICALS, CYCLIC--Continued	
Alicyclic and Heterocyclic—Continued	
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.
3-(4-Chloro-3-sulfamoylphenyl)-3-hydroxyphthalimidine	GGY.
2-Chlorothiophene	GAM.
Coenzyme A	PBS.
Cozymase	PBS.
α-Cyclohexyl-α-phenyl-1-piperidinepropanol	ACY, SDW.
Cyclopentanol	LIL.
Cyclopentyl bromide	LIL.
1-Cyclopentyl-2-methylpropylamine (Cyclopentamine) hydrochloride.	LIL.
α-Cyclopentyl-2-thiophenylglycolic acid, 2-diethylaminoethyl ester methobromide.	SDW.
Dextran	COM, PHR.
2,4-Diamino-5-(p-chlorophenyl)-6-ethylpyrimidine	BUR.
2,6-Diamino-3-phenylazopyridine hydrochloride	HOF, NEP.
4,7-Dichloroquinoline	SDH, SFA.
Diethylaminocarbethoxybicyclohexyl (Dicyclomine) hydrochloride.	BKC.
6-(2-Diethylaminoethoxy)-2-dimethylaminobenzothiazole hydrochloride.	HOF.
1-Diethylcarbamyl-4-methylpiperazine dihydrogen citrate	ACY.
3,3-Diethyl-5-methyl-2,4-piperidinedione	HOF.
*Dihydrocodeinone bitartrate	EN, MAL, MRK, PEN.
Dihydrohydroxycodeinone hydrochloride	EN.
3,4-Dihydro-6-(trifluoromethyl)-2H-1,2,4-benzothiadiazine-7-sulfonamide, 1,1-dioxide.	OMS.
3,5-Diiodo-4-pyridone-N-acetic acid, diethanolamine salt	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.
p,α-Dimethylbenzyl camphorate, diethanolamine salt	x.
([(2,3-Dimethyl-5-oxo-1-phenyl-3-pyrazoline-4-yl)methyl]-amino)methanesulfonic acid, sodium salt (Dipyrone).	SDW.
3,4-Dimethyl-2-phenylmorpholine	x.
N,N-Dimethyl-4-piperidylidene-1,1-diphenylmethane, methylsulfate (Diphemanil methylsulfate).	SCH.
N-(2,6-Dioxo-3-piperidyl)phthalimide	BKC.
5-Ethyl-3,5-dimethyl-2,4-oxazolidinedione	ABB.
Ethyl 1-methyl-4-phenylisonipecotate	SDW, WYT.
1-Ethyl-3-(5-nitro-2-thiazolyl)urea	MRK.
N-Ethyl-3-piperidyl benzilate methobromide	LKL.
N-Ethyl-3-piperidyl diphenylacetate hydrochloride	LKL.
Ethynyl cyclohexyl carbamate	LIL.
Fructose (Levulose)	DLI.
Galactose	PFN.
Heparin sodium	ABB, RIK.
Hesperidin methyl chalcone	SKG.
1-Hexadecylpyridinium chloride	GAN, HEX, ICO.
Hexahydro-1-methyl-4-phenylazepine-4-carboxylic acid, ethyl ester, citrate salt.	WYT.
Hexamethylenetetramine	HN.

TABLE 13B.--*Medicinal chemicals for which U.S. production or sales were reported, identified by manufacturer, 1961*--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
MEDICINAL CHEMICALS, CYCLIC--Continued	
Alicyclic and Heterocyclic--Continued	
Hexamethylenetetramine anhydromethylene citrate	SDW.
Hexamethylenetetramine mandelate	NEP, PYL.
Hexokinase	PBS.
Hexosediphosphoric acid salt: Calcium hexosediphosphate	SBR.
Hormones (steroid):	
Adrenocorticotropic hormone (ACTH)	ARP, ORG, WIL.
21-Desoxy-9α-fluoro-6α-methylprednisolone	x.
Dexamethasone	MRK, SCH.
Dexamethasone acetate	SCH.
9α,11β-Dichloro-17,21-dihydroxy-1,4-pregnadiene-3,20-dione 21-acetate.	SCH.
Dienediol	UPJ.
Estradiol-3-benzoate	ORG.
Estradiol-3,17-dipropionate	ORG.
Estrogenic substance	ORG.
9α-Fluorohydrocortisone acetate	UPJ.
9α-Fluoroprednisolone	UPJ.
Fluoxymesterone	UPJ.
*Hydrocortisone alcohol and acetate	MRK, PFZ, UPJ.
Hydrocortisone diethylaminoacetate hydrochloride	PFZ.
17β-Hydroxy-3-androstanone benzoate	ORG.
17-Hydroxy-11-dehydrocorticosterone (Cortisone) and acetate.	INI, MRK, SCH, UPJ.
21-Hydroxypregnane-3,20-dione, sodium hemisuccinate	PFZ.
11-α-Hydroxyprogesterone	UPJ.
17-α-Methyl-17-β-hydroxyandrostane-1,4-diene-3-one	CBP.
Methylprednisolone	x.
Piperazine estrone sulfate	ABB.
Prednisolone	MRK, UPJ.
*Prednisone	MRK, SCH, UPJ.
4-Pregnen-16α-methyl-17α,21-diol-3,20-dione 21-acetate	INI.
Progesterone	x.
Sitosterol B	UPJ.
Triamcinolone	ACY, OMS.
Trienediol	UPJ.
*Hydantoin derivatives:	
Allantoin (5-Ureidohydantoin)	FIN, FMF, HFT, SPC.
5,5-Diphenylhydantoin	PD.
5,5-Diphenylhydantoin, sodium salt	PD, PYL.
3-Ethyl-5-phenylhydantoin	ABB.
N-(5-Nitro-2-furfurylidene)-1-aminohydantoin	NOR.
1-Hydrazinonaphthalazine hydrochloride	CBP.
3-Hydroxy-1-methylpyridinium bromide dimethylcarbamate	HOF.
8-Hydroxyquinoline-5-sulfonic acid	LEM.
4,5-Imidazoledicarboxamide (Glycarbylamide)	MRK.
*Imidazoline derivatives:	
2-Benzyl-2-imidazoline (Tolazoline) hydrochloride	ORT, SPC.
1-Methyl-2-undecyl-3-benzylimidazolium bromide	LIL.
α-2-(1,2,3,4-Tetrahydro-1-naphthyl)-2-imidazoline hydrochloride.	PFZ.
Iodoantipyrine	MAL.
2-Iodoethyl-1,3-dioxolane-4-methanol	x.

TABLE 13B. --*Medicinal chemicals for which U.S. production or sales were reported, identified by manufacturer, 1961*-- **Continued**

Chemical	Manufacturers' identification codes (according to list in table 23)
MEDICINAL CHEMICALS, CYCLIC--Continued	
Alicyclic and Heterocyclic--Continued	
Isonicotinic acid hydrazide	RIL.
1-Isopentylcyclohexanecarboxylic acid, 2-diethylaminoethyl ester.	BKC.
Maltose	PFN.
Menthyl salicylate	ICO.
homo-Menthyl salicylate	ICO.
6-Mercaptopurine	BUR.
6-Methoxy-8-aminoquinoline	GAM.
β-Methoxy-γ-hydroxymercuric propylamide of camphoric acid, sodium salt with theophylline.	FIN.
Methoxyoximercuripropylsuccinyl urea	LKL.
5-(o-Methoxyphenoxymethyl)-2-oxazolidinone	ACY.
2-Methylbenzothiazole	FMT.
α-Methylcyclopentaneethylamine	LIL.
2-Methyl-1,2-di-3-pyridyl-1-propanone	CBP.
3,3′-Methylenebis[4-hydroxycoumarin]	ABB, FIN.
3-Methyl-2-phenylmorpholine hydrochloride	GGY.
N-Methyl-3-piperidylbenzilate methobromide	LKL.
10-[(1-Methyl-3-piperidyl)methyl]phenothiazine hydrochloride (Mepazine).	NEP.
3-(2-Methyl-1-piperidyl)propyl benzoate (Piperocaine) hydrochloride.	LIL.
3-(2-Methyl-1-piperidyl)propyl p-cyclohexyloxybenzoate	LIL.
2-Methyl-3-o-tolyl-4(3H)-quinazolinone	BPC.
Nikethamide (Coramine)	CBP.
5-Nitro-2-furaldehyde diacetate	NOR.
5-Nitro-2-furaldehyde semicarbazone	NOR.
5-Nitro-2-fural semioxamazone	NOR.
N-(5-Nitro-2-furfurylidene)-3-amino-2-oxazolidene	NOR.
Nucleic acid	SBR.
Nucleic acid salts	SBR.
Pamaquine (N-Diethylaminoisopentyl-8-amino-6-methoxyquinoline).	SDW.
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.
Phytic acid	STA.
Phytic acid, calcium salt	STA.
*Piperazine	DOW, HOU, 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.
N-Methylpiperazine	UCC.
*Piperazine adipate	JCC, PYL, RDA.
Piperazine calcium ethylenediamine tetraacetate (Perin)	EN.

TABLE 13B.--*Medicinal chemicals for which U.S. production or sales were reported, identified by manufacturer, 1961*--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
MEDICINAL CHEMICALS, CYCLIC--Continued	
Alicyclic and Heterocyclic--Continued	
*Piperazine derivatives--Continued	
*Piperazine citrate	JCC, PYL, RDA, RSA.
Piperazine dihydrochloride	DOW, PYL, WHL.
Piperazine eutectic	JCC.
Piperazine hexahydrate	JCC, PYL, RDA.
*Piperazine hydrochloride	DOW, JCC, RDA.
*Piperazine phosphate	JCC, PYL, RDA, WHL.
Piperazine sulfate solution	JCC.
Piperazine tartrate	PYL.
sym-N-Tetramethylpiperazine diiodide	PYL.
Podophyllin powder	ABB.
Primaquine (8-(4-Amino-1-methylbutylamino)-6-methoxyquinoline) phosphate.	PD.
6-Propyl-2-thiouracil	ACY, PYL.
Pyrazinamide	MRK.
2-Pyridinemethanol tartrate	HOF.
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, MTL, PYL.
Rutin	PEN.
Terpinol hydrate	PEN.
Theobromine derivatives:	
Theobromine sodium acetate	MAL.
Theobromine sodium salicylate	MAL.
*Theophylline base and derivatives:	
Theophylline aminoisobutanol	GAN.
Theophylline, anhydrous	GAN.
Theophylline cholinate	NEP.
*Theophylline ethylenediamine (Aminophylline)	GAN, LEM, SRL.
Theophylline ethylenediamine, sodium biphosphate	GAN.
Theophylline magnesium	MAL.
Theophylline methoxyoximercuripropyl succinylurea	LKL.
Theophylline monoethanolamine	LIL.
Theophylline sodium acetate	MAL.
2-(4-Thiazolyl)benzimidazole	MRK.
2-Thiouracil	ACY.
*Tranquilizers (including benzenoid):	
4-[2-(2-Acetylphenothiazin-10-yl)propyl]piperazine-ethanol.	SCH.
1-(p-Chlorobenzhydryl)-4-[2-(2-hydroxyethoxy)ethyl]-diethylenediamine dihydrochloride.	PFZ.
1-(p-Chlorobenzhydryl)-4-[2-(2-hydroxyethoxy)ethyl]-diethylenediamine pamoate.	PFZ.
2-Chloro-10-(3-dimethylaminopropyl)phenothiazine (Chlorpromazine) hydrochloride.	SK.
7-Chloro-2-methylamino-5-phenyl-3H-1,4-benzodiazepine-4-oxide hydrochloride.	HOF.
2-Chloro-10-[3-(1-methyl-4-piperazinyl)propyl]phenothiazine dimaleate.	SK.

TABLE 13B. --***Medicinal chemicals for which U.S. production or sales were reported, identified by manufacturer, 1961***--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
MEDICINAL CHEMICALS, CYCLIC--Continued	
Alicyclic and Heterocyclic--Continued	
*Tranquilizers (including benzenoid)--Continued	
4-[3-(2-Chloro-10-phenothiazinyl)propyl]-1-piperazine-ethanol.	SCH.
2-(p-Chlorophenyl)-3-methyl-2,3-butanediol	LIL.
10-(3-Dimethylaminopropyl)phenothiazine (Promazine) hydrochloride.	WYT.
α-(4-Piperidyl)benzhydrol (Azacyclonol) hydrochloride	BKC.
6-(Trifluoromethyl)-1,2,4-benzothiadiazine-7-sulfonamide, 1,1-dioxide.	OMS.
2-Trifluoromethyl-10-(3-dimethylaminopropyl)phenothiazine (Triflupromazine) hydrochloride.	OMS.
4-(3-[2-(Trifluoromethyl)-10-phenothiazinyl]propyl)-1-piperazineethanol dihydrochloride.	OMS, SCH.
3,5,5-Trimethyl-2,4-oxazolidinedione	ABB.
Triphosphopyridine nucleotide	PBS.
3-Tropanol (Tropine)	SPC.
Tropine benzhydryl ether methanesulfonate	x.
Uric acid	FMF.
Uridine	SBR.
Uridine triphosphate	PBS, SBR.
1-Vinyl-2-pyrrolidinone iodine complex polymer	G.
*Vitamins:	
*A, from all sources:	
A acetate	CW, EK, HOF, MRK, PFZ.
A acetate (feed grade)	HOF.
A alcohol	CW.
A ester (natural)	CW.
A palmitate	EK, HOF, MRK, PFZ.
A palmitate (feed supplement)	EK, HOF, PFZ.
β-Carotene	HOF.
B_1 (Thiamin derivatives):	
(Thiamin hydrochloride)	HOF, MRK.
(Thiamin nitrate)	HOF, MRK.
B_2:	
(Riboflavin-5'-phosphate, monosodium salt) (100%)	HOF.
*(Riboflavin for human consumption) (100%)	HOF, MRK.
*(Riboflavin for animal and poultry consumption) (100%)	COM, GPR, HOF, MRK, PBS.
B_6 (Pyridoxine)	HOF, MRK.
*B_{12}, 100%:	
Feed grade	COM, GPR, IMC, MRK, PBS.
Pharmaceutical quality	IMC, MRK.
U.S.P. Crystalline	MRK.
*D_2 (Irradiated ergosterol)	DGS, DLI, GNM, VTM.
*D_3 (Irradiated animal sterol)	DGS, DLI, NOP, VTM.
E (α-Tocopherol)	HOF.
E (α-Tocopherol acetate)	HOF.
Biotin	HOF.
Folic acid	ACY, UPJ.
Inositol	STA.
*Niacin (Nicotinic acid)	ABB, ACP, KPT, MRK, NOP, RIL, SCR.
*Niacinamide	ABB, MRK, NEP, RIL, SCR.

TABLE 13B.--*Medicinal chemicals for which U.S. production or sales were reported, identified by manufacturer, 1961*--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
MEDICINAL CHEMICALS, CYCLIC--Continued	
Alicyclic and Heterocyclic--Continued	
*Vitamins--Continued	
Niacinamide hydrochloride	NEP.
*Nicotinic acid (animal feed)	KPT, MRK, NEP, RIL.
Nicotinic acid, sodium salt	MRK, NEP.
Xylose	PFN.
5-(3,5-Xylyloxymethyl)-2-oxazolidinone	ACY.
All other	SRL.
MEDICINAL CHEMICALS, ACYCLIC	
Acetylcarbromal (1-Acetyl-3-(2-bromo-2-ethylbutyryl)urea)	MLS.
Acetylcholine bromide	EK, PYL.
Acetylcholine chloride	MRK, PYL.
Acetylmethionine	DOW.
Acetyl-β-methylcholine chloride	RSA.
*Amino acids:	
dl-Alanine (dl-α-Alanine)	DOW.
β-Alanine	ABB, BFG, NOP.
Arginine free base	GNM.
Arginine glutamate	GNM.
l(+)-Arginine hydrochloride	GNM.
dl-Aspartic acid	HEX, NAC.
Glutamic acid and salts:	
l(+)-Glutamic acid	IMC.
l(+)-Glutamic acid hydrochloride	IMC, LEM.
l(+)-Glutamic acid, monoammonium salt	GNM.
l(+)-Glutamic acid, monopotassium salt	IMC.
Glycine (Aminoacetic acid)	BPC, DOW.
Glycine hydrochloride	EK.
2-Hydroxy-4-(methylthio)butyric acid, calcium salt	DUP.
l-Isoleucine	DOW.
*l(+)-Lysine hydrochloride	DUP, MRK, PFZ.
dl-Methionine	DOW, LEM.
Methionine (animal feed grade)	DOW.
dl-Threonine	DOW.
dl-Valine	DOW.
Amino acid mixtures	ABB, CUT, STA.
Amyl nitrite (Isoamyl nitrite)	MAL.
Betaine base	HFT.
Betaine hydrochloride	HFT, LEM.
Bromoform (Tribromomethane)	DOW.
Calcium lactophosphate	MAL.
Calcium succinate	LEM, PEN.
Carbromal (3-(2-Bromo-2-ethylbutyryl)urea)	MLS.
Chloretone (tert-Trichlorobutyl alcohol)	BPC, PD.
3-Chloromercuri-2-methoxypropylurea	LKL.
β-Chlorovinylethylethynyl carbinol	ABB.
Choline and salts:	
Choline bicarbonate	COM.
*Choline bitartrate	ACY, CFC, HFT.
*Choline chloride, for animal and poultry feed, and for use as an intermediate.	COM, HFT, RH.

TABLE 13B.--*Medicinal chemicals for which U.S. production or sales were reported, identified by manufacturer, 1961*--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
MEDICINAL CHEMICALS, ACYCLIC--Continued	
Choline and salts--Continued	
Choline chloride, medicinal grade only	CFC, HFT.
*Choline dihydrogen citrate	ACY, CFC, HFT.
Tricholine citrate	ACY, CFC.
Cyanoacetic acid hydrazide	KF.
Di(2-ethylhexyl) sulfosuccinate	ACY.
2-Dimethylaminoethanol bitartrate	x.
Divinyl ether	MRK.
Ethyl carbamate (Urethane)	FMP.
2-Ethyl-cis-crotonylurea	MLS.
Ethylenediamine dihydroiodide	WHL.
Ethylenediamine diiodide	PYL.
Ethyl iodide	FMT.
Ethyl nitrite	MAL.
Gluconic acid salts:	
Ammonium gluconate	PFZ.
Calcium glucoheptonate	PFN.
*Calcium gluconate	DLI, MAL, PFZ.
Copper gluconate	PFZ.
Iron (ferrous) gluconate	PFZ.
Magnesium gluconate	PFZ.
Manganese gluconate	PFZ.
Potassium gluconate	PFZ.
Sodium gluconate	DLI, PFZ.
Glucono-δ-lactone	PFZ.
Glucosamine hydrochloride	PFZ.
dl-Glutamine	LIL.
Glutathione (oxidized)	SBR.
Glutathione (reduced)	SBR.
Hendecenoic acid salts:	
Calcium hendecenoate	WTM.
Zinc hendecenoate	WTM.
Hexamethyldiaminoisopropanol diiodide	SDW.
Hexamethylenebis[trimethylammonium chloride] (Hexamethonium chloride).	HEX.
2-Hydroxy-4-methylisobutyric acid, calcium salt	MON.
Iodoform	MAL, PEN.
Iodomethanesulfonic acid, sodium salt	SDW.
Iron (ferrous) oxalate	BKL.
α-Ketoglutaric acid	LIL.
Lactic acid salts (medicinal grades only): Iron (ferrous) lactate.	MAL.
Lecithin	UPJ.
Magnesium citrate	MAL.
Magnesium hydrogen aspartate	WYT.
Methyl glucamine	ABB.
2-Methyl-2-propyl-1,3-propanediol	ABB.
Pantolactone (2,4-Dihydroxy-3,3-dimethylbutyric acid, γ-lactone) (racemic).	ABB, CKL, PD.
d-Pantolactone (d-2,4-Dihydroxy-3,3-dimethylbutyric acid, γ-lactone).	PD.
Potassium hydrogen aspartate	WYT.
2-Propylvaleric acid and bismuth salt	x.
Sodium bismuth triglycolamate	x.

TABLE 13B.--*Medicinal chemicals for which U.S. production or sales were reported, identified by manufacturer, 1961*--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
MEDICINAL CHEMICALS, ACYCLIC--Continued	
Sodium morrhuate	FIN.
Sodium 3,3-pentamethylene-4-hydroxybutyrate	NEP.
Sodium succinate	PEN.
Sodium tartrate	MAL.
*Succinylcholine dichloride	ABB, BUR, SDW.
Tetramethylammonium chloride	ASL, EK, RSA.
Tetramethylammonium hydroxide	RSA.
Thiosemicarbazide	FMT, PYL.
Tranquilizers:	
2-Methyl-2-sec-butyl-1,3-propanediol dicarbamate	x.
*2-Methyl-2-n-propyl-1,3-propanediol dicarbamate	ABB, BKL, ICO, PEN, x.
2,2,2-Tribromoethanol	SDW.
*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.
Pantothenic acid, sodium salt	PD.
d-Pantothenyl alcohol (α,γ-Dihydroxy-N-(3-hydroxy-propyl)-β,β-dimethylbutyramide).	HOF.
dl-Pantothenyl alcohol	HOF.

Flavor and Perfume Materials

TABLE 14B. --*Flavor and perfume materials for which U.S. production or sales were reported, identified by manufacturer, 1961*

[Flavor and perfume materials for which separate statistics are given in table 14A are marked below with an asterisk (*); those not so marked do not appear in table 14A because the reported data are accepted in confidence and may not be published. Manufacturers' identification codes shown below are taken from table 23. An x signifies that the manufacturer did not consent to his identification with the designated product]

Material	Manufacturers' identification codes (according to list in table 23)
FLAVOR AND PERFUME MATERIALS, CYCLIC	
Benzenoid and Naphthalenoid	
2'-Acetonaphthone (Methyl β-naphthyl ketone)	GIV, TBK.
Acetophenone	GIV, TBK.
7-Acetyl-6-ethyl-1,1,4,4-tetramethyl-1,2,3,4-tetrahydronaphthalene.	GIV, TBK.
4-Allylveratrole (Eugenyl methyl ether)	GIV, ICO, TBK.
Amyl cinnamate	TBK.
p-tert-Amyl cyclohexanone	x.
*Anethole (p-Propenylanisole)	FB, GIV, GLD, HNW, HPC, UNG.
*p-Anisaldehyde (p-Methoxybenzaldehyde)	GIV, ICO, OPC, TBK.
Anisole (Methyl phenyl ether)	GIV.
Anisyl acetate	GIV, TBK.
Anisyl alcohol	GIV, TBK.
*Benzophenone	GIV, ICO, OPC, TBK.
*Benzyl acetate	GIV, OPC, SHL, TBK.
*Benzyl alcohol	BPC, GIV, OPC, SHL, TBK, TNP, VLY.
Benzyl benzoate	GIV, MON, OPC, TBK, TNP.
Benzyl butyrate	FB, TBK.
*Benzyl cinnamate	GIV, ICO, TBK.
Benzyl ether	OPC, SHL.
Benzyl formate	TBK.
Benzyl isoeugenyl ether	GIV, TBK.
Benzyl isopentyl ether	GIV.
Benzyl phenylacetate (Benzyl α-toluate)	TBK.
*Benzyl propionate	FB, GIV, OPC, TBK, VLY, VPC.
Benzyl salicylate	GIV, IFF, OPC, TBK.
α-Bromostyrene	TBK.
4'-tert-Butyl-2',6'-dimethyl-3',5'-dinitroacetophenone (Musk ketone).	GIV.
6-tert-Butyl-3-methyl-2,4-dinitroanisole (Musk ambrette)	GIV.
p-tert-Butyl-α-methylhydrocinnamaldehyde (α-Methyl-β-(p-tert-butylphenyl)propionaldehyde).	GIV.
5-tert-Butyl-1,2,3-trimethyl-4,6-dinitrobenzene (5-tert-Butyl-4,6-dinitrohemimellitene).	GIV.
5-tert-Butyl-2,4,6-trinitro-m-xylene (Musk xylol)	GIV.
Carvacrol (2-p-Cymenol)	GIV.
*Cinnamaldehyde	FB, GIV, OPC, TBK.
Cinnamic acid	BPC.
*Cinnamyl acetate	FB, GIV, TBK.
*Cinnamyl alcohol	FB, GIV, NEO, RDA, TBK.
Cinnamyl anthranilate	FEL, GIV.
Cinnamyl formate	TBK.
Cinnamyl isovalerate	TBK.
trans-Decahydro-2-naphthol	IFF.
p,α-Dimethylbenzyl alcohol (p-Methylphenylmethylcarbinol)	GIV.
α,α-Dimethylphenethyl acetate	GIV, IFF, TBK.

TABLE 14B.--*Flavor and perfume materials for which U.S. production or sales were reported, identified by manufacturer, 1961*--Continued

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

TABLE 14B.--*Flavor and perfume materials for which U.S. production or sales were reported, identified by manufacturer, 1961*--Continued

Material	Manufacturers' identification codes (according to list in table 23)
FLAVOR AND PERFUME MATERIALS, CYCLIC--Continued	
Benzenoid and Naphthalenoid--Continued	
2-Phenoxyethyl isobutyrate	GIV, TBK.
Phenylacetaldehyde (α-Tolualdehyde)	GIV, TBK.
Phenylacetaldehyde, dimethyl acetal	GIV, TBK.
o-Phenylanisole (2-Methoxybiphenyl)	GIV, IFF.
4-Phenyl-3-buten-2-one (Benzylidene acetone)	FB, TBK.
Phenylethyl cinnamate	TBK.
3-Phenyl-1-propanol (Hydrocinnamic alcohol)	GIV, TBK.
3-Phenyl-1-propyl acetate	GIV, TBK.
*4-Propenylveratrole (Isoeugenyl methyl ether)	GIV, ICO, TBK.
Salicylaldehyde	DOW.
Styrolyl acetate	FB.
1,2,3,6-Tetrahydro-2,3,5-trimethylbenzaldehyde	IFF.
p-Tolualdehyde (p-Methylbenzaldehyde)	HN.
p-Tolyl acetate (p-Cresyl acetate)	GIV, TBK.
p-Tolyl isobutyrate (p-Cresyl isobutyrate)	GIV, IFF.
p-Tolyl phenylacetate (p-Cresyl α-toluate)	GIV, TBK.
α-(Trichloromethyl)benzyl acetate (Rosetone)	ICO, OPC, TBK.
Trimethyl tetrahydro benzylidene acetone	x.
Vanillin	MON, SLV.
Terpenoid, Heterocyclic, and Alicyclic	
Allyl ionone	GIV, IFF.
Amyris acetate	TBK.
Bornyl acetate	FEL, GIV.
4-tert-Butylcyclohexanol	IFF.
4-tert-Butylcyclohexyl acetate	DOW, IFF, VPC.
Carvone (Carvol)	FB, FRM, OPC.
Caryophyllene	GIV, GLD.
Cedranone	TBK.
*Cedrol	GIV, IFF, OPC, TBK, UNG, VLY.
*Cedryl acetate	GIV, IFF, NEO, TBK, UNG.
*Citral (Geranial)	FB, GIV, LUE, NEO, RT, TBK, UNG.
Citronellal	FB, GIV, IFF, TBK.
*Citronellol	FB, GIV, GLD, ICO, IFF, OPC, TBK, VLY.
*Citronellyl acetate	GIV, IFF, TBK, VLY.
Citronellyl butyrate	GIV.
*Citronellyl formate	GIV, IFF, TBK.
Citronellyl isobutyrate	GIV, TBK.
Citronellyl oxyacetaldehyde	IFF, TBK.
Citronellyl propionate	IFF.
*Coumarin	DOW, MON, NEO, RDA, TBK.
Cyclopentanone	ARA.
Dihydroterpinyl acetate	GIV.
*Essential oils, chemically modified:	
Citronella oil, acetone condensation product	CP.
Citronella oil, acetylated	FB.
Clove stem oil, acetylated	FB.
*Ethyl oxyhydrate	FEL, FLO, LUE, RT, VND, VPC.
Guaiac wood acetate	FB, TBK.
Lavandin, acetylated	FEL.
Rosemary oil, acetylated	FB, UNG.

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TABLE 14B. --*Flavor and perfume materials for which U.S. production or sales were reported, identified by manufacturer, 1961*--Continued

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

TABLE 14B. --*Flavor and perfume materials for which U.S. production or sales were reported, identified by manufacturer, 1961*--Continued

Material	Manufacturers' identification codes (according to list in table 23)
FLAVOR AND PERFUME MATERIALS, CYCLIC--Continued	
Terpenoid, Heterocyclic, and Alicyclic--Continued	
*Rhodinol	FB, FEL, GIV, IFF, LUE, NEO, RDA, SHL, UNG.
Rhodinyl acetate	FB, GIV, IFF.
Rhodinyl formate	GIV.
Safrole	FB, GIV, PEN.
Santalol	GIV, IFF.
Santalyl acetate	GIV.
Sweeteners, synthetic:	
Cyclohexanesulfamic acid	ABB.
Cyclohexanesulfamic acid, calcium salt	ABB.
Cyclohexanesulfamic acid, sodium salt	ABB.
Saccharin	MEE, MON.
Saccharin, ammonium salt	MEE.
Saccharin, calcium salt	MEE.
Saccharin, sodium salt	MEE, MON.
*Terpineols:	
α-Terpineol	GLD, HNW, HPC.
β-Terpineol	HNW.
Terpineol (α- and β-)	GIV, NEO.
Terpinol hydrate (Terpin hydrate), tech	HPC.
*Terpinyl acetate	GIV, HNW, OPC, RDA, TBK, UNG.
Terpinyl propionate	GIV, TBK.
Tetrahydro alloocimenol	x.
3,5,5-Trimethylcyclohexanol	ICO, OPC.
Vertofix (Acetyl cedrene, principally)	x.
Vetivenol	GIV, TBK.
*Vetivenyl acetate	FB, GIV, IFF, NEO, TBK, VLY.
FLAVOR AND PERFUME MATERIALS, ACYCLIC	
Allyl heptanoate (Allyl enanthate)	DOW, TBK.
*Allyl hexanoate (Allyl caproate)	DOW, FB, GIV, TBK.
Allyl isothiocyanate (Synthetic mustard oil)	ICO, MRT, OPC.
Allyl sulfide (Diallyl sulfide)	DOW, RT.
Butyl butyrate	TBK.
Butyl isovalerate	TBK.
Butyrone (Di-n-propyl ketone)	TBK.
Decanal (Capraldehyde) (C_{10})	GIV, TBK.
ω-Decenol	x.
Diethyl sebacate (Ethyl sebacate)	FEL, TBK.
Diethyl succinate	TBK, UCC.
Diethyl tridecanedioate (Ethylene brassylate)	RDA, TBK.
Dihexyl fumarate	FB.
3,6-Dimethyl-3-octanol	AIR.
*3,7-Dimethyl-1-octanol	GIV, IFF, TBK.
Dimethyl succinate	ICO.
*Ethyl butyrate	FB, NW, RT, TBK.
Ethyl decylate	TBK.
Ethyl heptanoate (Ethyl enanthate)	FEL, TBK.
Ethyl hexanoate (Ethyl caproate)	FB, NW, TBK.
Ethyl isovalerate	FB, TBK.
Ethyl levulinate	FMT.
Ethyl myristate	GIV.

TABLE 14B. --*Flavor and perfume materials for which U.S. production or sales were reported, identified by manufacturer, 1961*--Continued

Material	Manufacturers' identification codes (according to list in table 23)
FLAVOR AND PERFUME MATERIALS, ACYCLIC--Continued	
Ethyl nonanoate (Ethyl pelargonate)	TBK.
Glutamic acid, monopotassium salt	GRW.
*Glutamic acid, monosodium salt (Monosodium glutamate)	COM, GRW, HPC, IMC, MRK, PFZ.
Heptanal (Enanthaldehyde) (C_7)	BAC, WTM.
Heptyl ether (Enanthic ether)	TBK.
Hexyl acetate	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 butyrate	FB, TBK.
*Isopentyl butyrate (Amyl butyrate)	FB, GIV, NW, RT, TBK.
Isopentyl formate (Amyl formate)	FB, 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.
Methyl propionate	FB.
2-Methylundecanal (2-Methylnonylacetaldehyde)	GIV, TBK, VPC.
Nonanal (Pelargonaldehyde) (C_9)	GIV, TBK.
Nonanol	TBK.
Nonyl acetate	TBK.
Nonynol acetate, isomeric (Tepyl acetate)	IFF, TBK.
Octanal (Caprylaldehyde) (C_8)	GIV, IFF, TBK.
*Octanol	TBK.
n-Octyl acetate	FB, TBK.
*n-Octyl isobutyrate	FB, ICO, TBK.
Tridecanedioate	VLY.
Trimethylundecenal	VPC.
Undecanal (Hendecanaldehyde) (C_{11})	GIV, TBK.
Undecenal (Hendecenaldehyde)	GIV, TBK.
Valerolactone	GIV.

Plastics and Resin Materials

TABLE 15B.--*Plastics and resin materials for which U.S. production or sales were reported, identified by manufacturer, 1961*

[Plastics and resin materials for which separate statistics are given in table 15A are marked below with an asterisk (*); chemicals not so marked do not appear in table 15A because the reported data are accepted in confidence and may not be published. Manufacturers' identification codes shown below are taken from table 23. An x signifies that the manufacturer did not consent to his identification with the designated product]

Material	Manufacturers' identification codes (according to list in table 23)
PLASTICS AND RESIN MATERIALS, BENZENOID	
*Coumarone-indene resins	ACP, DSO, ICF, NEV, NSP, PAI.
Epoxy resins:	
*Unmodified	CBA, DOW, JOD, KPT, RCI, SHC, UCP.
*Modified	ACP, AMF, ARO, BEN, CM, CPL, CPV, DSO, EW, FRE, GLD, GRV, HYC, ICF, IOC, ISO, JOB, JNS, MCC, MID, MNP, MRW, OSB, PFP, PPG, RAB, RCI, RED, SHC, SRR, SVC, SW, UCP, WAS.
*Petroleum polymer and condensation resins	ACC, CFX, DSO, ENJ, ICF, KPI, MCA, MID, NEV, NSP, PAI, VEL, VSV.
*Phenolic and other tar-acid resins:	
*Unmodified:	
*Cresols-formaldehyde	BOR, CD, EW, ICF, MON, NVF, RAB, RCI, SCN, UCP, VAR.
*Cresylic acid-formaldehyde	CAT, CD, EW, FOM, ICF, RCD, SCN, SPL, TAY, UCP, VAR.
*Phenol(and substituted phenols)-formaldehyde	ABS, ACP, ADM, AMR, ARK, BGC, BME, BOR, CAT, CD, DSO, EW, FOM, GE, GRG, HER, HKD, HVG, ICF, INL, IRI, KRM, MCA, MID, MON, MRB, NCI, NVF, PFP, PLS, PYR, PYZ, RAB, RCI, RGC, RH, SCN, SHA, SIM, SPL, SW, SYR, SYV, UCP, VAR, WCA, WEV, WRD, x.
*Resorcinol-formaldehyde	AMR, BOR, CAT, KPC, MID, MMM, NTC, PGU, RCI, SCN.
*All other unmodified phenolic and other tar-acid resins	ACP, BOR, CAT, CD, DA, GE, GEI, ICF, KND, RAB, RCD, RGC, SPL, UCP, WAS.
*Modified:	
*Phenol(and substituted phenols)-formaldehyde with modifiers (except rosin).	ABS, ACP, ACR, ADM, AKL, CAT, EW, GE, ICF, OCF, OSB, RAB, RCI, REZ, RH, SCN, SNC, UCP.
*Rosin and rosin esters modified with phenolic and other tar-acid resins (hard resins).	ACP, ADM, AKL, BOR, CD, CIK, CPV, DAV, DPP, DSO, FCD, FRP, GIL, HKD, HPC, KRM, NCI, RCI, RH, SCN, SHA, SW, WAS.
*All other modified phenolic and other tar-acid resins	ADM, CBC, EVM, GE, GRV, JNS, KPC, NPP, PPG, RCI, REZ, SCN, UCP, VSV, WAS, x.
*Phthalic alkyd resins:	
*Unmodified	ABR, ACP, ACY, ADM, AKL, AMF, AMK, APV, ARO, BAL, BEN, BOY, BRU, CIK, CM, CPL, CPV, DAV, DSO, DUN, DUP, EW, FAR, FBR, FCD, FLW, FRE, FSH, GEI, GIL, GLD, GRV, HAN, HPC, HRS, ICF, JAM, JOB, JOD, JWL, KEL, KPV, KYN, LON, MCC, MCW, MID, MNP, MR, MRW, NCI, NON, ONX, ORO, OSB, PFP, PPG, PRT, RCI, RED, REL, RH, RMC, SCF, SCN, SED, SIP, SPP, SRR, STT, SVC, SW, TV, UCP, VTV, WAS, WEV, WPC.
*Modified	ACY, ADM, AKL, AMF, APV, ARO, BAL, BEN, BOY, CIK, CM, CPV, DAV, DSO, DUN, DUP, EW, FLW, FMP, FRE, GEI, GIL, GLD, GRG, GRV, HPC, ICF, JOB, JOD, JSC, JWL, KRM, KYN, LON, MCC, MCW, MID, MMM, MNP, MR, MRW, NON, NTL, ORO, OSB, PER, PFP, PPG, PRT, QCP, RCI, REL, RH, RMC, SCF, SCN, SED, SIP, SPP, SRR, STT, SVC, SW, TV, VTV, WAS, WEV, WPC.

TABLE 15B.--*Plastics and resin materials for which U.S. production or sales were reported, identified by manufacturer, 1961*--Continued

Material	Manufacturers' identification codes (according to list in table 23)
PLASTICS AND RESIN MATERIALS, BENZENOID--Continued	
*Polyester resins	ACP, ACR, ACY, ADM, AKL, AMK, AMR, APD, BOR, BRR, CEL, CIK, COR, CPV, DA, DAV, DSO, EPC, EW, FMP, FRE, GEI, GLD, GRG, GRV, GYR, HKD, HYC, ICF, INM, JNS, MCW, MFG, MOB, ORO, OSB, PFP, PLU, PPG, RCI, REL, RH, SCN, SW, USR, UTR, VAL, WTC, x.
*Polyurethane and diisocyanate resins	ACB, ACP, ADM, AMF, ARK, BFG, CWN, DSO, DUP, FRE, GLD, GPM, IPI, ISO, MOB, NOP, PEL, PFP, PYR, RCI, SFC, WPC, WTC.
*Styrene and styrene derivative polymer and copolymer resins:	
*Polystyrene	ACP, ATL, BEA, BPL, CSD, DOW, FG, GOR, GRP, KPP, MON, MPL, NSP, PCI, PLA, RCC, SHC, SOL, TIC, UBS, UCP, UNC, WAS.
*Styrene-alkyd polyesters (for protective coatings)	ACP, ACY, ADM, APV, ARO, BOR, CPV, DSO, DUP, EW, FCD, FRE, GLD, GRV, ICF, JOB, KEL, MCW, PPG, RCI, REL, RH, SCN, SPP, SW.
*Styrene-butadiene copolymer:	
*Latexes	DOW, DSO, FIR, GLD, GNT, GRD, GYR, KPP, MON, USR.
*All other	BFG, DSO, ENJ, FI, FIR, GYR, JOD, MON, PPG, USR.
*Styrene-divinylbenzene copolymer	DA, DOW, IOC, POL, RH.
*All other styrene and styrene derivative polymer and copolymer resins.	ACY, APV, ARO, ATL, BFG, CAT, CSD, DOW, DUP, ENJ, FIR FRE, GLD, GNT, GYR, JNS, JSC, MCB, MON, NCI, ONX, PAI, PLA, RH, RUB, SHC, SW, UCP, USR.
Toluenesulfonamide resins	MON.
All other benzenoid plastics and resin materials	ACP, AKL, BKC, DUP, GLD, IOC, NEV, NOP, NVF, RH.
PLASTICS AND RESIN MATERIALS, NONBENZENOID	
*Acetone-formaldehyde resins	ACY, GLD, IOC, RCI, UCP.
Acrylic resins:	
Polymethylmethacrylate resins	ACO, ARO, CAT, DOW, DSO, DUP, GLD, ICF, POL, RCI, RH, SAR, USP.
All other acrylic resins	ACY, APV, CAT, DOW, DSO, DUP, GLD, GLX, GNX, GRV, ICI JNS, JSC, MEE, PCI, PII, PPG, RCI, RH, TRC, UCP, VAL, WIC.
*Alkyd resins (except phthalic):	
*Unmodified	ACP, ACY, ADM, AKL, AMF, APV, BAL, BEN, CM, CPV, DSO, DUP, EW, FBR, FLW, FRE, GEI, GLD, GRV, HPC, ICF, MCC, MCW, MR, ORO, OSB, PPG, PRT, RCI, RH, SPP, SRR, SW, TV, WTC.
*Modified:	
*Rosin and rosin esters, modified with maleic and fumaric acids only (hard resins).	ACP, ADM, AKL, APV, CBY, CM, CPT, CPV, DAV, DPP, DSO, FAR, FBR, FCD, FLW, FRP, GIL, GLD, GRV, HPC, ICF, JOD, KRM, MCC, MR, NCI, ORO, OSB, PPG, RCI, RED, REL, RH, SCF, SCN, SHA, SW, TV, WAS.
*All other modified alkyd resins	ADM, AMR, APV, CIK, CPV, FBR, FCD, FLW, FSH, GEI, GL GRV, ICF, KYN, LON, MCW, MMM, ORO, OSB, PPG, RCI, REL, RH, RMC, RUB, SIP, STT, SW, UCP, VTV, WEV.
*Dicyandiamide resins	ACY, APX, DEP, GGY, JSC, MRA, NOP, RPC, TRC, VAL, WI
*Polyamide resins	BCI, DUP, FG, FI, FIR, GNM, NAC, SPN.
Polychloroethylene and polyfluoroethylene resins	DUP, FIR, MMM.
*Polyethylene resins:	
*High-pressure process	ACP, CEL, DOW, DUP, EKX, GRP, KPP, MON, SPN, UCC, US
*Low-pressure process	ACP, CEL, DOW, DUP, GGC, GRP, HPC, KPP, MON, PLC, UC

TABLE 15B.--*Plastics and resin materials for which U.S. production or sales were reported, identified by manufacturer, 1961*--Continued

Material	Manufacturers' identification codes (according to list in table 23)
PLASTICS AND RESIN MATERIALS, NONBENZENOID--Continued	
*Polypropylene resins	AVS, DOW, EKX, ENJ, FIR, HPC.
Polyterpene resins	ACP, PAI, SCN.
*Rosin modifications:	
*Rosin adduct resins	ACP, ADM, BEN, CIK, CPV, DPP, GRV, JOB, OSB, SCN, SW.
*Rosin and rosin esters, unmodified:	
*Esterified with glycerol	ACP, ADM, AKL, APV, CBY, CIK, CPV, DAV, DPP, FCD, FRP, GIL, HPC, KRM, MCC, NCI, RCI.
*Esterified with other alcohols	ACP, ADM, CBY, CPV, DPP, DSO, FAR, FRP, GLD, HPC, MCC, MMM, MRW, NCI, OSB, RCI, SCN, SRR.
*All other rosin modifications	ACP, AKL, APV, BOR, DPP, DUN, FCD, FRP, HPC, ICF, JNS, MMM, ONX, PPG, SW, UCP, VSV.
*Silicone resins	ACP, DCC, SPD, UCS.
*Urea and melamine resins:	
*Melamine-formaldehyde type	ACP, ACY, APV, CAP, CAT, CDF, COL, CPV, CRC, DAN, DUP, FOM, GLD, JOD, MON, MRA, NPP, PPG, RCI, REL, RH, RPC, SW, TRC, WRD.
*Urea-formaldehyde type	ACP, ACY, AMR, APX, AV, BGC, BOR, BRR, BRY, CAP, CAT, CDF, CPV, CRC, DA, DAN, DEP, DUP, FOM, GDN, GGY, GLD, GRV, HNC, HPC, HRT, IPR, JSC, MDP, MMM, MON, MRA, NTC, ONX, PC, PGU, PPG, QCP, RCI, REL, RH, RPC, S, SFA, SIM, SNW, SOR, SW, SYT, SYV, UPL, USO, VAL, VAR, WIC, WON, WRD, x, x.
*Vinyl and vinyl copolymer resins:	
*Polyvinyl acetate	ACP, AML, BFG, BOR, BOY, CEL, COL, DAN, DAV, DSO, DUP, FLH, GLD, GRD, HAN, HNC, JOD, JSC, MCC, MRN, NSC, ONX, PCI, PII, QCP, RCI, RH, RPC, SH, SNM, SRC, SW, UCC, VAL, WIC, x.
*Polyvinyl alcohol	BOR, COL, DUP, SRC, UCC.
Polyvinyl butyral	DUP, SRC.
*Polyvinyl chloride and copolymers:	
*Polyvinyl chloride	ATU, BFG, CRY, CUC, DA, DOW, ESC, FCP, FIR, GNT, GYR, MON, PNT, RUB, THC, UCC, USR.
*Polyvinyl chloride-acetate copolymer	ATU, BFG, BOR, CRY, CUC, DA, FCP, FIR, KYS, MON, RUB, UCC.
*All other polyvinyl chloride and copolymer resins	DUP, FIR, GRA, GYR, RUB.
Polyvinyl chloride-vinylidene chloride copolymer	BFG, DOW, GLD, MMM.
Polyvinyl formal	ACP, SRC.
All other vinyl and vinyl copolymer resins	APV, BEN, DUP, G, GLD, MR, PII, PPG, SYR.
All other nonbenzenoid plastics and resin materials	ACP, BEN, BOR, CPV, DA, DSO, DUP, GE, GLD, GLY, GRD, HAP, HPC, HVG, ICF, KRM, MOB, MON, PLU, PPG, RCI, TRC, UCP, VAR.

Rubber-Processing Chemicals

TABLE 17B.--*Rubber-processing chemicals for which U.S. production or sales were reported, identified by manufacturer, 1961*

[Rubber-processing chemicals for which separate statistics are given in table 17A are marked below with an asterisk (*); chemicals not so marked do not appear in table 17A because the reported data are accepted in confidence and may not be published. Manufacturers' identification codes shown below are taken from table 23. An x signifies that the manufacturer did not consent to his identification with the designated product]

Chemical	Manufacturers' identification codes (according to list in table 23)
RUBBER-PROCESSING CHEMICALS, CYCLIC	
*Accelerators:	
*Aldehyde-amines:	
Acetaldehyde-aniline	USR.
n-Butyraldehyde-aniline	DUP, MON, USR.
Butyraldehyde-butylidene-aniline	MON.
N,N'-Dibutyldithioadipamide	DUP.
4,4'-Dithiodimorpholine	MON.
α-Ethyl-β-propylacrylanilide	CCO.
Formaldehyde-p-toluidine (Methylene-p-toluidine)	DUP.
Heptaldehyde-aniline	USR.
Triethyltrimethylenetriamine	USR.
p-Benzoquinone dioxime	DUP, NAC, USR.
Dibenzoyl-p-quinonedioxime	USR.
Dibenzylamine	USR.
Di-N-pentamethylenethiuram tetrasulfide	DUP, VNC.
*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	NAC.
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.
N-(2,6-Dimethylmorpholino)-2-benzothiazolesulfenamide.	MON.
*2,2'-Dithiobis(benzothiazole)	ACY, BFG, GYR, MON, USR.
*2-Mercaptobenzothiazole	ACY, GYR, MON, URS.
2-Mercaptobenzothiazole, sodium salt	ACY, GYR, MON.

TABLE 17B.--*Rubber-processing chemicals for which U.S. production or sales were reported, identified by manufacturer, 1961*--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
RUBBER-PROCESSING CHEMICALS, CYCLIC--Continued	
*Accelerators--Continued	
*Thiazole derivatives--Continued	
2-Mercaptobenzothiazole, zinc salt	ACY, GYR, USR.
4-Morpholinyl-2-benzothiazyl disulfide	x.
N-Oxydiethylene-2-benzothiazolesulfenamide	ACY, MON.
Thiazoline-2-thiol	ACY.
All other cyclic accelerators	DUP, VNC.
Antioxidants:	
Aldehyde- and acetone-amines:	
Acetaldehyde-aniline hydrochloride	USR.
Aldol-α-naphthylamine condensation	BFG.
Diphenylamine-acetone	BFG, USR.
Phenyl-2-naphthylamine-acetone	USR.
*Amino and hydroxy compounds:	
*Amino compounds:	
p-Anilinophenol	BFG.
N-Cyclohexyl-N'-phenyl-p-phenylenediamine	USR.
Diarylarylene diamines, mixed	GYR.
N,N'-Di(1-ethyl-3-methylpentyl)-p-phenylenediamine	BFG, EKT, UPM.
1,2-Dihydro-6-dodecyl-2,2,4-trimethylquinoline	MON.
1,2-Dihydro-6-ethoxy-2,2,4-trimethylquinoline	MON.
1,2-Dihydro-2,2,4-trimethylquinoline	BFG, MON.
p,p'-Dimethoxydiphenylamine	DUP.
N,N'-Di(1-methylheptyl)-p-phenylenediamine	EKT, UPM.
N,N'-Di-2-naphthyl-p-phenylenediamine	BFG.
4,4'-Dioctyldiphenylamine	BFG.
N,N'-Di-2-octyl-p-phenylenediamine	BFG.
N,N'-Diphenylethylenediamine	CCO, NOP.
*N,N'-Diphenyl-p-phenylenediamine	BFG, DUP, USR.
N,N'-Diphenyl-1,3-propanediamine	CCO.
N,N'-Di-o-tolylethylenediamine	CCO.
p-Isopropoxydiphenylamine	BFG.
N-Isopropyl-N'-phenyl-p-phenylenediamine	MON, USR.
4,4'-Methylenedianiline	USR.
Octyldiphenylamine	USR.
Octyldiphenylamine, alkylated	PAS.
Octyldiphenylamine mixture (mono-, nonyl- and di-)	BFG.
N-Phenyl-1-naphthylamine	DUP.
N-Phenyl-2-naphthylamine	BFG, DUP.
Tetramethyldiphenylethylenediamine	NOP.
p-(p-Toluenesulfonamido)diphenylamine	USR.
*Hydroxy compounds:	
p-Benzyloxyphenol	BFG.
4,4'-Butylidenebis(6-tert-butyl-m-cresol)	MON.
2,5-Di(1,1-dimethylpropyl)hydroquinone	MON.
N-Lauroyl-p-aminophenol	MLS.
2,2'-Methylenebis(6-tert-butyl-p-cresol)	ACY.
2,2'-Methylenebis(6-tert-butyl-4-ethylphenol)	ACY.
*Phenol, alkylated	BFG, CCO, GYR, MEE, PAS, 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.

TABLE 17B.--*Rubber-processing chemicals for which U.S. production or sales were reported, identified by manufacturer, 1961*--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
RUBBER-PROCESSING CHEMICALS, CYCLIC--Continued	
Blowing agents:	
N,N′-Dimethyl-N,N′-dinitrosoterephthalamide	DUP.
Dinitrosopentamethylenetetramine	AHC, DUP, NPI.
p,p′-Oxybis(benzenesulfonhydrazide)	USR.
Inhibitors, modifiers, and stabilizers:	
Dicresyl disulfide	USR.
N,4-Dinitroso-N-methylaniline	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.
RUBBER-PROCESSING CHEMICALS, ACYCLIC	
*Accelerators:	
n-Butyraldehyde-butylamine	DUP.
Di-n-butylammonium oleate	DUP.
*Dithiocarbamic acid derivatives:	
Dibutyldithiocarbamic acid, sodium salt	DUP, USR, VNC.
*Dibutyldithiocarbamic acid, zinc salt	DUP, GYR, PAS, RBC, USR, VNC.
Diethyldithiocarbamic acid, selenium salt	VNC.
Diethyldithiocarbamic acid, sodium salt	USR.
Diethyldithiocarbamic acid, tellurium salt	VNC.
*Diethyldithiocarbamic acid, zinc salt	GYR, PAS, USR, VNC.
Dimethyldithiocarbamic acid, bismuth salt	VNC.
Dimethyldithiocarbamic acid, copper salt	VNC.
Dimethyldithiocarbamic acid, lead salt	VNC.
*Dimethyldithiocarbamic acid, potassium salt	GYR, PAS, USR.
Dimethyldithiocarbamic acid, selenium salt	VNC.
*Dimethyldithiocarbamic acid, sodium salt	BFG, DUP, GYR, PAS, x.
Dimethyldithiocarbamic acid, sodium salt and sodium polysulfide.	BFG, GNT, USR.
*Dimethyldithiocarbamic acid, zinc salt	DUP, FMN, GYR, PAS, RBC, USR, WRC, x.
All other	PAS, VNC, x.
*Thiurams:	
Bis(dibutylthiocarbamoyl)sulfide	USR.
Bis(diethylthiocarbamoyl)disulfide	DUP, GYR, PAS.
*Bis(dimethylthiocarbamoyl)disulfide	BFG, CLY, DUP, GYR, MON, PAS, RBC, USR, VNC.
*Bis(dimethylthiocarbamoyl)sulfide	DUP, GYR, USR.
Thiuram blend	VNC.
Xanthates and sulfides:	
Di-n-butylxantho disulfide	USR.
Di-isopropylxantho disulfide	BFG.
Zinc dibutylxanthate	USR.

Chemical	Manufacturers' identification codes (according to list in table 23)
RUBBER-PROCESSING CHEMICALS, ACYCLIC--Continued	
*Accelerators--Continued	
All other acyclic accelerators:	
3-Ethyl-1,1-dimethyl-2-thiourea	VNC.
Ethylenediamine carbamate	DUP.
Polyoxyalkylenetetrasulfide	TKL.
1,1,3-Trimethyl-2-thiourea	VNC.
Blowing agents:	
1,1'-Azobisformamide	NPI, USR.
Urea-biuret mixture	SW.
Conditioning and lubricating agents:	
Methyl stearyl-10-sulfonic acid, sodium salt	DUP.
Mono- and dialkyl acid phosphates, mixed	DUP.
Mono- and dialkyl phosphate ammonium salts, mixed	DUP.
Peptizers and modifiers:	
Alkyl mercaptans, mixed	PLC.
*Dodecyl mercaptans	HK, PAS, PLC.
Zinc laurate	USR.
All other	TKL, USR.

Elastomers (Synthetic Rubbers)

TABLE 18B. --***Elastomers (synthetic rubbers) for which U.S. production or sales were reported, identified by manufacturer, 1961***

[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]

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

Plasticizers

TABLE 19B.--*Plasticizers for which U.S. production or sales were reported, identified by manufacturer, 1961*

[Plasticizers for which separate statistics are given in table 19A are marked below with an asterisk (*); products not so marked do not appear in table 19A because the reported data are accepted in confidence and may not be published. Manufacturers' identification codes shown below are taken from table 23. An x signifies that the manufacturer did not consent to his identification with the designated product]

Chemical	Manufacturers' identification codes (according to list in table 23)
PLASTICIZERS, CYCLIC	
Coumarone-indene plasticizer	NEV.
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.
N-Ethyl-p-toluenesulfonamide	MON.
Isopropylidenediphenoxypropanol	DOW.
Naphthalene, alkylated	ACC.
Phosphoric acid esters:	
*Cresyl diphenyl phosphate	CEL, FMP, KLK, MON, MTR, SPP.
Dibutyl phenyl phosphate	MON.
Diphenyl mono-o-xenyl phosphate	DOW.
Diphenyl octyl phosphate	MON.
Methyl diphenyl phosphate	MON.
Tri(p-tert-butylphenyl) phosphate	DOW.
*Tricresyl phosphate	CEL, FMP, KLK, MON, MTR.
*Triphenyl phosphate	CEL, DOW, EK, MON, MTR.
All other phosphoric acid esters	DOW, MON.
*Phthalic anhydride esters:	
Butyl benzyl phthalate	GRH, MON.
Butyl cyclohexyl phthalate	ACP.
*Butyl decyl phthalate	ACP, GRH, KLK, PCC, RUB, THC.
*Butyl octyl phthalate	ACP, EKT, FCP, GRH, MON, NPI, PCC, UCC.
Butyl phthalyl butyl glycolate	MON, NOP.
Di(2-butoxyethyl) phthalate	DUP, FMP, GRH, KES.
*Dibutyl phthalate	ACP, COM, DEC, EKT, FMP, GRD, GRH, HAL, KLK, MON, PF RUB, SW, WTC, WTH.
*Dicyclohexyl phthalate	ACP, DUP, FMP, GRH, MON.
*Didecanoyl phthalate (Dicapryl phthalate)	ACP, GRH, WTH.
Diethylene glycol phthalate	ARK.
Di(ethylhexyl) hexahydrophthalate	UCC.
*Diethyl phthalate	DUP, EKT, GRH, KF, KLK, MON.
Di-n-hexyl phthalate	ACP, CCA.
*Diisodecyl phthalate	ACP, BFG, DEC, EKT, GRH, KES, MON, PCC, PFZ, ROS, RU THC, UCC, WTH.
Di(2-methoxyethyl) phthalate	DUP, EKT, FMP, GRH.
*Dimethyl phthalate	ACP, DUP, EKT, GRH, KF, KLK, MON.
Dinonyl phthalate	DEC.
*Dioctyl phthalates:	
*Di(2-ethylhexyl) phthalate	ACP, BFG, DEC, DUP, EKT, FCP, GRH, MON, NPI, PCC, PI ROS, RUB, SW, THC, UCC, WTC, WTH.
*Diiso-octyl and mixed octyl phthalates	ACP, BFG, DEC, EKT, FCP, GDL, GRH, KLK, MON, PCC, RU RUB, THC, WTH.
Di-n-octyl phthalate	KLK, THC.

TABLE 19B.--*Plasticizers for which U.S. production or sales were reported, identified by manufacturer, 1961*--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
PLASTICIZERS, CYCLIC--Continued	
*Phthalic anhydride esters--Continued	
Diphenyl phthalate	MON.
*Ditridecyl phthalate	ACP, BFG, DEC, GRH, HPC, MON, PCC, RUB.
Ethyl, and methyl phthalyl ethyl glycolate	MON.
*Octyl decyl phthalates:	
*Iso-octyl isodecyl phthalate	ACP, BFG, GRH, PCC, PFZ, RUB, THC, UCC.
*n-Octyl n-decyl phthalate	ACP, DEC, FMP, GRH, HPC, KLK, MON, PCC, PFZ, THC.
All other phthalic anhydride esters	ACP, ARG, DEC, DUP, EK, FCP, FMP, HAL, HPC, MON, PFZ, UOC.
Tetrahydrofurfuryl oleate	CCW, EMR.
Toluenesulfonamide, o-, p- mixture	MON.
All other cyclic plasticizers	AV, EKT, TKL, TNP, UCC.
PLASTICIZERS, ACYCLIC	
*Adipic acid esters:	
Di(2-(2-butoxyethoxy)ethyl) adipate	FMP, TKL.
*Di(2-ethylhexyl) adipate	DEC, EKT, FCP, FMP, GRH, HAL, MON, PCC, RH, RUB, THC, UCC, WTH.
*Diisobutyl adipate	DEC, FMP, GRD, HAL, KES.
*Diisodecyl adipate	ACP, BFG, DEC, FMP, GRH, LEH, MON, PCC, PFZ, RH, RUB, THC, UCC, WTH.
*Diiso-octyl adipate	ACP, BFG, DEC, FCP, FMP, GRH, HAL, KLK, LEH, MON, PCC, PFZ, RH, RUB.
*Octyl decyl adipate	ACP, BFG, DEC, FMP, GRH, LEH, MON, PCC, PFZ, RUB, THC.
All other adipic acid esters	DEC, GRH, KES, PCC, TKL.
*Azelaic acid esters:	
Di(2-ethylhexyl) azelate	DEC, DUP, EKT, EMR, FCP, HAL, LEH, PFZ.
Diisobutyl azelate	EKT, HAL.
Diiso-octyl azelate	EMR, GDL, LEH.
All other azelaic acid esters	ACP, EMR, LEH, PFZ.
N-Butyl myristate	AHC, KES.
Castor oil maleate	RH.
*Complex linear polyesters and polymeric plasticizers	EMR, MON, PFZ, RH, RUB, UCC, x.
Di(2-(2-butoxyethoxy)ethyl)methane	TKL.
*Dibutyl maleate	DEC, DUP, GRD, MON, RUB.
Diethylene glycol dinonanoate	EMR, LEH, RUB.
Diiso-octyl diglycolate	CCA, FCP, FMP.
*Epoxidized soya and tall oil, and epoxy stearates	ARG, BAC, CCW, FMP, ROS, UCC.
Glycerol pelargonate	EMR.
Glyceryl tripropionate	EKT.
Glycol pelargonate	EMR.
Isodecyl nonanoate (Isodecyl pelargonate)	EMR, LEH.
Isopropyl myristate	DRW.
Lauric acid esters	FOR, HAL, KES.
*Oleic acid esters:	
2-Butoxyethyl oleate	HAL, KES.
*Butyl oleate	AHC, FMP, HAL, KES, NOP, RH, RUB, WTH.
Glycerol trioleate	DRW, EMR.
*Methyl oleate	AHC, EMR, FOR, NOP.
All other oleic acid esters	AHC, EMR, FMP, RH.
Palmitic acid esters:	
Iso-octyl palmitate	KLK, RUB.
All other palmitic acid esters	EKT, FOR.

TABLE 19B.--*Plasticizers for which U.S. production or sales were reported, identified by manufacturer, 1961*--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
PLASTICIZERS, ACYCLIC--Continued	
*Phosphoric acid esters	EKT, FMP, SFA, UCC.
Polyethylene glycol di-2-ethylhexoate	UCC, x.
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, NOP, x.
*Sebacic acid esters:	
*Dibutyl sebacate	DEC, EKT, GRD, GRH, HAL, RH, WTH.
*Di(2-ethylhexyl) sebacate	DEC, GRD, GRH, HAL, PCC, PFZ, RH, RUB, WTH.
All other sebacic acid esters	DEC, GRH, LEH, NOP, RH, RUB.
*Stearic acid esters:	
*n-Butyl stearate	AHC, HAL, KES, NOP, RUB, SCP, WTH.
All other stearic acid esters	BAC, CCW, DEC, DRW, FMP, HK, HPC, KES, NOP, RH, ROS.
Tributyl acetylcitrate	PFZ.
*Triethylene glycol di(caprylate-caprate)	DRW, FOR, GRH, HAL, RUB.
Triethylene glycol di-2-ethylbutyrate	UCC.
All other acyclic plasticizers	ACP, BAC, DUP, EKT, EKX, EMR, FMP, HAL, HPC, KES, PCC, PFZ, RH, ROS, RUB, UCC, x.

TABLE 20B. ***--Surface-active agents for which U.S. production or sales were reported, identified by manufacturer, 1961***

[Surface-active agents for which separate statistics are given in table 20A are marked below with an asterisk (*); products not so marked do not appear in table 20A because the reported data are accepted in confidence and may not be published. Manufacturers' identification codes shown below are taken from table 23. An x signifies that the manufacturer did not consent to his identification with the designated product]

Chemical	Manufacturers' identification codes (according to list in table 23)
BENZENOID SURFACE-ACTIVE AGENTS	
*Amides, amines, and quaternary ammonium salts, not sulfated or sulfonated:	
*Alkylbenzyldimethylammonium salts:	
Benzylcocodimethylammonium chloride	APD.
*Benzyldimethyloctadecylammonium chloride	APX, ITX, ONX, RET.
Benzyldimethyltetradecylammonium chloride	ITX.
*Benzyldodecyldimethylammonium chloride	BC, DEP, FIN, ITX, ONX, PCS, RH, SDH.
*Benzylhexadecyldimethylammonium chloride	BC, FIN, ONX, RH.
Benzyl(hydrogenated tallow)dimethylammonium chloride	ARC, GNM.
Benzyltrimethylammonium chloride	COM.
(Mixed alkyl)benzyldimethylammonium chloride	FIN, RH.
Alkyl(ethylbenzyl)dimethylammonium chloride	ONX.
N-Benzyl-N,N-bis(2-hydroxyethyl)-N-(2-octadecanamidomethoxyethyl)ammonium chloride.	TRC.
Benzyl(polyethoxyethyl)bis(tall oil amidoethyl)ammonium chloride.	APD.
Benzyl(polyethoxyethylcoco)dimethylammonium chloride	G.
(3,4-Dichlorobenzyl)dodecyldimethylammonium chloride	ONX, SDW.
(Dimethylbenzyl)dodecyldimethylammonium chloride	ONX.
(Dodecylbenzyl)diethyl(2-hydroxyethyl)ammonium chloride	ORO.
(Dodecylbenzyl)(2-hydroxyethyl)dimethylammonium chloride	PCS.
(Dodecylbenzyl)triethylammonium chloride	ITX, PC.
(Dodecylbenzyl)trimethylammonium chloride	BC, UVC.
(Dodecylmethylbenzyl)trimethylammonium chloride	RH.
(Ethoxybenzyl)dimethyl(octylcresoxy)ammonium chloride	RH.
(Ethoxybenzyl)dimethyl(octylphenoxy)ammonium chloride	RH.
*Heterocyclic quaternary ammonium salts:	
Benzyl-2-heptadecyl-1-(2-hydroxyethyl)imidazolinium chloride.	PCS.
2-Dodecylisoquinolinium bromide	BC, ITX, ONX.
1-Dodecylpyridinium chloride	BC, HK.
1-Hexadecylpyridinium bromide	FIN.
N-(2-Hydroxyethyl)-1,2-diphenylethylenediamine	APX.
All other	PCS.
*Ethers and carboxylic acid esters, not sulfated or sulfonated:	
Acetylphenol-formaldehyde polyethoxyethanol	SDW.
Castor oil phthalate polyester	APD.
(Mixed alkyl)phenoxypolyethoxyethyl butyl ether	RH.
Octadecyl phthalate, potassium salt	TRC.
Pentylphenol-formaldehyde polyethoxyethanol	APD.
Pentylphenol-formaldehyde polyoxyalkylene tall oil ester	APD.
Phenols and alkylphenols, ethoxylated:	
Diisobutylphenoxypolyethoxyethanol	G, RH.
Dinonylphenoxypolyethoxyethanol	G, JCC, PCS.
*Dodecylphenoxypolyethoxyethanol	G, MON, PCS, UCC.
*Iso-octylphenoxypolyethoxyethanol	DRW, G, NOP, OMC.
(Mixed alkyl)phenoxypolyethoxyethanol	RH.
*Nonylphenoxypolyethoxyethanol	AHC, APD, CLY, DOW, DRW, G, HPC, JCC, MON, OMC, PCS, RH, STP, TRC, UCC, VIS.
n-Octylphenoxypolyethoxyethanol	G.
*Phenoxypolyethoxyethanol	APD, FBC, G, NOP, UCC.
Tetradecylphenoxypolyethoxyethanol	ORO, PCS.
Xyloxypolyethoxyethanol	THC, VIS.

TABLE 20B.--*Surface-active agents for which U.S. production or sales were reported, identified by manufacturer, 1961*--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
BENZENOID SURFACE-ACTIVE AGENTS--Continued	
*Ethers and carboxylic acid esters, not sulfated or sulfonated--Continued	
Polyethoxyethyl castor oil phthalate polyester	APD.
Sorbitolpolyoxyalkylene phthalate stearate	APD.
Tridecylpolyethoxyethyl benzoate	OMC.
Phosphoric and polyphosphoric acid esters, not sulfated or sulfonated:	
Nonylphenoxypolyethoxyethyl phosphate	TCC.
All other	x.
*Sulfated and sulfonated benzenoid surface-active agents:	
*Benzenesulfonates:	
*Benzene-, toluene-, and xylenesulfonates:	
Benzenesulfonic acid, sodium salt	UPF.
p-Toluenesulfonic acid, hexadecyltrimethylammonium salt.	FIN.
Toluenesulfonic acid, potassium salt	MYW, NES, RCD, WTU.
*Toluenesulfonic acid, sodium salt	CO, NES, PIL, STP, WTU.
Xylenesulfonic acid, ammonium salt	WTU.
Xylenesulfonic acid, potassium salt	NES.
*Xylenesulfonic acid, sodium salt	CO, MYW, NES, PIL, RCD, STP, WTU.
*Dodecylbenzenesulfonates:	
Dodecylbenzenesulfonamide	MAH.
*Dodecylbenzenesulfonic acid	CI, CO, LEV, MON, MYW, NAC, NOP, PIL, PRX, RCD, SOC, STP, TDC, TN, WTU.
Dodecylbenzenesulfonic acid, ammonium salt	MYW, PRX, WTU.
*Dodecylbenzenesulfonic acid, calcium salt	RCD, RH, STP, VIS.
Dodecylbenzenesulfonic acid, cyclohexylamine salt	G.
*Dodecylbenzenesulfonic acid, isopropylamine salt	APD, ATR, PCS, RCD, SNW, STP.
Dodecylbenzenesulfonic acid, mixed alkylamine salts	PCS.
*Dodecylbenzenesulfonic acid, sodium salt	AHC, AML, ATR, CO, CTL, DEP, EMK, HLI, HRT, LEV, MON, NAC, NOP, PG, PIL, PRX, RCD, SOC, TN, WIC, WTU.
*Dodecylbenzenesulfonic acid, triethanolamine salt	AML, ATR, CO, CTL, HLI, NAC, PCS, PIL, RCD, SOS, STP, TN.
*Other mono- and dialkylbenzenesulfonates:	
*Decylbenzenesulfonic acid	EFH, HLI, SCO, STP.
Decylbenzenesulfonic acid, sodium salt	MON.
Didodecylbenzenesulfonic acid	CO.
Nonylbenzenesulfonic acid, sodium salt	WTU.
Pentylbenzenesulfonic acid, sodium salt	MON.
Tridecylbenzenesulfonic acid	WTU.
Tridecylbenzenesulfonic acid, ammonium salt	PRX.
Tridecylbenzenesulfonic acid, sodium salt	CP, PRX, RCD, WTU.
*Lignosulfonates:	
Lignosulfonic acid, aluminum salt	MAR.
Lignosulfonic acid, ammonium salt	CRZ.
*Lignosulfonic acid, calcium salt	CWP, INP, LKY, LPC, MAR, PSP.
Lignosulfonic acid, chromium salt	MAR.
Lignosulfonic acid, magnesium salt	LPC, MAR.
Lignosulfonic acid, sodium salt	CRZ, INP, MAR, WVA.
*Naphthalenesulfonates:	
Benzylnaphthalenesulfonic acid	G.
*Butylnaphthalenesulfonic acid	CMG, G, PFZ, SCP.
*Butylnaphthalenesulfonic acid, sodium salt	GGY.
Dibutylnaphthalenesulfonic acid	CI, G, MRA, S.
Didodecylnaphthalenesulfonic acid, sodium salt	PFZ.
*Diisopropylnaphthalenesulfonic acid	DUP, G, GRD, WTU.
*Diisopropylnaphthalenesulfonic acid, sodium salt	PFZ.

TABLE 20B.--*Surface-active agents for which U.S. production or sales were reported, identified by manufacturer, 1961*-- Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
BENZENOID SURFACE-ACTIVE AGENTS--Continued	
*Sulfated and sulfonated benzenoid surface-active agents--Continued	
*Naphthalenesulfonates--Continued	
*Isopropylnaphthalenesulfonic acid	BRY, DUP, NAC, NOP, ONX.
Methylenebis(2-naphthalenesulfonic acid)	DUP.
Mixed alkylnaphthalenesulfonic acid, sodium salt	UDI.
Pentylnaphthalenesulfonic acid	ONX.
Tetrahydronaphthalenesulfonic acid	DUP.
*Phenols and ethoxylated phenols, sulfated:	
Dodecylphenoxypolyethoxyethyl sulfate	G, LEV.
*Nonylphenoxypolyethoxyethyl sulfate	G, OMC, RCD, STP.
Nonylphenoxypolyethoxyethyl sulfate, ammonium salt	MYW.
n-Octylphenoxypolyethoxyethyl sulfate	RH.
Trichlorophenol sulfate, ethanolamine salt	G.
*All other benzenoid surface-active agents, sulfated and sulfonated:	
Butylhydroxybiphenylsulfonic acid	ICO, RBC.
N-Dodecylbenzyl-N-methyl taurine, sodium salt	ORO.
Dodecyldiphenyloxidedisulfonic acid, sodium salt	DOW.
N-Methylheptadecylbenzimidazolinesulfonic acid, sodium salt.	TRC.
Octylphenoxypolyethoxyethanesulfonic acid	RH.
Petroleumsulfonic acid, water soluble (acid layer), sodium salt.	SIN, SON.
NONBENZENOID SURFACE-ACTIVE AGENTS	
*Amides, amines, and quaternary ammonium salts, not sulfated or sulfonated:	
Acyclic quaternary ammonium salts:	
*Alkylethyldimethylammonium salts:	
Ethyldimethyloctadecenylammonium bromide	ITX.
Ethyldimethylsoya-ammonium bromide	BC.
Ethylhexadecyldimethylammonium bromide	FIN, ONX.
Alkyltrimethylammonium salts:	
Cocotrimethylammonium chloride	ARC.
*Dodecyltrimethylammonium bromide	DUP.
*Dodecyltrimethylammonium chloride	ARC, GNM.
*Hexadecyltrimethylammonium bromide	AHC, DUP, FIN.
Hexadecyltrimethylammonium chloride	ARC.
(Hydrogenated tallow)trimethylammonium chloride	ARC.
Trimethyloctadecylammonium chloride	ARC.
Trimethylsoya-ammonium chloride	ARC.
Trimethyl tallow ammonium chloride	ARC, GNM.
Dialkyldimethylammonium salts:	
Dicocodimethylammonium chloride	ARC, GNM.
Didodecyldimethylammonium bromide	ONX.
Di(hydrogenated tallow)dimethylammonium chloride	ARC, FOR, GNM, ONX.
Dimethyldioctadecylammonium chloride	PG.
Dimethyldisoya-ammonium chloride	ARC.
Trialkylmethylammonium salts:	
Methyltri(mixed alkyl)ammonium chloride	GNM.
Methyltrioctylammonium chloride	GNM.
Other acyclic quaternary ammonium salts:	
Cocomethyldi(polyethoxyethyl)ammonium chloride	ARC.
Decylbetaine	DUP.
Dodecyl(epoxypropyl)dimethylammonium chloride	TRC.
Hexadecylbetaine	DUP.
2-Hydroxyethyldimethylstearamidopropylammonium nitrate	ACY.

TABLE 20B.--*Surface-active agents for which U.S. production or sales were reported, identified by manufacturer, 1961*--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
NONBENZENOID SURFACE-ACTIVE AGENTS--Continued	
*Amides, amines, and quaternary ammonium salts, not sulfated or sulfonated--Continued	
*Acylated amino acids and polypeptides:	
N-[2-(Carboxymethylamino)ethyl]-N-(2-hydroxyethyl) coconut oil amide.	TCC.
N-Cocoylsarcosine	GGY.
N-(2-Hydroxyethyl)-N-(2-stearamidoethyl)glycine	G.
N-Lauroylpolypeptide	MYW.
*N-Lauroylsarcosine, sodium salt	CP, GGY, ONX.
N-Oleoylpolypeptide	MYW.
N-Oleoylsarcosine, sodium salt	G, GGY.
Polypeptide	MYW.
Stearamide of carboxymethylpolyoxyethylenediethylene-triamine.	APX.
N-Stearoylsarcosine, sodium salt	G, GGY.
*Alkanolamides:	
Diethanolamine condensates:	
Capric acid	GGY, PCS.
Castor oil acids	PCS.
*Coconut oil acids:	
*(amine/acid ratio=1/1)	APX, CP, EFH, EMK, GGY, HRT, JRG, KAL, KNP, MOA, NOP, ONX, PC, PCS, PG, RCD, STP, UVC, VAL, VND, WTU.
*(Amine/acid ratio=2/1)	AML, BSC, DEP, HLI, MOA, MRV, NOP, PCS, PNX, QCP, RCL SNW, TCC, TRC, UVC, WTU.
*(All other ratios)	CCL, CTL, DEX, DRW, JOR, JRG, LEV, LUR, MRA, PCS, RCD, TXC.
*Lauric acid	DRW, HLI, NOP, PCS, PG, RCD, WTU.
*Oleic acid	CCW, GGY, MRA, NOP, PCS, SCP, STP.
*Stearic acid	AML, APX, BSC, EMR, G, GGY, JOR, MRA, NOP, ONX, QCP, SNW, TXC, VAL, WTU.
Tall oil acids	EFH.
Tallow acids	PG.
N-(2-Hydroxyethyl)ethylenediamine condensates:	
Coconut oil acids	DEX, NOP.
*Oleic acid	CI, NOP, SOC, x.
Palm oil acids	SCP.
*Stearic acid	AHC, AML, APX, CHP, CI, DEP, DEX, G, HRT, MRA, NOP, ONX, S, SCP, SNW, WTU.
Isopropanolamine condensates:	
Coconut oil acids	LEV, RCD, STP.
*Lauric acid	ARC, PCS, WTU.
Myristic acid	WTU.
Monoethanolamine condensates:	
Coconut oil acids	APX, DEP, HRT, PCS, PG, UVC, VND.
Lauric acid	WTU.
Oleic acid	FBC.
*Stearic acid	EFH, PCS, STP, UVC.
Alkylated amino acids:	
N-(Coconut oil)-β-alanine	GNM.
N-Dodecyl-3-iminodipropionic acid	GNM.
N-Octadecyl-β-alanine, sodium salt	DUP.
N-Tallow-3-iminodipropionic acid	GNM.
*Amides of ethylenediamine, diethylenetriamine, and tetraethylenepentamine:	
Adipic and stearic acids-diethylenetriamine condensate	APX.
Coconut oil acids-diethylenetriamine condensate	APX, NOP.
Oleic acid-diethylenetriamine acetate condensate	PCS
*Oleic acid-diethylenetriamine condensate	APD, HDG, PCS.

TABLE 20B.-- *Surface-active agents for which U.S. production or sales were reported, identified by manufacturer, 1961*-- Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
NONBENZENOID SURFACE-ACTIVE AGENTS--Continued	
*Amides, amines, and quaternary ammonium salts, not sulfated or sulfonated--Continued	
*Amides of ethylenediamine, diethylenetriamine, and tetraethylenepentamine--Continued	
Pelargonic acid-tetraethylenepentamine condensate	AHC.
Stearic acid-diethylenetriamine condensate	APX, NOP, ONX, QCP, TRC, UVC.
Stearic acid-ethylenediamine condensate	CCW.
Stearic acid-tetraethylenepentamine condensate	AHC, ONX, UVC.
*Amine salts:	
*Amine acetates:	
Coconut oil amine acetate	ARC.
Hydrogenated tallow amine acetate	ARC.
Octadecylamine acetate	ACY, ARC, GNM.
Octylamine acetate	ARC.
Oleylamine acetate	GNM.
Soya-amine acetate	ARC.
Tallow amine acetate	ARC, GNM.
Tallow diethanolamine acetate	PG.
Coconut oil acid, triethanolamine salt	PG.
Naphthenic acids, N-tallow propylenediamine salt	APD.
*Oleic acid, triethanolamine salt	DOM, HDG, NOP, SRR, TCC.
Stearic acid, N-polyethoxyethylethylenediamine salt	APD.
Stearic acid, N,N,N′,N′-tetrakis (2-hydroxyethyl) ethylenediamine salt.	AHC.
Stearic acid, triethanolamine salt	HDG, TCC.
*Ethoxylated amides:	
Coconut oil acids-diethylenetriamine condensate, polyethoxylated.	TCC.
Fatty acid-alkylenediamine condensate, polyethoxylated	G.
Hydrogenated tallow acids-monoethanolamine condensate, polyethoxylated.	ARC.
Oleic acid-monoethanolamine condensate, polyethoxylated	ARC, WTU.
Stearic acid-diethylenetriamine condensate, polyethoxylated.	APX, TCC, TRC.
Stearic acid-N-(2-hydroxyethyl)ethylenediamine condensate, monoethoxylated.	TCC.
Stearic acid-N-(2-hydroxyethyl)ethylenediamine condensate, polyethoxylated.	TCC.
Stearic acid-isopropanolamine condensate, polyethoxylated.	PCS.
*Ethoxylated amines:	
N-Polyethoxyethylcocoamine	APD, ARC.
*N-Polyethoxyethyl mixed alkylamine	APD, G, NOP, PCS, RH, TRC.
N-Polyethoxyethyloctadecenylamine	G.
N-Polyethoxyethyloctadecylamine	ARC.
N-Polyethoxyethylpolyethylenepolyamine	VIS.
*N-Polyethoxyethylrosinamine	APD, HPC, PCS, VIS.
N-Polyethoxyethylsoya-amine	ARC.
N-Polyethoxyethyltallowamine	ARC, TCH.
N-Polyethoxyethyl-N-tallowtrimethylenediamine	ARC.
*Heterocyclic amines and quaternary ammonium salts:	
Decylimidazoline	PCS.
1-Ethyl-2-heptadecenyl-1-hydroxyethylimidazolinium bromide.	BC.
2-Heptadecenyl-4,4-bis(hydroxymethyl)-2-oxazoline	COM.
*2-Heptadecenyl-1-hydroxyethyl-2-imidazoline	APD, BC, GGY, UVC.
2-Heptadecenyl-4-hydroxymethyl-4-methyl-2-oxazoline	COM.
2-Heptadecenyl-2-imidazoline	HDG, PCS.
2-Heptadecyl-1-hydroxyethyl-2-imidazoline	GGY, UVC.
2-Heptadecyl-2-imidazoline	SCO.
1-Hydroxyethyl-2-nonyl-2-imidazoline	GGY.

TABLE 20B.--*Surface-active agents for which U.S. production or sales were reported, identified by manufacturer, 1961*--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
NONBENZENOID SURFACE-ACTIVE AGENTS--Continued	
*Amides, amines, and quaternary ammonium salts, not sulfated or sulfonated--Continued	
*Heterocyclic amines and quaternary ammonium salts--Continued	
1-Hydroxyethyl-2-tridecylimidazolium chloride	GGY.
1-Hydroxyethyl-2-undecyl-2-imidazoline	GGY, UVC.
Nonylimidazolinium hydroxyethyl sodium monoacetate chloride.	PCS.
Oxazaline, substituted	NOP, UVC.
Ricinoleylimidazoline	PCS.
Rosinpolyamidoimidazoline	GRD, PCS, UVC.
Other amides and amines:	
N,N-Bis(2-hydroxyethyl)-2-(octadecanamidomethoxy) ethylamine.	TRC.
N,N-Bis(2-hydroxyethyl)-2-(octadecanamidomethoxy) ethylamine-melamine ether condensate.	TRC.
Cottonseed oil mixed amines	GNM.
N-(2-Diethylaminoethyl) stearamide	CBP.
N,N-Diethylethylenebisoctadecanamide	SNW.
N-(3-Dimethylaminopropyl) oleamide	CCW, DUP, SNW.
Distearamide of N-(2-Cyanoethyl)diethylenetriamine	TRC.
Dodecyldiethylenetriamine	FIN.
Hydroxyethyltrihydroxypropylethylenediamine	VIS.
Miscellaneous oleamides	CCW.
Stearoylbiguanidine hydrochloride	G.
N,N,N′,N′-Tetrakishydroxyethyl (polyoxyethyl-enepolyoxypropylene) ethylenediamine.	VIS, WYN.
*Carboxylic acid esters, not sulfated or sulfonated:	
Anhydrosorbitol esters:	
Anhydrosorbitol dioleate	APD.
Anhydrosorbitol monolaurate	APD, PCS.
Anhydrosorbitol mono-oleate	APD, HDG, PCS.
Anhydrosorbitol monopalmitate	APD.
Anhydrosorbitol monostearate	APD, PCS.
Anhydrosorbitol tall oil ester	APD.
Anhydrosorbitol tetrastearate	APD.
Anhydrosorbitol trioleate	APD, HDG.
Anhydrosorbitol triricinoleate	APD.
Anhydrosorbitol tristearate	APD.
*Ethylene glycol and diethylene glycol esters:	
*Diethylene glycol monolaurate	CCW, GLY, HAL, HDG, KAL, KES, NOP, PCS.
*Diethylene glycol mono-oleate	EMR, GLY, HAL, HDG, KES.
*Diethylene glycol monostearate	AML, CCW, CP, GLY, HAL, KES, NOP, PC, PCS, QCP, UVC, VAL, VND.
Diethylene glycol tall oil ester	HDG, QCP.
Ethylene glycol distearate	KES.
Ethylene glycol mono-oleate	CCW, EFH.
*Ethylene glycol monostearate	GLY, HAL, KES, KNP, NSP, PCS, VND.
*Glycerol esters:	
Glycerol diacetyltartrate monostearate	PCS.
Glycerol diester of lard	PCS.
Glycerol dioleate	KES.
Glycerol distearate	KES, PCS.
Glycerol ester of hydrogenated fatty acids	EMR.
Glycerol maleate mono-oleate	NOP.

TABLE 20B.-- *Surface-active agents for which U.S. production or sales were reported, identified by manufacturer, 1961*--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
NONBENZENOID SURFACE-ACTIVE AGENTS--Continued	
*Carboxylic acid esters, not sulfated or sulfonated--Continued	
*Glycerol esters--Continued	
Glycerol monocaprylate	KES.
*Glycerol mono(coconut oil)ester	CP, DRW, HAL, HDG, JRG, VND.
Glycerol monoester of cottonseed oil acids	LEV, PCS.
Glycerol monoester of edible fats and oils	x.
Glycerol monoester of lard	GLY, x.
Glycerol monolaurate	DRW, KES, KNP.
*Glycerol mono-oleate	CCW, DRW, EFH, EMR, GLY, HAL, HDG, KES, PAR, PCS, STP, UVC, VND, x.
*Glycerol monostearate	APD, APX, CCW, CI, CP, CRC, DEX, DRW, GLY, HAL, KES, LUR, MRA, NOP, NSP, NW, PC, PCS, PG, TCC, UVC, VND, x, x.
Polyethoxyethylanhydrosorbitol esters:	
Polyethoxyethylanhydrosorbitol castor oil ester	APD.
Polyethoxyethylanhydrosorbitol monolaurate	APD, PCS, TCH.
Polyethoxyethylanhydrosorbitol mono-oleate	APD, HDG, PCS, TCH.
Polyethoxyethylanhydrosorbitol monopalmitate	APD, TCH.
Polyethoxyethylanhydrosorbitol monostearate	APD, TCH.
Polyethoxyethylanhydrosorbitol tall oil ester	APD.
Polyethoxyethylanhydrosorbitol trioleate	APD, TCH.
Polyethoxyethylanhydrosorbitol tristearate	APD, TCH.
Polyethoxyethylsorbitol esters:	
Polyethoxyethylsorbitol beeswax ester	APD.
Polyethoxyethylsorbitol hexaoleate	APD.
Polyethoxyethylsorbitol hexa(tall oil) ester	APD.
Polyethoxyethylsorbitol lanolin ester	APD.
Polyethoxyethylsorbitol mono-oleate	APD.
Polyethoxyethylsorbitol monostearate	APD.
Polyethoxyethylsorbitol pentalaurate	APD.
Polyethoxyethylsorbitol penta(tall oil) ester	APD.
Polyethoxyethylsorbitol tetra(laurate, oleate)	APD.
Polyethoxyethylsorbitol tetra(tall oil) ester	APD.
*Polyethylene glycol esters:	
Polyethoxyethyl castor oil ester	G, GGY, KES, NOP, UVC.
Polyethoxyethyl coconut oil ester	NOP, PG, UVC.
*Polyethoxyethyl dilaurate	DEX, EFH, GGY, GLY, HAL, HDG, JOR, KES, PCS, UVC.
*Polyethoxyethyl dioleate	CI, GGY, GLY, HAL, HDG, KES, NOP, OTH, PCS, SPP, UVC.
*Polyethoxyethyl distearate	GLY, KES, PCS, QCP, UVC.
*Polyethoxyethyl monolaurate	ARC, BSC, CCA, DRW, GGY, GLY, HAL, HDG, JOR, KES, KNP, NOP, PCS, QCP, SYC.
*Polyethoxyethyl mono-oleate	AHC, ARC, CCA, CI, DEX, DRW, EFH, G, GGY, GLY, HAL, HDG, KES, NOP, ONX, PAR, PCS, QCP, SPP, SYC, TCH, UVC.
Polyethoxyethyl monopalmitate	APD.
Polyethoxyethyl monoricinoleate	KES, NOP.
*Polyethoxyethyl monostearate	AHC, AML, APD, ARC, DEX, DRW, G, GGY, GLY, HAL, HDG, JOR, KES, KNP, NOP, ONX, PC, PCS, PD, RH, UVC.
Polyethoxyethyl resin ester	APD, QCP, VIS.
Polyethoxyethyl sesqui(coconut oil)ester	JRG.
*Polyethoxyethyl tall oil ester	AML, APD, APX, ARC, DRW, EFH, KES, HDG, MON, NOP, OMB, PCS, TCH, UVC.
Polyethoxyethyl tallow ester	SOS, TCH.

TABLE 20B.-- *Surface-active agents for which U.S. production or sales were reported, identified by manufacturer, 1961* --Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
NONBENZENOID SURFACE-ACTIVE AGENTS--Continued	
*Carboxylic acid esters, not sulfated or sulfonated--Continued	
Propylene glycol esters:	
1,2-Propanediol distearate	PCS.
1,2-Propanediol mono(coconut oil)ester	CP.
1,2-Propanediol monolaurate	CP, HAL, KES.
1,2-Propanediol mono-oleate	HAL, KES.
*1,2-Propanediol monostearate	CCW, CP, HAL, KES, PCS, PG.
Other esters:	
Anhydrosorbitol glycerol monolaurate	APD.
Diisobutylene maleate	RH.
Disorbitolpropoxypropylethoxyethyl diglycollate	APD.
Glucose polyethoxyethyl distearate	APD.
Glucose polyethoxyethyl oleate	APD.
*Methoxypolyethoxyethyl coconut oil ester	DRW, JOR, ONX.
Methyl glucoside laurate	HDG.
Methyl glucoside oleate	HDG.
Pentaerythritol distearate	VAL.
Polyethoxyethyl isoctyl adipate	PFZ.
Polyoxyalkylene diglycollate	APD.
Polyoxyalkylene naphthenate	APD.
1,2-Propanediol polyethoxyethyl stearate	APD.
Tridecylpolyethoxyethyl carbonate, sodium salt	x.
*Ethers, not sulfated or sulfonated:	
*Polyethylene glycol ethers:	
Polyethoxyethyl butyl ether	x.
*Polyethoxyethyl castor oil ether	AHC, APD, DRW, NOP, PCS, TCH, VIS.
Polyethoxyethyl decyl ether	AHC, PCS.
*Polyethoxyethyl dodecyl ether	AAC, APD, DRW, DUP, G, JCC, PCS, UCC.
Polyethoxyethyl hexadecyl ether	ARC, TRC.
Polyethoxyethyl hexadecyl, octadecenyl ether	AHC.
Polyethoxyethyl hydrogenated castor oil ether	APD.
Polyethoxyethyl lanolin ether	APD, VIS.
*Polyethoxyethyl octadecyl ether	AAC, APD, G, TRC.
*Polyethoxyethyl oleyl ether	AAC, APD, DRW, DUP, G, NOP, TRC.
Polyethoxyethyl rosin ether	APD, x.
*Polyethoxyethyl tridecyl ether	AAC, AHC, APD, DRW, EFG, G, JCC, MON, OMC, PCS, UCC, VIS.
Polyethoxyethyl trimethylnonyl ether	UCC.
All other	JCC.
*Other ethers and thioethers:	
Di(polyethoxyethyl)-tert-acetylene glycol	AIR.
Di(polyethoxyethyl) polyoxypropylene glycol ether	PCS, VIS, WYN.
Mixed polyethylene glycol-polypropylene glycol ether	UCC.
Polyethoxyethyl tert-dodecyl thioether	EFH, MON, PAS.
Propylpolyethoxyethyl polyoxypropylene glycol ether	APD.
Tridecylpolypropoxypolyethoxy ethanol	PCS.
*Fatty acids, potassium and sodium salts, not sulfated or sulfonated:	
Castor oil acids, potassium salt	OTT, WHI.
Castor oil acids, sodium salt	MRV.
*Coconut oil acids, potassium salt	DRW, LUR, OTT, PCH.
Corn oil acids, potassium salt	PCH.
Corn oil acids, sodium salt	LUR.

TABLE 20B.--*Surface-active agents for which U.S. production or sales were reported, identified by manufacturer, 1961*--**Continued**

Chemical	Manufacturers' identification codes (according to list in table 23)
NONBENZENOID SURFACE-ACTIVE AGENTS--Continued	
*Fatty acids, potassium and sodium salts, not sulfated or sulfonated--Continued	
Lauric acid, potassium salt	BSC, DRW, NOP.
Lauric acid, sodium salt	DEP.
Mixed vegetable fatty acids, potassium salt	PCH.
*Oleic acid, potassium salt	AML, BSC, DAN, EFH, NOP, OTH, OTT, PCH, QCP, S, SHP, WBG.
*Oleic acid, sodium salt	DEP, LUR, MRV, NOP, QCP, WBG.
Olive oil acids, sodium salt	LUR, OTT.
Peanut oil acids, potassium salt	SLC.
Rosin acids, sodium salt	MRA, QCP.
Soya foots fatty acids, potassium salt	PCH.
Soybean oil acids, potassium salt	KAL, OTT.
*Stearic acid, potassium salt	DEX, DRW, QCP, VAL.
Stearic acid, sodium salt	LEV, MAL, NOP.
*Tall oil acids, potassium salt	BSC, CON, KAL, LUR, OTT, PCH, PCS, PNX, QCP, WHI.
Tall oil acids, sodium salt	DEX, NOP, QCP.
Tallow acids, potassium salt	OTT.
*Tallow acids, sodium salt	BSW, CON, LUR, NOP, QCP.
All other	AML, MON, SLC, WHI.
*Phosphoric and polyphosphoric acid esters, not sulfated or sulfonated:	
Alkyl phosphates, diethanolamine salt	DUP.
Decyl, octyl phosphate	UVC.
Dodecylpolyethoxyethyl polyphosphate	VIC.
2-Ethylhexyl phosphate, sodium salt	UCC, UVC.
2-Ethylhexyl polyphosphate	BEA.
Hexyl polyphosphate, potassium salt	DEX.
2-Hydroxyethyldimethyl(stearamidopropyl)ammonium dihydrogen phosphate.	ACY.
Mixed mono- and dialkyl acid phosphate	DUP.
Octadecenyl phosphate	DUP.
Octyl phosphate, alkylamine salt	DUP.
Octyl polyphosphate	BEA.
Octyl polyphosphate, potassium salt	DEX.
Octyl polyphosphate, sodium salt	VIC.
Trialkylphosphate	VIC.
All other	VIC, x.
*Sulfated and sulfonated nonbenzenoid surface-active agents:	
Acids, sulfated and sulfonated:	
Acetyloleic acid, sulfonated	DUP.
*Oleic acid, sulfonated (Sulfonated red oil)	ACT, ACY, AHC, DEX, DRW, G, LUR, MRA, MRV, NOP, PC, PFZ, QCP, SCO, SON, SWT, TN, WHI, WHW.
Ricinoleic acid, sulfonated	DRW, NOP.
Alcohols, sulfated and sulfonated:	
Decyl octyl sulfate blend	PCS.
Decyl sulfate	DUP, ONX, PCS.
Decyl sulfate, triethanolamine salt	DUP.
3,9-Diethyl-6-tridecyl sulfate	UCC.
Dodecyl sulfate, 2-amino-2-methylpropanol salt	DUP.
*Dodecyl sulfate, ammonium salt	AAC, DUP, ONX, PCS, RCD, STP.
*Dodecyl sulfate, diethanolamine salt	AAC, DUP, HLI, ONX, PCS, STP.
Dodecyl sulfate, N,N-diethylcyclohexylamine salt	DUP.
Dodecyl sulfate, isopropanolamine salt	JRG, PCS.
Dodecyl sulfate, magnesium salt	AAC.

TABLE 20B.--*Surface-active agents for which U.S. production or sales were reported, identified by manufacturer, 1961*--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
NONBENZENOID SURFACE-ACTIVE AGENTS--Continued	
*Sulfated and sulfonated nonbenzenoid surface-active agents--Continued	
Alcohols, sulfated and sulfonated--Continued	
Dodecyl sulfate, potassium salt	JRG, PG.
*Dodecyl sulfate, sodium salt	AAC, DUP, HLI, HLN, ONX, PCS, PG, RCD, RET, STP, SYC.
*Dodecyl sulfate, triethanolamine salt	AAC, DUP, HLI, HLN, ONX, PCS, PG, RCD, RET, STP.
2-Ethylhexyl sulfate	AAC, PCS, UCC.
7-Ethyl-2-methyl-4-undecyl sulfate	UCC.
Hexadecyl, octadecenyl sulfate	CMG.
Hexadecyl sulfate	AAC, DUP.
9-Octadecenyl sulfate, sodium salt	DUP.
Octadecyl sulfate	AAC, DUP, EMK, ONX, PG.
Octadecyl sulfate, sodium salt	x.
Octadecyl sulfate, triethanolamine salt	DUP.
Octyl sulfate, sodium salt	DUP.
Tetradecyl sulfate, sodium salt	ONX.
Tridecyl sulfate, sodium salt	AAC.
Amines, fatty acid amides, and quaternary ammonium salts, sulfated and sulfonated:	
Alkanolamides, sulfated:	
Coconut oil acids-isopropanolamine condensate, sulfated, sodium salt.	APX.
*Coconut oil acids-monoethanolamine condensate, sulfated, potassium salt.	DEX, EMK, HRT, ONX.
Coconut oil acids-monoethanolamine condensate, sulfated, sodium salt.	AML, DEP.
Lauric acid-isopropanolamine condensate, sulfated	PCS.
Neatsfoot oil acids-monoethanolamine condensate, sulfated, ammonium salt.	APX.
Oleic acid-monoethanolamine condensate, sulfated	SCP.
Stearic acid-hydroxyethylethylenediamine condensate, methyl sulfate salt.	DUP.
Stearic acid-monoethanolamine condensate, sulfated	NOP.
Heterocyclic amines and quaternary ammonium salts, sulfated and sulfonated:	
Caproylethyl-5-hydroxycycloimidine, sodium ethylate, sodium ethionate.	MIR.
1-Ethyl-2-heptadecenyl imidazolinium ethyl sulfate	APD.
N-Ethyl-n-hexadecyl morpholinium ethyl sulfate	APD.
Lauroyl-5-ethoxycycloimidine, disodium ethionate	MIR.
Lauroylethyl-5-hydroxycycloimidine, sodium ethylate, sodium ethionate.	MIR.
Stearoylethyl-5-hydroxycloimidine, sodium ethylate, sodium ethionate.	MIR.
Taurine derivatives:	
N-Cyclohexyl-N-palmitoyl taurine	G.
*N-Methyl-N-oleoyl taurine	CRC, DEP, DRW, G, HRT, MRA, NOP, VAL, WIC.
N-Methyl-N-palmitoyl taurine	G.
N-Methyl-N-tallow taurine	LEV.
Other amines, fatty acid amides, and quaternary ammonium salts, sulfated and sulfonated:	
Alkylethyldimethylammonium ethosulfate	x.
N-(Alkylsulfonyl)glycine, sodium salt	G.
Dimethyldioctadecylammonium methylsulfate	ONX.
Ethoxylated mixed primary amines, sulfated	RH.
N-Hydroxyethyl-N,N',N'-tris(hydroxypropyl)ethylenediamine distearate methylsulfate.	DUP.
N,N,N',N'-Tetrakis-(2-hydroxypropyl)ethylenediamine dioleate methylsulfate.	DUP.
All other	EMR, PCS, TCC, x.

TABLE 20B.-- *Surface-active agents for which U.S. production or sales were reported, identified by manufacturer, 1961* --Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
NONBENZENOID SURFACE-ACTIVE AGENTS--Continued	
*Sulfated and sulfonated nonbenzenoid surface-active agents--Continued	
*Dicarboxylic acid amides and esters, sulfated and sulfonated:	
Bis-sulfosuccinate ester of tallow monoglyceride	ACY.
Bis(tridecyl)sulfosuccinate, sodium salt	ACY.
Didecanoyl sulfosuccinate, sodium salt	RH.
*Di(2-ethylhexyl) sulfosuccinate	ACY, AHC, CRC, CST, EMK, GGY, HRT, MOA, MRA, PC, QCP, RCD.
Dihexyl sulfosuccinate	ACY, DAN, MOA.
Dipentyl sulfosuccinate, sodium salt	ACY.
N-(2-Hydroxyethyl)tallow sulfosuccinamide	SCP.
n-Octadecyl-n-disodiumsuccino disodium sulfosuccinate	ACY.
N-Octadecylsulfosuccinamide, disodium salt	ACY.
Ethers, sulfated and sulfonated:	
2-Hexyloxyethyl sulfate, sodium salt	DEX.
Polyethoxyethyl dodecyl sulfate, sodium salt	AAC, PCS, PG.
Polyethoxyethyl dodecyl sulfate, triethanolamine salt	PG.
Polyethoxyethyl octadecyl sulfate	DUP.
Polyethoxyethyl tridecyl sulfate, sodium salt	AAC.
All other	x.
*Fats, oils, and waxes, sulfated and sulfonated:	
Animal fats and oils, sulfated and sulfonated:	
Grease, other than wool, sulfonated	NOP, WHW.
*Lard, sulfonated	APX, EFH, FBC, WAW.
*Neatsfoot oil, sulfonated	ACT, APX, FBC, KAL, LEA, LUR, MRD, NOP, OTT, PC, SNW, WHW.
*Tallow, sulfonated	ACT, ACY, AHC, BRY, CRC, DRW, EFH, FRR, GTS, LEA, LUR, MRA, MRD, NOP, ONX, OTT, PC, SCP, SID, SON, SOS, WHI, WHW.
Wool grease, sulfonated	WHI.
All other	WHI.
Fish and marine animal oils, sulfated and sulfonated:	
*Cod oil, sulfonated	ACT, DRW, FBC, MRD, NOP, OTT, S, WAW, WHI, WHW.
Herring oil, sulfonated	NOP.
*Sperm oil, sulfonated	ACT, CI, DRW, FBC, HRT, KAL, KNG, LEA, MRD, NOP, ONX, OTT, QCP, RTC, S, SON, SWT, WAW, WHI, WHW.
Whale oil, sulfonated	KNG.
All other	AML, SCO.
*Tall oil, sulfonated	ACY, AHC, APX, QCP, WHW.
Vegetable oils, sulfated and sulfonated:	
*Castor oil, sulfonated	AAE, ACT, ACY, AHC, AML, APX, BRY, BSC, CI, DEX, DRW, DUP, FBC, G, HRT, KAL, KNG, LEA, LUR, MRA, MRD, MRV, NOP, ONX, OTT, PC, ROY, S, SCO, SCP, SLC, SON, SWT, WHI, WHW.
*Coconut oil, sulfonated	ACY, LEA, LUR, MRD, NOP, RTC, WHW.
Cottonseed oil, sulfonated	NOP, RTC.
Linseed oil, sulfonated	LEA.
Mustard seed oil, sulfonated	LUR, NOP.
*Peanut oil, sulfonated	ACY, AHC, LEA, NOP, SCP, SLC, SOS.
Rapeseed oil, sulfonated	LEA, NOP.
*Rice-bran oil, sulfonated	DRW, EFH, HRT, KNG, LUR, NOP, OTT, QCP.
*Soybean oil, sulfonated	DRW, HRT, KAL, LEA, MRD, ONX.
All other	FRR.

TABLE 20B.-- *Surface-active agents for which U.S. production or sales were reported, identified by manufacturer, 1961* --Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
NONBENZENOID SURFACE-ACTIVE AGENTS--Continued	
*Sulfated and sulfonated nonbenzenoid surface-active agents--Continued	
Fatty acid esters, sulfated and sulfonated:	
Butyl ethylene glycol sulfo-oleate	S.
n-Butyl sulfo-oleate	AHC, AML, NOP, ONX, PC.
n-Butyl sulforicinoleate	DEC, NOP.
Coconut oil isethionate	DRW.
Coconut oil isethionate, sodium salt	G, LEV.
Dodecyl sulfoacetate	NAC.
Ethyl sulfo-oleate	KAL.
Glycerol mono(coconut oil)ester, sulfated, ammonium salt.	CP.
Glycerol mono(coconut oil)ester, sulfated, sodium salt	CP.
Glycerol tri(sulfo-oleate)	DRW, MRV, NOP, SCP.
*Isopropyl sulfo-oleate	AHC, BRY, DEX, EMR, HRT, LUR, QCP, SON.
Lauroyl-2-hydroxy-1-propanesulfonic acid	SDH.
Methyl, ethyl, propyl sulfo-oleate	NOP.
Methyl sulfo-oleate	AHC.
Oleic ester of sodium isethionate	G.
*n-Propyl sulfo-oleate	ACY, BSC, EFH, LEA, MRV.
Other nonbenzenoid surface-active agents, sulfated and sulfonated:	
Mixed alkanesulfonic acids	TN.
Mixed alkanesulfonic acids, sodium salt	DUP.

TABLE 21B. ***--Pesticides and other organic agricultural chemicals for which U.S. production or sales were reported, identified by manufacturer, 1961***

[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 products]

Chemical	Manufacturers' identification codes (according to list in table 23)
PESTICIDES AND OTHER ORGANIC AGRICULTURAL CHEMICALS, CYCLIC	
*Fungicides:	
2,6-Bis(dimethylaminomethyl)cyclohexanone	MTL.
5-Chloro-2-mercaptobenzothiazole, laurylpyridinium salt	VNC.
2,4-Dichloro-6-(o-chloroanilino)-s-triazine	CHG.
2,3-Dichloro-1,4-naphthoquinone (Dichlone)	USR.
3,5-Dimethyltetrahydro-2H,1,3,5-thiadiazine-2-thione	SF.
Diphenylammonium propionate	MTL.
2-Heptadecyl-2-imidazoline acetate (Glyodin)	UCC.
2-Mercaptobenzothiazole, monoethanolamine salt	VNC.
*Mercury fungicides:	
2-Chloro-4-(hydroxymercuri)phenol	DUP.
N-(Ethylmercuri)-p-toluenesulfonanilide	DUP.
1,4,5,6,7,7-Hexachloro-N-(ethylmercuri)-5-norbornane-2,3-dicarboximide.	RBC.
4-(Hydroxymercuri)-2-nitrophenol	DUP.
8-(Methylmercurioxy)quinoline	MTL.
2-(Phenylmercuriamino)ethyl acetate	CLY.
N-Phenylmercuriformamide	VIN.
Phenylmercuryammonium acetate	GUA, SCI.
Phenylmercury hydroxide	GUA, MTL, WRC.
Phenylmercury lactate	GUA, WRC.
Phenylmercury naphthenate	HNX, MTL.
Phenylmercury oleate	CLY, GUA, HNX, MTL, TRO.
Phenylmercury propionate	MTL.
2-(1-Methylheptyl)-4,6-dinitrophenyl crotonate (Karathane).	RH.
*Naphthenic acid, copper salt	CCA, FER, HSH, HNX, MLD, SOC, SRR, TGL, TRO, WTC.
*Pentachlorophenol	DOW, FRO, MON, RCI.
*Pentachlorophenol, sodium salt	DOW, MON, RCI.
8-Quinolinol (8-Hydroxyquinoline), copper salt	GAM, HNX.
2,3,4,6-Tetrachlorophenol	DOW.
2,3,4,6-Tetrachlorophenol, sodium salt	DOW.
Tetrachloro-p-quinone (Chloranil)	USR.
N-Trichloromethylthio-4-cyclohexene-1,2-dicarboximide (Captan).	CHO.
Trichloromethylthiophthalimide	CHO.
*2,4,5 Trichlorophenol	DA, DOW, HK.
*2,4,5-Trichlorophenol, ethanolamine salt	DOW, G.
*2,4,5-Trichlorophenol, sodium salt	DOW, MON.
2,4,6-Trichlorophenol	DA, DOW.
2,4,6-Trichlorophenol, potassium salt	CLY.
*Herbicides and other plant hormones:	
1-n-Butyl-3-(3,4-dichlorophenyl)-1-methylurea	DUP.
2-sec-Butyl-4,6-dinitrophenol	DOW, FMN.
2-sec-Butyl-4,6-dinitrophenol, ammonium salt	FMN.
2-sec-Butyl-4,6-dinitrophenol, triethanolamine salt	CIS, DOW, FMN.
2-Chloro-4,6-bis(ethylamino)-s-triazine	GGY.
4-Chloro-2-butynyl m-chlorocarbanilate	SPN.
2-Chloro-4-ethylamino-6-isopropylamino-s-triazine	GGY.

TABLE 21B.--*Pesticides and other organic agricultural chemicals for which U.S. production or sales were reported, identified by manufacturer, 1961*--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
PESTICIDES AND OTHER ORGANIC AGRICULTURAL CHEMICALS, CYCLIC--Continued	
*Herbicides and other plant hormones--Continued	
3-(p-Chlorophenyl)-1,1-dimethylurea (CMU)	DUP.
3-(p-Chlorophenyl)-1,1-dimethylurea trichloroacetate	ACG.
3,6-Dichloro-2-methoxybenzoic acid	VEL.
3-(3,4-Dichlorophenyl)-1,1-dimethylurea	DUP.
3,4-Dichloropropionanilide	x.
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	FMN.
4,6-Dinitro-o-cresol, sodium salt (Sinox)	FMN.
Diphenylacetonitrile	LIL.
Gibberellic acid	ABB, MRK, PFZ.
Indolebutyric acid	ARA.
Isopropyl carbanilate (Isopropyl N-phenylcarbamate)	FMP, PPG.
Isopropyl 3-chlorocarbanilate (Isopropyl N-(3-chlorophenyl)carbamate) (CIPC).	PPG.
1-Naphthaleneacetic acid and derivatives:	
1-Naphthaleneacetamide	AMC.
1-Naphthaleneacetic acid	AMC, COK.
1-Naphthaleneacetic acid, methyl ester	AMC, COK.
1-Naphthaleneacetic acid, sodium salt	AMC, BKL.
2-Naphthyloxyacetic acid	BKL.
N-1-Naphthylphthalamic acid	USR.
7-Oxabicyclo[2.2.1]heptane-2,3-dicarboxylic acid, disodium salt.	PAS.
Phenoxyacetic acid derivatives:	
(4-Chloro-o-phenoxy)acetic acid, potassium salt	GTH.
(4-Chloro-o-tolyloxy)acetic acid	CHC, DOW.
*(2,4-Dichlorophenoxy)acetic acid (2,4-D)	CHC, CIS, DA, DOW, MON, x.
*(2,4-Dichlorophenoxy)acetic acid esters and salts:	
(2,4-Dichlorophenoxy)acetic acid, butoxyethoxypropyl ester.	DA.
(2,4-Dichlorophenoxy)acetic acid, 2-butoxyethyl ester	AMC.
(2,4-Dichlorophenoxy)acetic acid, butoxypolypropyleneglycol ester.	DOW.
*(2,4-Dichlorophenoxy)acetic acid, n-butyl ester	AMC, DA, DOW, MON, RIV.
(2,4-Dichlorophenoxy)acetic acid, sec-butyl ester	CHC, MON.
*(2,4-Dichlorophenoxy)acetic acid, dimethylamine salt	AMC, CHC, DA, DOW, RIV, x.
(2,4-Dichlorophenoxy)acetic acid, ethanolamine and isopropanolamine salt.	DOW.
(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	CHC, CIS, DOW, MON, RIV.
*(2,4-Dichlorophenoxy)acetic acid, isopropyl ester	AMC, CHC, DA, DOW, MON, RIV.
(2,4-Dichlorophenoxy)acetic acid, lithium salt	GTH, LCA.
(2,4-Dichlorophenoxy)acetic acid, sodium salt	DOW.
*(2,4,5-Trichlorophenoxy)acetic acid (2,4,5-T)	BKL, CIS, DA, DOW, MON.
*(2,4,5-Trichlorophenoxy)acetic acid esters and salts:	
(2,4,5-Trichlorophenoxy)acetic acid, butoxyethoxypropyl ester.	DA.
(2,4,5-Trichlorophenoxy)acetic acid, 2-butoxyethyl ester.	AMC.

TABLE 21B.-- *Pesticides and other organic agricultural chemicals for which U.S. production or sales were reported, identified by manufacturer, 1961*--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
PESTICIDES AND OTHER ORGANIC AGRICULTURAL CHEMICALS, CYCLIC--Continued	
*Herbicides and other plant hormones--Continued	
Phenoxyacetic acid derivatives--Continued	
*(2,4,5-Trichlorophenoxy)acetic acid esters and salts--Continued	
(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, sec-butyl ester-	MON.
(2,4,5-Trichlorophenoxy)acetic acid, 2-ethylhexyl ester.	DA.
*(2,4,5-Trichlorophenoxy)acetic acid, iso-octyl ester-	CHC, CIS, DOW, MON, RIV.
(2,4,5-Trichlorophenoxy)acetic acid, isopropyl ester-	DA, MON.
(2,4,5-Trichlorophenoxy)acetic acid, triethylamine salt.	DOW.
*Phenylmercury acetate----------	BKM, CLY, GUA, MTL, SCI, TRO, WRC.
Polychlorodicyclopentadiene isomers----------	VEL.
N-Tolylphthalamic acid----------	USR.
Tributyl-2,4-dichlorobenzylphosphonium chloride----------	VC.
(2,4,5-Trichlorophenoxy)propionic acid----------	DOW.
Tris(2,4-dichlorophenoxyethyl) phosphite----------	USR.
Zinc cyclohexylamine complex----------	BFG.
Insect attractants:	
4-(p-Acetoxyphenyl)-2-butanone----------	TBK.
sec-Butyl 4(and 5)-chloro-2-methylcyclohexanecarboxylate-	TBK.
tert-Butyl 4(and 5)-chloro-2-methylcyclohexanecarboxylate	TBK.
*Insecticides:	
Allethrin (Allyl homolog of Cinerin I)----------	BPC.
Benzyl thiocyanate----------	HK.
*Chlorinated insecticides:	
1,1-Bis(p-chlorophenyl)-2-nitrobutane----------	COM.
1,1-Bis(p-chlorophenyl)-2-nitropropane----------	COM.
2-(p-tert-Butylphenoxy)-1-methylethyl-2-chloroethyl sulfite (Aramite).	USR.
p-Chlorophenyl p-chlorobenzenesulfonate----------	DA, DOW.
p-Chlorophenyl 2,4,5-trichlorophenyl sulfone----------	FMP.
4,4′-Dichlorobenzilic acid----------	GGY.
1,1-Dichloro-2,2-bis(p-chlorophenyl)ethane (DDD)-------	ACG, PIC, RH.
1,1-Dichloro-2,2-bis(p-ethylphenyl)ethane----------	RH.
4,4′-Dichloro-α-methylbenzhydrol----------	ARA.
4,4′-Dichloro-α-(trichloromethyl)benzhydrol----------	RH.
Heptachloro-tetrahydro-methanoindene (Heptachlor)------	VEL.
*Hexachlorocyclohexane (Benzene hexachloride)----------	DA, FRO, HK, PPG, SF.
*Hexachlorocyclohexane, 100% γ-isomer (Lindane)---------	HK.
Hexachloro-epoxy-octahydro-endo, endo-dimethanonaphthalene (Endrin).	SHC, VEL.
Hexachloro-epoxy-octahydro-endo, exo-dimethanonaphthalene (Dieldrin).	SHC.
Hexachloro-hexahydro-endo, exo-dimethanonaphthalene (Aldrin).	SHC.

TABLE 21B.--*Pesticides and other organic agricultural chemicals for which U.S. production or sales were reported, identified by manufacturer, 1961*--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
PESTICIDES AND OTHER ORGANIC AGRICULTURAL CHEMICALS, CYCLIC--Continued	
*Insecticides--Continued	
*Chlorinated insecticides--Continued	
Octachloro-tetrahydro-methanoindan (Chlordan)----------	VEL.
Toxaphene (Chlorinated camphene)----------	HPC.
*1,1,1-Trichloro-2,2-bis(p-chlorophenyl)ethane (DDT)----	ACG, DA, CCG, LEB, MTO, OMC.
1,1,1-Trichloro-2,2-bis(p-methoxyphenyl)ethane (Methoxychlor).	DUP.
N,N-Diethyltoluamide----------	CWL, HPC.
Isobornyl thiocyanatoacetate (Thanite)----------	BKC, HPC.
1-Naphthyl methylcarbamate----------	UCC.
Organophosphorus insecticides:	
O-3(Chloro-4-methylumbelliferone) O,O-diethylphosphorothioate.	CHG.
S-(p-Chlorophenylthio)methyl O,O-diethyl phosphorodithioate.	SF.
O,O-Diethyl O-(2-isopropyl-4-methyl-6-pyrimidinyl) phosphorothioate (Diazinon).	GGY.
*O,O-Diethyl O-(p-nitrophenyl) phosphorothioate (Parathion).	ACY, AMP, MON.
*O,O-Dimethyl O-(p-nitrophenyl) phosphorothioate (Methyl parathion).	AMP, MON, SHC, VIC.
O,O-Dimethyl S-(4-oxo-1,2,3-benzotriazin-3(4H)-ylmethyl) phosphorodithioate.	CHG.
O,O-Dimethyl O-(2,4,5-trichlorophenyl)phosphorothioate (Ronnel).	DOW.
p-Dioxane-2,3-diyl ethyl phosphorodithioate----------	HPC.
O-Ethyl O-(p-nitrophenyl)phenyl phosphorothioate (EPN)-	VIC.
Nematocides: O-(2,4-Dichlorophenyl) O,O-diethyl phosphorothioate.	VC.
*Rodenticides:	
3-(Acetonylbenzyl)-4-hydroxycoumarin (Warfarin)----------	ABB, PEN.
2-Pivaloyl-1,3-indandione----------	MOT, PIC.
PESTICIDES AND OTHER ORGANIC AGRICULTURAL CHEMICALS, ACYCLIC	
*Fungicides:	
Bis-1,4-bromoacetoxybutene-2----------	VIN.
Cadmium succinate----------	MAL.
*Dimethyldithiocarbamic acid, ferric salt (Ferbam)--------	DUP, FMN, RBC, WRC.
Dimethyldithiocarbamic acid, manganese salt----------	FMN.
Disodium cyanodithioimidocarbonate----------	BKM.
Dodecylguanidine acetate----------	ACY.
Ethylene bis(dithiocarbamic acid), diammonium salt-------	CIS, RBC.
*Ethylene bis(dithiocarbamic acid), disodium salt (Nabam)-	CIS, DUP, FMN, RBC, RH.
Ethylene bis(dithiocarbamic acid), manganese salt (Manzate).	CIS, DUP, RH.
*Ethylene bis(dithiocarbamic acid), zinc salt (Zineb)-----	CIS, DUP, FMN, RH.
3-Ethyl-(mercurithio)-1,2-propanediol----------	DUP.
Ethylmercury acetate----------	DUP.
Ethylmercury chloride----------	DUP, MTL.
Ethylmercury phosphate----------	DUP.
Hydroxyethylmercury acetate----------	WRC.
Methanearsonic acid, calcium salt----------	VIN.
2-Methoxyethylmercury acetate----------	WRC.

TABLE 21B.--*Pesticides and other organic agricultural chemicals for which U.S. production or sales were reported, identified by manufacturer, 1961*--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
PESTICIDES AND OTHER ORGANIC AGRICULTURAL CHEMICALS, ACYCLIC--Continued	
*Fungicides--Continued	
Methylmercury hydroxide	MRT.
Methylmercury nitrile	WRC.
Propanearsinic acid, calcium salt	VIN.
Gameticides: α,β-Dichloroisobutyric acid, sodium salt	x.
*Herbicides and other plant hormones:	
Cacodylic acid	ASL.
2-Chloroallyl diethyldithiocarbamate	MON.
N,N-Diallyl-2-chloroacetamide	MON.
2,3-Dichloroallyl diisopropyl thiocarbamate	MON.
2,2-Dichloropropionic acid, sodium salt	DOW.
Diethyl dithiobis(thionoformate)	RBC.
0,0-Dimethyl 2,2,2-trichloro-1-n-butyryloxyethyl phosphonate.	CHG.
Ethyl N,N-di-n-propylthiocarbamate	SF.
Hexachloroacetone	ACG.
*Methanearsonic acid, disodium salt	ASL, CLY, VIN.
Methanearsonic acid, dodecyl- and octylammonium salts	VIN.
S-Propylbutylethylthiocarbamate	SF.
S,S,S-Tributyl phosphorotrithioate	CHG.
Tributyl phosphorotrithioite	VC.
Trichloroacetic acid, sodium salt (TCA)	DOW, MON.
*Insecticides:	
2-(2-Butoxyethoxy)ethyl thiocyanate	RH.
Metaldehyde	COM.
Organophosphorus insecticides:	
S-(1,2-Bis(ethoxycarbonyl)ethyl) 0,0-dimethyl phosphorodithioate (Malathion).	ACY.
2,2-Dichlorovinyl dimethyl phosphate (DDVP)	MTR, SHC.
0,0-Diethyl S-[2-(ethylthio)ethyl] phosphorodithioate	CHG.
0,0-Diethyl O-[2-(ethylthio)ethyl] phosphorothioate	CHG.
0,0-Diethyl S-[2-(ethylthio)ethyl] phosphorothioate	CHG.
0,0-Diethyl S-(ethylthio)methyl phosphorodithioate	ACY.
0,0-Diethyl phosphorochloridothioate	MON.
Diethyl phosphorochloridothionate	VIC.
0,0-Dimethyl S-2-(ethylsulfinyl)ethyl phosphorodithioate.	CHG.
0,0-Dimethyl phosphorochloridothioate	MON.
Dimethyl phosphorochloridothionate	VIC.
Ethyl pyrophosphate (Tetraethyl pyrophosphate) (TEPP)	AMP, x.
Methyl 3-hydroxycrotonoyl dimethyl phosphate (Phosdrin)	SHC.
0,0,0′-Tetraethyl-S,S′-methylenebis phosphorodithioate (Ethion).	FMP.
2-Thiocyanatoethyl laurate	RH.
*Rodenticides: Sodium fluoroacetate	RBC.
*Soil conditioners: Polyacrylonitrile, hydrolyzed, sodium salt.	ACY, x.
*Soil fumigants:	
*Bromomethane (Methyl bromide)	AMP, DOW, GLC, KLK, MCH.
Chloropicrin	DOW, IMC.
*1,2-Dibromo-3-chloropropane	AMP, DOW, SHC.
1,3-Dichloropropane	DOW.
1,3-Dichloropropene, 1,2-Dichloropropane (D-D mixture)	DOW, SHC.
N-Methyldithiocarbamic acid, sodium salt	DUP, SF.

TABLE 22B.--*Miscellaneous chemicals for which U.S. production or sales were reported, identified by manufacturer, 1961*

[Miscellaneous chemicals for which separate statistics are given in table 22A are marked with an asterisk (*); chemicals not so marked do not appear in table 22A because the reported data are accepted in confidence and may not be published. Manufacturers' identification codes shown below are taken from table 23. An x signifies that t manufacturer did not consent to his identification with the designated product]

Chemical	Manufacturers' identification codes (according to list in table 23)
MISCELLANEOUS CHEMICALS, CYCLIC	
Adenine and adenosine derivatives	SBR.
Adenosine phosphates	PBS.
2-Aminobenzothiazole	FMT.
1-(2-Aminoethyl)piperazine	JCC.
Ammonium caseinate	OTH.
Barium octylphenate	ROS.
Benzoic acid salts:	
Aluminum benzoate	G.
Cadmium di(p-tert-butyl benzoate)	x.
Calcium benzoate	HN.
*Sodium benzoate, tech	HN, TNP.
*Sodium benzoate, U.S.P	HK, HN, MON, TNP.
Tributyltin benzoate	x.
p-Benzoquinone (p-Quinone)	EKT.
Benzothiazole	ACY.
*Benzoyl peroxide	CAD, OXY, SDH, WTL.
Benzoylresorcinol	G.
p-Benzylaminophenol hydrochloride	EK.
Biological stains	HLC, NAC.
Bis(2,4-dichlorobenzoyl) peroxide	CAD.
Boron fluoride-phenol complex	ACG.
α-[2-(2-Butoxyethoxy)ethoxy]-4,5-methylenedioxy-2-propyltoluene (Piperonyl butoxide).	FMP.
Butyl benzoate	KLK.
p-tert-Butylbenzoic acid, barium bis-salt	CCA.
2(and 3)-tert-Butyl-4-methoxyphenol	EKT, UPM.
tert-Butyl peroxybenzoate	WTL.
4-tert-Butylpyrocatechol	DOW.
Calcium stearyl-2-lactylate	MEE.
Camphene	GLD, HPC.
Centralite-1 (N,N′-Diethyl-N,N′-diphenylurea)	PAS.
Chemical indicators	EK, HLC, LAM, NAC.
Chemical reagents	ACG, ARA, EK, FIN, GFS, HLC, LAM, MAL, NAC, PIC.
Chlorinated terphenyls	KPT.
5-Chlorobenzotriazole	MEE.
o-Chlorobenzylidenemalononitrile	GAM.
2-Chloro-3-toluenesulfonylpropionitrile	MON.
Chlorophyllin, sodium-potassium-copper	KCH.
Cumene hydroperoxide	HPC.
Cyclohexanone peroxide	CAD, WTL.
Cyclohexene-1,2-dicarboxylic acid (Tetrahydrophthalic acid), disubstituted, polyester salts:	
Barium salt	DEC.
Barium cadmium salt	DEC.
Cadmium salt	DEC.
1,4-Cyclohexylenedimethanol	EKT.
Cyclopentanepropionic acid	ARA.
*Cyclopropane	MAL, OH, OMS, TAE.
Cytidine and derivatives	SBR.
Cytidine phosphates	PBS.
Decahydronaphthalene (Decalin)	DUP.
Decyl diphenyl phosphite	HKP.

TABLE 22B.--*Miscellaneous chemicals for which U.S. production or sales were reported, identified by manufacturer, 1961*--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
MISCELLANEOUS CHEMICALS, CYCLIC--Continued	
Deoxyribonucleic acid	SBR.
1,4-Diazabicyclo[2.2.2]octane (Triethylenediamine)	HOU.
Diazodinitrophenol	HPC.
1,3-Dibromo-5,5-dimethylhydantoin	ARA.
*2,6-Di-tert-butyl-p-cresol:	
*Food grade	CAT, EKT, HPC, KPT, SHC.
*Tech	BFG, CAT, EKT, HPC, KPT, SHC.
2,5-Di-tert-butylhydroquinone	EKT.
1,3-Dichloro-5,5-dimethylhydantoin	GLY.
p-(Dichlorosulfamoyl)benzoic acid (Halazone)	ABB.
Dichloro-5-triazine-2,4,6(1H,3H,5H)trione (Dichloroisocyanuric acid).	MON.
Dichloro-5-triazine-2,3,6(1H,3H,5H)trione, potassium salt	MON.
Dichloro-5-triazine-2,4,6(1H,3H,5H)trione, sodium salt	MON.
Dicyclohexylammonium nitrite	OMC.
N,N'-Dicyclohexylcarbodiimide	ACY.
Dicyclopentadienyliron	TNA.
Didecyl phenyl phosphite	HKP.
1,4-Diethoxybenzene	EKT.
2,2'-Dihydroxy-4,4'-dimethoxybenzophenone	G.
2,6-Dihydroxyisonicotinic acid (2,6-Dihydroxy-4-carboxy-pyridine).	EK.
3,5-Diiodosalicylic acid	MRT.
Diisopropylenebenzene hydroperoxide	HPC.
p-Dimethoxybenzene (Dimethyl ether of hydroquinone)	ASL, EKT, ICO.
2,6-Dimethoxybenzoic acid	LCA.
4,4-Dinitrocarbanilide-4,6-dimethyl-2-pyrimidinol	MRK.
Dioxane (1,4-Diethylene oxide)	DOW, UCC.
Diphenyl hydrogen phosphite	HKP.
Diphenyloxazole	ARA.
Diphosphopyridine nucleotide derivatives	PBS.
1,2-Epoxy-3-phenoxypropane (Glycidyl phenyl ether)	SHC.
6-Ethoxy-m-anol (Propenylmethylguaethol)	ICO.
5-Ethyl-10,10-diphenylphenazasiline	MRK.
Ethylenediaminebis[o-hydroxyphenylacetic acid], monosodium ferric salt.	GGY.
2-Ethylhexyl octylphenyl phosphite	VC.
2-Ethylhexyl tallate	UCC.
Ethyl hydrocaffeate	ICO.
4-Ethylmorpholine	JCC, UCC.
Fenchone	HNW.
*Flotation reagents:	
Dicresylphosphorodithioic acid (Dicresylthiophosphoric acid).	ACY.
Dicresylphosphorodithioic acid, ammonium salt	ACY.
Dicresylphosphorodithioic acid, sodium salt	KCU.
2,2'-Dimethylthiocarbanilide (Di-o-tolylthiourea)	ACY, DUP.
Rosin amines	HPC.
Thiocarbanilide (Diphenylthiourea)	ACY, MON, NAC.
Furan derivatives:	
2-Furaldehyde (Furfural)	QKO.
2-Furoic acid	QKO.
Tetrahydrofurfuryl alcohol	QKO.
Gallic acid, tech	MAL.
*Gasoline additives:	
N,N'-Bis(1,4-dimethylpentyl)-p-phenylenediamine	EKT.
2,6-Di-tert-butylphenol	TNA.

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TABLE 22B. --*Miscellaneous chemicals for which U.S. production or sales were reported, identified by manufacturer, 1961*--**Continued**

Chemical	Manufacturers' identification codes (according to list in table 23)
MISCELLANEOUS CHEMICALS, CYCLIC--Continued	
*Gasoline additives--Continued	
*N,N'-Di-sec-butyl-p-phenylenediamine	DUP, EKT, UPM.
N,N'-Diisopropyl-p-phenylenediamine	DUP.
*N,N'-Disalicylidene-1,2-propanediamine	DUP, EKT, SOI, SPP, TNA, TX, UPM.
Methylcyclopentadienylmanganese tricarbonyl	TNA.
2,2'-Thiobis[6-tert-butylphenol]	CAT.
All other	EKT, UPM.
Glyceryl p-aminobenzoate	VND.
Guanosine	SBR.
Guanosine phosphates	PBS.
Hesperidin	SKG.
*Hexamethylenetetramine, tech	BOR, DUP, HKD, HN, PLS, UCP.
2-Hydroxy-4-methoxybenzophenone	G.
Hydroxymethyl-5,5-dimethylhydantoin	GLY.
2-(2'-Hydroxy-5'-methylphenyl)benzotriazole	GGY.
2-Imidazolidinethione (1,3-Ethylene-2-thiourea)	PAS.
Inosine	SBR.
Inosine phosphates	PBS.
Isopropylcresols	CP, GIV.
Lemon bioflavonoid	SKG.
*Lubricating oil and grease 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	ATR, CO, LUB, SIN, SON, x.
*Oil-soluble petroleum sulfonate, calcium salt	CO, LUB, ORO, SHO, SOI, SON.
*Oil-soluble petroleum sulfonate, sodium salt	CO, ENJ, MOR, NOP, PAR, SHO, SOC, SOI, SON, SUN, TX
Phenol salts:	
Barium salt of dodecylphenol	x.
Barium salt of nonylphenol	CCA, ENJ.
Barium salts of other alkylphenols	LUB.
Calcium salt of octylphenol-formaldehyde	SHC.
Calcium salt of polypropylphenol	ORO.
Calcium salts of other alkylphenols	ENJ, LUB, SIN.
All other	ACY, ENJ, LUB, ORO, SIN, TNA.
Phosphorodithioates (Dithiophosphates)	ORO, x.
All other	ENJ, ORO, SPP, TNA, VC, x.
p-Menthane	HNW, HPC.
8-p-Menthyl hydroperoxide	HNW, HPC.
4-Methoxyphenol	ASL, EKT, ICO.
Methylbenzylphenol mixture	DOW.
o-Methylbenzylamine	ALB.
2,2'-Methylenebis[6-tert-butylphenol]	CAT.
2,2'-Methylenebis[4-chlorophenol] (Dichlorophene)	GIV.
4,4'-Methylenebis[2,6-di-tert-butylphenol]	SHC.
2,2'-Methylenebis[3,4,6-trichlorophenol] (Hexachlorophene)	GIV.
2,2'-Methylenedi-p-cresol (Bis(5-methyl-2-hydroxyphenyl) methane).	GIV.
Methylglucoside	CRN.
4-Methylmorpholine	JCC, UCC.
Methyl phenyl phosphates	TNA.
1-Methyl-2-pyrrolidone, monomer	G.

TABLE 22B. ***--Miscellaneous chemicals for which U.S. production or sales were reported, identified by manufacturer, 1961*--Continued**

Chemical	Manufacturers' identification codes (according to list in table 23)
MISCELLANEOUS CHEMICALS, CYCLIC--Continued	
Methyl terpinyl ether	HPC.
Morpholine	JCC, UCC.
Morpholine oleate	PCH.
Morpholine salt of p-toluenesulfonic acid	AMB.
Naphthenic acid salts:	
Aluminum naphthenate	HSH.
Barium naphthenate	CCA, QCP.
Cadmium naphthenate	CCA.
*Calcium naphthenate	CCA, HNX, HSH, MLD, SHP, SOC, SPP, SRR, TRO, WTC.
Chromium naphthenate	HNX.
Cobalt lead manganese naphthenate	HNX, HSH.
*Cobalt naphthenate	CCA, CCC, CCW, CS, HNX, HSH, MLD, SHP, SOC, SPP, SRR, SW, TRO, WTC.
*Iron naphthenate	CCA, CCC, HNX, HSH, SOC, SRR, WTC.
*Lead naphthenate	CCA, CCC, CCW, HNX, HSH, MLD, QCP, SHP, SOC, SPP, SW, SRR, SW, TRO, WTC.
Lithium naphthenate	CCA.
Magnesium methoxynaphthenate	SPP.
*Manganese naphthenate	CCA, CCC, HNX, HSH, MLD, SHP, SOC, SPP, SRR, SW, TRO, WTC.
Mercury naphthenate	MTL.
Nickel naphthenate	CCA.
Rare earths naphthenate	CCA, HNX.
Sodium naphthenate	CCA.
Strontium naphthenate	CCA.
*Zinc naphthenate	CCA, CCC, HNX, HSH, MLD, SHP, SOC, SRR, SW, TRO, WTC.
Nicotinamide mononucleotide	PBS.
Organic mercury compounds:	
Phenyl mercuric borate	WRC.
Pyridyl mercuric acetate	MAL.
Phenolthiosulfonic acid	G.
2-Phenoxyethanol (Ethylene glycol monophenyl ether)	DOW, UCC.
2-(2-Phenoxyethoxy)ethanol (Diethylene glycol phenyl ether)	DOW.
Phenyl acid phosphate	VC.
2,2'-(p-Phenyleneoxy)diethanol (2,2-Paraphenylenedioxydiethanol).	EKT.
Phenylmagnesium bromide	ARA.
4-Phenylmorpholine	UCC.
5-Phosphorylribose-1-pyrophosphate	PBS.
Photographic chemicals:	
N-(2-Acetamidophenethyl)-1-hydroxy-2-naphthamide	EKT.
2-(4-Amino-N-ethyl-m-toluidino)ethyl sulfate	EKT.
3-Amino-6-methoxy-o-cresol hydrochloride (2-Methyl-6-methoxy-4-aminophenol hydrochloride).	x.
3-Amino-1,2,4-triazole (5-Amino-1,3,4-triazole)	FMT.
*Benzotriazole	EK, FMT, MEE, MRT.
Catechol (Pyrocatechin)	KPC.
5-Chlorobenzotriazole	FMT.
3-Chloro-4-diethylaminobenzenediazonium chloride (p-Diazo-2-chloro-N,N-diethylaniline) - zinc chloride.	FMT.
Chlorohydroquinone	EK.
2,4-Diaminophenol dihydrochloride (Amidol)	VPC.
2,5-Diethoxy-4-morpholinobenzenediazonium chloride (1-N-Morpholine-4-diazo-2,5-diethoxybenzene) - zinc chloride.	IDC.

TABLE 22B.--*Miscellaneous chemicals for which U.S. production or sales were reported, identified by manufacturer, 1961*--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
MISCELLANEOUS CHEMICALS, CYCLIC--Continued	
*Photographic chemicals--Continued	
*p-Diethylaminobenzenediazonium chloride (p-Diazo-N,N-diethylaniline) - zinc chloride.	FMT, G, 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.
p-(N-Ethylbenzimido)benzenediazonium chloride (p-Diazo-N-benzyl-N-ethylaniline) - zinc chloride.	FMT, MRT.
p-[Ethyl(2-hydroxyethyl)amino]benzenediazonium chloride (p-Diazo-N-ethyl-N-hydroxyethylaniline) - zinc chloride.	FMT, IDC.
N-Ethyl-N-hydroxyethyl-p-phenylenediamine sulfate	IDC.
N-Ethyl-N-(β-methanesulfonamidoethyl)toluene-2,5-diamine sulfate.	EKT.
Hydroquinone (Hydroquinol)	CRS, EKT.
p-[(2-Hydroxyethyl)methylamino]benzenediazonium chloride (p-Diazo-N-hydroxyethyl-N-methylaniline) - zinc chloride.	FMT, IDC.
3-Hydroxy-N-(2-hydroxyethyl)-2-naphthamide (β-Oxynaphthoicmonoethanolamide).	FMT.
5-Hydroxy-7-methyl-1,3,4-triazoindolizine	FMT.
N-(p-Hydroxyphenyl)glycine	IDC.
1-(3-Hydroxyphenyl)urea	FMT.
4-Isopropoxy-1-naphthol	MEE.
4-Methoxy-1-naphthol	x.
p-Methylaminophenol sulfate (Metol)	EK, HSH.
5-Methylbenzotriazole	EK,
1-Methylbenzoxazole	FMT.
1-Methylnaphthoxazole	FMT.
6-Nitrobenzimidazole	EK, FMT.
Phenylhydroquinone	ACY.
Phenyl-5-mercaptotetrazole	FMT.
1-Phenyl-3-pyrazolidone	GGY.
4-Phenylpyrocatechol	x.
4,4'-Thiodiresorcinol (Diresorcyl sulfide)	BKC.
All other	FMT, x.
Phthalic acid, lead salt, dibasic	NTL.
Phthalocyanine disulfonic acid, cobalt salt	NAC.
Phthalocyanine disulfonic acid, copper salt	NAC.
Pinene	GLD, HPC.
Polyethylene terephthalate	DUP, EK.
Propyl gallate	EKT, FIN, HN.
Pyrogallol (Pyrogallic acid)	HSH, MAL.
*Rosin acid salts:	
Aluminum resinate	JMS, MAL.
Calcium resinate	JMS, SW.
Calcium zinc resinate	JOD.
Copper resinate	JMS.
Iron resinate	JMS.
Lead resinate	HSH, JMS, SRR.
Manganese resinate	JMS, SRR.
Zinc resinate	JMS, SW.
*Salicylanilide	DUP, FIN, MEE, MON, PCW.
Salicylanilide, polybrominated	FIN.
Salicylic acid, lead salt	NTL.
Salicylic acid, tributyltin salt	x.

TABLE 22B. ***--Miscellaneous chemicals for which U.S. production or sales were reported, identified by manufacturer, 1961*** **--Continued**

Chemical	Manufacturers' identification codes (according to list in table 23)
MISCELLANEOUS CHEMICALS, CYCLIC--Continued	
Silicones	DCC, SPD.
Stearyl-2-lactylic acid	MEE.
Sulfosalicylic acid	FIN, MON, MRK.
Sodium cresoxide (Cresylic acid, sodium salt)	DEX, GOC.
Tall oil fatty acid chloride	G.
*Tall oil salts (Linoleic-rosin acid salts):	
Barium zinc tallate	HSH.
*Calcium tallate	CCA, HNX, MLD, TRO, WTC.
*Cobalt tallate	CCA, CCC, HNX, HSH, MLD, SHP, SRR, TRO, WTC.
*Copper tallate	CCA, HNX, SHP.
Iron tallate	CCA, HNX, MCA, SRR, WTC.
Lead manganese tallate	HSH.
*Lead tallate	CCA, CCC, HNX, HSH, MLD, SHP, SRR, TRO, WTC.
*Manganese tallate	CCA, CCC, HNX, HSH, MLD, SHP, SRR, TRO, WTC.
Zinc glyceryl tallate	CCA.
*Zinc tallate	CCA, HNX, HSH.
Tannic acid	MAL.
*Tanning materials, synthetic:	
Hydroxytoluenesulfonic acid, formaldehyde condensate (Cresol-formaldehyde sulfonate), sodium salt.	G, GGY.
*2-Naphthalenesulfonic acid, formaldehyde condensate and salts.	GRD, NAC, NOP, NYC, RH.
2-Naphtholsulfonic acid, formaldehyde condensate	NOP.
1-Phenol-2-sulfonic acid, formaldehyde condensate	NOP, RH.
1-Phenol-4-sulfonic acid, formaldehyde condensate	NOP.
Styrene maleic anhydride interpolymer, partial sodium salt.	DUP.
Sulfonyldiphenolsulfonic acid, formaldehyde condensate	G.
2-Terpinoxyethanol (Ethylene glycol terpinyl ether)	HPC.
1,2,3,4-Tetrahydronaphthalene (Tetralin)	DUP.
Tetrahydro-2-naphthylmethylidyne-1-octadecenylpyrimidine	SPP.
Tetrahydrothiophene	MET, ORO, PAS.
Tetraphenylbutadiene	ARA.
Textile chemicals, other than surface-active agents:	
N-Benzyl(and N,N-dibenzyl)-p-sulfanilic acid	G.
1,3-Bis(hydroxymethyl)-2-imidazolidone (Dimethylol ethylene urea).	ACY, x.
Heptadecyl-N-methylbenzimidazole	TRC.
1-[(Octadecyloxy)methyl]pyridinium chloride	DUP.
Phenol, sulfurated	G.
Protalbinic acid	CMG.
Tetrahydro-3,5-bis(methoxymethyl)-4H-1,3,5-oxadiazin-4-one.	DEX.
2,2',4,4'-Tetrahydroxybenzophenone	G.
All other	SNW.
2,2'-Thiobis[4-chlorophenol]	GIV, OPC.
2,2'-Thiobis[4,6-dichlorophenol]	CAT, MON, SDH.
Thymidine phosphates	PBS.
o-Tolylbiguanide	MON.
3,4,4'-Trichlorocarbanilide	MON.
Trichloromelamine	x.
1,3,5-Trichloro-5-triazine-2,4,6(1H,3H,5H)trione (Trichloro isocyanuric acid).	MON.
Tri-(m,p)-cresyl borate	USB.
3,4,5-Trimethoxybenzoic acid	KF.
s-Trioxane	CEL.

TABLE 22B. ***--Miscellaneous chemicals for which U.S. production or sales were reported, identified by manufacturer, 1961*--Continued**

Chemical	Manufacturers' identification codes (according to list in table 23)
MISCELLANEOUS CHEMICALS, CYCLIC--Continued	
Triphenyl phosphite	HK, HKP, MON.
Triphenylphosphorus	MET.
Triphenyltin chloride	x.
Vinyl cyclohexenedioxide	UCC.
Uridine	SBR.
Uridine phosphates	PBS.
1-Vinyl-2-pyrrolidinone, monomer	G.
1-Vinyl-2-pyrrolidinone, polymer	G.
1-Vinyl-2-pyrrolidinone - vinyl acetate copolymer	G.
MISCELLANEOUS CHEMICALS, ACYCLIC	
*Acetaldehyde	BFG, CEL, COM, DUP, EKT, HPC, MON, PUB, SHC, UCC.
Acetamide	ACG.
Acetamidine hydrochloride	MRK.
2-Acetamidoethanol (N-Acetylethanolamine)	RBC.
Acethydrazide trimethylammonium chloride	ARA
*Acetic acid, synthetic, 100%	CEL, COM, EKT, HPC, PUB, UCC.
*Acetic acid salts:	
Aluminum acetate	ACY, UCC.
Aluminum subacetate	MAL.
*Ammonium acetate	ACG, BKG, MAL.
Barium acetate	ACG, BKC, MAL.
Cadmium acetate	ACG, MAL.
Calcium acetate	ACG, BKC, MAL.
Chromium acetate	ACY.
Cobalt acetate	HSH, SHP.
*Copper acetate	ACG, BKC, UCC.
Lead acetate	ACG, BKC, SRR, SW.
Lead subacetate	ACG, BKC, G.
Lead tetraacetate	ARA.
Magnesium acetate	ACG, BKC.
Manganese acetate	HSH, SHP.
Mercuric acetate	ACG, BKC, MAL.
Nickel acetate	HSH, SHP.
*Potassium acetate	ACG, BKC, CWL, MAL, UCC.
Silver acetate	MAL.
Sodium acetate	ACG, BKC, CEL, EKT, MAL, UCC.
Zinc acetate	ACG, BKC, HSH, MAL, UCC.
*Acetic anhydride, 100%	
From acetaldehyde	HPC.
From ethylene	UCC.
From recovered acetic acid by the vapor-phase process	CEL.
From acetic acid (other than recovered) by the vapor-phase process.	CEL, EKT.
Acetin:	
Mono	KES.
Tri	EKT.
Acetoacetic acid, sodium salt	UCC.
*Acetone:	
By fermentation	PUB.
From cumene	ACP, HPC, SHC, SOC.
*From isopropyl alcohol	EKT, ENJ, SHC, UCC.
All other	CEL.
Acetone semicarbazone	NOR.
Acetone, sodium bisulfite	FMT.
Acetonitrile	EKX, UCC.

TABLE 22B. -- *Miscellaneous chemicals for which U.S. production or sales were reported, identified by manufacturer, 1961*--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued	
Acetyl chloride	TBK.
Acetyl peroxide	WTL.
Acrolein (Acrylaldehyde)	CEL, SHC, UCC.
*Acrylic acid	BFG, NTL, RH, UCC.
Acrylic monomers not specifically listed	RH.
*Acrylonitrile	ACY, BFG, DUP, MON, SOH, UCC.
*Adipic acid	CS, DUP, MON, NAC.
Adipic acid, ethylene glycol-propylene glycol ester	PFZ.
Adiponitrile	CS, DUP.
*Alcohols, monohydric, unsubstituted:	
*Alcohols C_9 or lower:	
Allyl alcohol	DOW, SHC.
Amyl alcohols:	
*Unmixed:	
Isopentyl alcohol (Isoamyl alcohol)	FB, FMP, USI.
2-Methyl-2-butanol (tert-Amyl alcohol)	PAS.
2-Pentanol	PAS.
3-Pentanol	UCC.
Mixed:	
*Fusel oil, refined	COM, FMP, PUB, USI.
Other than fusel oil:	
Primary mixed	EKX, PAS, UCC.
Secondary mixed	PAS.
Other	PAS.
*Butyl alcohols:	
Primary:	
Iso (Isopropylcarbinol)	CEL, EKT, EKX, UCC, x.
*Normal (n-Propylcarbinol)	CEL, DUP, EKX, PUB, UCC.
Secondary (Methylethylcarbinol)	ENJ, SHC.
Tertiary (Trimethylcarbinol)	SHC.
Mixed	CEL, EKX.
2,6-Dimethyl-4-heptanol (Diisobutylcarbinol)	UCC.
*Ethyl alcohol, synthetic	EKX, ENJ, HPC, SHC, UCC, USI, x.
2-Ethyl-1-butanol (sec-Hexyl alcohol)	UCC.
2-Ethyl-1-hexanol	CEL, EKX, UCC.
Hexyl alcohol	ENJ, UCC.
1-Hexyn-3-ol	AIR.
3-Hexyn-2-ol	LIL.
*Iso-octyl alcohols	EKX, ENJ, GOC, SOI, UCC.
*Isopropyl alcohol	ENJ, SHC, UCC.
*Methanol, synthetic	ACN, CEL, COM, DUP, ESC, HPC, MON, SPN, UCC, x.
2-Methyl-3-butyn-2-ol	AIR.
3-Methyl-3-pentanol	AIR.
4-Methyl-2-pentanol (1-Methylisobutylcarbinol)	SHC, UCC.
3-Methyl-1-pentyn-3-ol (Methylparafynol)	AIR.
2-Methyl-2-propen-1-ol (Methallyl alcohol)	BPC.
*1-Octanol	DUP.
*2-Octanol	RH, WTH.
Octanols, mixed	PG.
Propyl alcohol (Propanol)	CEL, DUP, UCC.
2-Propyn-1-ol	G.
All other	CEL, EKX.
*Alcohols C_{10} and higher:	
*Decyl alcohols	DUP, ENJ, GOC, PG, RH, SOI, UCC.
3,9-Diethyl-6-tridecanol	UCC.
Dodecyl alcohol (Lauryl alcohol)	DUP, PG, RH.
7-Ethyl-2-methyl-4-hendecanol	UCC.

TABLE 22B.-- ***Miscellaneous chemicals for which U.S. production or sales were reported, identified by manufacturer, 1961*** **--Continued**

Chemical	Manufacturers' identification codes (according to list in table 23)
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued	
*Alcohols, monohydric, unsubstituted--Continued	
*Alcohols C_{10} and higher--Continued	
5-Ethyl-2-nonanol	UCC.
1-Hexadecanol (Cetyl alcohol)	ADM, DUP, RH.
*1-Octadecanol (Stearyl alcohol)	ADM, DUP, PG.
cis-9-Octadecen-1-ol (Oleyl alcohol)	ADM, DUP.
1-Tridecanol	ENJ.
2,6,8-Trimethyl-4-nonanol	UCC.
All other	ADM, DUP, GOC, PG, RH.
Aldol (Acetaldol)	UCC.
Alkylene oxides, mixed	DOW.
Alkyl sulfides, mixed	ORO.
Allyl cyanide	RBC.
1-Allyl-3-(2-hydroxyethyl)-2-thiourea (N-β-Hydroxyethyl-N′-allylthiourea).	FMT, IDC.
Allyl isothiocyanate, nonflavoring grade	ICO.
Allyl methacrylate	SAR.
1-(Allyloxy)-2,3-epoxypropane (Allyl glycidyl ether)	SHC.
3-(Allyloxy)-1,2-propanediol (Allyl glyceryl ether)	SHC.
Aluminum isopropoxide (Aluminum isopropylate)	SFA.
Amidinourea (Guanylurea) phosphate	ACY.
Amidinourea (Guanylurea) sulfate	ACY.
*Amines:	
*Butylamine	EKT, PAS, UCC.
tert-Butylamine	MON, RH.
Coco diamine	ADM.
*Coconut oil amine	ADM, ARC, FOR, GNM.
N-Coco-1,3-propanediamine	GNM.
Diallylamine	SHC.
Dibutylamine	PAS, UCC.
*Diethylamine	DUP, PAS, UCC.
Diethylamine hydrochloride	BKL.
Diethylenetriamine	DOW, UCC.
N,N-Diethylethylenediamine	ALB, COK.
N^1,N^1-Diethyl-1,4-pentanediamine (Novoldiamine)	SDH.
N,N-Diethyl-1,3-propanediamine	UCC.
Diisopropylamine	PAS, UCC.
*Dimethylamine	COM, DUP, PAS, RH.
Dimethylamine alkyl and fatty derivatives	ARC, BC, x.
Dimethylamine sulfate	RH.
N,N-Dimethylhexadecylamine	ONX.
Dimethylmyrystylamine	BC.
N,N-Dimethyloctadecylamine (Stearyldimethylamine)	ARC.
N,N-Dimethyl-1,3-propanediamine	UCC.
Dipentylamine (Diamylamine)	PAS.
Dipropylamine	PAS, UCC.
Dipropylenetriamine	UCC.
Disoya amine	ARC.
*Dodecylamine	ARC, FOR, GNM.
Ethylamine	PAS, UCC.
Ethylenediamine	DOW, UCC.
Ethylenediamine dihydrochloride	BKC.
Ethylenediamine sulfate	EK.
Hexadecylamine	ADM, GNM.
1,6-Hexanediamine (Hexamethylenediamine)	CS, DUP.

TABLE 22B. --*Miscellaneous chemicals for which U.S. production or sales were reported, identified by manufacturer, 1961*--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued	
*Amines--Continued	
3,3'-Iminobispropylamine	UCC.
Isobutylamine	PAS.
Isopentylamine	ALB.
Isopropylamine	PAS, UCC.
*Methylamine, mono-	COM, DUP, PAS, RH.
*Octadecylamine	ADM, ARC, GNM.
Octylamine	ARC, RH, UCC.
Oleylamine	ARC, FOR, GNM.
Pentylamine (Monoamylamine)	PAS.
Primary amines, mixed	RH.
1,2-Propanediamine (Propylenediamine)	UCC.
1,3-Propanediamine	UCC.
Propylamine	PAS, UCC.
Soybean oil amine	ARC.
*Tallow amine	ADM, ARC, FOR, GNM.
*Tallow amine, dihydrogenated	ADM, ARC, FOR, GNM.
*Tallow amine, hydrogenated	ADM, ARC, FOR, GNM.
Tallow diamine	ADM.
Tallow dimethylquaternaryamine, dihydrogenated	ADM.
Tallow methylamines, dihydrogenated	ADM, ARC, GNM.
N-Tallow-1,3-propanediamine	GNM.
Tetraethylenepentamine	DOW, UCC.
N,N,N',N'-Tetramethyl-1,3-butanediamine	UCC.
N,N,N',N'-Tetramethylethylenediamine	RH.
Triallylamine	SHC.
Tributylamine	PAS.
Tricaprylylamine	GNM.
Tridodecylamine	GNM.
Triethylamine	PAS, UCC.
Triethylenetetramine	DOW, UCC.
*Trimethylamine	COM, DUP, PAS, RH.
Trimethylenediamine fatty derivatives	ARC, FOR.
Trimethylethylenediamine	RH.
Tripentylamine	PAS.
Tripropylamine	PAS.
All other	ALB, ARC, EK, GNM, HAP.
Amine acid reaction products	SHC.
2-Amino-1-butanol	COM.
1-Aminoethanol (Acetaldehyde ammonia)	TBK.
2-Aminoethanol (Monoethanolamine) sulfite	SUM.
Aminoethoxypropylsilane	UCS.
2-(2-Aminoethylamino)ethanol (Aminoethylethanolamine)	DOW, UCC.
2-Amino-2-ethyl-1,3-propanediol	COM.
Aminoguanidine bicarbonate	TRJ.
2-Amino-2-(hydroxymethyl)-1,3-propanediol (Tris(hydroxymethyl)aminomethane).	COM.
2-Amino-2-methyl-1,3-propanediol	COM.
2-Amino-2-methyl-1-propanol	COM.
3-Amino-1-propanol	UCC.
*Amyl acetates, 90%:	
Amyl acetate (n-Pentyl acetate)	COM, TBK.
Isopentyl acetate (Isoamyl acetate)	FB, NW.
Mixed	PAS, PUB, UCC.
Azelaic acid	EMR.
2,2'-Azobis[2-methylpropionitrile] (α,α'-Azodiisobutyronitrile).	WST.

TABLE 22B.--*Miscellaneous chemicals for which U.S. production or sales were reported, identified by manufacturer, 1961*--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued	
Barbituric acid	ABB.
Barbituric acid, sodium salt	ABB.
Behenamide (Docosanamide)	HND.
Behenic acid	ADM.
Bis[2-(2-butoxyethoxy)ethyl] ether (Tetraethylene glycol dibutyl ether).	RBC.
Bis(2-butoxyethyl) ether (Diethylene glycol di-n-butyl ether).	DOW, UCC.
Bis(2-chloroethoxy)methane (Dichloroethylformal)	TKL.
*Bis(2-chloroethyl) ether (Dichlorodiethyl ether)	DOW, JCC, OMC, WYN.
Bis(2-chloro-1-methylethyl) ether (Dichloroisopropyl ether)	DOW, JCC, WYN
Bis(2,6-dimethyl-4-heptyl) maleate	G.
Bis(dodecyltrimethylammonium) polythionate	BKC, PAS.
Bis(2-ethoxyethyl) ether (Diethylene glycol diethyl ether)	UCC.
Bis(hydroxyethyl)ether butynediol	G.
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.
Bis(tributyltin) oxide	x.
Bis(trichloromethyl) sulfone	SF.
Biuret	SW.
Boric acid esters:	
Trihexylene glycol biborate	USB.
All other	USB.
Boron alcoholate	SFA.
Boron fluoride ethyl ether complex	ACG.
Boron trifluoride monoethylamine complex	ACG.
Bromal	SDW.
N-Bromoacetamide	ARA.
2-Bromododecanoic acid (α-Bromolauric acid)	DUP.
N-Bromosuccinimide (Succinibromimide)	ARA, SDW.
1,2(and 1,3)-Butanediol (Butylene glycol)	CEL.
1,4-Butanediol	G.
2,3-Butanediol (2,3-Butylene glycol)	UCC.
2,3-Butanedione 2-oxime	EK.
2-Butanone (Methyl ethyl ketone)	ENJ, SHC, UCC.
Butanone mixture	CEL.
*2-Butanone oxime	ALB, CCA, NAC, TRO.
2-Butanone peroxide	CAD, SHC, WTL.
2-Butene-1,4-diol	G.
3-Buten-2-one (Methyl vinyl ketone)	PFZ.
1-Butoxy-2,3-epoxypropane (Butyl glycidyl ether)	SHC.
2-Butoxyethanol (Ethylene glycol monobutyl ether)	OMC, UCC.
2-(2-Butoxyethoxy)ethanol (Diethylene glycol monobutyl ether).	OMC, UCC
2-[2-(2-Butoxyethoxy)ethoxy]ethanol (Triethylene glycol monobutyl ether).	DOW, OMC.
2-(2-Butoxyethoxy)ethyl acetate	UCC.
1-Butoxyethoxy-2-propanol	UCC.
2-Butoxyethyl acetate	UCC.
*Butyl acetates, 90%:	
*Iso	CEL, EKT, PAS, UCC.
*Normal	CEL, COM, EKT, PUB, UCC.
Secondary	ENJ, HPC, PUB, SHC.
Tertiary	RH.
Mixed	CEL.

TABLE 22B. --*Miscellaneous chemicals for which U.S. production or sales were reported, identified by manufacturer, 1961*--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued	
Butyl acrylate	CEL, UCC.
Butylene oxide	DOW, UCC.
Butyl ether (Di-n-butyl ether)	EK, UCC.
tert-Butyl hydroperoxide	CAD, SHC, WTL.
2,2'-(Butylimino)diethanol (N,N-Bis(2-hydroxyethyl)butylamine).	PAS.
Butyl isocyanate	CWN.
Butyl lactate	COM.
Butyllithium	AMP.
sec-Butyllithium	LCA.
Butylmagnesium chloride	ARA.
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	G.
Butyraldehyde	CEL, EKX, UCC.
Butyraldehyde oxime	NAC.
*Butyric acid	CEL, EKT, UCC.
Butyric anhydride	EKT, UCC.
Butyrolactone	G.
Butyronitrile	EKX.
Butyryl chloride	HK, TBK.
*Carbon disulfide	ACG, BKT, FMW, OLH, PAS, PPG, SF.
*Cellulose esters:	
*Cellulose acetate	AV, CEL, DUP, EKT.
Cellulose acetate butyrate	EKT.
Cellulose acetate propionate	EKT.
Cellulose propionate	CEL.
Nitrocellulose (Cellulose nitrate)	DUP, HPC.
All other	EK.
*Cellulose ethers:	
Ethylcellulose	DOW, HPC.
Ethylhydromethylcellulose	HPC.
Hydroxyethylcellulose	HPC, UCC.
Methylcellulose	DOW.
*Sodium carboxymethylcellulose, 100%	BUK, DUP, HPC, WYN.
Sodium carboxymethylhydroxyethylcellulose	BUK, HPC.
*Chloral (Trichloroacetaldehyde)	DA, FMW, GGY, MTO.
Chloroacetamide	BPC.
*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.
Chloroacetonitrile	BPC.
Chloroacetyl chloride	DOW.
*2-Chloro-N,N-dimethylethylamine (Dimethylaminoethyl chloride) hydrochloride.	ABB, GAM, MCH, NES, WYT.
2-Chloro-N,N-dimethylpropylamine hydrochloride	WYT.
3-Chloro-N,N-dimethylpropylamine hydrochloride	MCH.
2-Chloroethanol (Ethylene chlorohydrin)	OMC, UCC.
2-(2-Chloroethoxy)ethyl 2-chloroethyl ether (Triethylene glycol dichloride).	UCC.
2-Chloroethyl vinyl ether	UCC.
4-Chloro-3-hydroxybutyronitrile	EK.

TABLE 22B. -- *Miscellaneous chemicals for which U.S. production or sales were reported, identified by manufacturer, 1961*--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued	
Chloromaleic anhydride	RBC.
Chloromethoxypropylmercuric acetate	SCI.
Chloromethyl methyl ether	EK, HK, x.
1-Chloro-1-penten-3-one (β-Chlorovinyl ethyl ketone)	ABB.
*3-Chloro-1,2-propanediol (Glycerol α-chlorohydrin)	EKT, EVN, ICO.
2-Chloro-1-propanol	BPC.
Chloro-2-propanone (Chloroacetone)	BPC, EK, GAM.
3-Chloropropionic acid	DOW, LIL.
N-Chlorosuccinimide (Succinichlorimide)	NAC.
2-Chlorotriethylamine hydrochloride	MCH.
Chlorotrimethylsilane	UCS.
Citric acid	BZ, MLS, PFZ.
Citric acid salts:	
Ammonium citrate	MAL, PFZ.
Barium citrate	SW.
Calcium citrate	PFZ.
Ferric ammonium citrate	MAL, PFZ.
Ferric citrate	MAL.
Ferrous calcium citrate	BKL.
Manganese citrate	MAL.
Potassium citrate	MAL, PFZ.
Sodium citrate	MAL, MLS, PFZ.
Coconitrile	FOR.
Coconut oil amide	ARC, KES.
Crotonaldehyde	CEL, EKT, UCC.
Crotonic acid (2-Butenoic acid)	EKT.
2-Cyanoacetamide	KF.
Cyanoacetic acid	KF.
n-Decane	HMY.
1,10-Decanediol	NEP.
Decanoic acid (Capric acid)	FOR.
Decanoyl peroxide	CAD.
1-Decene	HMY.
2,3-Dibromo-1-propanol	DUP.
1,2-Dibutoxyethane (Ethylene glycol di-n-butyl ether)	DOW, UCC.
2-Dibutylaminoethanol	PAS.
Dibutyl ammonium laurate	UCC.
*Dibutyl fumarate	DEC, MON, RUB.
Dibutylmethoxytin (Dibutyl tin methoxide)	CCA.
1,3-Dibutyl-2-thiourea	PAS.
Dibutyltin compounds:	
Dibutyltin bis(isooctyl mercaptoacetate)	x.
Dibutyltin bis(lauryl mercaptide)	x.
Dibutyltin dichloride	x.
Dibutyltin dilaurate	CCA, MLD, x.
Dibutyltin maleate	CCA, x.
Dibutyltin mercaptopropionate	CCA.
Dibutyltin oxide	x.
All other	x.
Dichloroacetaldehyde	FMW.
Dichloroacetic acid	DOW, KF.
Dichloroacetyl chloride	EK.
Dichlorodimethylsilane	UCS.
Dichlorohydrogenmethylsilane	UCS.
Dichloromethylvinylsilane	DCC.
1,3-Dichloro-2-propanol	PRR.
2,3-Dichloropropanol	UCC.

TABLE 22B.--*Miscellaneous chemicals for which U.S. production or sales were reported, identified by manufacturer, 1961*--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued	
*Didodecyl 3,3'-thiodipropionate	ACY, CCA, EVN, HAB.
Diethoxydimethylsilane	UCS.
Diethyl acetol	UCC.
Diethylaluminum chloride	TNA.
Diethyl allylisopentylmalonate	BPS.
2-Diethylaminoethanol	PAS, UCC.
2-(2-Diethylaminoethoxy)ethanol	PAS.
2-Diethylaminoethyl methacrylate	DUP.
Diethylaminopropionamide	DUP.
Diethyl sec-butylethylmalonate	ABB.
Diethyl butylmalonate	BPC.
Diethyl sec-butylmalonate	ABB.
2,2-Diethylbutyric acid (Triethylacetic acid)	BPC.
Diethylcarbamoyl chloride	GAM.
Diethyl carbonate (Ethyl carbonate)	DLM, FMP.
Diethyl diethylmalonate (Diethyl malonic ester)	BPC, LIL.
*Diethylene glycol	ACN, CAU, DOW, G, JCC, OMC, UCC, WYN.
Diethylene glycol chloroformate	PPG.
Diethyl (ethoxymethylene)malonate	KF.
Diethyl ethylisopentylmalonate	BPC, LIL.
Diethyl ethylmalonate (Ethyl malonic ester)	LIL.
Diethyl ethyl(1-methylbutyl)malonate	ABB.
Di-2-ethyl-1-hexyl fumarate	RUB.
Di-2-ethyl-1-hexyl maleate	QCP.
N,N-Diethylhydroxylamine oxalate	EK.
N,N-Diethylhydroxylamine sulfate	EK.
Diethyl maleate	ACY, UCC.
*Diethyl malonate (Malonic ester)	ABB, KF, LIL.
Diethyl (1-methylbutyl)malonate	ABB, LIL.
Diethyl methylmalonate	BPC.
Diethyl oxalate (Ethyl oxalate)	BPC, FMP.
Diethylthiophosphoryl chloride	ACY.
1,3-Diethyl-2-thiourea	PAS.
Diglycolic acid	DUP.
2,4-Dihydroxy-3,3-dimethylbutyric acid, γ-lactone (Pantolactone).	ACY.
1,3-Dihydroxy-2-propanone	ABB, BAX, PFZ.
Diisodecyl fumarate	RUB.
Diiso-octyl fumarate	RUB.
2-Diisopropylaminoethanol	PAS, UCC.
Diisopropylammonium nitrite	OMC.
Diisopropyl peroxydicarbonate (Isopropyl percarbonate)	PPG.
Dimethoxyethane (Ethylene glycol dimethyl ether)	ARA, ASL, OMC
N,N-Dimethylacetamide	DUP.
*2-Dimethylaminoethanol	PAS, RH, UCC.
3-Dimethylaminopropionitrile	ACY.
Dimethylcarbamoyl chloride	GAM.
N-(1,1-Dimethyldecyl)methylenimine	SPP.
N,N-Dimethylformamide	DUP.
Dimethylglyoxime	EK.
2,5-Dimethyl-2,5-hexanediol	AIR.
2,5-Dimethyl-3-hexyne-2,5-diol	AIR.
1,1-Dimethylhydrazine	FMP, 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.

TABLE 22B. --*Miscellaneous chemicals for which U.S. production or sales were reported, identified by manufacturer, 1961*--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued	
Dimethyl sulfoxide	CRZ.
Dimethyltin compounds	x.
1,3-Dimethylurea	PAS
Dioctyl maleate	DEC, RUB.
1,3-Dioctyl-2-thiourea	PAS.
Dioctyltin oxide	x.
*Dipropylene glycol	CEL, DOW, JCC, OMC, UCC.
Ditridecyl fumarate	RUB.
n-Dodecane	HMY.
1-Dodecene	HMY.
*Dodecenylsuccinic anhydride	HMY, MON, NAC.
Dodecylnitrile	FOR.
*Epichlorohydrin	DOW, SHC, UCC.
Erucamide	ADM, FIN.
Erucic acid	ADM.
Ethanedithiol	RBC, TKL.
*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-Ethoxyethoxy)ethyl acetate	UCC.
2-Ethoxyethyl acetate	EKT, OMC, UCC.
3-Ethoxypropionitrile	ACY.
1-Ethoxy-1,3,3-trimethoxypropane	KF.
*Ethyl acetate, 85%	CEL, COM, EKT, ENJ, HPC, PUB, SRC, UCC.
Ethyl acetoacetate	FMP, UCC.
*Ethyl acrylate	CEL, RH, UCC.
Ethylaluminum dichloride	TNA.
Ethylaluminum sesquichloride	TNA.
2-Ethylaminoethanol (Ethylmonoethanolamine)	PAS, UCC.
Ethyl bromoacetate	DOW.
2-Ethylbutyraldehyde	UCC.
2-Ethylbutyric acid (Diethylacetic acid)	UCC.
Ethyl carbamate	FMP.
Ethyl chloroformate	FMP.
Ethyl 3-(chloroformyl)propionate (β-Carbethoxypropionyl chloride).	ABB.
Ethyl cyanoacetate	KF.
Ethylene, from ethyl alcohol	OH.
Ethylene carbonate	DOW, JCC.
*Ethylene glycol	ACN, CAU, CEL, DOW, DUP, ENJ, G, HCH, JCC, OMC, UCC WYN.
Ethylene glycol diacetate	UCC.
Ethylene glycol dimethacrylate	SAR.
*Ethylene oxide	ACN, CAU, DOW, G, JCC, OMC, UCC, WYN.
*Ethyl ether:	
Absolute	MAL.
Tech	ENJ, HPC, UCC, USI.
U.S.P	MAL, OMS.
*Ethyl formate	COM, FB, TBK, UCC.
2-Ethylhexanal (α-Ethylcaproaldehyde)	EKX, UCC.
2-Ethyl-1,3-hexanediol	UCC.
2-Ethylhexanoic acid (α-Ethylcaproic acid)	EKT, UCC.

TABLE 22B. --*Miscellaneous chemicals for which U.S. production or sales were reported, identified by manufacturer, 1961*--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued	
*2-Ethylhexanoic acid (α-Ethylcaproic acid) salts:	
Aluminum 2-ethylhexanoate	WTC.
Barium 2-ethylhexanoate	CCA.
Cadmium 2-ethylhexanoate	CCA, ROS.
*Calcium 2-ethylhexanoate	CCA, HNX, HSH, SRR, SW, WTC.
*Cobalt 2-ethylhexanoate	CCA, CCW, HNX, HSH, MLD, SHP, SRR, SW, WTC.
Copper 2-ethylhexanoate	CCA, SRR.
Iron 2-ethylhexanoate	CCA.
*Lead 2-ethylhexanoate	CCA, HNX, HSH, NTL, SHP, SRR, SW, WTC.
Lithium 2-ethylhexanoate	WTC.
Manganese 2-ethylhexanoate	CCA, HNX, SW.
Potassium 2-ethylhexanoate	CCA.
Rare earths 2-ethylhexanoate	CCA.
Strontium 2-ethylhexanoate	CCA.
*Zinc 2-ethylhexanoate	CCA, HNX, HSH, ROS, SRR, WTC, x.
Zirconium 2-ethylhexanoate	CCA, HNX.
*2-Ethyl-1-hexyl acetate	DEC, EKT, UCC.
2-Ethyl-1-hexyl acrylate	CEL, UCC.
Ethyl 2-hydroxy-3-methylbutyrate (Ethyl α-hydroxyisovalerate-	RH.
2-Ethyl-2-(hydroxymethyl)-1,3-propanediol (Trimethylol-propane).	CEL.
2-Ethyl-2-(hydroxymethyl)-1,3-propanediol esters	CEL.
2,2′-(Ethylimino)diethanol (N,N-Bis-(2-hydroxyethyl)-ethylamine).	PAS.
2-Ethylisohexyl acetate	EKT.
Ethyl lactate	KF.
Ethylmagnesium bromide	ARA.
Ethylmagnesium chloride	ARA.
2-(Ethylmercapto)ethanol	PAS.
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, dehydrated or hydrogenated	BAC.
Castor oil, phosphated	VIC.
Lard oil, nitrated	SPP.
Vegetable oils, brominated	DOM, RT.
Fatty acids, chemically modified:	
α-Bromo(lauric-stearic) acids	DUP.
Castor oil fatty acids, dehydrated	BAC.
All other	RH, RT.
*Fatty acid esters, not included with plasticizers or surface-active agents:	
Butyl palmitate	NOP.
Ethyl stearate	ICO.
Hexadecyl stearate	KES.
*Isopropyl myristate	AHC, GIV, KES, PRP.
*Isopropyl oleate	AHC, KES, PRP.
*Isopropyl palmitate	AHC, DRW, GIV, KES, PRP.
Isopropyl stearate	KES.
Methyl decanoate	FOR.
Methyl ester of coconut oil	FOR.
Methyl ester of lard oil	CCW.
Methyl esters of tallow	FOR.

TABLE 22B. ***--Miscellaneous chemicals for which U.S. production or sales were reported, identified by manufacturer, 1961*****--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	
Methyl 12-hydroxystearate	BAC.
Methyl myristate	FOR.
Methyl octanoate	FOR.
Pentaerythritol monostearate	x.
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.
Sodium ethyl(and methyl) phosphorodithioates	ACY.
Xanthates:	
Potassium n-butylxanthate	USR.
Potassium sec-butylxanthate	DOW.
Potassium ethylxanthate	ACY, DOW.
Potassium hexylxanthate	DOW.
Potassium isopropylxanthate	DOW.
Potassium pentylxanthates	ACY, DOW.
Potassium sec-pentylxanthate	DOW.
Sodium n-butylxanthate	KCC, USR.
Sodium sec-Butylxanthate	ACY, DOW.
Sodium ethylxanthate	ACY, DOW.
Sodium isopropylxanthate	ACY, DOW.
All other	ACY, DOW.
*Formaldehyde, 37% by weight	ACN, BOR, CEL, COM, DUP, HKD, HN, HPC, KF, MON, RCI, RH, SPN, TRJ, UCP.
Formamide	DUP.
*Formic acid, 90%	DUP, HN, MAL, VIC.
*Formic acid salts:	
Aluminum formate	SNW, VIC, UCC.
Ammonium formate	ACG, HEX.
Calcium formate	TRJ.
Chromic formate	NAC.
Lead formate	NTL.
Nickel formate	HSH.
Sodium formate, refined	ACG, RPC.
Sodium formate, tech	HN, HPC.
Thallous formate	EK.
*Fumaric acid	BZ, HN, MON, NAC, PCC.
Fumaric acid, lead salt (Tetrabasic)	NTL.
Gluconic acid, tech	DLI, PFZ.
Glucose pentaacetate	BKL.
Glutaric acid	CS, EK.
Glycerol, synthetic	DOW, SHC.
Glycerol tri(polyoxypropylene) ether	JCC, UCC, WYN.
Glycine (Aminoacetic acid), tech	BPC.
Glycine ethyl ester hydrochloride	BPC.

TABLE 22B.--*Miscellaneous chemicals for which U.S. production or sales were reported, identified by manufacturer, 1961*--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued	
Glycolic acid (Hydroxyacetic acid)	DUP.
Glycolic acid, aluminum salt	TRC.
Glycolonitrile	ACY.
Glycoxal	UCC.
Guanidine hydrochloride	ACY.
4-Guanyl-1-isonitrosoguanyl-1-tetrazene	REM.
*Halogenated hydrocarbons:	
*1-Bromobutane (n-Butyl bromide)	DOW, EK, MCH.
2-Bromobutane (sec-Butyl bromide)	ABB, BPC.
Bromochloromethane	DOW.
1-Bromo-3-chloropropane (Trimethylenechlorobromide)	DOW, MCH.
*Bromoethane (Ethyl bromide)	DOW, GLC, MCH.
1-Bromohexadecane (Cetyl bromide)	MCH.
1-Bromohexane (n-Hexyl bromide)	BPC.
1-Bromo-octadecane	DUP, G.
1-Bromopentane (n-Amyl bromide)	DOW.
2-Bromopentane (1-Methylbutyl bromide)	ABB, LIL.
1-Bromopropane (n-Propyl bromide)	DOW, EK.
3-Bromopropene (Allyl bromide)	DOW.
3-Bromopropyne	G.
Bromotrichloromethane	DOW.
Bromotrifluoromethane	DOW, DUP.
*Carbon tetrachloride	ACG, ACS, DA, DOW, FMW, FRO, PPG, SF.
*Chlorinated paraffins:	
Less than 35% chlorine	HK.
*35%-64% chlorine	CCH, DA, DVC, HK, HPC, KPT, WOI.
65% or more chlorine	DA, DVC, WOI.
1-Chlorobutane (n-Butyl chloride)	PUB, UCC.
2-Chlorobutane	NES.
1-Chloro-1,1-difluoroethane	ACG.
*Chlorodifluoromethane	ACG, DUP, PAS, UCC.
*Chloroethane (Ethyl chloride):	
Tech	AME, DOW, DUP, HPC, TNA, USI.
U.S.P	DOW, SHC.
*Chloroform:	
*Tech	ACS, DA, DOW, DUP, FRO, KLK, SF.
*U.S.P	ACS, DA, DOW.
*Chloromethane (Methyl chloride):	
Crude	ASL, DCC, KLK, SPD, TNA.
Refined (Refrigerant grade)	ACS, DA, DOW, DUP, TNA.
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.
1-Chloro-5,5,7,7-tetramethyl-2-octene	x.
Chlorotrifluoroethylene, (Trifluorovinyl chloride)	ACG.
Chlorotrifluoroethylene, polymerized	ACG, HK.
Chlorotrifluoromethane	ACG, DUP, PAS.
Dibromodifluoromethane	DOW, DUP.
1,2-Dibromoethane (Ethylene dibromide)	AMP, DOW, ETD, FMW, GLC, MCH, TNA.
Dibromomethane (Methylene bromide)	DOW.
1,2-Dibromo-1,1,2,2-tetrafluoromethane	DUP.
2,3-Dichloro-1,3-butadiene, brominated polymer	CWN.
1,4-Dichlorobutane	DUP.

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TABLE 22B.--*Miscellaneous chemicals for which U.S. production or sales were reported, identified by manufacturer, 1961--Continued*

Chemical	Manufacturers' identification codes (according to list in table 23)
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued	
*Halogenated hydrocarbons--Continued	
*Dichlorodifluoromethane	ACG, DUP, PAS, UCC.
*1,2-Dichloroethane (Ethylene dichloride)	AME, DA, DOW, JCC, MON, OMC, PPG, RH, TNA, UCC, WYN.
Dichlorofluoromethane	ACG.
*Dichloromethane (Methylene chloride)	ACS, DA, DOW, DUP, FRO, KLK, SF.
Dichloropentanes, mixed isomers	PAS.
*1,2-Dichloropropane (Propylene dichloride)	DOW, JCC, OMC, UCC, WYN.
2,3-Dichloropropene	UCC.
*Dichlorotetrafluoroethane	ACG, DUP, PAS.
1,1-Difluoroethane	ACG.
1,1-Difluoroethylene	ACG.
Difluorotetrachloroethane	DUP.
Diiodomethane (Methylene iodide)	NTB, SDW, x.
Hexafluoropropylene, monomer	DUP.
Iodoethane (Ethyl iodide), tech	EK.
Iodoform (Triiodomethane)	NTB.
Iodomethane (Methyl iodide), tech	EK.
2-Iodopropane	EK.
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, monomer	DUP.
Tetrafluoroethylene polymer (Teflon)	DUP.
Tetrafluoromethane	DUP.
1,1,1-Trichloroethane (Methyl chloroform)	DOW.
1,1,2-Trichloroethane (Vinyl trichloride)	DOW, UCC.
*Trichloroethylene	DOW, DUP, HK, PPG, TTX.
*Trichlorofluoromethane	ACG, DUP, PAS, UCC.
*1,2,3-Trichloropropane	DOW, SHC, UCC.
1,2,3-Trichloropropene	DOW.
Trichlorotrifluoroethane	ACG, DUP, PAS, UCC.
*Vinyl chloride, monomer (Chloroethylene)	ACS, AME, BFG, CUC, DOW, GNT, GYR, MON, TNA, UCC, U
Vinyl fluoride	DUP.
Vinylidene chloride, monomer (1,1-Dichloroethylene)	DOW, TNA.
Vinylidene fluoride	DUP.
All other	EK, HMY, LIL, RH, SDH, UCC.
2-Heptanone (Methyl amyl ketone)	UCC.
3-Heptanone (Ethyl butyl ketone)	UCC.
1-Heptene	HMY.
Hexadecane	HMY.
1-Hexadecene	HMY.
Hexadecenylsuccinic anhydride	HMY.
Hexadienal	UCC.
Hexa(2-ethylbutoxy)disiloxane	UCC.
Hexamethyleneadipamide	CS.
2,5-Hexanedione (Acetonylacetone)	RBC.
1,2,6-Hexanetriol	UCC.
1,2,6-Hexanetriol octanoate	KES.
Hexanoic acid (Caproic acid)	FB, TBK.
5-Hexen-2-one (Allylacetone)	FMP.
Hexyl ether	CEL, UCC.
2-(Hexyloxy)ethanol (Ethylene glycol hexyl ether)	UCC.
Hydracrylonitrile (Ethylene cyanohydrin)	UCC.
Hydrazine and salts	FMT, OMC.
2-Hydrazinoethanol	NOR.
2-Hydroxy-2-methylbutyric acid	BPC.

TABLE 22B. --*Miscellaneous chemicals for which U.S. production or sales were reported, identified by manufacturer, 1961*--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued	
2-(Hydroxymethyl)-2-methyl-1,3-propanediol (Trimethylolethane).	TRJ.
2-(Hydroxymethyl)-2-nitro-1,3-propanediol (Tris(hydroxymethyl)nitromethane).	COM.
N-(Hydroxymethyl)octadecanamide (N-Hydroxymethylstearamide)--	DUP.
4-Hydroxy-4-methyl-2-pentanone (Diacetone alcohol)----------	SHC, UCC.
(Hydroxymethyl)urea (Methylol-urea)----------	DUP.
3,3'-Iminodipropionitrile----------	ACY.
Iodomethylmercury iodide----------	NTB.
Isethionic acid (2-Hydroxyethanesulfonic acid)----------	G.
*Isoascorbic acid----------	MLS, MRK, PFZ.
Isoascorbic acid, sodium salt----------	BAX, MLS, MRK, PFZ.
Isobutyl isobutyrate----------	EKX.
Isobutyl vinyl ether----------	UCC.
Isobutyraldehyde----------	EKX, UCC.
Isobutyric acid and anhydride----------	EKT.
Isobutyric acid, zinc salt----------	EKT.
Isobutyronitrile----------	EKX.
Isodecaldehyde, mixed isomers----------	UCC.
Isodecanoic acid, mixed isomers----------	UCC.
Isodecyl acrylate----------	UCC.
Iso-octanoic acid, mixed isomers----------	UCC.
Isopropanolamines:	
1-Amino-2-propanol (Monoisopropanolamine)----------	DOW, UCC.
1,1'-Iminodi-2-propanol (Diisopropanolamine)----------	DOW, UCC.
1,1',1''-Nitrilotri-2-propanol (Triisopropanolamine)-------	DOW, UCC.
*Isopropyl acetate----------	EKT, ENJ, HPC, PUB, SHC, UCC.
2-Isopropylaminoethanol----------	PAS.
Isopropyl chloroformate----------	FMP, PPG.
*Isopropyl ether----------	ENJ, SHC, UCC.
Isovalerone (Diisobutyl ketone)----------	UCC.
Isovaleryl chloride----------	TBK.
Itaconic acid (Methylenesuccinic acid)----------	PFZ.
*Lactic acid, 100%:	
*Edible----------	AMZ, CLN, DUP.
*Medicinal----------	DUP.
*Technical----------	AMZ, CLN, DUP.
Lactic acid salts:	
Aluminum sodium chlorohydroxylactate----------	REH.
Calcium lactate----------	AMZ, SHF.
Sodium zirconium lactate----------	NTL.
Zirconium lactate----------	NTL.
Lactic anhydride----------	FB.
Lactide (3,6-Dimethyl-2,5-p-dioxanedione)----------	CLN.
Lauric acid salts----------	CCW.
Lauroyl chloride----------	G, HK, MON, TBK, WTC.
Lauroyl peroxide----------	CAD, WTL.
Levulinic acid----------	QKO.
*Linoleic acid salts:	
*Calcium linoleate----------	CCA, LEF, SHP, SRR.
Cobalt linoleate----------	SHP, SRR.
Copper linoleate----------	TRO, WTC.
Iron linoleate----------	HSH.
*Lead linoleate----------	SDH, SHP, SRR.
Lead manganese linoleate----------	SDH, SRR.
Manganese linoleate----------	SHP.

TABLE 22B. ***--Miscellaneous chemicals for which U.S. production or sales were reported, identified by manufacturer, 1961*** **--Continued**

Chemical	Manufacturers' identification codes (according to list in table 23)
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued	
*Lubricating oil additives:	
Chloronaphtha xanthate	MON.
Chlorosulfurized hydrocarbon	ENJ.
Chlorosulfurized lard oil	CCW.
Chlorosulfurized sperm oil	CCW.
High-molecular-weight hydrocarbons and their phosphorus derivatives.	SOI.
Lauryl and diethylaminoethyl polymethacrylates	DUP.
Oxidized hydrocarbons	ALX.
*Phosphorodithioates (Dithiophosphates):	
Barium alkyl phosphorodithioates	LUB, x.
Barium dioctyl phosphorodithioate	ACY.
Barium polyisobutylene phosphorodithioate	x.
Nickel zinc alkyl phosphorodithioates	SIN.
Zinc alkyl phosphorodithioates	ENJ, LUB.
Zinc di(butylhexyl) phosphorodithioate	ORO.
Zinc dihexyl phosphorodithioate	MON, SIN.
Zinc diisopropyl phosphorodithioate	ACY.
Zinc hexyl isopropyl phosphorodithioate	ACY, x.
All other	ENJ, LUB.
Phosphorosulfurized compounds	ENJ, SIN.
Sulfurized butenes	LUB.
*Sulfurized lard oil	CCW, GOC, SIN, SOI.
Sulfurized methyl oleate	SIN.
*Sulfurized sperm oil	CCW, LUB, QCP, SIN, SOI, WBG.
Tetradecyl selenide	ORO.
All other	CCW, EKX, ENJ, HK, LUB, MON, OMC, ORO, SIN, x.
Magnesium methylate	MRT, SFA.
Maleic acid	NAC, PFN, UCC.
Maleic acid, tribasic lead salt	NTL.
*Maleic anhydride	ACY, HN, MON, NAC, PCC, PTT, RCI, SOC.
Malic acid	EK, NAC.
Malonamide	KF.
Malonic acid	KF.
Malononitrile	KF.
Mannitol	APD.
Mannitol hexanitrate	APD.
Mercaptoacetic acid (Thioglycolic acid)	EVN.
*Mercaptoacetic acid (Thioglycolic acid) derivatives:	
2-Aminoethyl mercaptoacetate (Monoethanolamine thioglycolate).	EVN, HAB, RET.
*Ammonium mercaptoacetate (Ammonium thioglycolate)	EVN, HAB, HLN, RET, SUM.
Antimony mercaptoacetate	CCA.
Calcium mercaptoacetate	EVN.
Dibutyltin mercaptoacetate	CCA.
Ethylene glycol dimercaptoacetate	EVN.
Iso-octyl mercaptoacetate	EVN.
Sodium mercaptoacetate	EVN.
Mercaptoethanol	UCC.
3-Mercapto-1,2-propanediol (Thioglycerol)	EVN.
β-Mercaptopropionic acid	EVN.
Mesityl oxide	SHC, UCC.
Metal soaps of oxidized hydrocarbons	ALX.
Methacrylamide	RH.
Methacrylate monomers, above methyl	DUP.
Methacrylic acid	DUP, RH.
Methacryloyl chloride	BKC.

TABLE 22B.--*Miscellaneous chemicals for which U.S. production or sales were reported, identified by manufacturer, 1961*--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued	
Methanesulfonic acid	EK, PAS.
*2-Methoxyethanol (Ethylene glycol monomethyl ether)	DOW, OMC, UCC.
2-(2-Methoxyethoxy)ethanol (Diethylene glycol monomethyl ether).	DOW, OMC, UCC.
2-[2-(2-Methoxyethoxy)ethoxy]ethanol (Triethylene glycol monomethyl ether).	DOW, OMC, UCC
2-(2-Methoxyethoxy)ethyl 2-methoxyethyl ether (Triethylene glycol dimethyl ether).	ASL.
2-Methoxyethyl acetate	UCC.
4-Methoxy-4-methyl-2-pentanol	SHC.
4-Methoxy-4-methyl-2-pentanone	SHC.
Methoxypolyethylene glycol	JCC, UCC.
1-Methoxy-2-propanol	DOW.
3-Methoxypropionitrile	ACY.
3-(3-Methoxypropoxy)propanol (Dipropylene glycol methyl ether).	DOW.
3-[3-(3-Methoxypropoxy)propoxy]propanol (Tripropylene glycol methyl ether).	DOW.
N-Methylacetamide	EK.
*Methyl acetate	AIR, BOR, ICO, SRC, UCC.
Methyl acetoacetate	UCC.
Methyl acrylate, monomer	CEL, RH.
Methylal (Dimethoxymethane)	CEL.
Methylaluminum sesquichloride	TNA.
2-Methylaminoethanol (N-Methylethanolamine)	UCC.
Methyl borate	CAL, MHI, SFA.
Methyl borate azeotrope methanol	HUC.
2-Methyl-1-buten-3-yne (Isopropenylacetylene)	AIR.
Methyl butynoxyethanol	AIR.
Methyl carbamate	FMP.
Methyl chloroformate	DLM.
Methyl cyanoacetate	KF.
Methyl 2-cyanoacrylate	EKT.
Methyl dichloroacetate	KF, PD.
N,N'-Methylenebisacrylamide	ACY.
N,N'-Methylenebisoctadecanamide	ARC.
Methyl ether (Dimethyl ether)	COM, DUP.
Methyl ethyl carbamate (Methyl urethane)	BKL.
Methyl formate	DUP.
N-Methylglucamine	DUP.
Methyl glycolate (Methyl hydroxyacetate)	DUP.
Methyl hexanoate (Methyl caproate)	FOR.
5-Methyl-2-hexanone (Methyl isoamyl ketone)	UCC.
2,2'-(Methylimino)diethanol (Methyl diethanolamine)	UCC.
2-Methyllactonitrile (Acetone cyanohydrin)	DUP, RH.
Methylmagnesium bromide	ARA, CEL.
Methylmagnesium iodide	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	PUB, SHC, UCC.
Methylpolyethanolamine	G.
2-Methyl-2-propyl-1,3-propanediol	ICO.

TABLE 22B. --*Miscellaneous chemicals for which U.S. production or sales were reported, identified by manufacturer, 1961*--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued	
Methyl sulfate (Dimethyl sulfate)	DUP.
Methyl sulfide (Dimethyl sulfide)	CRZ.
N-Methyltaurine	G.
2-Methylvaleraldehyde (2-Methylpentaldehyde)	UCC.
2-Methylvaleric acid	UCC.
Methyl vinyl ether	G.
Mucochloric acid (2,3-Dichloro-3-formylacrylic acid)	EK.
Naringin	SKG.
Nitriminobispropionic acid	ACY.
Nitroethane	COM.
Nitromethane	COM.
1-Nitropropane	COM.
2-Nitropropane	COM.
Nonanoic acid (Pelargonic acid)	EMR.
Nylon (Polyhexamethylene adipamide)	CS, DUP.
1-Octadecene	HMY.
Octadecyl isocyanate	MOB.
n-Octane	HMY.
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.
Stannous octanoate	WTC.
Zinc octanoate	BKC.
*2-Octanone (Hexyl methyl ketone)	ACP, EKT, TBK, WTH.
3-Octanone (Amyl ethyl ketone)	SHC.
Octanoyl chloride	HK, TBK.
1-Octene	HMY.
1-(and 2-)Octene	WTH.
2-Octene	ACP.
Octenylsuccinic anhydride	HMY.
Oleamide (Octadecene amide)	ARC, FIN, HND.
*Oleic acid salts:	
Aluminum oleate	MAL, WTC.
Barium zinc oleate	HSH.
Cobalt oleate	CCW.
Copper oleate	SHP, SRR, WTC.
Diethylamine oleate	WTC.
Lead oleate	SHP, WTC.
Stannous oleate	x.
Oleonitrile	ARC, FOR, GNM.
Oleoyl chloride	DEP, G, 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.
Potassium binoxalate	BKC.
Potassium oxalate	ACG, BKC, PFZ.
Sodium binoxalate	VIC.
Sodium oxalate	ACG, BKC, MAL, VIC.
Stannous oxalate	x.
Oxalyl chloride	EK.

TABLE 22B. --*Miscellaneous chemicals for which U.S. production or sales were reported, identified by manufacturer, 1961*--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued	
Oxidized hydrocarbon mixtures, other than lubricating oil additives.	ALX.
2-Oxohexamethylenimine (Caprolactam)	DUP, NAC.
Palmitic acid salts:	
Aluminum palmitate	LEF, NOP, WTC.
Zinc palmitate	ACY, LEF, NOP, WTC.
Palmitoyl chloride	G, TBK.
Paraformaldehyde	CEL, DUP, HN.
Paraldehyde (Paracetaldehyde)	UCC.
*Pentaerythritol	COM, DCI, NH, HPC, RCI, TRJ.
Pentaerythritol, di- and tri-	HPC.
*Pentaerythritol tetranitrate	APD, DUP, HPC, TRJ.
2,4-Pentanedione (Acetylacetone)	UCC.
2,4-Pentanedione derivatives	MAK.
Pentanone (Methyl propyl ketone)	UCC.
3-Pentanone (Diethyl ketone)	UCC.
Pentyl nitrate (Amyl nitrate)	TNA.
Perchloromethanethiol (Perchloromethyl mercaptan)	CHO.
Peroxyacetic acid	FMB.
*Phosgene (Carbonyl chloride)	DLM, DUP, NAC, PPG, SWC.
*Phosphorus acid esters, not elsewhere specified (*See also* Plasticizers, Surface-Active Agents, Pesticides, Flotation reagents, and Lubricating oil additives):	
Bis(2-ethylhexyl) hydrogen phosphate	UCC, VC.
Bis(2-ethylhexyl) hydrogen phosphite	VC.
Butyl phosphates (mono and di)	VC, VIC.
Chloropropyl thiophosphate	TNA.
Dibutyl butylphosphonate	VC.
Didodecyl hydrogen phosphate	DUP.
Diethyl hydrogen phosphite	VC.
Dimethyl hydrogen phosphite	VC.
Dimethyl methylphosphonate	VC.
Dodecyl phosphates (mono)	VIC.
2-Ethylhexyl phosphates (mono and di)	VIC.
Ethyl phosphates (mono and di)	VIC.
Iso-octyl phosphate (mono and di)	VC.
Isopentyl octyl hydrogen phosphate	VC.
Methyl phosphates (mono and di)	HK, VIC.
Octyl phosphates (mono and di)	DUP.
Pentyl phosphates (Mono and diamyl phosphates)	HK, VIC.
*Tributyl phosphate	CEL, COM, FMP.
Tributyl phosphite	VC.
Tributyl trithiophosphate	KLK.
Tridecyl phosphite	HKP.
Triethyl phosphite	VC.
Triisobutyl phosphate	EKT, FMP.
Triiso-octyl phosphite	VC.
Trimethyl phosphate	TNA.
Trimethyl phosphite	VC.
Trioctadecyl phosphate	IOC.
Tris(2-chloroethyl) phosphate	CEL, ENJ, UCC.
Tris(2-chloroethyl) phosphite	VC.
Tris(2,3-dibromopropyl) phosphate	DUP, MCH.
Tris (Dichloropropyl) phosphate	CEL.
Tris(2-ethylhexyl) phosphite	HKP, VC.
All other	MON, VC.

TABLE 22B. --*Miscellaneous chemicals for which U.S. production or sales were reported, identified by manufacturer, 1961*--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued	
Pimelic acid (Heptanedioic acid)	ACY.
Pine oil, synthetic	CBY.
Polyacrylamide	ACY.
Polyacrylic acid	BFG, NOP.
*Polyacrylic acid salts:	
Ammonium polyacrylate	BFG, NOP.
Sodium polyacrylate	BFG, JOR, RH.
All other	BFG, GRD.
Polyacrylonitrile	DUP.
Polyethoxyethylhexitol	TCH.
Polyethoxyethylsorbitol	APD.
Polyethoxyethyl stearyl ether	G.
*Polyethylene glycol	ACN, DOW, JCC, OMC, UCC, WYN.
Polyethylene glycol dimethacrylate	SAR.
Polyethylene glycol maleate	CCA.
Polyethylene oxide	UCC.
Polyethylene polysulfide	BFG.
Polygalacturonic acid	SKG.
Polyglycerol	CP, DRW, WTC.
Polyglycols, ethylene glycol and glycol ethers, mixtures	DOW.
Polyisobutylene succinic anhydride	PFZ.
Polyoxypropylene ethers	WYN.
Polypropoxyglucose	APD.
Polypropoxysorbitol	APD.
*Polypropylene glycol	ACS, APD, DOW, JCC, OMC, UCC, WYN.
Polytetramethylene glycol	DUP.
1,3-Propanediol (Trimethylene glycol)	RBC.
Propionaldehyde	EKX, UCC.
*Propionic acid	CEL, COM, DUP, EKT, UCC.
Propionic acid salts:	
Calcium propionate	CEL, DUP.
*Sodium propionate	CEL, DUP, UCC.
Zinc propionate	BKC.
Propionic anhydride	CEL, EKT, UCC.
Propionitrile	RBC, UCC.
Propionyl chloride	ABB, EK, TBK.
Propyl acetate	CEL, PUB, UCC.
Propylene carbonate	DOW, JCC, UCC.
*Propylene glycol (1,2-Propanediol)	CEL, DOW, JCC, OMC, UCC, x.
Propylene glycol, mixed ethers	DOW.
*Propylene oxide	CEL, DOW, JCC, OMC, UCC, WYN.
m-Propyl isocyanate	CWN.
Propyl 4-methylvalerate (Propyl isocaproate)	COM.
Propyl nitrate	TNA.
Propyne (Methylacetylene)	AIR.
Pyruvaldehyde	UCC.
Rare sugars	PFN.
Ricinolamide	TKL.
Ricinoleic acid, calcium salt	BAC.
Sarcosine (N-Methylaminoacetic acid)	ATL, DUP, G, HMP, VPC.
Sarcosine, sodium salt	GGY.
Sebacic acid	WTH, x.
Sebacoyl chloride	EK, TBK.
Semicarbazide base and hydrochloride	FMT.
Semioxamazide	NOR.

TABLE 22B. --*Miscellaneous chemicals for which U.S. production or sales were reported, identified by manufacturer, 1961*--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued	
*Sequestering agents:	
(Diethylenetrinitrilo)pentaacetic acid	RPC.
(Diethylenetrinitrilo)pentaacetic acid, monosodium hydrogen ferric salt.	GGY.
(Diethylenetrinitrilo)pentaacetic acid, sodium salt	DOW, GGY, HMP.
N,N-Dihydroxyethylglycine, sodium salt	DOW, GGY, HMP.
*(Ethylenedinitrilo)tetraacetic acid (Ethylenediamine-tetraacetic acid).	DOW, G, GGY, GLY, HMP, RPC, VIC.
(Ethylenedinitrilo)tetraacetic acid, dihydrogen disodium salt.	DOW, EK, GGY, HMP, RPC.
(Ethylenedinitrilo)tetraacetic acid, dipotassium salt	EK.
(Ethylenedinitrilo)tetraacetic acid, disodium calcium salt.	DOW.
(Ethylenedinitrilo)tetraacetic acid, disodium copper salt	GGY.
(Ethylenedinitrilo)tetraacetic acid, disodium zinc salt, dihydrate.	GGY.
(Ethylenedinitrilo)tetraacetic acid, manganese salt	GGY, RPC.
(Ethylenedinitrilo)tetraacetic acid, monohydrogen trisodium salt.	GGY, HMP, RPC.
*(Ethylenedinitrilo)tetraacetic acid, monosodium iron salt	DOW, GGY, GLY, HMP, MOA, RPC.
(Ethylenedinitrilo)tetraacetic acid, tetrapotassium salt	GGY.
*(Ethylenedinitrilo)tetraacetic acid, tetrasodium salt	ACY, DOW, G, GGY, GLY, HMP, HRT, MOA, NOP, RPC, TCC.
Glucoheptonic acid, sodium salt	WIC.
Hexahydroxyheptanoic acid, sodium salt	PCW.
(N-Hydroxyethylethylenedinitrilo)triacetic acid	GGY.
*(N-Hydroxyethylethylenedinitrilo)triacetic acid, trisodium salt.	DOW, GGY, HMP, MOA, RPC, TCC.
Nitrilotriacetic acid, tripotassium salt	GGY.
Sodium salts of sugar acids	PFN.
All other	RPC.
Silicones	DCC, EK, ORO, SPD.
Sodium diethyldithiocarbamate	EK.
Sodium ethyl oxalacetate	FMP.
Sodium formaldehydebisulfite	ACG, EK.
*Sodium formaldehydesulfoxylate	NOP, RH, ROY.
*Sodium methoxide (Sodium methylate)	HSH, KF, OMC, RBC, x.
Sodium polypectate	SKG.
Sodium sorbitol borate	APD.
Sorbic acid (2,4-Hexadienoic acid), and potassium and sodium salts.	UCC.
Sorbitol	APD, MRK.
Sorbitol, tri(polyoxypropylene) ether	UCC.
Soybean oil acyl chloride salt of sodium lysalbinate	LMI.
Stearamide (Octadecane amide)	ADM, DUP, FIN, HND.
*Stearic acid salts:	
*Aluminum stearates:	
Aluminum monostearate	LEF, MAL, NOP, SYP.
*Aluminum distearate	ACY, JTC, LEF, MAL, NOP, PRP, SYP, WTC.
Aluminum tristearate	ACY, HNX, LEF, MAL, NOP, PRP, SYP, WTC.
*Ammonium stearate	DEX, FRR, LEF, NOP, WTC.
*Barium stearate	LEF, NOP, PRP, SYP, WTC.
Cadmium stearate	NOP, WTC.
*Calcium stearate	ACY, CCW, HNX, JTC, LEF, MAL, NOP, PRP, SYP, WTC.
Cobalt stearate	WTC.
Ferric stearate	WTC.

TABLE 22B. ***--Miscellaneous chemicals for which U.S. production or sales were reported, identified by manufacturer, 1961--*** **Continued**

Chemical	Manufacturers' identification codes (according to list in table 23)
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued	
*Stearic acid salts--Continued	
*Lead stearate	HSH, LEF, NOP, NTL, WTC.
Lead stearate, dibasic	NOP, NTL, WTC.
Lithium hydroxystearate	WTC.
*Lithium stearate	FTE, LEF, NOP, PRP, SYP, WTC.
*Magnesium stearate	ACY, JTC, LEF, MAL, NOP, PRP, SYP, WTC.
Nickel stearate	WTC.
*Zinc stearate	ACY, CCW, HNX, HSH, JTC, LEF, MAL, NOP, PLS, PRP, SYP, WTC.
All other	APD.
Stearonitrile (Octadecanenitrile)	GNM.
Stearoyl chloride	G, WTC.
Succinic acid	ARA, CS, NAC.
Succinic acid, sodium salt	MAL.
Succinic anhydride	NAC.
Succinimide	ARA, NAC.
Succinonitrile	ACY.
Succinyl peroxide	WTL.
Sucrose octa-acetate	UCC.
*Tallow amide, hydrogenated	ADM, ARC, HND.
Tallow fatty acyl chloride	G.
Tallow nitrile	FOR, GNM.
Tartaric acid salts, nonmedicinal	PFZ.
1,1,3,3-Tetraethoxypropane	KF.
Tetra-2-ethylbutyl 2-ethylhexyl ortho-silicate	UCC.
Tetraethylene glycol	DOW, JCC, UCC.
Tetraethylene glycol dimethacrylate	SAR.
Tetraethyllead	DUP, HCH, TNA.
Tetraethyl orthosilicate	UCC.
Tetrafattytetramide of triethylenetetramine	DCH.
Tetrahydroxysuccinic acid (Dioxytartaric acid)	ACY.
Tetrakis(hydroxymethyl)phosphonium chloride	HK.
N,N,N′,N′-Tetrakis(2-hydroxypropyl)ethylenediamine	MON, WYN.
Tetramethyl(and ethyl)lead	DUP.
Tetramethylguanidine	ACY.
Tetramethyllead	DUP, HCH, TNA.
Tetraoctyl orthosilicate	MON.
2,4,8,10-Tetraoxaspiro-5,5-undecane	EK.
Tetrapropenyl succinic acid	x.
Thioacetamide	EK.
2,2′-Thiodiethanol (Thiodiethylene glycol)	UCC.
Thiodipropionic acid	EVN.
3,3′-Thiodipropionitrile	ACY, HAB.
Titanic acid esters	DUP.
Triallyl cyanurate	ACY.
Tributyltin chloride	x.
Trichloroacetyl chloride	EK.
Trichloroethylsilane (Ethyl silicone trichloride)	UCS.
Trichloromethylsilane	DCC.
Trichloro-octadecylsilane	DCC.
Trichloropentylsilane	UCS.
Trichlorovinylsilane	DCC, UCS.

TABLE 22B.--*Miscellaneous chemicals for which U.S. production or sales were reported, identified by manufacturer, 1961*--Continued

Chemical	Manufacturers' identification codes (according to list in table 23)
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued	
Triethoxyethylsilane	UCS.
Triethoxyvinylsilane	UCS.
Triethyl acetylcitrate	JCC, PFZ.
Triethylaluminum	TNA.
Triethylboron	TNA.
*Triethylene glycol	ACN, CAU, DOW, G, OMC, UCC.
Triethylene glycol dimethacrylate	SAR.
Triethylene glycol sulfate	PCS.
Triethyl orthoacetate	KF.
Triethyl orthoformate	KF.
Triethyl orthopropionate	KF.
Trifluoroacetic anhydride	EK.
Triisobutylaluminum	TNA.
Trimethoxyboroxine	CAL.
Trimethylaluminum	TNA.
2,6,8-Trimethyl-4-nonanone	UCC.
Trimethyl orthoacetate	EK.
Trimethyl orthoformate	KF.
2,2,4-Trimethyl-1,3-pentanediol	EKX.
2,2,4-Trimethyl-1,3-pentanediol monoisobutyrate	EKX.
Trimethylpentenyl isobutyrate	EKX.
Tri-n-octylphosphine oxide	EK.
1,2,6-Tri(polypropoxypropyl)hexane	UCC.
Tripropylene glycol	DOW, UCC.
2-Undecanone	TBK.
Undecenoic acid (Undecylenic acid)	BAC.
*Urea in compounds or mixtures, 100%:	
*In feed compounds	ACN, DUP, GCC, JDC, MON, MSC, SNO, SOH.
*In liquid fertilizer	ACN, CFA, DUP, GCC, HPC, JDC, MON, MSC, SNI, SNO, SOH, SPN.
*In solid fertilizer	ACN, DUP, GCC, HPC, JDC, MON, MSC, SHC, SNO, SOH, SPN.
In plastics	DUP, MON.
All other	ACN, DUP, HPC, MON, MSC, SNO, SOH.
Urea peroxide	FMB.
Urea-urethane copolymer	DUP.
Valeraldehyde	UCC.
Valeric acid	UCC.
*Vinyl acetate, monomer	AIR, CEL, DUP, PCA, UCC.
*Zinc formaldehydesulfoxylate	NOP, RH, ROY.

Directory of Manufacturers

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

For 1961, the Directory of Manufacturers lists 722 primary manufacturers (see table 23). Some of the companies that report production of synthetic organic chemicals do not sell the materials, but consume their entire output in further manufacturing.

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

TABLE 23.--*Synthetic organic chemicals: Directory of manufacturers, 1961*

SECTION 1. ALPHABETICAL DIRECTORY BY CODE

[Names of synthetic organic chemical manufacturers that reported production or sales to the U.S. Tariff Commission for 1961 are listed below in the order of their identification codes as used in tables in pt. III. Sec. 2 of this table lists these manufacturers alphabetically and gives their office address]

Code	Name of company
AAC	Alcolac Chemical Corp.
AAE	American Aniline & Extract Co., Inc.
ABB	Abbott Laboratories
ABR	Andrew Brown Co.
ABS	American Brake Shoe Co., American Brakeblok Div.
ACB	Allied Chemical Corp., Barrett Div.
ACC	Amoco Chemicals Corp.
ACG	Allied Chemical Corp., General Chemical Div.
ACN	Allied Chemical Corp., Nitrogen Div.
ACO	Acralite Co., Inc., Acco Polymers Div.
ACP	Allied Chemical Corp., Plastics Div.
ACR	Acme Resin Corp.
ACS	Allied Chemical Corp., Solvay Process Div.
ACT	Arthur C. Trask Co.
ACY	American Cyanamid Co.
ADC	Ad-Co Color Corp.
ADM	Archer-Daniels-Midland Co.
AHC	Arnold, Hoffman & Co., Inc.
AIR	Air Reduction Co., Inc., Air Reduction Chemical & Carbide Co. Div.
AKL	Reichhold Chemicals, Inc., Alkydol Laboratories Div.
ALB	Ames Laboratories, Inc.
ALL	Alliance Color & Chemical Co.
ALT	Crompton & Knowles Corp., Althouse Chemical Co. Div.
ALX	Alox Corp.
AMB	American Bio-Synthetics Corp.
AMC	Amchem Products, Inc.
AME	American Chemical Corp.
AMF	Martin-Marietta Co., Ferbert-Schorndorfer Co. Div.
AMK	American Alkyd Industries
AML	Amalgamated Chemical Corp.
AMO	American Oil Co. (Texas)
AMP	American Potash & Chemical Corp.
AMR	Martin-Marietta Co., Adhesive, Resin & Chemical Div.
AMS	Martin-Marietta Co., Ridgway Color & Chemical Co. Div.
AMZ	American Maize Products Co.
APC	Appleton Coated Paper Co.
APD	Atlas Chemical Industries, Inc.
APR	Atlas Processing Co.
APV	Armstrong Paint & Varnish Works, Inc.
APX	Apex Chemical Co., Inc.
ARA	Arapahoe Chemicals, Inc.
ARC	Armour & Co., Armour Industrial Chemical Co. Div.
ARG	Argus Chemical Corp.
ARK	Armstrong Cork Co.
ARO	Martin-Marietta Co., Arco Co. Div.
ARP	Armour & Co., Armour Pharmaceutical Co. Div.
ASH	Ashland Oil & Refining Co.
ASL	Ansul Chemical Co.
AST	Astra Pharmaceutical Products, Inc.
ASY	American Synthetic Rubber Corp.
ATL	Atlantic Chemical Corp., and Macromol Div.
ATR	Atlantic Refining Co.
ATU	Atlantic Tubing & Rubber Co.
AUG	Augusta Chemical Co.
AV	American Viscose Corp.
AVS	AviSun Corp.
BAC	Baker Castor Oil Co.
BAL	Baltimore Paint & Chemical Corp.
BAT	Bates Chemical Co.
BAX	Baxter Laboratories, Inc., Wallerstein Co. Div.
BC	Barlow Chemical Corp.
BCI	Belding Chemical Industries
BCN	Beech-Nut Life Savers, Inc.
BEA	Beacon Chemical Industries, Inc.
BEN	Bennett's
BFG	B. F. Goodrich Co., B. F. Goodrich Chemical Co. D
BGC	Balfour, Guthrie & Co., Ltd., Chemical Div.
BIS	Bios Laboratories, Inc.
BKC	J. T. Baker Chemical Co.
BKL	Berkeley Chemical Corp.
BKM	Buckman Laboratories, Inc.
BKS	Berkshire Color & Chemical Co.
BKT	J. T. Baker Chemical Co., Taylor Chemical Div.
BL	Belle Chemical Co., Inc.
BLN	Brooklyn Color Works, Inc.
BLS	Stanley Blackman Laboratories, Inc.
BME	Bendix Corp., Marshall-Eclipse Div.
BOR	Borden Chemical Co.
BOY	Walter N. Boysen Co.
BPC	Benzol Products Co.
BPL	Brand Plastics Co.
BRR	Brown Co., Resi-Chem Div.
BRS	Bristol-Meyers Co., Bristol Laboratories Div.
BRU	M. A. Bruder & Sons, Inc.
BRY	Bryant Chemical Corp.
BSC	Burkart-Schier Chemical Co.
BSW	Original Bradford Soap Works, Inc.
BUC	Blackman-Uhler Chemical Co.
BUK	Buckeye Cellulose Corp.
BUR	Burroughs Wellcome & Co. (U.S.A.), Inc.
BZ	Bzura Chemical Co., Inc.

TABLE 23.--*Synthetic organic chemicals: Directory of manufacturers, 1961*--Continued

Code	Name of company
CAD	Cadet Chemical Corp.
CAL	Callery Chemical Co.
CAP	Capital Plastics, Inc.
CAT	Catalin Corp. of America
CAU	Calcasieu Chemical Corp.
CBA	Ciba Corp., Ciba Products Co. Div.
CBC	Coos Bay Timber Co.
CBP	Ciba Corp., Ciba Pharmaceutical Co. Div.
CBT	Samuel Cabot, Inc.
CBY	Crosby Chemicals, Inc.
CC	Collway Colors, Inc.
CCA	Carlisle Chemical Works, Inc., Advance Solvents & Chemical Div.
CCC	Chase Chemical Corp.
CCH	Pearsall Chemical Co.
CCL	Charlotte Chemical Laboratories
CCO	Chemico, Inc.
CCP	Crown Central Petroleum Corp.
CCW	Carlisle Chemical Works, Inc.
CD	Continental-Diamond Fibre Corp.
CDF	Concord-Danan Co.
CEL	Celanese Corp. of America: Celanese Chemical Co. Div. Celanese Polymer Co. Div.
CFA	Cooperative Farm Chemicals Association
CFC	Rexall Chemical Co. - Kearny
CFX	Chemfax, Inc.
CHC	Chipman Chemical Co., Inc.
CHG	Chemagro, Corp.
CHO	Stauffer Chemical Co., Calhio Chemicals Div.
CHP	Chemical Products Corp. (New Jersey)
CI	Colloids, Inc.
CIK	California Ink Co., Inc.
CIS	Chemical Insecticide Corp.
CKL	Chemlek Laboratories, Inc.
CLN	Standard Brands, Inc., Clinton Corn Processing Co. Div.
CLV	Clover Chemical Co.
CLY	W. A. Cleary Corp.
CM	Carpenter-Morton Co.
CMG	Chemical Manufacturing Co., Inc.
CO	Continental Oil Co.
COK	Cockerille Chemicals, Inc.
COM	Commercial Solvents Corp.
CON	Concord Chemical Co., Inc.
COP	Coopers Creek Chemical Corp.
COR	Commercial Resins Corp.
COS	Coastwise Petroleum Co.
CP	Colgate-Palmolive Co.
CPC	Childs Pulp Colors, Inc.
CPD	Chemical Products Corp. (Georgia)
CPL	Reliance Varnish Co., Coast Paint & Lacquer Co. Div.
CPT	Consolidated Paint Co.
CPV	Cook Paint & Varnish Co.
CPY	Copolymer Rubber & Chemical Corp.
CRC	Crown Chemical Corp.
CRN	Corn Products Co.
CRS	Carus Chemical Co., Inc.
CRT	Crown Tar & Chemical Works, Inc.
CRY	Cary Chemicals, Inc.
CRZ	Crown Zellerbach Corp., Chemical Products Div.
CS	Chemstrand Corp.
CSD	Cosden Petroleum Corp.
CST	Charles S. Tanner Co.
CTL	Continental Chemical Co.
CUC	Cumberland Chemical Corp.
CUT	Cutter Laboratories, Inc.
CW	Collett-Week Corp.
CWL	Cowles Chemical Co.
CWN	Carwin Co.
CWP	Consolidated Water Power & Paper Co.
DA	Diamond Alkali Co., and Western Div.
DAN	Dan River Mills, Inc.
DAV	Consolidated Chem. & Coatings Co., H.B. Davis Co. Div.
DCC	Dow Corning Corp.
DCH	Dearborn Chemical Co.
DCI	Delaware Chemicals, Inc.
DEC	Reichhold Chemicals, Inc., Deecy Products Co. Div.
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.
DPP	Dixie Pine Products Co., Inc.
DRG	Drug Processors, Inc.
DRW	Drew Chemical Corp.
DSC	Dye Specialties, Inc.
DSO	DeSoto Chemical Coatings, Inc.
DUN	Frank W. Dunne Co.
DUP	E. I. duPont de Nemours & Co., Inc.
DVC	Dover Chemical Co.
DXS	Sunray DX Oil Co.
EAK	J. S. & W. R. Eakins, Inc.
EDC	Edcan Laboratories
EDY	Eddystone Manufacturing Co.
EFH	E. F. Houghton & Co.
EK	Eastman Kodak Co.
EKT	Eastman Kodak Co., Tennessee Eastman Co. Div.
EKX	Eastman Kodak Co., Texas Eastman Co. Div.
ELP	El Paso Natural Gas Products Co.
EMK	Emkay Chemical Co.
EMR	Emery Industries, Inc.
EN	Endo Laboratories, Inc.
ENJ	Enjay Chemical Co.
EPC	Epoxylite Corp.
ERD	Erdmann Chemical Co., Inc.
ESC	Escambia Chemical Corp.
ETD	Ethyl-Dow Chemical Co.
EVM	Everledge Manufacturing, Inc.
EVN	Evans Chemetics, Inc.
EW	Westinghouse Electric Corp.
FAR	Farnow, Inc.
FB	Fritzsche Bros., Inc.
FBC	Fiber Chemical Corp.
FBR	Fibreboard Paper Products Corp.
FCD	France, Campbell & Darling, Inc.
FCL	Federal Color Laboratories, Inc.
FCP	J. P. Frank Chemical & Plastic Corp.
FEL	Felton Chemical Co., Inc.
FER	Ferro Corp., Ferro Chemical Div.
FG	Foster-Grant Co., Inc.
FH	Foster-Heaton Co.
FI	Fiberfil, Inc.
FIN	Fine Organics, Inc.
FIR	Firestone Tire & Rubber Co., Firestone Plastics Co. Div.
FLA	Florida Chemical Co., Inc.
FLH	H. B. Fuller Co.
FLO	Florasynth Laboratories, Inc.
FLW	W. P. Fuller & Co.
FMB	FMC Corp., Becco Chemical Div.
FMF	Schuylkill Chemical Co.
FMN	FMC Corp., Niagara Chemical Div.
FMP	FMC Corp., Chemicals & Plastics Div.
FMT	Fairmount Chemical Co., Inc.
FMW	FMC Corp., Chemical Div.

TABLE 23.--*Synthetic organic chemicals: Directory of manufacturers, 1961*--Continued

Code	Name of company
FOM	Formica Corp.
FOR	Foremost Food & Chemical Co.
FRE	Freeman Chemical Corp.
FRM	Farmers' Chemical Co.
FRO	Vulcan Materials Co., Frontier Chemical Co. Div.
FRP	Filtered Rosin Products Co.
FRR	Estate of W. U. Farrington
FRS	Firestone Tire & Rubber Co., Firestone Synthetic Rubber & Latex Co. Div.
FSH	Frisch & Co., Inc.
FTE	Foote Mineral Co.
G	General Aniline & Film Corp.
GAM	Gamma Chemical Corp.
GAN	Gane's Chemical Works, Inc.
GCC	W. R. Grace & Co., Nitrogen Products Div.
GDL	Gordon-Lacey Chemical Products Co., Inc.
GDN	Gordon Chemicals, Inc.
GE	General Electric Co., Chemical Materials Dept.
GEI	General Electric Co., Insulating Materials Dept.
GFS	G. Frederick Smith Chemical Co.
GGC	Goodrich-Gulf Chemicals, Inc.
GGY	Geigy Chemical Corp.
GIL	Gilman Paint & Varnish Co.
GIV	Givaudan Corp.
GLC	Great Lakes Chemical Corp.
GLD	Glidden Co.
GLX	Glasflex, Inc.
GLY	Chas. L. Huisking & Co., Inc., Glyco Chemicals Div.
GNF	General Foods Corp., Maxwell House Div.
GNM	General Mills, Inc.
GNT	General Tire & Rubber Co., Chemical Div.
GNX	General Latex & Chemical Corp.
GOC	Gulf Oil Corp.
GOR	Gordon Chemical Co., Inc.
GPM	General Plastics Manufacturing Co.
GPR	Grain Processing Corp.
GRA	Great American Plastics Co.
GRD	W. R. Grace & Co., Dewey & Almy Chemical Div.
GRG	P. D. George Co.
GRH	W. R. Grace & Co., Hatco Chemical Div.
GRP	W. R. Grace & Co., Polymer Chemicals Div.
GRS	Great Southern Chemical Corp.
GRV	Grand Rapids Varnish Corp.
GRW	Great Western Sugar Co.
GTH	Guth Chemical Co.
GTS	Greenwood Textile Supply Co.
GUA	Guard Chemical Co., Inc.
GYR	Goodyear Tire & Rubber Co.
HAB	Halby Products Co., Inc.
HAL	C. P. Hall Co. of Illinois
HAM	Hampden Color & Chemical Co.
HAN	Hanna Paint Manufacturing Co., Inc.
HAP	Hexcel Products, Inc., Applied Plastics Div.
HAR	Allied Chemical Corp., National Aniline Div., Harmon Color Works
HCC	Holland Color & Chemical Co.
HCH	Houston Chemical Corp.
HDG	Hodag Chemical Corp.
HER	Heresite & Chemical Co.
HET	Heterochemical Corp.
HEX	Hexagon Laboratories, Inc.
HFT	Hoffman-Taff, Inc.
HK	Hooker Chemical Corp.
HKD	Hooker Chemical Corp., Durez Plastics Div.
HKP	Hooker Chemical Corp., Phosphorus Div.
HLC	Hartman-Leddon Co.
HLI	Haag Laboratories, Inc.
HLN	Helene Curtis Industries, Inc.
HMP	Hampshire Chemical Corp.
HMY	Humphrey-Wilkinson, Inc.
HN	Heyden Newport Chemical Corp.
HNC	H & N Chemical Co.
HND	National Dairy Products Corp., Humko Products Chemical Div.
HNW	Heyden Newport Chemical Corp., Newport Industries Div.
HNX	Heyden Newport Chemical Corp., Nuodex Products Div.
HOF	Hoffmann-LaRoche, Inc.
HOU	Air Products & Chemicals, Inc., Houdry Process Corp. Div.
HPC	Hercules Powder Co.
HRS	Harris Standard Paint Co.
HRT	Hart Products Corp.
HSH	Harshaw Chemical Co.
HST	Hoechst Chemical Corp.
HUC	Hukill Chemical Corp.
HUS	Husky Oil Co.
HVG	Haveg Industries, Inc., Resin & Compound Div.
HYC	Hysol Corp.
HYN	Hynson, Westcott & Dunning, Inc.
ICC	Interchemical Corp., Color & Chemicals Div.
ICF	Interchemical Corp., Finishes Div.
ICO	Interchemical Corp., Organic Chemicals Dept.
IDC	Industrial Dyestuff Co.
IFF	International Flavors & Fragrances, Inc.
ILC	International Latex Corp.
IMC	International Minerals & Chemical Corp.
IMP	Hercules Powder Co., Imperial Color & Chemical Dept.
INI	Intermediates, Inc.
INL	Inland Steel Container Co.
INM	Industrial Marine Chemical Co.
INP	International Paper Co.
IOC	Pfaudler Permutit, Inc., Ionac Chemical Co. Div.
IPI	Isocyanate Products, Inc.
IPR	Inter-Pacific Resins, Inc.
IRC	International Resistance Co.
IRI	Ironsides Co.
ISO	Isochem Resins Co.
ITX	Intex Chemical Corp.
JAM	Jamestown Paint & Varnish Co.
JCC	Jefferson Chemical Co., Inc.
JDC	John Deere Chemical Co.
JEN	Jennison-Wright Corp.
JMS	J. Meyer & Sons, Inc.
JNS	S. C. Johnson & Son, Inc.
JOB	Jones-Blair Paint Co.
JOD	Jones-Dabney Co.
JOR	W. H. & F. Jordan, Jr. Manufacturing Co., Inc.
JRG	Andrew Jergens Co.
JSC	Jersey State Chemical Co.
JTC	Joseph Turner & Co.
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.
KK	K & K Laboratories, Inc.
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.

TABLE 23.--*Synthetic organic chemicals*: *Directory of manufacturers, 1961*--Continued

Code	Name of company
KPC	Koppers Co., Inc., Chemicals & Dyestuffs Div.
KPI	Kenrich Petrochemicals, Inc.
KPP	Koppers Co., Inc., Plastics Div.
KPT	Koppers Co., Inc., Tar Products Div.
KPV	Keystone Paint & Varnish Corp.
KRM	Lawter Chemicals, Inc., Krumbhaar Resin Div.
KYN	Kyanize Paints, Inc.
KYS	Keysor Chemical Co.
LAM	LaMotte Chemical Products Co.
LCA	Lithium Corp. of America, Inc.
LEA	Leatex Chemical Co.
LEB	Lebanon Chemical Corp.
LEF	Leffingwell Chemical Co.
LEH	Lehigh Chemical Co.
LEM	B. L. Lemke & Co., Inc.
LEN	Leonard Refineries, Inc.
LEV	Lever Brothers Co.
LIL	Eli Lilly & Co.
LKL	Lakeside Laboratories, Inc.
LKY	St. Regis Paper Co., Lake States Yeast & Chemical Div.
LMI	Lawrence Mills, Inc.
LON	Martin-Marietta Corp., Charles R. Long, Jr. Co. Div.
LPC	Lignin Products Co.
LUB	Lubrizol Corp.
LUE	George Lueders & Co.
LUR	Laurel Soap Manufacturing Co.
LVR	C. Lever Co., Inc.
LVY	Fred'k H. Levey Co., Inc.
MAH	Maher Color & Chemical Co.
MAK	MacKenzie Chemical Works, Inc.
MAL	Mallinckrodt Chemical Works
MAR	American Can Co., Marathon Div.
MAY	Otto B. May, Inc.
MCA	Masonite Corp., Alpine Chemical Div.
MCB	Borg-Warner Corp., Marbon Chemical Div.
MCC	McCloskey Varnish Co.
MCH	Michigan Chemical Corp.
MCW	McWhorter Chemicals, Inc.
MDP	Maryland Plastics, Inc.
MED	Medical Chemical Corp.
MEE	Maumee Chemical Co.
MER	Jefferson Lake Sulphur Co., Merichem Co. Div.
MET	Metal & Thermit Corp.
MFG	Molded Fiber Glass Body Co., Resin Div.
MGR	Magruder Color Co., Inc.
MHI	Metal Hydrides, Inc.
MID	Midland Industrial Finishes Co.
MIR	Miranol Chemical Co., Inc.
MLD	Metalead Products Corp.
MLS	Miles Laboratories, Inc.
MMM	Minnesota Mining & Manufacturing Co.
MNP	Minnesota Paints, Inc.
MOA	Mona Industries, Inc.
MOB	Mobay Chemical Co.
MON	Monsanto Chemical Co.
MOR	Mineral Oil Refining Co.
MOT	Motomco, Inc.
MPL	Massachusetts Plastic Corp.
MR	Benjamin Moore & Co.
MRA	Metro-Atlantic, Inc.
MRB	Marblette Corp.
MRD	Marden-Wild Corp.
MRK	Merck & Co., Inc.
MRN	Morningstar Paisley, Inc.
MRT	Morton Chemical Co.
MRV	Marlowe-Van Loan Corp.
MRW	Morwear Paint Co.
MRX	Max Marx Color & Chemical Co.
MSC	Mississippi Chemical Corp.
MTL	Metalsalts Corp.
MTO	Montrose Chemical Corp. of California
MTR	Baldwin-Montrose Chemical Co., Inc., Montrose Chemical Div.
MYW	Stepan Chemical Co., Maywood Chemical Works Div.
NAC	Allied Chemical Corp., National Aniline Div.
NCI	Nelio Chemicals, Inc.
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.
NPI	National Polychemicals, Inc.
NPP	National Plastic Products Co., Inc.
NSC	National Starch & Chemical Corp.
NSP	Alabama Binder & Chemical Corp.
NTB	National Biochemical Co.
NTC	National Casein Co.
NTL	National Lead Co.
NVF	National Vulcanized Fibre Co.
NW	Northwestern Chemical Co.
NYC	American Dyewood Co., Inc., New York Color & Chemical Co., Div.
OCF	Owens-Corning Fiberglas Corp.
OH	Ohio Chemical & Surgical Equipment Co.
OLC	Old Colony Tar Co., Inc.
OLH	Old Hickory Chemical Co.
OMB	Olin Mathieson Chemical Corp., Blockson Chemical Co. Div.
OMC	Olin Mathieson Chemical Corp.
OMS	Olin Mathieson Chemical Corp., E. R. Squibb & Sons Div.
ONX	Onyx Chemical Corp.
OPC	Orbis Products Corp.
ORG	Organics, Inc.
ORO	California Chemical Co., Oronite Div.
ORT	Ortho Chemical Corp.
OSB	C. J. Osborn Co.
OTA	Ottawa Chemical Co.
OTC	Ott Chemical Co.
OTH	California Chemical Co., Ortho Div.
OTT	Ottol Oil Co.
OXY	Oxy Chemical Co.
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.
PCA	Pacific Carbide & Alloys Co.
PCC	Pittsburgh Chemical Co.
PCH	Peerless Chemical Co.
PCI	Polyvinyl Chemicals, Inc.
PCO	Peerless Color Co., Inc.
PCS	Process Chemicals Co.
PCW	Pfister Chemical Works
PD	Parke, Davis & Co.
PDC	Poughkeepsie Dyestuff Corp.
PEL	Pelron Corp.
PEN	S. B. Penick & Co.
PER	Perry & Derrick Co.
PET	Petroleum Chemicals, Inc.
PFN	Pfanstiehl Laboratories, Inc.
PFP	Phelan-Faust Paint Manufacturing Co.
PFZ	Chas. Pfizer & Co., Inc.

TABLE 23.--*Synthetic organic chemicals: Directory of manufacturers, 1961*--Continued

Code	Name of company
PG	Procter & Gamble Co., Procter & Gamble Manufacturing Co. Div.
PGU	Perkins Glue Co.
PHR	Pharmachem Corp.
PIC	Pierce Chemical Co.
PII	Polymer Industries, Inc.
PIL	Pilot Chemical Co. of California
PIT	Pitt-Consol Chemical Co.
PLA	Plastics Corp. of America
PLC	Phillips Chemical Co.
PLP	Phillips Petroleum Co.
PLS	Plastics Engineering Co.
PLU	Plumb Chemical Corp.
PNT	Pantasote Co.
PNX	Phoenix Oil Co.
POL	Polymer Corp.
PPG	Pittsburgh Plate Glass Co.
PRD	Productol Co.
PRO	Pure Oil Co.
PRP	M. W. Parsons-Plymouth, Inc.
PRR	L. Perrigo Co.
PRT	Pratt & Lambert, Inc.
PRX	Purex Corp., Ltd.
PSP	Puget Sound Pulp & Timber Co.
PTT	Petro-Tex Chemical Corp.
PUB	Publicker Industries, Inc.
PYL	Polychemical Laboratories, Inc.
PYR	Poly Resins
PYZ	Polyrez Co., Inc.
QCP	Quaker Chemical Products Corp.
QKO	Quaker Oats Co.
RAB	Raybestos-Manhattan, Inc., Raybestos Div.
RBC	Roberts Chemicals, Inc.
RCC	Rexall Chemical Co.
RCD	Richardson Co.
RCI	Reichhold Chemicals, Inc.
RDA	Rhodia, Inc.
RED	Red Spot Paint & Varnish Co., Inc.
REH	Reheis Co., Inc.
REL	Reliance Varnish Co.
REM	Remington Arms Co., Inc.
RET	Rayette, Inc., 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.
RPC	Refined Products Co.
RSA	R. S. A. Corp.
RT	F. Ritter & Co.
RTC	Ritter Chemical Co., Inc.
RUB	Rubber Corp. of America
RUR	Ruberoid Co.
S	Sandoz, Inc.
SAL	Dr. Salsbury's Laboratories
SAR	Sartomer Resins, Inc.
SBR	Schwartz Bioresearch, Inc.
SCC	Standard Chlorine Chemical Co., Inc.
SCF	Schaefer Varnish Co., Inc.
SCH	Schering Corp.
SCI	Stecker Chemicals, Inc.
SCN	Schenectady Chemicals, Inc.
SCO	Scholler Bros., Inc.
SCP	Standard Chemical Products, Inc.
SCR	R. P. Scherer Corp.
SDC	Martin-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.
SF	Stauffer Chemical Co.
SFA	Stauffer Chemical Co., Anderson Chemical Co. Div.
SFC	Stahl Finish Co.
SH	Stein, Hall & Co., Inc.
SHA	Shanco Plastics & Chemicals, Inc.
SHC	Shell Oil Co., Shell Chemical Co. Div.
SHF	National Dairy Products Corp., Sheffield Chemical Co. Div.
SHL	Shulton, Inc.
SHO	Shell Oil Co.
SHP	Shepherd Chemical Co.
SID	George F. Siddall Co., Inc.
SIM	Simpson Timber Co.
SIN	Sinclair Refining Co.
SIP	James B. Sipe & Co.
SK	Smith, Kline & French Laboratories
SKG	Sunkist Growers, Inc.
SLC	Soluol Chemical Co., Inc.
SLV	Sterling Drug, Inc., Salvo Chemical Div.
SM	Socony Mobil Oil Co., Inc., Mobil Oil Co. Div.
SNA	Ansbacher-Siegle Corp. Div. of Sun Chemical Corp.
SNC	Sonoco Products Co.
SNI	Southern Nitrogen Co., Inc.
SNM	Mansum Paint Manufacturing Co., Inc.
SNO	SunOlin Chemical Co.
SNT	Suntide Refining Co.
SNW	Sun Chemical Corp., Warwick Chemical Co. Div.
SOC	Standard Oil Co. of California, Western Operations, Inc.
SOG	Signal Oil & Gas Co.
SOH	Solar Nitrogen Chemicals, Inc., Sohio Chemical Co., Agent
SOI	American Oil Co. (Maryland)
SOL	Solar Chemical Corp.
SON	Sonneborn Chemical & Refining Corp.
SOR	Southern Resin Glue Co.
SOS	Southern Sizing Co.
SPC	Chemetron Corp., Specific Pharmaceuticals, Chemical Products Div.
SPD	General Electric Co., Silicone Products Dept.
SPL	Spaulding Fibre Co., Inc.
SPN	Spencer Chemical Co.
SPP	Socony Paint Products Co.
SRC	Shawinigan Resins Corp.
SRL	G. D. Searle & Co.
SRR	Fred'k A. Stresen-Reuter, Inc.
STA	A. E. Staley Manufacturing Co.
STD	Standard Dyestuff Corp.
STG	Wm. J. Stange Co.
STH	South Hampton Co.
STN	Standard Naphthalene Products Co., Inc.
STP	Stepan Chemical Co.
STT	Standard T Chemical Co., Inc.
SUC	Standard Ultramarine & Color Co.
SUM	Summit Chemical Products Corp.
SUN	Sun Oil Co.
SVC	Sullivan Varnish 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.
SYT	Synthron, Inc.
SYV	Synvar Corp.

TABLE 23.--*Synthetic organic chemicals: Directory of manufacturers, 1961*--Continued

Code	Name of company
TAE	Thomas A. Edison Industries, McGraw-Edison Co. Div.
TAR	Witco Chemical Co., Inc., Tar Distilling Co., Inc. Div.
TAY	Taylor Fibre Co.
TBK	Trubek Laboratories, Inc.
TCC	Tanatex Chemical Corp.
TCH	Trylon Chemical Corp.
TDC	Diversey Corp.
TGL	Triangle Chemical Co.
THC	Thompson Chemical Co.
TIC	Ticonderoga Chemical Corp.
TKL	Thiokol Chemical Corp.
TMS	Sterling Drug Inc., Thomasset Colors Div.
TN	Tennessee Corp.
TNA	Ethyl Corp.
TNP	Tennessee Products & Chemical Corp.
TOC	Tenneco Oil Co.
TRC	Toms River Chemical Corp.
TRJ	Trojan Powder Co.
TRO	Troy Chemical Co.
TTX	Detrex Chemical Industries, Inc.
TUS	Texas-U.S. Chemical Co.
TV	Tousey Varnish Co.
TX	Texaco, Inc.
TXB	Texas Butadiene & Chemical Corp.
TXC	Tex Chemical Co.
UBS	A.E. Staley Manufacturing Co., U B S Chemical Co. Div.
UCC	Union Carbide Corp., Union Carbide Chemicals Co. Div.
UCP	Union Carbide Corp., Union Carbide Plastics Co. Div.
UCS	Union Carbide Corp., Silicones Div.
UDI	Universal Detergents, Inc. & Petrochemicals Co.
UHL	Paul Uhlich & Co., Inc.
UNC	United Cork Companies
UNG	Ungerer & Co.
UOC	Union Oil Co. of California
UPF	United States Pipe & Foundry Co.
UPJ	Upjohn Co.
UPL	United States Plywood Corp.
UPM	Universal Oil Products Co.
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 & Chemical Corp.
USR	U.S. Rubber Co., Naugatuck Chemical Div.
UTR	Utah Resin Co., Inc.
UVC	Universal Chemicals Corp.
VAL	Valchem
VAR	Reichhold Chemicals, Inc., Varcum Chemical Div.
VB	Vermilye-Bell
VC	Virginia-Carolina Chemical Corp.
VEL	Velsicol Chemical Corp.
VIC	Stauffer Chemical Co., Victor Chemical Works Div.
VIN	Vineland Chemical Co.
VIS	Nalco Chemical Co., Visco Products Co. Div.
VLY	Chem-Fleur, Inc.
VNC	Vanderbilt Chemical Corp.
VND	Van Dyk & Co., Inc.
VPC	Verona-Pharma Chemical Corp.
VPT	Vickers Petroleum Co., Inc.
VSV	Valentine Sugars, Inc., Valite Div.
VTM	Vitamins, Inc.
VTV	Vita-Var Corp.
WAS	T. F. Washburn Co.
WAW	W. A. Wood Co.
WBG	White & Bagley Co.
WCA	West Coast Adhesives Co.
WDC	Western Dry Color Co.
WEV	Geo. D. Wetherill Varnish Co.
WHI	White & Hodges, Inc.
WHL	Whitmoyer Laboratories, Inc.
WHW	Whittemore-Wright Co., Inc.
WIC	Wica Co., Inc.
WIL	Wilson & Co., Inc., Wilson Laboratories Div.
WJ	Warner-Jenkinson Manufacturing Co.
WLM	Wilmot & Cassidy, Inc.
WOI	Western Organics, Inc.
WON	Woonsocket Color & Chemical Co.
WPC	Warren Paint & Color Co.
WRC	Wood Ridge Chemical Corp.
WRD	Weyerhaeuser Co., Wood Products Div.
WST	Westville Chemical Corp.
WTC	Witco Chemical Co., Inc.
WTH	Wallace & Tiernan, Inc., Harchem Div.
WTL	Wallace & Tiernan, Inc., Lucidol Div.
WTM	Wallace & Tiernan, Inc.
WTU	Witco Chemical Co., Inc., Ultra Chemical Works, Inc. Div.
WVA	West Virginia Pulp & Paper Co., Polychemicals Div.
WYN	Wyandotte Chemicals Corp.
WYT	American Home Products Corp., Wyeth Laboratories, Inc. Div.
YAW	Young Aniline Works, Inc.

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TABLE 23. --*Synthetic organic chemicals: Directory of manufacturers, 1961*--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 1961 are listed below alphabetically, together with their identification codes as used in tables in pt. III. Sec. 1 of this table lists these manufacturers in the order of their identification codes]

Code	Name of company	Office address
ABB	Abbott Laboratories	14th St. and Sheridan Rd., N. Chicago, Ill.
ACR	Acme Resin Corp	1401 Circle Ave., Forest Park, Ill.
ACO	Acralite Co., Inc., Acco Polymers Div.	59 Kent St., Brooklyn 22, N.Y.
ADC	Ad-Co Color Corp	66 Lister Ave., Newark 5, N.J.
HOU	Air Products & Chemicals, Inc., Houdry Process Corp., Div.	1528 Walnut St., Philadelphia 2, Pa.
AIR	Air Reduction Co., Inc., Air Reduction Chemical & Carbide Co. Div.	150 E. 42d St., New York 17, N.Y., and 6626 Union Ave., Cleveland 5, Ohio.
NSP	Alabama Binder & Chemical Corp	P.O. Box 3179, Tuscaloosa, Ala.
AAC	Alcolac Chemical Corp	3440 Fairfield Rd., Baltimore 26, Md.
ALL	Alliance Color & Chemical Co	33 Avenue P, Newark 5, N.J.
	Allied Chemical Corp:	
ACB	Barrett Div	40 Rector St., New York 6, N.Y.
ACG	General Chemical Div	40 Rector St., New York 6, N.Y.
NAC	National Aniline Div	40 Rector St., New York 6, N.Y.
HAR	Harmon Color Works	40 Rector St., New York 6, N.Y.
ACN	Nitrogen Div	40 Rector St., New York 6, N.Y.
ACP	Plastics Div	40 Rector St., New York 6, N.Y.
ACS	Solvay Process Div	P.O. Box 271, Syracuse 1, N.Y.
ALX	Alox Corp	3943 Buffalo Ave., Niagara Falls, N.Y.
AML	Amalgamated Chemical Corp	Ontario and Rorer Sts., Philadelphia 34, Pa.
AMC	Amchem Products, Inc	Brookside Ave., Ambler, Pa.
AMK	American Alkyd Industries	Broad and 14th St., 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.
ABS	American Brake Shoe Co., American Brakeblok Div.	P.O. Box 21, Birmingham, Mich.
MAR	American Can Co., Marathon Div	Menasha, Wis.
AME	American Chemical Corp	2112 E. 223d St., Long Beach 10, Calif.
ACY	American Cyanamid Co	Berdan Ave., Wayne, N.J.
NYC	American Dyewood Co., Inc., New York Color & Chemical Co. Div.	374 Main St., Belleville 9, N.J.
WYT	American Home Products Corp., Wyeth Laboratories, Inc. Div.	P.O. Box 8299, Philadelphia 1, Pa.
AMZ	American Maize Products Co	250 Park Ave., New York 17, N.Y.
SOI	American Oil Co. (Maryland)	910 South Michigan Ave., Chicago 80, Ill.
AMO	American Oil Co. (Texas)	P.O. Box 6110-A, Chicago 80, Ill.
AMP	American Potash & Chemical Corp	3000 W. 6th St., Los Angeles 5, Calif.
ASY	American Synthetic Rubber Corp	P.O. Box 360, Louisville 1, Ky.
AV	American Viscose Corp	1617 Pennsylvania Blvd., Philadelphia 3, Pa.
ALB	Ames Laboratories, Inc	200 Rock Lane, Milford, Conn.
ACC	Amoco Chemicals Corp	130 E. Randolph Dr., Chicago 1, Ill.
SNA	Ansbacher-Siegle Corp. Div. of Sun Chemical Corp.	92 Chestnut Ave., Staten Island 5, N.Y.
ASL	Ansul Chemical Co	Marinette, Wis.
APX	Apex Chemical Co., Inc	200 S. 1st St., Elizabethport 1, N.J.
APC	Appleton Coated Paper Co	825 E. Wisconsin Ave., Appleton, Wis.
ARA	Arapahoe Chemicals, Inc	2855 Walnut St., Boulder, Colo.
ADM	Archer-Daniels-Midland Co	700 Investors Bldg., Minneapolis 40, Minn.
ARG	Argus Chemical Corp	633 Court St., Brooklyn 31, N.Y.
	Armour & Co:	
ARC	Armour Industrial Chemical Co. Div	110 N. Wacker Dr., Chicago 6, Ill.
ARP	Armour Pharmaceutical Co. Div	P.O. Box 511, Kankakee, Ill.
ARK	Armstrong Cork Co	W. Liberty St., Lancaster, Pa.
APV	Armstrong Paint & Varnish Works, Inc	1330 S. Kilbourn Ave., Chicago 23, Ill.
AHC	Arnold, Hoffman & Co., Inc	55 Canal St., Providence 1, R.I.
ASH	Ashland Oil & Refining Co	1401 Winchester Ave., Ashland, Ky.
AST	Astra Pharmaceutical Products, Inc	7 Neponset St., Worcester 6, Mass.
ATL	Atlantic Chemical Corp	153 Prospect St., Passaic, N.J.
	Macromol Div	153 Prospect St., Passaic, N.J.
ATR	Atlantic Refining Co	260 S. Broad St., Philadelphia 1, Pa.
ATU	Atlantic Tubing & Rubber Co	Mill St., Cranston 5, R.I.
APD	Atlas Chemical Industries, Inc	New Murphy Rd. and Concord Pike, Wilmington 99, Del.
APR	Atlas Processing Co	P.O. Box 1786, 3546 Midway St., Shreveport, La.
AUG	Augusta Chemical Co	P.O. Box 660, Augusta, Ga.
AVS	AviSun Corp	1345 Chestnut St., Philadelphia 7, Pa.

TABLE 23.--*Synthetic organic chemicals: Directory of manufacturers, 1961*--Continued

Code	Name of company	Office address
BAC	Baker Castor Oil Co	40 Avenue A, Bayonne, N.J.
BKC	J. T. Baker Chemical Co	600 N. Broad St., Phillipsburg, N.J.
BKT	Taylor Div	600 N. Broad St., Phillipsburg, N.J.
MTR	Baldwin-Montrose Chemical Co., Inc., Montrose Chemical Div.	100 Lister Ave., Newark 5, N.J.
BGC	Balfour, Guthrie & Co., Ltd., Chemical Div.	P.O. Box 1627, Tacoma 1, Wash.
BAL	Baltimore Paint & Chemical Corp	2325 Annapolis Ave., Baltimore 30, Md.
BC	Barlow Chemical Corp	Barlow Lane, Ossining, N.Y.
BAT	Bates Chemical Co	Scottdale Rd., Lansdowne, Pa.
BAX	Baxter Laboratories, Inc., Wallerstein Co. Div.	Morton Grove, Ill.
BEA	Beacon Chemical Industries, Inc	33-51 Richdale Ave., Cambridge 40, Mass.
BCN	Beech-Nut Life Savers, Inc	Canajoharie, N.Y.
BCI	Belding Chemical Industries	1407 Broadway, New York 18, N.Y.
BL	Belle Chemical Co., Inc	534 Pearl St., Reading, Pa.
BME	Bendix Corp., Marshall-Eclipse Div	P.O. Box 538, Troy, N.Y.
BEN	Bennett's	65 W. 1st S. Salt Lake City 1, Utah.
BPC	Benzol Products Co	237 South St., Newark 14, N.J.
BKL	Berkeley Chemical Corp	11 Summit Ave., Berkeley Heights, N.J.
BKS	Berkshire Color & Chemical Co	12th and Bern St., Reading, Pa.
BIS	Bios Laboratories, Inc	17 W. 60th St., New York 23, N.Y.
BLS	Stanley Blackman Laboratories, Inc	Wesley St., S. Hackensack, N.J.
BUC	Blackman-Uhler Chemical Co	P.O. Box 1869, Spartanburg, S.C.
BOR	Borden Chemical Co	350 Madison Ave., New York 17, N.Y.
MCB	Borg-Warner Corp., Marbon Chemical Div	P.O. Box 68, Washington, W. Va.
BOY	Walter N. Boysen Co	1001 42d St., Oakland 8, Calif.
BPL	Brand Plastics Co	8400 Willow Springs Rd., Willow Springs, Ill.
BRS	Bristol-Meyers Co., Bristol Laboratories Div.	P.O. Box 657, Syracuse 1, N.Y.
BLN	Brooklyn Color Works, Inc	Morgan and Norman Aves., Brooklyn 22, N.Y.
BRR	Brown Co., Resi-Chem Div	100 E. Broadway, Swanton, Ohio.
ABR	Andrew Brown Co	5431 District Blvd., Los Angeles 22, Calif.
BRU	M. A. Bruder & Sons, Inc	52d St. and Grays Ave., Philadelphia 43, Pa.
BRY	Bryant Chemical Corp	6 North St., N. Quincy 71, Mass.
BUK	Buckeye Cellulose Corp	2899 Jackson Ave., Memphis 8, Tenn.
BKM	Buckman Laboratories, Inc	1256 N. McLean, Memphis 8, Tenn.
BSC	Burkart-Schier Chemical Co	1228 Chestnut St., Chattanooga 2, Tenn.
BUR	Burroughs Wellcome & Co. (U.S.A.), Inc	1 Scarsdale Rd., Tuckahoe 7, N.Y.
BZ	Bzura Chemical Co., Inc	Keyport, N.J.
CBT	Samuel Cabot, Inc	246 Summer St., Boston 10, Mass.
CAD	Cadet Chemical Corp	2153 Lockport-Olcott Rd., Burt, N.Y.
CAU	Calcasieu Chemical Corp	P.O. Box 1522, Lake Charles, La.
	California Chemical Co.:	
ORO	Oronite Div	200 Bush St., San Francisco 20, Calif.
OTH	Ortho Div	Lucas and Ortho Way, Richmond, Calif.
CIK	California Ink Co., Inc	545 Sansome St., San Francisco 11, Calif.
CAL	Callery Chemical Co	Callery, Pa.
CAP	Capital Plastics, Inc	250 Mill St., Rochester 14, N.Y.
CCW	Carlisle Chemical Works, Inc	West St., Reading 15, Ohio.
CCA	Advance Solvents & Chemical Div	500 Jersey Ave., New Brunswick, N.J.
CM	Carpenter-Morton Co	376 3d St., Everett 49, Mass.
CRS	Carus Chemical Co., Inc	1375 8th St., LaSalle, Ill.
CWN	Carwin Co	Stiles Lane, North Haven, Conn.
CRY	Cary Chemicals, Inc	P.O. Box 38, E. Brunswick, N.J.
CAT	Catalin Corp. of America	1 Park Ave., New York 16, N.Y.
CEL	Celanese Corp. of America:	
	Celanese Chemical Co. Div	522 5th Ave., New York 36, N.Y.
	Celanese Polymer Co. Div	744 Broad St., Newark 2, N.J.
CCL	Charlotte Chemical Laboratories	4840 Old Pineville Rd., Charlotte 1, N.C.
CCC	Chase Chemical Corp	3527 Smallman St., Pittsburgh 1, Pa.
CHG	Chemagro Corp	P.O. Box 4913, Station "F", Kansas City 20, Mo.
SPC	Chemetron Corp., Specific Pharmaceuticals, Chemical Product Div.	386 Park Ave. S., New York 16, N.Y.
CFX	Chemfax, Inc	P.O. Box 763, Gulfport, Miss.
VLY	Chem-Fleur, Inc	200 Pulaski St., Newark, N.J.
CIS	Chemical Insecticide Corp	30 Whitman Ave., Metuchen, N.J.
CMG	Chemical Manufacturing Co., Inc	Megonoto Rd., Ashland, Mass.
CPD	Chemical Products Corp. (Georgia)	P.O. Box 815, Cartersville, Ga.
CHP	Chemical Products Corp. (New Jersey)	McBride and Lackawanna Ave., W. Paterson, N.J.
CCO	Chemico, Inc	2508 E. Bailey Rd., Cuyahoga Falls, Ohio.
CKL	Chemlek Laboratories, Inc	4040 W. 123d St., Alsip 58, Ill.

TABLE 23.--*Synthetic organic chemicals: Directory of manufacturers, 1961*--Continued

Code	Name of company	Office address
CS	Chemstrand Corp	350 5th Ave., New York 1, N.Y.
CPC	Childs Pulp Colors, Inc	42 Summit St., Brooklyn 31, N.Y.
CHC	Chipman Chemical Co., Inc	P.O. Box 309, Bound Brook, N.J.
	Ciba Corporation:	
CBP	Ciba Pharmaceutical Co. Div	556 Morris Ave., Summit, N.J.
CBA	Ciba Products Co. Div	Route 208, Fair Lawn, N.J.
CLY	W. A. Cleary Corp	P.O. Box 749, New Brunswick, N.J.
CLV	Clover Chemical Co	360 Regis Rd., Pittsburgh 36, Pa.
COS	Coastwise Petroleum Co	1127 Munsey Bldg., Baltimore 2, Md.
COK	Cockerille Chemicals, Inc	Greenwood, Va.
CP	Colgate-Palmolive Co	300 Park Ave., New York 22, N.Y.
CW	Collett-Week Corp	Quimby St., Ossining 12, N.Y.
CI	Colloids, Inc	394 Frelinghuysen Ave., Newark 14, N.J.
CC	Collway Colors, Inc	15 Market St., Paterson 1, N.J.
COR	Commercial Resins Corp	1250 W. 7th St., St. Paul 2, Minn.
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-Danan Co	3475 3d Ave., New York 56, N.Y.
DAV	Consolidated Chemical & Coatings Co., H. B. Davis Co. Div.	Bush and Severn St., Baltimore 30, Md.
CPT	Consolidated Paint Co	3101 E. 11th St., Los Angeles 23, Calif.
CWP	Consolidated Water Power & Paper Co	Wisconsin Rapids, Wis.
CTL	Continental Chemical Co	270 Clifton Blvd., Clifton, N.J.
CD	Continental-Diamond Fibre Corp	70 S. Chapel St., Newark, Del.
CO	Continental Oil Co	1300 Main, Houston 1, Tex.
CPV	Cook Paint & Varnish Co	1412 Knox N. Kansas City 16, Mo.
CFA	Cooperative Farm Chemicals Association	P.O. Box 80, Lawrence, Kans.
COP	Coopers Creek Chemical Corp	River Rd., W. Conshohocken, Pa.
CBC	Coos Bay Timber Co	P.O. Box 869, Coos Bay, Oreg.
CPY	Copolymer Rubber & Chemical Corp	P.O. Box 2591, Baton Rouge 1, La.
CRN	Corn Products Co	717 5th Ave., New York 22, N.Y.
CSD	Cosden Petroleum Corp	P.O. Box 1311, Big Spring, Tex.
CWL	Cowles Chemical Co	12000 Shaker Blvd., Cleveland 20, Ohio.
ALT	Crompton & Knowles Corp., Althouse Chemical Co. Div.	500 Pear St., Reading, Pa.
CBY	Crosby Chemicals, Inc	Picayune, Miss.
CCP	Crown Central Petroleum Corp	American Bldg., Baltimore 2, Md.
CRC	Crown Chemical Corp	240 India St., Providence 3, R.I.
CRT	Crown Tar & Chemical Works, Inc	900 Wewatta St., Denver 4, Colo.
CRZ	Crown Zellerbach Corp., Chemical Products Div.	Camas, Wash.
CUC	Cumberland Chemical Corp	150 E. 42d St., New York 17, N.Y.
CUT	Cutter Laboratories, Inc	4th and Parker Sts., Berkeley 10, Calif.
DAN	Dan River Mills, Inc	Danville, Va.
DLI	Dawe's Laboratories, Inc	4800 S. Richmond St., Chicago 32, Ill.
DCH	Dearborn Chemical Co	Rm. 375, Merchandise Mart Plaza, Chicago 54, Ill.
JDC	John Deere Chemical Co	Pryor, Okla.
DCI	Delaware Chemicals, Inc	726 King St., Wilmington, Del.
DLH	Delhi-Taylor Oil Corp	P.O. Box 4067, Corpus Christi, Tex.
DLM	Delmar Chemical Co., Inc	P.O. Box 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.
DEX	Dexter Chemical Corp	845 Edgewater Rd., New York 59, N.Y.
DA	Diamond Alkali Co	300 Union Commerce Bldg., Cleveland 14, Ohio.
	Western Div	1901 Spring St., Redwood, Calif.
TDC	Diversey Corp	212 W. Monroe St., Chicago 6, Ill.
DPP	Dixie Pine Products Co., Inc	P.O. Box 470, Hattiesburg, Miss.
DOD	Donald A. Dodd	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.
DVC	Dover Chemical Co	15th and Davis Sts., Dover, Ohio.
DOW	Dow Chemical Co	Main St., Midland, Mich.
DCC	Dow Corning Corp	P.O. Box 592, Midland, Mich.
DRW	Drew Chemical Corp	15 E. 26th St., New York 10, N.Y.
DRG	Drug Processors, Inc	1219 E. Church St., Adrian, Mich.
DUN	Frank W. Dunne Co	1007 41st St., Oakland 8, Calif.
DUP	E. I. duPont de Nemours & Co., Inc	10th and Market Sts., Wilmington 98, Del.
DSC	Dye Specialties, Inc	26 Journal Sq., Jersey City 6, N.J.

TABLE 23.--*Synthetic organic chemicals: Directory of manufacturers, 1961*--Continued

Code	Name of company	Office address
EAK	J. S. & W. R. Eakins, Inc	55 Berry St., Brooklyn 11, N.Y.
EK	Eastman Kodak Co	343 State St., Rochester 4, N.Y.
EKT	Tennessee Eastman Co. Div	P.O. Box 511, Kingsport, Tenn.
EKX	Texas Eastman Co. Div	P.O. Box 2068, Longview, Tex.
EDC	Edcan Laboratories	10 Pine St., S. Newark, Conn.
EDY	Eddystone Manufacturing Co	P.O. Box 471, Wilmington 99, Del.
TAE	Thomas A. Edison Industries, McGraw-Edison Co. Div.	120 S. LaSalle St., Chicago 3, Ill.
ELP	El Paso Natural Gas Products Co	P.O. Box 1161, El Paso, Tex.
EMR	Emery Industries, Inc	4300 Carew Tower, Cincinnati 2, Ohio.
EMK	Emkay Chemical Co	319 2d St., Elizabethport, N.J.
EN	Endo Laboratories, Inc	84-40 101st St., Richmond Hill 18, N.Y.
ENJ	Enjay Chemical Co	15 W. 51st St., New York 19, N.Y.
EPC	Epoxylite Corp	1428 N. Tyler Ave., S. El Monte, Calif.
ERD	Erdmann Chemical Co., Inc	66 Lister Ave., Newark 5, N.J.
ESC	Escambia Chemical Corp	P.O. Box 467, Pensacola, Fla.
TNA	Ethyl Corp	100 Park Ave., New York 17, N.Y.
ETD	Ethyl-Dow Chemical Co	Midland, Mich.
EVN	Evans Chemetics, Inc	250 E. 43d St., New York 17, N.Y.
EVM	Everledge Manufacturing, Inc	P.O. Box 178, Harrison City, Pa.
FMT	Fairmount Chemical Co., Inc	117 Blanchard St., Newark 5, N.J.
FRM	Farmers' Chemical Co	P.O. Box 591, Kalamazoo, Mich.
FAR	Farnow, Inc	4-83 48th Ave., Long Island 1, N.Y.
FRR	Estate of W. U. Farrington	P.O. Box 389, E. Greenwich, R.I.
FCL	Federal Color Laboratories, Inc	4526 Chickering Ave., Cincinnati 32, Ohio.
FEL	Felton Chemical Co., Inc	599 Johnson Ave., Brooklyn 37, N.Y.
FER	Ferro Corp., Ferro Chemical Div	P.O. Box 349, Bedford, Ohio.
FBC	Fiber Chemical Corp	P.O. Box 218, Matawan, N.J.
FI	Fiberfil, Inc	Fox Farm Road, Warsaw, Ind.
FBR	Fibreboard Paper Products Corp	P.O. Box 4314, Oakland 23, Calif.
FRP	Filtered Rosin Products Co	P.O. Box 179, Baxley, Ga.
FIN	Fine Organics, Inc	205 Main St., Lodi, N.J.
	Firestone Tire & Rubber Co.:	
FIR	Firestone Plastics Co. Div	P.O. Box 690, Pottstown, Pa.
FRS	Firestone Synthetic Rubber & Latex Co. Div.	381 W. Wilbeth Rd., Akron 1, Ohio.
FLO	Florasynth Laboratories, Inc	900 Van Nest Ave., New York 62, N.Y.
FLA	Florida Chemical Co., Inc	P.O. Box 997, Lake Alfred, Fla.
	FMC Corporation:	
FMB	Becco Chemical Div	Sawyer Ave. and River Rd., Tonawanda, N.Y.
FMW	Chemical Div	161 E. 42d St., New York 17, N.Y.
FMP	Chemicals & Plastics Div	1701 Patapsco Ave., Baltimore 26, Md., and P.O. Box 98, Nitro, W. Va.
FMN	Niagara Chemical Div	100 Niagara St., Middleport, N.Y.
FTE	Foote Mineral Co	Rt. 100, Exton, Pa.
FOR	Foremost Food & Chemical Co	P.O. Box 599, Oakland 4, Calif.
FOM	Formica Corp	4614 Spring Grove Ave., Cincinnati 32, Ohio.
FG	Foster-Grant Co., Inc	289 N. Main St., Leominster, Mass.
FH	Foster-Heaton Co	16 E. 5th St., Paterson 4, N.J.
FCD	France, Campbell & Darling, Inc	N. Michigan Ave., Kenilworth, N.J.
FCP	J. P. Frank Chemical & Plastic Corp	5410 Avenue U, Brooklyn 34, N.Y.
FRE	Freeman Chemical Corp	222 E. Main St., Port Washington, Wis.
FSH	Frisch & Co., Inc	88 E. 11th St., Paterson 4, N.J.
FB	Fritzsche Bros., Inc	76 9th Ave., New York 11, N.Y.
FLH	H. B. Fuller Co	4819 Industrial Ct., Cincinnati 17, Ohio.
FLW	W. P. Fuller & Co	450 E. Grand Ave., S. San Francisco, Calif.
GAM	Gamma Chemical Corp	355 Lexington Ave., New York 17, N.Y.
GAN	Gane's Chemical Works, Inc	535 5th Ave., New York 17, N.Y.
GGY	Geigy Chemical Corp	P.O. Box 430, Yonkers, N.Y.
G	General Aniline & Film Corp	435 Hudson St., New York 14, N.Y.
	General Electric Co.:	
GE	Chemical Materials Dept	1 Plastics Ave., Pittsfield, Mass.
GEI	Insulating Materials Dept	1 Campbell Rd., Schenectady 6, N.Y.
SPD	Silicone Products Dept	Waterford, N.Y.
GNF	General Foods Corp., Maxwell House Div	1125 Hudson St., Hoboken, N.J.
GNX	General Latex & Chemical Corp	666 Main St., Cambridge 39, Mass.
GNM	General Mills, Inc	9200 Wayzata Blvd., Minneapolis 26, Minn.
GPM	General Plastics Manufacturing Co	3481 S. 35th St., Tacoma 9, Wash.
GNT	General Tire & Rubber Co., Chemical Div	1708 Englewood Ave., Akron 9, Ohio.
GRG	P. D. George Co	5200 N. 2d St., St. Louis 7, Mo.
GIL	Gilman Paint & Varnish Co	W. 8th and Pine Sts., Chattanooga 1, Tenn.

TABLE 23. --*Synthetic organic chemicals: Directory of manufacturers, 1961*--Continued

Code	Name of company	Office address
GIV	Givaudan Corp	109-201 Delawanna Ave., Delawanna, N.J.
GLX	Glasflex, Inc	43 W. 47th St., New York, N.Y.
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.
GGC	Goodrich-Gulf Chemicals, Inc	1717 E. 9th St., Cleveland 14, Ohio.
GYR	Goodyear Tire & Rubber Co	1144 E. Market St., Akron 16, Ohio.
GOR	Gordon Chemical Co., Inc	88 Webster St., Worcester 3, Mass.
GDN	Gordon Chemicals, Inc	P.O. Box 52, Carlstadt, N. J.
GDL	Gordon-Lacey Chemical Products Co., Inc	57-02 48th St., Maspeth 78, N.Y.
	W. R. Grace & Co.:	
GRD	Dewey & Almy Chemical Div	62 Whittenmore Ave., Cambridge 40, Mass.
GRH	Hatco Chemical Div	King George Post Rd., P.O. Box 27, Fords, N.J.
GCC	Nitrogen Products Div	147 Jefferson, Memphis 7, Tenn.
GRP	Polymer Chemicals Div	225 Allwood Rd., Clifton, N.J.
GPR	Grain Processing Corp	1600 Oregon St., Muscatine, Iowa.
GRV	Grand Rapids Varnish Corp	1350 Steele Ave., SW., Grand Rapids 2, Mich.
GRA	Great American Plastics Co	650 Water St., Fitchburg, Mass.
GLC	Great Lakes Chemical Corp	2024 Filer City Rd., Filer City, Mich.
GRS	Great Southern Chemical Corp	P.O. Box 4166, Corpus Christi, Tex.
GRW	Great Western Sugar Co	P.O. Box 5308, Terminal Annex, Denver 17, Colo.
GTS	Greenwood Textile Supply Co	27 Meadow St., Warwick, R.I.
GUA	Guard Chemical Co., Inc	N. Water St., Ossining, N.Y.
GOC	Gulf Oil Corp	P.O. Drawer 2100, Houston 1, Tex.
GTH	Guth Chemical Co	850 Weed St., Chicago 22, Ill.
HNC	H & N Chemical Co	88 Bleeker St., Paterson 4, N.J.
HLI	Haag Laboratories, Inc	P.O. Box 117, 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	Hampton Color & Chemical Co	5 Albany St., Springfield 1, Mass.
HMP	Hampshire Chemical Corp	Poisson Ave., Nashua, N.H.
HAN	Hanna Paint Manufacturing Co., Inc	1313 Windsor, Ave., Columbus 16, Ohio.
HRS	Harris Standard Paint Co	P.O. Box 1381, Tampa 1, Fla.
HSH	Harshaw Chemical Co	1945 E. 97th St., Cleveland 6, Ohio
HRT	Hart Products Corp	1440 Broadway, New York 18, N.Y.
HLC	Hartman-Leddon Co	60th and Woodland Ave., Philadelphia 43, Pa.
HVG	Haveg Industries, Inc., Resin & Compound Div.	Plastics Park, Wilmington 8, Del.
HLN	Helene Curtis Industries, Inc	4401 W. North Ave., Chicago 39, Ill.
HPC	Hercules Powder Co	910 Hercules Tower, Wilmington 99, Del.
IMP	Imperial Color & Chemical Dept	P.O. Box 231, Glens Falls, N.Y.
HER	Heresite & Chemical Co	822 S. 14th St., Manitowoc, Wis.
HET	Heterochemical Corp	111 E. Hawthorne Ave., Valley Stream, N.Y.
HEX	Hexagon Laboratories, Inc	3536 Peartree Ave., New York 69, N.Y.
HAP	Hexcel Products, Inc., Applied Plastics Div.	130 Penn St., El Segundo, Calif.
HN	Heyden Newport Chemical Corp	342 Madison Ave., New York 17, N.Y.
HNW	Newport Industries Div	P.O. Box 911, Pensacola, Fla.
HNX	Nuodex Products Div	830 Magnolia Ave., Elizabeth, N.J.
HDG	Hodag Chemical Corp	7247 N. Central Park Ave., Skokie, Ill.
HST	Hoechst Chemical Corp	129 Quidnick St., W. Warwick, R.I.
HOF	Hoffmann-LaRoche, Inc	324 Kingsland Rd., Nutley 10, N.J.
HFT	Hoffman-Taff, Inc	P.O. Box 1246, Springfield, Mo.
HCC	Holland Color & Chemical Co	492 Douglas Ave., Holland, Mich.
HK	Hooker Chemical Corp	Buffalo Ave. and 47th St., Niagara Falls, N.Y.
HKD	Durez Plastics Div	Walck Rd., N. Tonawanda, N.Y.
HKP	Phosphorus Div	Buffalo Ave. and 47th St., Niagara Falls, N.Y.
EFH	E. F. Houghton & Co	303 W. Lehigh Ave., Philadelphia 33, Pa.
HCH	Houston Chemical Corp	200 Madison Ave., New York 16, N.Y.
GLY	Chas. L. Huisking & Co., Inc., Glyco Chemicals Div.	417 5th Ave., New York 16, N.Y.
HUC	Hukill Chemical Corp	2533 Broadway Ave., Cleveland 13, Ohio.
HMY	Humphrey-Wilkinson, Inc	Devine St., N. Haven, Conn.
HUS	Husky Oil Co	P.O. Box 380, Cody, Wyo.
HYN	Hynson, Westcott & Dunning, Inc	Charles and Chase Sts., Baltimore 1, Md.
HYC	Hysol Corp	1100 Seneca Ave., Olean, N. Y.
IDC	Industrial Dyestuff Co	Massasoit Ave., E. Providence 14, R.I.
INM	Industrial Marine Chemical Co	P.O. Box 2344, Fort Worth, Tex.
INL	Inland Steel Container Co	6532 S. Menard Ave., Chicago 38, Ill.

TABLE 23.--*Synthetic organic chemicals: Directory of manufacturers, 1961*--Continued

Code	Name of company	Office address
	Interchemical Corp.:	
ICC	Color & Chemicals Div----------	150 Wagaraw Rd., Hawthorne, N.J.
ICF	Finishes Div----------	224 McWhorter St., Newark 1, N.J.
ICO	Organic Chemicals Dept----------	P.O. Box 8, Rt. 17, Carlstadt, N.J.
INI	Intermediates, Inc----------	P.O. Box 1503, Joliet, Ill.
IFF	International Flavors & Fragrances, Inc.	521 W. 57th St., New York 19, N.Y.
ILC	International Latex Corp----------	Playtex Park, Dover, Del.
IMC	International Minerals & Chemical Corp	5401 Old Orchard Rd., Skokie, Ill.
INP	International Paper Co----------	220 E. 42d St., New York 17, N.Y.
IRC	International Resistance Co----------	401 N. Broad St., Philadelphia 8, Pa.
IPR	Inter-Pacific Resins, Inc----------	P.O. Box 445, Sweet Home, Oreg.
ITX	Intex Chemical Corp----------	165 Main St., Lodi, N.J.
IRI	Ironsides Co----------	270 W. Mound St., Columbus 15, Ohio.
ISO	Isochem Resins Co----------	221 Oak St., Providence 9, R.I.
IPI	Isocyanate Products, Inc----------	900 Wilmington Rd., New Castle, Del.
JAM	Jamestown Paint & Varnish Co----------	108 Main St., Jamestown, Pa.
JCC	Jefferson Chemical Co., Inc----------	P.O. Box 303, Houston 1, Tex.
MER	Jefferson Lake Sulphur Co., Merichem Co. Div.	1914 Haden Rd., Houston 15, Tex.
JEN	Jennison-Wright Corp----------	P.O. Box 4187, Station E, Toledo 9, Ohio.
JRG	Andrew Jergens Co----------	2535 Spring Grove Ave., Cincinnati 14, Ohio.
JSC	Jersey State Chemical Co----------	59 Lee Ave., Haledon, N.J.
JWL	Jewel Paint & Varnish Co----------	345 N. Western Ave., Chicago 12, Ill.
JNS	S. C. Johnson & Son, Inc----------	1525 Howe St., Racine, Wis.
JOB	Jones-Blair Paint Co----------	6969 Denton Dr., Dallas 35, Tex.
JOD	Jones-Dabney Co----------	1481 S. 11th St., Louisville 8, Ky.
JOR	W. H. & F. Jordan, Jr. Manufacturing Co., Inc.	2126 E. Somerset St., Philadelphia 34, Pa.
KK	K & K Laboratories, Inc----------	177-10 93d Ave., Jamaica 33, N. Y.
KAL	Kali Manufacturing Co----------	427 E. Moyer St., Philadelphia 25, Pa.
KF	Kay-Fries Chemicals, Inc----------	180 Madison Ave., New York 16, N.Y.
KEL	Kelly-Pickering Chemical Corp----------	956 Bransten Rd., San Carlos, Calif.
KEN	Kendall Refining Co----------	1177 Kendall Ave., Bradford, Pa.
	Kennecott Copper Corp.:	
KCC	Chino Mines Div----------	Hurley, N. Mex.
KCU	Utah Copper Div----------	P.O. Box 1650, Salt Lake City 10, Utah.
KPI	Kenrich Petrochemicals, Inc----------	57-02 48th St., Maspeth 78, N.Y.
KES	Kessler Chemical Co., Inc----------	State Rd. and Cottman Ave., Philadelphia 35, Pa.
KYS	Keysor Chemical Co----------	26000 Bouquet Canyon Rd., Saugus, Calif.
KCH	Keystone Chemurgic Corp----------	R.D. #2, Bethlehem, Pa.
KCW	Keystone Color Works, Inc----------	151 W. Gay Ave., York, Pa.
KPV	Keystone Paint & Varnish Corp----------	71 Otsego St., Brooklyn 31, N.Y.
KLS	Kilsdonk Chemical Corp----------	101 Canal St., Lock Haven, Pa.
KNK	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 13, N.Y.
KLK	Kolker Chemical Corp----------	600 Doremus Ave., Newark 5, N.J.
	Koppers Co., Inc.:	
KPC	Chemicals & Dyestuffs Div----------	Koppers Bldg., 430 7th Ave., Pittsburgh 19, Pa.
KPP	Plastics Div----------	Koppers Bldg., 430 7th Ave., Pittsburgh 19, Pa.
KPT	Tar Products Div----------	Koppers Bldg., 430 7th Ave., Pittsburgh 19, Pa.
KYN	Kyanize Paints, Inc----------	2d and Boston Sts., Everett 49, Mass.
LKL	Lakeside Laboratories, Inc----------	1707 E. North Ave., Milwaukee 1, Wis.
LAM	LaMotte Chemical Products Co----------	Chestertown, Md.
LUR	Laurel Soap Manufacturing Co----------	Thompson and Tioga Sts., Philadelphia 34, Pa.
LMI	Lawrence Mills, Inc----------	19 S. Canal St., Lawrence, Mass.
KRM	Lawter Chemicals, Inc., Krumbhaar Resin Div.	3550 Touhy Ave., Chicago 45, Ill.
LEA	Leatex Chemical Co----------	2722 N Hancock St., Philadelphia 33, Pa.
LEB	Lebanon Chemical Corp----------	P.O. Box 532, Lebanon, Pa.
LEF	Leffingwell Chemical Co----------	10523 Santa Gertrudes Rd., Whittier, Calif.
LEH	Lehigh Chemical Co----------	P.O. Box 120, Chestertown, Md.
LEM	B. L. Lemke & Co., Inc----------	199 Main St., Lodi, N.J.
LEN	Leonard Refineries, Inc----------	E. Superior St., Alma, Mich.
LEV	Lever Brothers Co----------	390 Park Ave., New York 22, N.Y.
LVR	C. Lever Co., Inc----------	Howard and Huntington Sts., Philadelphia 33, Pa.
LVY	Fred'k H. Levey Co., Inc----------	380 Madison Ave., New York 17, N.Y.
LPC	Lignin Products Co----------	P.O. Box 960, Erie, Pa.

TABLE 23.--*Synthetic organic chemicals: Directory of manufacturers, 1961*--Continued

Code	Name of company	Office address
LIL	Eli Lilly & Co	740 S. Alabama St., Indianapolis 6, Ind.
LCA	Lithium Corp. of America, Inc	500 5th Ave., New York 36, N.Y.
LUB	Lubrizol Corp	Cleveland 17, Ohio.
LUE	George Lueders & Co	427 Washington St., New York 13, N.Y.
MAK	MacKenzie Chemical Works, Inc	1 Cordello Ave., Central Islip, L.I., N.Y.
MGR	Magruder Color Co., Inc	2385 Richmond Terrace, Staten Island 2, N.Y.
MAH	Maher Color & Chemical Co	1700 N. Elston Ave., Chicago 22, Ill.
MAL	Mallinckrodt Chemical Works	3600 N. 2d St., St. Louis 7, Mo.
SNM	Mansun Paint Manufacturing Co., Inc	40 Industrial Rd., Lodi, N.J.
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 Joshua Circle, High Point, N.C.
	Martin-Marietta Co.:	
AMR	Adhesive, Resin & Chemical Div	42 S. 3d St., Newark, Ohio, and 3400 13th Ave., S.W., Seattle 4, Wash.
ARO	Arco Div	7301 Bessemer Ave., Cleveland 27, Ohio.
AMF	Ferbert-Schorndorfer Co. Div	12815 Elmwood Ave., Cleveland 11, Ohio.
LON	Charles R. Long, Jr. Co. Div	1630 W. Hill St., Louisville 10, Ky.
AMS	Ridgway Color & Chemical Co. Div	75 Front St., Ridgway, Pa.
SDC	Southern Dyestuff Co. Div	P.O. Box 10098, Charlotte 1, N.C.
MRX	Max Marx Color & Chemical Co	192 Coit St., Irvington 11, N.J.
MDP	Maryland Plastics, Inc	251 E. Central Ave., Federalsburg, Md.
MCA	Masonite Corp, Alpine Chemical Div	P.O. Box 101, Gulfport, Miss.
MPL	Massachusetts Plastic Corp	Ludlow, Mass.
MEE	Maumee Chemical Co	1310 Expressway Dr., Toledo 8, Ohio.
MAY	Otto B. May, Inc	52 Amsterdam St., Newark 5, N.J.
MCC	McCloskey Varnish Co	7600 State Rd., Philadelphia 36, Pa.
MCW	McWhorter Chemicals, Inc	1645 S. Kilbourn Ave., Chicago 23, Ill.
MED	Medical Chemicals Corp	4122 W. Grand Ave., Chicago 51, Ill.
MRK	Merck & Co., Inc	Lincoln Ave., Rahway, N.J.
MLD	Metalead Products Corp	2901 Park Blvd., Palo Alto, Calif.
MHI	Metal Hydrides, Inc	12-24 Congress St., Beverly, Mass.
MTL	Metalsalts Corp	200 Wagaraw Rd., Hawthorne, N.J.
MET	Metal & Thermit Corp	Woodbridge Rd. and Randolph Ave., Rahway, N.J.
MRA	Metro-Atlantic, Inc	2072 Smith St., Centerdale 11, R.I.
JMS	J. Meyer & Sons, Inc	4321 N. 4th St., Philadelphia 40, Pa.
MCH	Michigan Chemical Corp	500 N. Bankson St., St. Louis, Mich.
MID	Midland Industrial Finishes Co	E. Water St., Waukegan, Ill.
MLS	Miles Laboratories, Inc	1127 Myrtle St., Elkhart, Ind.
MOR	Mineral Oil Refining Co	P.O. Drawer C, Dickinson 1, Tex.
MMM	Minnesota Mining & Manufacturing Co	900 Bush Ave., St. Paul 1, Minn.
MNP	Minnesota Paints, Inc	1101 S. 3d St., Minneapolis 15, Minn.
MIR	Miranol Chemical Co., Inc	277 Coit St., Irvington 11, N.J.
MSC	Mississippi Chemical Corp	P.O. Box 563, Yazoo City, Miss.
MOB	Mobay Chemical Co	Penn Lincoln Parkway, W. Pittsburgh 5, Pa.
MFG	Molded Fiber Glass Body Co., Resin Div	4601 Benefit Ave., Ashtabula, Ohio.
MOA	Mona Industries, Inc	65 E. 23d St., Paterson 17, N.J.
MON	Monsanto Chemical Co.:	
	Organic Chemical Div	800 N. Lindbergh Blvd., St. Louis 66, Mo.
	Plastics Div	812 Monsanto Ave., Springfield 2, Mass., and P.O. Box 1311, Texas City, Tex.
	Western Div	P.O. Box 120, Santa Clara, Calif.
MTO	Montrose Chemical Corp. of California	500 S. Virgil Ave., Los Angeles 5, Calif.
MR	Benjamin Moore & Co	548 5th Ave., New York 36, N.Y.
MRN	Morningstar Paisley, Inc	1770 Canalport Ave., Chicago 16, Ill.
MRT	Morton Chemical Co	110 N. Wacker Dr., Chicago 6, Ill.
MRW	Morwear Paint Co	568 14th St., Oakland 12, Calif.
MOT	Motomco, Inc	89 Terminal Ave., Clark, N.J.
VIS	Nalco Chemical Co., Visco Products Co. Div.	P.O. Box 87, Sugar Land, Tex.
NTB	National Biochemical Co	3127 W. Lake St., Chicago 12, Ill.
NTC	National Casein Co	601 W. 80th St., Chicago 20, Ill.
	National Dairy Products Corp.:	
HND	Humko Products Chemical Div	Sterick Bldg., Memphis 1, Tenn.
SHF	Sheffield Chemical Co. Div	P.O. Box 630, Norwich, N.Y.
USI	National Distillers & Chemical Corp., U.S. Industrial Chemicals Co. Div.	99 Park Ave., New York 16, N.Y.
NTL	National Lead Co	111 Broadway, New York 6, N.Y.
NPP	National Plastic Products Co., Inc	Odenton, Md.
NPI	National Polychemicals, Inc	Eames St., Wilmington, Mass.
NSC	National Starch & Chemical Corp	750 3d Ave., New York 17, N.Y.

TABLE 23. --*Synthetic organic chemicals*: *Directory of manufacturers, 1961*-- Continued

Code	Name of company	Office address
NVF	National Vulcanized Fibre Co	1000 Beach St., Wilmington, Del.
NES	Nease Chemical Co., Inc	P.O. Box 221, State College, Pa.
NCI	Nelio Chemicals, Inc	2051 Lane Ave., Jacksonville 5, Fla.
NEP	Nepera Chemical Co., Inc	Rt. 17 and Averill Ave., Harriman, N.Y.
NEV	Neville Chemical Co	Neville Island, Pittsburgh 25, Pa.
NIL	Nilok Chemicals, Inc	2000 College Ave., Niagara Falls, N.Y.
NON	A. P. Nonweiler Co	P.O. Box 1007, Oshkosh, Wis.
NOP	Nopco Chemical Co., Inc	60 Park Pl., Newark 2, N.J.
NEO	Norda Essential Oil & Chemical Co., Inc	600 W. 26th St., New York 1, N.Y.
NW	Northwestern Chemical Co	120 N. Aurora St., W. Chicago, Ill.
NOR	Norwich Pharmacal Co	17 Eaton Ave., Norwich, N.Y.
OH	Ohio Chemical & Surgical Equipment Co	1400 E. Washington Ave., Madison 10, Wis.
OLC	Old Colony Tar Co., Inc	P.O. Box 305, Paramus, N.J.
OLH	Old Hickory Chemical Co	P.O. Box 3408, Richmond 34, Va.
OMC	Olin Mathieson Chemical Corp	P.O. Box 1996, Baltimore 3, Md., and 460 Park Ave., New York 22, N.Y.
OMB	Blockson Chemical Co. Div	Joliet, Ill.
OMS	E. R. Squibb & Sons Div	745 5th Ave., New York 22, N.Y.
ONX	Onyx Chemical Corp	190 Warren St., Jersey City 2, N. J.
OPC	Orbis Products Corp	601 W. 26th St, New York 1, N.Y.
ORG	Organics, Inc	1724 Greenleaf Ave., Chicago 26, Ill.
BSW	Original Bradford Soap Works, Inc	200 Providence St., W. Warwick, R.I.
ORT	Ortho Chemical Corp	52-20 37th St., Long Island City 1, N.Y.
OSB	C. J. Osborn Co	1301 W. Blancke St., Linden, N.J.
OTA	Ottawa Chemical Co	700 N. Wheeling St., Toledo 5, Ohio.
OTC	Ott Chemical Co	500 Agard Rd., Muskegon, Mich.
OTT	Ottol Oil Co	455 Cortlandt St., Belleville 9, N. J.
OCF	Owens-Corning Fiberglas Corp	National Bank Bldg., Toledo 1, Ohio.
OXY	Oxy Chemical Co	P.O. Box 41, Nixon, N.J.
PBS	Pabst Brewing Co	917 W. Juneau Ave., Milwaukee 1, Wis.
PCA	Pacific Carbide & Alloys Co	P.O. Box 5607, Portland 17, Oreg.
PAN	Pan American Petroleum Corp	P.O. Box 591, Tulsa 2, Okla.
PNT	Pantasote Co	26 Jefferson St., Passaic, N.J.
PD	Parke, Davis & Co	Foot of Jos. Campau, Detroit 32, Mich.
PRP	M. W. Parsons-Plymouth, Inc	100 Church St., New York 8, N.Y.
PAT	Patent Chemicals, Inc	335 McLean Blvd., Paterson 4, N.J.
CCH	Pearsall Chemical Co	P.O. Box 108, Phillipsburg, N.J.
PCH	Peerless Chemical Co	3850 Oakman Blvd., Detroit 4, Mich.
PCO	Peerless Color Co., Inc	P.O. Box 267, Passaic, N.J.
PEL	Pelron Corp	7847 W. 47th St., Lyons, Ill.
PEN	S. B. Penick & Co	100 Church St., New York, N.Y.
PAS	Pennsalt Chemicals Corp	3 Penn Center, Philadelphia 2, Pa.
PAI	Pennsylvania Industrial Chemical Corp	120 State St., Box 240, Clairton, Pa.
PAR	Pennsylvania Refining Co	Commonwealth Bank & Trust Co. Bldg., Butler, Pa.
PGU	Perkins Glue Co	632 Cannon Ave., Lansdale, Pa.
PRR	L. Perrigo Co	Allegan, Mich.
PER	Perry & Derrick Co	2510 Highland Ave., Cincinnati 12, Ohio.
PET	Petroleum Chemicals, Inc	P.O. Box 1522, Lake Charles, La.
PTT	Petro-Tex Chemical Corp	P.O. Box 2584, Houston 1, Tex.
PFN	Pfanstiehl Laboratories, Inc	1219 Glen Rock Ave., Waukegan, Ill.
IOC	Pfaudler Permutit, Inc., Ionac Chemical Co. Div.	Birmingham, N.J.
PCW	Pfister Chemical Works	Linden Ave., Ridgefield, N.J.
PFZ	Chas. Pfizer & Co., Inc	235 E. 42d St., New York 17, N.Y.
PHR	Pharmachem Corp	Broad and Wood Sts., Bethlehem, Pa.
PFP	Phelan-Faust Paint Manufacturing Co	932 Loughborough Ave., St. Louis 11, Mo.
	Phelan's Resins & Plastics Div	P.O. Box 189, Burlington, Iowa.
PLC	Phillips Chemical Co	Adams Bldg., Bartlesville, Okla.
PLP	Phillips Petroleum Co	Adams Bldg., Bartlesville, Okla.
PNX	Phoenix Oil Co	9505 Cassius Ave., Cleveland 5, Ohio.
PIC	Pierce Chemical Co	P.O. Box 117, Rockford, Ill.
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 Chemical Co	200 Grant Bldg., Pittsburgh 30, Pa.
PPG	Pittsburgh Plate Glass Co	1 Gateway Center, Pittsburgh 22, Pa.
PLA	Plastics Corp. of America	700 Canal St., Box 1158, Stamford, Conn.
PLS	Plastics Engineering Co	1607 Geele Ave., Sheboygan, Wis.
PLU	Plumb Chemical Corp	4837 James St., Philadelphia 37, Pa.
PYL	Polychemical Laboratories, Inc	490 Hunts Point Ave., New York 59, N.Y.
POL	Polymer Corp	2120 Fairmont Ave., Reading, Pa.
PII	Polymer Industries, Inc	Viaduct Rd., Springdale, Conn.

TABLE 23.--*Synthetic organic chemicals: Directory of manufacturers, 1961*--Continued

Code	Name of company	Office address
PYR	Poly Resins	11655 Wicks St., Sun Valley, Calif.
PYZ	Polyrez Co., Inc	So. Columbia St., Woodbury, N.J.
PCI	Polyvinyl Chemicals, Inc	26 Howley St., Peabody, Mass.
PDC	Poughkeepsie Dyestuff Corp	77 N. Water St., Poughkeepsie, N.Y.
PRT	Pratt & Lambert, Inc	75 Tonawanda St., Buffalo 7, N.Y.
PCS	Process Chemicals Co	8733 S. Dice Rd., Sante Fe Springs, Calif.
PG	Procter & Gamble Co., Procter & Gamble Manufacturing Co. Div.	301 E. 6th St., Cincinnati 2, Ohio.
PC	Proctor Chemical Co., Inc	P.O. Box 399, Salisbury, N.C.
PRD	Productol Co	417 S. Hill St., Los Angeles 13, Calif.
PUB	Publicker Industries, Inc	1429 Walnut St., Philadelphia 2, Pa.
PSP	Puget Sound Pulp & Timber Co	300 Laurel St., Bellingham, Wash.
PRO	Pure Oil Co	200 E. Gulf Rd., Palatine, Ill.
PRX	Purex Corp., Ltd	5101 Clark Ave., Lakewood, Calif.
QCP	Quaker Chemical Products Corp	Elm, Lime, and Sandy Sts., Conshohocken, Pa.
QKO	Quaker Oats Co	Merchandise Mart Plaza, Chicago 54, Ill.
RSA	R. S. A. Corp	690 Saw Mill River Rd., Ardsley, N.Y.
RAB	Raybestos-Manhattan, Inc., Raybestos Div.	P.O. Box 1021, Bridgeport 2, 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.
RPC	Refined Products Co	624 Schuyler Ave., Lyndhurst, N.J.
REH	Reheis Company, Inc	235 Snyder Ave., Berkeley Heights, N.J.
RCI	Reichhold Chemicals, Inc	525 N. Broadway, White Plains, N.Y.
AKL	Alkydol Laboratories Div	7738 W. 61st Pl., Summit, Ill.
DEC	Deecy Products Co. Div	120 Potter St., Cambridge 42, Mass.
VAR	Varcum Chemical Div	Niagara Falls, N.Y.
RIL	Reilly Tar & Chemical Corp	1615 Merchants Bank Bldg., Indianapolis 4, Ind.
REL	Reliance Varnish Co	4730 Crittenden Dr., Louisville 9, Ky.
CPL	Coast Paint & Lacquer Co. Div	P.O. Box 1113, Houston 1, Tex.
REM	Remington Arms Co., Inc	939 Barnum Ave., Bridgeport 2, Conn.
RCC	Rexall Chemical Co	8480 Beverly Blvd., Los Angeles 54, Calif.
CFC	Rexall Chemical Co. - Kearny	1106 Harrison Ave., Kearny, N.J.
REZ	Rezolin, Inc	1651 18th St., Santa Monica, Calif.
RDA	Rhodia, Inc	60 E. 56th St., New York 22, N.Y.
RCD	Richardson Co	27th Ave. and Lake St., Melrose Park, Ill., and 100 New St., Paterson, N.J.
RIC	Richfield Oil Corp	555 S. Flower St., Los Angeles 17, Calif.
RIK	Riker Laboratories, Inc	19901 Nordhoff St., Northridge, Calif.
RMC	Rinshed-Mason Co	5935 Milford Ave., Detroit 10, Mich.
RT	F. Ritter & Co	4001 Goodwin Ave., Los Angeles 39, Calif.
RTC	Ritter Chemical Co., Inc	403 W. Main St., Amsterdam, N.Y.
RIV	Riverdale Chemical Co	220 E. 17th St., Chicago Heights, Ill.
RBC	Roberts Chemicals, Inc	P.O. Box 546, Nitro, W. Va.
ROC	Rock Hill Printing & Finishing Co	Rock Hill, S.C.
RGC	Rogers Corp	Mill St., Rogers, Conn.
RH	Rohm & Haas Co	222 W. Washington Sq., Philadelphia 5, Pa.
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	733 3d Ave., New York 17, N.Y.
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, Iowa.
S	Sandoz, Inc	61-63 Van Dam St., New York 13, N.Y.
SAR	Sartomer Resins, Inc	32d and Spring Garden Sts., Philadelphia 4, Pa.
SCF	Schaefer Varnish Co., Inc	15th and Magnolia Sts., Louisville 10, Ky.
SCN	Schenectady Chemicals, Inc	Congress St. and 10th Ave., Schenectady 1, N.Y.
SCR	R. P. Scherer Corp	9425 Grinnell Ave., Detroit 13, Mich.
SCH	Schering Corp	1011 Morris Ave., Union, N.J.
SCO	Scholler Bros., Inc	Collins and Westmoreland Sts., Philadelphia 34, Pa.
FMF	Schuylkill Chemical Co	2346 W. Sedgley Ave., Philadelphia 32, Pa.
SBR	Schwarz Bioresearch, Inc	Mountain View Ave., Orangeburg, N.Y.
SRL	G. D. Searle & Co	P.O. Box 5110, Chicago 80, Ill.
SED	Seidlitz Paint & Varnish Co	18th and Garfield, Kansas City 10, Mo.
SHA	Shanco Plastics & Chemicals, Inc	2716 Kenmore Ave., Tonawanda, N.Y.
SRC	Shawinigan Resins Corp	644 Monsanto Ave., Springfield 1, Mass.

TABLE 23.--*Synthetic organic chemicals: Directory of manufacturers, 1961*--Continued

Code	Name of company	Office address
SHO	Shell Oil Co	50 W. 50th St., New York 20, N.Y.
SHC	Shell Chemical Co. Div	50 W. 50th St., New York 20, N.Y.
SHP	Shepherd Chemical Co	2803 Highland Ave., Cincinnati 12, Ohio.
SW	Sherwin-Williams Co	101 Prospect Ave., N.W., Cleveland 1, Ohio.
SHL	Shulton, Inc	697 Rt. 46, Clifton, N.J.
SID	George F. Siddall Co., Inc	P.O. Box 925, Spartanburg, S.C.
SOG	Signal Oil & Gas Co	P.O. Box 5008, Harrisburg Station, Houston 12, Tex.
SIM	Simpson Timber Co	2301 N. Columbia Blvd., Portland 17, Oreg.
SIN	Sinclair Refining Co	600 5th Ave., New York 20, N.Y.
SIP	James B. Sipe & Co	P.O. Box 8010, Pittsburgh 16, Pa.
GFS	G. Frederick Smith Chemical Co	867 McKinley Ave., Columbus 22, Ohio.
SK	Smith, Kline & French Laboratories	1500 Spring Garden St., Philadelphia 1, Pa.
SM	Socony Mobile Oil Co., Inc., Mobile Oil Co. Div.	612 S. Flower St., Los Angeles 54, Calif., and P.O. Box 3311, Beaumont, Tex.
SPP	Socony Paint Products Co	Metuchen, N.J.
SOH	Solar Nitrogen Chemicals, Inc., Sohio Chemical Co., Agent.	554A Guildhall Bldg., Cleveland 15, Ohio.
SOL	Solar Chemical Corp	29 Fuller St., Leominster, Mass.
SLC	Soluol Chemical Co., Inc	Green Hill and Market Sts., W. Warwick, R.I.
SVT	Solvent Chemical Co., Inc	341 Commercial St., Malden 48, Mass.
SON	Sonneborn Chemical & Refining Corp	300 Park Ave. S., New York 10, N.Y.
SNC	Sonoco Products Co	Hartsville, S.C.
SNI	Southern Nitrogen Co., Inc	P.O. Box 246, Savannah, Ga.
SOR	Southern Resin Glue Co	P.O. Box 352, Fayetteville, N.C.
SOS	Southern Sizing Co	3056 SE. Main St., East Point, Ga.
STH	South Hampton Co	P.O. Box 6966, Houston 5, Texas.
SPL	Spaulding Fibre Co., Inc	310 Wheeler St., Tonawanda, N.Y.
SPN	Spencer Chemical Co	610 Dwight Bldg., Kansas City 5, Mo.
SFC	Stahl Finish Co	26 Howley St., Peabody, Mass.
STA	A. E. Staley Manufacturing Co	22d and Eldorado Sts., Decatur, Ill.
UBS	U B S Chemical Co. Div.	
CLN	Standard Brands, Inc., Clinton Corn Processing Co. Div.	Clinton, Iowa.
SCP	Standard Chemical Products, Inc	1301 Jefferson St., Hoboken, N.J.
SCC	Standard Chlorine Chemical Co., Inc	115 Jacobus Ave., S. Kearny, N.J.
STD	Standard Dyestuff Corp	19 E. 5th St., Paterson 4, N.J.
STN	Standard Naphthalene Products Co., Inc	115 Jacobus Ave., S. Kearny, N.J.
SOC	Standard Oil Co. of California, Western Operations, Inc.	225 Bush St., San Francisco 20, Calif.
STT	Standard T Chemical Co., Inc	2600 Richmond Ter., 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.
SF	Stauffer Chemical Co	380 Madison Ave., New York 17, N.Y.
SFA	Anderson Chemical Co. Div	380 Madison Ave., New York 17, N.Y.
CHO	Calhio Chemicals Div	380 Madison Ave., New York 17, N.Y.
VIC	Victor Chemical Works Div	155 N. Wacker Dr., Chicago 6, Ill.
SCI	Stecker Chemicals, Inc	45 N. Broad St., Ridgewood, N.J.
SH	Stein, Hall & Co., Inc	285 Madison Ave., New York 17, N.Y.
STP	Stepan Chemical Co	Edens and Winnetka, Northfield, Ill.
MYW	Maywood Chemical Works Div	100 W. Hunter Ave., Maywood, N.J.
	Sterling Drug, Inc.:	
SDG	Glenbrook Laboratories Div	1450 Broadway, New York 18, N.Y.
SDH	Hilton-Davis Chemical Co. Div	2235 Langdon Farm Rd., Cincinnati 37, Ohio.
SLV	Salvo Chemical Div	Rothschild, Wis.
TMS	Thomasset Colors Div	120 Lister Ave., Newark 5, N.J.
SDW	Winthrop Laboratories Div	1450 Broadway, New York 18, N.Y.
SRR	Fred'k A. Stresen-Reuter, Inc	400 W. Roosevelt Ave., Bensenville, Ill.
SVC	Sullivan Varnish Co	410 N. Hart St., Chicago 22, Ill.
SUM	Summit Chemical Products Corp	11 William St., Belleville 9, N.J.
SNW	Sun Chemical Corp., Warwick Chemical Co. Div.	Wood River Junction, R.I.
SKG	Sunkist Growers, Inc	707 W. 5th St., Los Angeles 17, Calif.
SUN	Sun Oil Co	1608 Walnut St., Philadelphia 3, Pa.
SNO	SunOlin Chemical Co	1608 Walnut St., Philadelphia 3, Pa.
DXS	Sunray DX Oil Co	P.O. Box 381 Tulsa 2, Okla.
SNT	Suntide Refining Co	P.O. Box 658, Corpus Christi, Tex.
SWT	Swift & Co	115 W. Jackson Blvd., Chicago 4, Ill.
SYR	Synco Resins, Inc	Henry St., Bethel, Conn.
SYC	Synthetic Chemicals, Inc	335 McLean Blvd., Paterson 4, N.J.
SYP	Synthetic Products Co	1636 Wayside Rd., Cleveland 20, Ohio.
SYT	Synthron, Inc	Ryan Ave., Ashton, R.I.
SYV	Synvar Corp	726 King St., Wilmington 99, Del.

TABLE 23.--*Synthetic organic chemicals: Directory of manufacturers, 1961*--Continued

Code	Name of company	Office address
TCC	Tanatex Chemical Corp	Belleville Turnpike, Kearny, N.J.
CST	Chas. S. Tanner Co	250 S. Water St., Providence, R.I.
TAY	Taylor Fibre Co	P.O. Box 471, Norristown, Pa.
TOC	Tenneco Oil Co	P.O. Box 18, Houston, Tex.
TN	Tennessee Corp	61 Broadway, New York 6, N.Y.
TNP	Tennessee Products & Chemical Corp	2611 West End Ave., Nashville 5, Tenn.
TX	Texaco, Inc	135 E. 42d St., New York 17, N.Y.
TXB	Texas Butadiene & Chemical Corp	1801 Bank of the Southwest Bldg., Houston 2, Tex.
TUS	Texas-U.S. Chemical Co	P.O. Box 667, Port Neches, Tex.
TXC	Tex Chemical Co	20-21 Wagaraw Rd., Fair Lawn, N.J.
TKL	Thiokol Chemical Corp	P.O. Box 27, Bristol, Pa.
THC	Thompson Chemical Co	90 Mendor Ave., Pawtucket, R.I.
TIC	Ticonderoga Chemical Corp	P.O. Box 11, Leominster, Mass.
TRC	Toms River 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.
TGL	Triangle Chemical Co	206 Lower Elm St., Macon, Ga.
TRJ	Trojan Powder Co	17 N. 7th St., Allentown, Pa.
TRO	Troy Chemical Co	338 Wilson Ave., Newark 5, N.J.
TBK	Trubek Laboratories, Inc	State Highway 17, E. Rutherford, N.J.
TCH	Trylon Chemical Corp	P.O. Box 5101, Greenville, S.C.
JTC	Joseph Turner & Co	P.O. Box 88, Ridgefield, N.J.
UHL	Paul Uhlich & Co., Inc	90 West St., New York 6, N.Y.
UNG	Ungerer & Co	161 Avenue of the Americas, New York 13, N.Y.
	Union Carbide Corp.:	
UCC	Union Carbide Chemicals Co. Div	270 Park Ave., New York 17, N.Y.
UCP	Union Carbide Plastics Co. Div	270 Park Ave., New York 17, N.Y.
UCS	Silicones Div	270 Park Ave., New York 17, N.Y.
UOC	Union Oil Co. of California	461 S. Boylston St., Los Angeles 17, Calif.
UNC	United Cork Companies	Central Ave., Kearny, N.J.
URC	United Rubber & Chemical Co	P.O. Box 149, Baytown, Tex.
USB	U.S. Borax Research Corp	630 Shatto Pl., Los Angeles 5, Calif.
USO	U.S. Oil Co	P.O. Box 307, Providence, R.I.
UPF	United States Pipe & Foundry Co	3300 1st Ave. N., Birmingham 2, Ala.
USP	U.S. Plastic & Chemical Corp	Lake and Whitman Aves., Metuchen, N.J.
UPL	United States Plywood Corp	P.O. Box 1688, Redding, Calif.
USR	U.S. Rubber Co., Naugatuck Chemical Div	1230 Avenue of the Americas, New York 20, N.Y.
UVC	Universal Chemicals Corp	48 Hunt St., Central Falls, R.I.
UDI	Universal Detergents, Inc. and Petrochemicals Co.	1825 E. Spring St., Long Beach 6, Calif.
UPM	Universal Oil Products Co	30 Algonquin Rd., Des Plaines, Ill.
UPJ	Upjohn Co	301 Henrietta St., Kalamazoo 99, Mich.
UTR	Utah Resin Co., Inc	418 Kearns Bldg., Salt Lake City 1, Utah.
VAL	Valchem	1407 Broadway, New York 18, N.Y.
VSV	Valentine Sugars, Inc., Valite Div	726 Whitney Bldg., New Orleans 2, La.
VNC	Vanderbilt Chemical Corp	230 Park Ave., New York 17, N. Y.
VND	Van Dyk & Co., Inc	11 William St., Belleville 9, N.J.
VEL	Velsicol Chemical Corp	330 E. Grand Ave., Chicago 11, Ill.
VB	Vermilye-Bell	21707 Bothell Way, Bothell, Wash.
VPC	Verona-Pharma Chemical Corp	P.O. Box 385, Union, N. J.
VPT	Vickers Petroleum Co., Inc	P.O. Box 2240, Wichita 1, Kans.
VIN	Vineland Chemical Co	W. Wheat Rd., Vineland, N.J.
VC	Virginia-Carolina Chemical Corp	401 E. Main St., Richmond 6, Va.
VTM	Vitamins, Inc	809 W. 58th St., Chicago 21, Ill.
VTV	Vita-Var Corp	10 Commerce Ct., Newark 2, N.J.
FRO	Vulcan Materials Co., Frontier Chemical Co Div.	P.O. Box 545, Wichita 1, Kans.
WTM	Wallace & Tiernan, Inc	25 Main St., Belleville 9, N.J.
WTH	Harchem Div	25 Main St., Belleville 9, N.J.
WTL	Lucidol Div	1740 Military Rd., Buffalo 5, N.Y.
WJ	Warner-Jenkinson Manufacturing Co	2526 Baldwin St., St. Louis 6, Mo.
WPC	Warren Paint & Color Co	700 Wedgewood Ave., Nashville 2, Tenn.
WAS	T. F. Washburn Co	2244 Elston Ave., Chicago 14, Ill.
WCA	West Coast Adhesives Co	11104 NW. Front Ave., Portland 10, Oreg.
WDC	Western Dry Color Co	600 W. 52d St., Chicago 9, Ill.
WOI	Western Organics, Inc	12800 E. Imperial Hwy., Sante Fe Springs, Calif.
EW	Westinghouse Electric Corp	P.O. Box 146, Pittsburgh 30, Pa.
WST	Westville Chemical Corp	Route 110, Monroe, Conn.
WVA	West Virginia Pulp & Paper Co., Polychemicals Div.	230 Park Ave., New York 17, N. Y.

TABLE 23.--*Synthetic organic chemicals: Directory of manufacturers, 1961*--Continued

Code	Name of company	Office address
VEV	Geo. D. Wetherill Varnish Co----------	Haddon Ave. and White Horse Pike, Camden 3, N. J.
VRD	Weyerhaeuser Co., Wood Products Div---	So. Palmetto St., Marshfield, Wis.
VBG	White & Bagley Co----------	100 Foster St., Worcester 8, Mass.
VHI	White & Hodges, Inc----------	576 Lawrence St., Lowell, Mass.
VHL	Whitmoyer Laboratories, Inc----------	19 N. Railroad St., Myerstown, Pa.
VHW	Whittemore-Wright Co., Inc----------	62 Alford St., Boston 29, Mass.
VIC	Wica Co., Inc----------	P.O. Box 506, Charlotte, N.C.
VLM	Wilmot & Cassidy, Inc----------	108 Provost St., Brooklyn 22, N.Y.
VIL	Wilson & Co., Inc., Wilson Laboratories Div.	4221 S. Western Blvd., Chicago 9, Ill.
VTC	Witco Chemical Co., Inc----------	122 E. 42d St., New York 17, N.Y.
TAR	Tar Distilling Co., Inc. Div---------	122 E. 42d St., New York 17, N.Y.
VTU	Ultra Chemical Works, Inc. Div------	2 Wood St., Paterson 4, N. J.
VAW	W. A. Wood Co----------	108 Spring St., Everett 49, Mass.
VRC	Wood Ridge Chemical Corp----------	Park Pl. E., Wood Ridge, N.J.
VON	Woonsocket Color & Chemical Co--------	176 Sunnyside Ave., Woonsocket, R.I.
VYN	Wyandotte Chemicals Corp----------	1609 Biddle Ave., Wyandotte, Mich.
YAW	Young Aniline Works, Inc----------	2731 Boston St., Baltimore 24, Md.

APPENDIXES

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

Table 24 summarizes, for the period 1959-61, 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 1961, general imports of coal-tar chemicals entered under paragraph 27 totaled 19.0 million pounds, with a foreign invoice value of $12.3 million, compared with imports of 19.8 million pounds, valued at $11.5 million, in 1960. Most of the coal-tar chemicals imported in 1961 were declared to be competitive (duty based on "American selling price"). In terms of quantity, about 45 percent of the total imports of these products in 1961 came from West Germany; imports from that country amounted to 8.5 million pounds, compared with 7.6 million pounds in 1960. Imports from Japan in 1961 amounted to 2.6 million pounds, compared with 876,000 pounds in 1960. Imports from the United Kingdom totaled 2.1 million pounds in 1961, compared with 2.0 million pounds in 1960. In 1961 sizable quantities of products that are dutiable under paragraph 27 were also imported from Switzerland (1,900,000 pounds), Italy (1,261,000 pounds), Denmark (833,000 pounds), France (687,000 pounds), Belgium (400,000 pounds), the

TABLE 24.-- *Coal-tar intermediates and finished coal-tar products: U.S. general imports, classified by use, 1959-61*

Product	1959		1960		1961	
	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]	28,842	14,033	19,806	11,491	19,029	12,3
Finished coal-tar products, total	11,259	21,901	12,299	22,209	12,393	25,9
Dyes, total	4,251	7,867	4,053	7,619	5,152	11,0
Acid	1,117	2,391	1,135	2,471	1,313	2,9
Azoic compositions	24	48	11	20	5	
Basic	462	777	379	599	439	8
Direct	917	1,921	769	1,692	771	1,6
Disperse	94	215	124	312	177	4
Fiber-reactive	170	494	265	735	1,003	2,7
Fluorescent brightening agents	280	416	296	454	424	9
Ingrain	64	154	6	20	20	
Mordant	169	312	194	335	112	2
Solvent	32	104	28	82	55	
Sulfur	20	15	11	8	4	
Vat	888	987	809	874	702	8
All other	14	33	26	17	127	2
Synthetic organic pigments (toners and lakes)	202	401	203	562	278	8
Medicinals and pharmaceuticals	2,305	10,676	2,106	10,350	2,579	10,4
Flavor and perfume materials	559	865	749	1,226	779	1,3
All other	3,942	2,092	5,188	2,452	3,605	1,4

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

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

[1] U.S. Tariff Commission, *Imports of Coal-Tar Products, 1961*, 1962 [processed].

etherlands (290,000 pounds), Canada (171,000 pounds), and Sweden (169,000 pounds). Smaller iantities came from Poland (15,000 pounds) and Norway (4,000 pounds).

The most important individual intermediates imported in 1961 were phthalic anhydride, :etoacetanilide, Bisphenol A, adipic acid, 4,4'-diamino-2,2'-stilbenedisulfonic acid, and imma acid. In 1961, imports of phthalic anhydride, which totaled 4.9 million pounds, came :incipally from Japan, West Germany, and Italy; imports of acetoacetanilide, which amounted 745,000 pounds, came from the United Kingdom, Switzerland, and West Germany. Imports of isphenol A, which came from West Germany, totaled 686,000 pounds in 1961, and imports of dipic acid, which also came from West Germany, amounted to 496,000 pounds. Imports of 4'-diamino-2,2'-stilbenedisulfonic acid, which came principally from the United Kingdom and ie Netherlands, totaled 456,000 pounds. Imports of gamma acid, which totaled 393,000 pounds, ame from West Germany, Italy, France, and the Netherlands. Among the other important in-ividual chemicals imported, 2-methyl-4-chlorophenoxyacetic acid (MCPA) came from Denmark nd the United Kingdom; refined naphthalene, from West Germany, Japan, Switzerland, Canada, nd Belgium; and anthraquinone, from the United Kingdom, Switzerland, and West Germany. Ialeic anhydride came principally from Japan and Canada. West Germany was the source of all ie H acid and benzidine hydrochloride.

Imports in 1961 of all finished coal-tar products that are dutiable under paragraph 28 comrised 2,027 items, with a total weight of 12.4 million pounds and a foreign invoice value of 25.9 million. In 1960, imports consisted of 1,770 items, with a total weight of 12.3 million ounds and a foreign invoice value of $22.2 million. In 1961, coal-tar dyes were the most imortant group of finished coal-tar products imported. Imports of dyes amounted to $11.1 million :oreign invoice value), or 42.6 percent of the value of all imports under paragraph 28. In 1960, mports of dyes (excluding synthetic organic pigments) amounted to $7.6 million (foreign invoice alue), or 34 percent of the value of all imports under paragraph 28.

Imports of medicinals and pharmaceuticals, the next most important group of products enered under paragraph 28 in 1961, were 22 percent larger in that year than in 1960 and 12 percent arger than in 1959. In 1961, imports of medicinals and pharmaceuticals were valued at $10.9 illion (foreign invoice value), or 42 percent of total imports under paragraph 28. In 1960, imorts of medicinals and pharmaceuticals were valued at $10.4 million, or 47 percent of total imorts under paragraph 28. In 1961, imports of synthetic organic pigments (toners and lakes) ere valued at $803,000, compared with $562,000 in 1960. Imports of flavor and perfume maerials in 1961 ($1,339,000) were 9 percent greater than those in 1960 ($1,226,000). In 1961, mports of other coal-tar products entered under paragraph 28 (chiefly synthetic resins) were 24 ercent smaller than in 1960; imports of such products were valued at $1.9 million in 1961, ompared with $2.5 million in 1960.

B. Glossary of Synonymous Names of Cyclic Intermediates

Many cyclic intermediates are known in the chemical industry and trade by a variety of ames. Individuals in the industry and trade frequently are not acquainted with all the synonynous names for a given product. To bring together the synonymous names for each product, he 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 requently followed by the most common synonymous name in parentheses.

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

***Cyclic intermediates*: Glossary of synonymous names**

Common name	Standard (Chemical Abstracts) name
Acedianthrone	Aceanthra[2,1-a]aceanthrylene-5,13-dione.
1,2-Acenaphthenedione	Acenaphthenequinone.
4-Acetamido-2-aminophenol hydrochloride	3′-Amino-4′-hydroxyacetanilide hydrochloride.
p-Acetamidobenzenesulfonyl chloride	N-Acetylsulfanilyl chloride.
5-Acetamido-2-hydroxybenzoic acid	5-Acetamidosalicylic acid.
1-Acetamido-2-methoxynaphthalene	N-(2-Methoxy-1-naphthyl)acetamide.
1-Acetamido-2-naphthol	N-(2-Hydroxy-1-naphthyl)acetamide.
1-Acetamido-7-naphthol	N-(7-Hydroxy-1-naphthyl)acetamide.
2-Acetamido-4-nitrophenol	2′-Hydroxy-5′-nitroacetanilide.
5-Acetamido-orthanilic acid	5-Acetamido-2-aminobenzenesulfonic acid.
Acetanilide-p-sulfonic acid	N-Acetylsulfanilic acid.
Acetanilid sulfon chloride	N-Acetylsulfanilyl chloride.
Acetate leuco violet	1,4-Diamino-2,3-dihydroanthraquinone.
p-Acetoacetchloranilide	4′-Chloroacetoacetanilide.
Acetoacet-o-chloroanilide	2′-Chloroacetoacetanilide.
o-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 ac
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 ac
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
minoazoxylenetoluidine	4-(2,4-Xylylazo)-o-toluidine [NH_2=1].
-Aminobenzenearsonic acid	Arsanilic acid [AsO_3H_2=1].
-Aminobenzenesulfonanilide	Metanilanilide.
-Aminobenzenesulfonanilide	Sulfanilanilide.
-Aminobenzenesulfonic acid	Metanilic acid [SO_3H=1].
-Aminobenzenesulfonic acid	Sulfanilic acid [SO_3H=1].
-Aminobenzoic acid	Anthranilic acid [COOH=1].
-Aminobenzoyl I(or J) acid	6-(m-Aminobenzamido)-1-naphthol-3-sulfonic acid.
-Aminobenzoyl I(or J) acid	6-(p-Aminobenzamido)-1-naphthol-3-sulfonic acid.
-Aminobenzoyl-m-phenylenediamine	2,4,4′-Triaminobenzophenone.
-Aminobiphenyl	2-Biphenylamine.
-Aminobiphenyl	2-Biphenylamine.
-Aminobiphenyl	4-Biphenylamine.
-Amino-4-bromoanthraquinone-2,5-disulfonic acid	5-Amino-8-bromo-1,6-anthraquinonedisulfonic acid.
-Amino-2-bromo-4-(p-toluidine)anthraquinone	1-Amino-2-bromo-4-(p-toluidino)anthraquinone.
-Amino-N-butyl-p-anisolesulfonamide	N^1-Butyl-4-methoxymetanilamide [SO_2NH_2=1].
-Amino-N-(n-butyl)phenol	p-Butylaminophenol.
-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.
n-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.

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***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
N-(p-Anisyl)-4-chloroanthranilic acid	4-Chloro-N-(p-methoxyphenyl)anthranilic acid [COOH
N-(m-Anisyl)-4-chloroanthranilic acid	4-Chloro-N-(m-methoxyphenyl)anthranilic acid [COOH
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
-Antipyrinecarboxylic acid	Antipyric acid.
,p′-Azobis(N,N-dimethylaniline hydrochloride)	p-Dimethylaminobenzenediazonium chloride.
,4′-Azobisdiphenylamine	p-Anilinobenzenediazonium chloride.
zohydroxyaniline	p-(p-Aminophenylazo)phenol.
zoxyaniline	3,3′-Azoxydianiline.
,m′-Azoxybisaniline	3,3′-Azoxydianiline.
enzal chloride	α,α-Dichlorotoluene.
enzaldehydedisulfonic acid	4-Formyl-m-benzenedisulfonic acid.
enzaldehydemonosulfonic acid	o-Formylbenzenesulfonic acid.
-(4-Benzamido-1-anthraquinonylimino)-5-benzamido-anthraquinone.	4,5′-Dibenzamido-1,1′-iminodianthraquinone.
-[3-(4-Benzamido-2,5-diethoxyphenyl)-1-methyldiazo-amino]ethanesulfonic acid.	2-[3-(4-Benzamido-2,5-diethoxyphenyl)-1-methyl-triazen-3-yl]ethanesulfonic acid.
-(4-Benzamido-2,5-diethoxyphenyl)-N-methyldiazo-taurine.	2-[3-(4-Benzamido-2,5-diethoxyphenyl)-1-methyl-triazen-3-yl]ethanesulfonic acid.
-(4-Benzamido-2,5-diethoxyphenyl)-3-sulfoethyl-1-methyltriazene.	2-[3-(4-Benzamido-2,5-diethoxyphenyl)-1-methyl-triazen-3-yl]ethanesulfonic acid.
3-(4-Benzamido-6-methoxy-m-tolyl)-1-methyldiazo-amino]acetic acid.	[3-(4-Benzamido-6-methoxy-m-tolyl)-1-methyltriazen-3-yl]acetic acid.
3-(4-Benzamido-6-methoxy-m-tolyl)-N-methyldiazo]-glycine.	[3-(4-Benzamido-6-methoxy-m-tolyl)-1-methyltriazen-3-yl]acetic acid.
enzanthrone	7H-Benz[de]anthracen-7-one.
enzanthronedianthraquinonyldiimide	3,9-Bis[1-anthraquinonylamino]-7H-benz[de]anthracen-7-one.
enzeneazobenzene	Azobenzene.
enzene-1,3-dicarboxylic acid	Isophthalic acid.
-Benzenedicarboxylic acid	Terephthalic acid.
,3,5-Benzenetriol	Phloroglucinol.
enzidine disulfonic acid	4,4′-Diamino-2,2′-biphenyldisulfonic acid.
,2′-Benzidinedisulfonic acid	4,4′-Diamino-2,2′-biphenyldisulfonic acid.
enzidine sulfonic acid	4,4′-Diamino-3-biphenylsulfonic acid.
enz[cd]indol-2(1H)-one	Naphthostyril.
enzocaine (nonmedicinal grade)	p-Aminobenzoic acid, ethyl ester.
-Benzofurylcyanomethyl ketone	2-Benzofuranacetonitrile.
H-1-Benzopyran-2-one	Coumarin.
,2-Benzopyrone	Coumarin.
enzotrichloride	α,α,α -Trichlorotoluene.
enzoylacetanilide	2-Benzoylacetanilide.
-Benzoylacetanilide	2-Benzoylacetanilide.
-Benzoylamino-4-aminoanthraquinone	1-Amino-4-benzamidoanthraquinone.
-Benzoylamino-1,4-diethoxybenzene	2′,5′-Diethoxybenzanilide.
-Benzoylamino-1,4-dimethoxybenzene	2′,5′-Dimethoxybenzanilide.
-Benzoylamino-2-nitrodimethoxybenzene	2′,5′-Dimethoxy-4′-nitrobenzanilide.
-Benzoylamino-2-nitrohydroquinone, diethyl ester	2′,5′-Diethoxy-4′-nitrobenzanilide.
enzoyl J acid	6-Benzamido-1-naphthol-3-sulfonic acid.
-Benzoylthiophene	Phenyl-2-thienyl ketone.
-Benzylacetamide	Hydrocinnamamide.
-Benzyl-p-aminophenol hydrochloride	4-Amino-α-phenyl-m-cresol hydrochloride.
enzyl chloride	α-Chlorotoluene.
-Benzyl-p-chlorophenol	4-Chloro-α-phenyl-o-cresol [OH=1].
enzyl cyanide	Phenylacetonitrile.
-Benzyl-ethylaniline	N-Ethyl-N-phenylbenzylamine.
-Benzyl-N-ethyl-p-nitrosoaniline	N-Ethyl-N-(p-nitrosophenyl)benzylamine.
-Benzyl-7-hydroxy-4-methylcoumarin	3-Benzyl-4-methylumbelliferone.
enzylidineacetophenone	Chalcone.
-Benzylidineaminoantipyrine	4-Benzylideneiminoantipyrine.
enzyl mercaptan	α-Toluenethiol.
-Benzylphenylcarbamate	α-Phenyl-p-cresol carbamate.
,p′-Biacetoacetanilide	4′,4′′′-Biacetoacetanilide.
ibenzal	Stilbene.
ibenzoyl	Benzil.
ibenzylidene	Stilbene.
-Biphenylamine	2-Biphenylamine.
iphenylene oxide	Dibenzofuran.
,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 este
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

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.
x-Chloro-2-methoxy-5-nitrotoluene	2-(Chloromethyl)-4-nitroanisole [CH_3O=1].
[3-(5-Chloro-2-methoxyphenyl)-1-methyldiazoamino]-acetic acid.	N-(5-Chloro-2-methoxyphenylazo)-N-methylglycine.
Chloromethylanthraquinone	1-Chloro-2-methylanthraquinone.
o-Chloro-p-nitroaniline	2-Chloro-4-nitroaniline.
p-Chloro-o-nitroaniline	4-Chloro-2-nitroaniline.
Chloro-o-nitrobenzene	1-Chloro-2-nitrobenzene.
4-Chloro-3-nitrobenzotrifluoride	4-Chloro-α,α,α-trifluoro-3-nitrotoluene.
4-Chloro-2-nitro-1-phenol-6-sulfonic acid	4-Chloro-6-nitro-1-phenol-2-sulfonic acid.
4-Chloro-2-nitrophenyl ether	1-(4-Chloro-2-nitrophenoxy)benzene.
2-Chlorophenol	o-Chlorophenol.
4-Chlorophenol	p-Chlorophenol.
Chlorophenylhydrazine-p-sulfonic acid	4-Chloro-3-hydrazinobenzenesulfonic acid.
1-(m-Chlorophenyl)-3-methyl-5-pyrazolone	1-(m-Chlorophenyl)-3-methyl-2-pyrazolin-5-one.
2-Chloro-o-phenyl phenol	2-Chloro-6-phenylphenol.
1-(6-Chloro-4-sulfophenyl)-3-methyl-2-pyrazolin-5-one	5-Chloro-4-(3-methyl-5-oxo-2-pyrazolin-1-yl)benzene-sulfonic acid.
1-(2-Chloro-4-sulfophenyl)-3-methyl-5-pyrazolone	5-Chloro-4-(3-methyl-5-oxo-2-pyrazolin-1-yl)benzene-sulfonic acid.
1-(6-Chloro-3-sulfophenyl)-3-methyl-5-pyrazolone	4-Chloro-3-(3-methyl-5-oxo-2-pyrazolin-1-yl)benzene-sulfonic acid.
o-Chloro-p-toluene sodium sulfonate	3-Chloro-p-toluenesulfonic acid, sodium salt [SO_3H=1].
4-Chlorotoluene-2-sulfonic acid	5-Chloro-o-toluenesulfonic acid [SO_3H=1].
m-Chlorotoluenethioglycolic acid	(4-Chloro-o-tolylthio)acetic acid.
4-Chloro-o-toluidine [CH_3=1]	5-Chloro-o-toluidine [NH_2=1].
5-Chloro-2-toluidine [CH_3=1]	4-Chloro-o-toluidine [NH_2=1].
5-Chloro-o-toluidine [CH_3=1]	4-Chloro-o-toluidine [NH_2=1].
o-Chloro-m-toluidine-p-sulfonic acid	2-Amino-5-chloro-p-toluenesulfonic acid [SO_3H=1].
2-Chloro-p-toluidine-5-sulfonic acid	6-Amino-4-chloro-m-toluenesulfonic acid [SO_3H=1].
2-Chloro-5-toluidine-4-sulfonic acid	2-Amino-5-chloro-p-toluenesulfonic acid [SO_3H=1].
4-Chloro-o-tolylmercaptoacetic acid	(4-Chloro-o-tolylthio)acetic acid.
1-(5-Chloro-o-tolyl)-3-methyl-3-triazeneacetic acid	N-(5-Chloro-o-tolyl)-N-methylglycine.
Chlorotolylthioglycolic acid	(4-Chloro-o-tolylthio)acetic acid.
Chloro-sym-xylenol	4-Chloro-3,5-xylenol.
Chloroxylidenesulfonic acid	6-Amino-3-chloro-2,5-xylenesulfonic acid [SO_3H=1].
4-Chloro-2,5-xylylmercaptoacetic acid	(4-Chloro-2,5-xylylthio)acetic acid.
Chromotropic acid	4,5-Dihydroxy-2,7-naphthalenedisulfonic acid.
Cinnamene	Styrene.
1,6-Cleve's acid	5-Amino-2-naphthalenesulfonic acid.
1,7-Cleve's acid	8-Amino-2-naphthalenesulfonic acid.
Cleve's acid, mixed	5(and 8)-Amino-2-naphthalenesulfonic acid.
m-Cresidine	2-Methyl-p-anisidine [NH_2=1].
Cresidine or p-Cresidine	5-Methyl-o-anisidine [NH_2=1].
m-Cresol methyl ether	m-Methylanisole [CH_3O=1].
m-Cresolsulfonic acid	5-Hydroxy-m-toluenesulfonic acid [SO_3H=1].
o-Cresotic acid	2,3-Cresotic acid.
Y-Cresotic acid	2,4-Cresotic acid.
o-Cresotinic acid	2,3-Cresotic acid.
Cresyldisulfide	p-Tolyl disulfide.
m-Cresyl methyl ether	m-Methylanisole [CH_3O=1].
Cumaldehyde	p-Isopropylbenzaldehyde.
psi-Cumene	1,2,4-Trimethylbenzene.
psi-Cumidine	2,4,5-Trimethylaniline.
Cuminaldehyde	p-Isopropylbenzaldehyde.
2-Cyanopyridine	Picolinonitrile.
3-Cyanopyridine	Nicotinonitrile.
4-Cyanopyridine	Isonicotinonitrile.
Dahl's acid	6-Amino-1-naphthalenesulfonic acid.
Dehydrothio-p-toluidine	2-(p-Aminophenyl)-6-methylbenzothiazole.
Desoxyanisoin	4′-Methoxy-2-(p-methoxyphenyl)acetophenone.
Developer Z	3-Methyl-1-phenyl-2-pyrazolin-5-one.
3,6-Diaminoacridine	Proflavine base.

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***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-carbox acid.

***Cyclic intermediates: Glossary of synonymous names*--Continued**

Common name	Standard (Chemical Abstracts) name
?,5-Dichloro-4-sulfobenzenediazohydroxide	2,6-Dichloro-4-hydroxydiazobenzenesulfonic acid.
.-(2,5-Dichloro-4-sulfophenyl)-3-methyl-5-pyrazolone	2,5-Dichloro-4-(3-methyl-5-oxo-2-pyrazolin-1-yl) benzenesulfonic acid.
?,4-Dichloro-5-(p-toluenesulfonamido)-1-naphthol	N-(6,8-Dichloro-5-hydroxy-1-naphthyl)-p-toluene-sulfonamide [SO_2NH_2=1].
)icresyldisulfide	p-Tolyl disulfide.
)icyclohexyl	Bicyclohexyl.
)iethanolaniline	2,2′-(Phenylimino)diethanol.
)iethanol-m-toluidine	2,2′-(m-Tolylimino)diethanol.
ι,4-Diethoxybenzene	p-Diethoxybenzene.
N-(2,5-Diethoxy-4-nitrophenyl)benzamide	2′,5′-Diethoxy-4′-nitrobenzanilide.
N-(2,5-Diethoxyphenol)benzamide	2′,5′-Diethoxybenzanilide.
)iethylaniline-m-sulfonic acid	N,N-Diethylmetanilic acid [SO_3H=1].
)iformyl-m-tolylenediamine	N^2,N^5-Diformyltoluene-2,5-diamine [CH_3=1].
ι,2-Dihydroacenaphthylene	Acenaphthene.
),10-Dihydroacridine	Acridan.
ι,4-Dihydro-4-oxo-2,6-pyridinedicarboxylic acid	Chelidamic acid.
ι,3-Dihydroxyanthraquinone	Xanthopurpurin.
ι,4-Dihydroxyanthraquinone	Quinizarin.
ι,5-Dihydroxyanthraquinone	Anthrarufin.
ι,8-Dihydroxyanthraquinone	Chrysazin.
?,6-Dihydroxyanthraquinone	Anthraflavic acid.
?,4-Dihydroxybenzoic acid	β-Resorcylic acid.
)ihydroxybiphenyl	Biphenol.
?,3-Dihydroxy-1,4-diaminoanthraquinone	1,4-Diaminohystazarin.
)ihydroxydibenzanthrone	16,17-Dihydroxyviolanthrone.
;,5′-Dihydroxydi-2-naphthylamine-7,7′-disulfonic acid	6,6′-Iminobis[1-naphthol-3-sulfonic acid].
ι,5-Dihydroxy-4,8-dinitroanthraquinone	4,8-Dinitroanthrarufin.
),p′-Dihydroxydiphenyldimethylmethane	4,4′-Isopropylidenediphenol.
',4′-Dihydroxydiphenylsulfone	4,4′-Sulfonyldiphenol.
;,5-Dihydroxy-7,7′-disulfonic-2,2′-dinaphthylamine	6,6′-Iminobis[1-naphthol-3-sulfonic acid].
)ihydroxyethylaniline	2,2′-(Phenylimino)diethanol.
N,N-Di(β-hydroxyethyl)aniline	2,2′-(Phenylimino)diethanol.
)ihydroxyethyl-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=
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=
2-[3-(2-Methoxy-4-nitrophenyl)-1-methyltriazeno]-5-sulfobenzoic acid.	2-[3-(2-Methoxy-4-nitrophenyl)-1-methyltriazen-3-y 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-anthraquinonesulfonic acid.
β-Toluenesulfonic acid	p-Toluenesulfonic acid, methyl ester [SO_3H=1].
Toluene-2,4,6-triol	2-Methylphloroglucinol.
4-Toluic acid	p-Toluic acid [COOH=1].
α-Toluic acid	Phenylacetic acid.
m-Toluidine-o-sulfonic acid	4-Amino-o-toluenesulfonic acid [SO_3H=1].
m-Toluidine-p-sulfonic acid	2-Amino-p-toluenesulfonic acid [SO_3H=1].
o-Toluidine-m-sulfonic acid	4-Amino-m-toluenesulfonic acid [SO_3H=1].
o-Toluidine-omega-sulfonic acid	(o-Toluidino)methanesulfonic acid [SO_3H=1].
p-Toluidine-m-sulfonic acid	6-Amino-m-toluenesulfonic acid [SO_3H=1].
p-Toluidine-o-sulfonic acid	5-Amino-o-toluenesulfonic acid [SO_3H=1].
p-Toluidine-o-sulfonic acid, isopropyl ester	5-Amino-o-toluenesulfonic acid, isopropyl ester [SO_3H=1].
3-Toluidine-6-sulfonic acid	4-Amino-o-toluenesulfonic acid [SO_3H=1].
6-(p-Toluidino)metanilic acid	5-Amino-2-(p-toluidino)benzenesulfonic acid.
α-Tolunitrile	Phenylacetonitrile.
4-Tolunitrile	p-Tolunitrile.
1,3-(p-Tolylamino)anthraquinone	1,3-Di(p-toluidino)anthraquinone.
p-Tolyl-o-benzoic acid	o-(p-Tolyl)benzoic acid [COOH=1].
o-Tolylcarbinol	o-Methylbenzyl alcohol.
Tolylenediamine	Toluenediamine.
p-m-Tolylenediamine	Toluene-2,5-diamine.
4-m-Tolylenediamine	Toluene-2,4-diamine.

***Cyclic intermediates*: *Glossary of synonymous names*--Continued**

Common name	Standard (Chemical Abstracts) name
5-m-Tolylenediamine	Toluene-3,5-diamine.
m-Tolylenediaminesulfonic acid	4,6-Diamino-m-toluenesulfonic acid [SO_3H=1].
m-Tolylene diisocyanates	Isocyanic acid, 4(and2)-methyl-m-phenylene ester.
[3-(p-Tolyl)-1-methyltriazeno]acetic acid	[3-(p-Tolyl)-1-methyltriazen-3-yl] acetic acid.
Tolyl peri acid	8-(p-Toluidino)-1-naphthalenesulfonic acid.
2,4,6-Triaminobenzene trihydrochloride	1,3,5-Benzenetriamine trihydrochloride.
2,4,6-Triaminotoluene trihydrochloride	Toluene-2,4,6-triamine trihydrochloride.
Trianthraquinonyldi-imide	1,4-Bis[1-anthraquinonylamino]anthraquinone.
1,4-Trianthrimide	1,4-Bis[1-anthraquinonylamino]anthraquinone.
Trichlorophenylsilicane	Trichlorophenylsilane.
1,2,4-Trihydroxyanthraquinone	Purpurin.
1,2,6-Trihydroxyanthraquinone	Flavopurpurin.
2,4,6-Trihydroxytoluene	2-Methylphloroglucinol.
1,3,5-Trimethylbenzene	Mesitylene.
2,4,6-Trimethylpyridine	s-Collidine.
Trinitrophenol	Picric acid.
2,4,6-Trinitroresorcin	Styphnic acid.
1,2,4-Trioxyanthraquinone	Purpurin.
1,3,5-Triphenylhexahydro-s-triazine	Hexahydro-1,3,5-triphenyl-s-triazine.
Triphenyl silicon chloride	Chlorotriphenylsilane.
3,3'-Ureyleneaniline	3,3'-Diaminocarbanilide.
Vinylbenzene	Styrene.
Vinyltoluene	Methylstyrene.
Violanthrene	Dinaphtho[1,2,3-cd,3',2',1'-lm]perylene.
Xenylamine	4-Biphenylamine.
m-Xylidine acetate	2,4-Xylidine acetate.
m-Xylidinesulfonic acid	2-Amino-3,5-xylenesulfonic acid [SO_3H=1].
Xylyl chloride	4-Chloro-m-xylene.

C. List of *Colour Index* and Common Names for Toners and Lakes

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

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

Toners and lakes: List of Colour Index *and common names*

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

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

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

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