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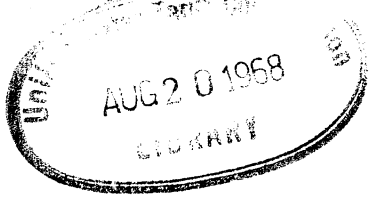

SYNTHETIC ORGANIC CHEMICALS

United States Production and Sales, 1966

TC Publication 248

Fiftieth Annual Edition

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UNITED STATES TARIFF COMMISSION

SYNTHETIC ORGANIC CHEMICALS

United States Production and Sales, 1966

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

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CONTENTS

Introduction

This is the fiftieth 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 1966 on crude organic chemicals derived from coal, natural gas, and petroleum; on intermediates; and on finished synthetic organic chemical products. The finished products are grouped according to their principal use--dyes, synthetic organic pigments, medicinal chemicals, flavor and perfume materials, plastics and resin materials, rubber-processing chemicals, elastomers, plasticizers, surface-active agents, pesticides and related products, 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 given in this report from information supplied by approximately 825 primary manufacturers, listed in part III.

The first section of the report includes the statistics on all products and groups of products for which information can be published. The second section lists all the chemicals and chemical products on which data are reported and identifies the manufacturers of each. Each reporting company has been assigned an identification symbol consisting of a combination of not more than three capital letters, selected in most instances with the approval of the manufacturer, and usually bearing some relationship to the company name. The identification symbols are permanent and, except for such changes as may be necessary, will be used in all future reports in this series. This report 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. More than half of the total production of intermediates is not sold directly to the ultimate consumer, but is used by the producing companies themselves in their manufacturing processes. The statistics given in this report include data for all known domestic producers of the items covered.

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 domestic and foreign sale. The quantities reported as produced, therefore, generally exceed the quantities reported as sold. Some of these differences, however, are attributable to changes in 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 bonafide 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 price, 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 of 95 percent or more purity 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, and the statistics on certain plastics and resins, which are reported on a dry basis. 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 the 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 unless there are three or more producers no one or two of which may be predominant. Moreover, even when there are three or more producers, statistics are not given if there is any possibility that their publication would violate the statutory provisions relating to unlawful disclosure of information accepted in confidence by the Commission.[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, and data furnished to the Division of Bituminous Coal, U.S. Bureau of Mines, by coke-oven operators.

Statistics on U.S. general imports in 1966 of benzenoid intermediates and finished benzenoid products that entered under schedule 4, parts 1B and 1C, of the Tariff Schedules of the United States are given in the appendix.

Information on synonymous names of organic chemicals included in this report may be found in the *SOCMA Handbook: Commercial Organic Chemical Names*, recently published by the Chemical Abstracts Service of the American Chemical Society, or the *Colour Index* (2d edition), published in 1956 by the Society of Dyers and Colourists.

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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 1966 was 169,174 million pounds--an increase of 11.6 percent over the output in 1965 (see table 1). Sales of these materials in 1966, which totaled 90,175 million pounds, valued at $10,999 million, were 12.4 percent larger than in 1965 in terms of quantity and 11.1 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 1966, production of all synthetic organic chemicals, including cyclic intermediates and finished chemical products, totaled 100,627 million pounds, or 13.2 percent more than the output in 1965 (see table 1). Production of plastics and resin materials (13,585 million pounds) was 16.3 percent larger in 1966 than in 1965; that of medicinal chemicals (185 million pounds) was 16.3 percent larger; that of pesticides and related products (1,013 million pounds) was 15.5 percent larger; that of cyclic intermediates (19,467 million pounds) was 15.4 percent larger; and that of miscellaneous organic chemicals (57,253 million pounds) was 12.6 percent larger.

The output of most other groups of synthetic organic chemicals also increased in 1966 compared with 1965, with rubber-processing chemicals and plasticizer chemicals showing increases of more than 12 percent. Production of surface-active agents (3,321 million pounds) showed the smallest percentage gain in 1966 over 1965 (4.8 percent).

TABLE 1.--*Synthetic organic chemicals and their raw materials: U.S. production and sales, 1965 and 1966*

Chemical	Production			Sales					
				Quantity			Value		
	1965	1966	Increase or decrease (-), 1966 over 1965[1]	1965	1966	Increase or decrease (-), 1966 over 1965[1]	1965	1966	Increase or decrease (-), 1966 over 1965[1]
	Million pounds	*Million pounds*	*Percent*	*Million pounds*	*Million pounds*	*Percent*	*Million dollars*	*Million dollars*	*Percent*
Grand total[2]	151,606	169,174	11.6	80,204	90,175	12.4	9,898	10,999	11.1
Tar	8,027	8,019	-.1	3,662	3,613	-1.4	37	35	-5.7
Tar crudes	10,205	10,062	-1.4	6,332	6,348	.3	136	140	2.9
Crude products from petroleum and natural gas	44,510	50,467	13.4	23,402	27,494	17.5	705	865	22.8
Synthetic organic chemicals, total[2]	88,864	100,627	13.2	46,807	52,720	12.6	9,021	9,958	10.4
Intermediates	16,865	19,467	15.4	7,551	8,852	17.2	814	925	13.6
Dyes	207	219	5.8	190	204	7.5	292	331	13.4
Synthetic organic pigments	48	51	6.4	38	43	13.9	94	108	14.9
Medicinal chemicals	160	185	16.3	129	136	5.7	362	398	10.0
Flavor and perfume materials	99	111	11.5	88	98	12.1	85	93	9.0
Plastics and resin materials	11,685	13,585	16.3	10,053	11,472	14.1	2,504	2,740	9.4
Rubber-processing chemicals	252	283	12.5	194	209	8.0	123	138	12.0
Elastomers (synthetic rubbers)	3,592	3,929	9.4	3,041	3,411	12.2	843	918	8.8
Plasticizers	1,073	1,209	12.7	1,022	1,156	13.1	214	246	14.7
Surface-active agents	3,170	3,321	4.8	1,698	1,766	4.0	300	315	4.9
Pesticides and related products	877	1,013	15.5	764	822	7.6	497	584	17.4
Miscellaneous chemicals	50,836	57,253	12.6	22,040	24,549	11.4	2,890	3,162	9.4

[1] Percentages calculated from figures rounded to thousands.
[2] Because of rounding, figures may not add to the totals shown.

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 tar and oil-gas tar reflects the consumption of manufactured gas for industrial and household use. Water-gas and oil-gas tars have properties intermediate between those of petroleum asphalts and coal tars. Petroleum asphalts are not usually considered to be raw materials for chemicals.

The quantity of tar produced from coal in the United States in 1966 was 802 million gallons, or 0.1 percent less than the 803 million gallons produced in 1965. U.S. production of water-gas tar and oil-gas tar was not reported to the Commission for 1965 or 1966; production of these tars amounted to 19 million gallons in 1962, the last year for which production was reported to the Tariff Commission.

Total consumption of tar in 1966 amounted to 763 million gallons, of which 605 million gallons was consumed by distillation, 132 million gallons as fuel, and 26 million gallons in miscellaneous uses.

TABLE 2.--*Tar: U.S. production and consumption, 1965 and 1966*

[In thousands of gallons]

Product	1965	1966
PRODUCTION		
Coal tar from coke-oven byproduct plants, total[1]	802,738	801,867
CONSUMPTION		
Total	765,946	762,904
Tar consumed by distillation, total	615,816	604,582
Coal tar distilled or topped by coke-oven operators[1]	312,079	302,873
Coal tar, water-gas tar, distilled by producers and tar distillers[2]	303,737	301,709
Tar consumed chiefly as fuel[1]	122,961	131,890
Tar consumed otherwise than by distillation or as fuel, total	27,169	26,432
Coal tar consumed at coke-oven plants for roads and upkeep[1]	871	2,192
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	26,298	24,240

[1] Reported to the U.S. Bureau of Mines.

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

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. Data for materials derived from petroleum are included, for the most part, with the statistics for materials derived from coal tar, which are shown in tables 3 and 4A.[1]

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

Domestic production of industrial and specification grades of benzene reported by coke-oven operators and petroleum refinery operators[2] in 1966 amounted to 955 million gallons--15.5 percent more than the 827 million gallons reported for 1965. These statistics include data for benzene produced from light oil and petroleum. Sales of benzene by coke-oven operators and petroleum operators in 1966 amounted to 606 million gallons, valued at $147 million, compared with 511 million gallons, valued at $123 million, in 1965. In 1966 the output of toluene [2] (including material produced for use in blending in aviation fuel) amounted to 584 million gallons--6.4 percent more than the 549 million gallons reported for 1965. Sales of toluene in 1966 were 361 million gallons, valued at $62 million, compared with 325 million gallons, valued at $54 million, in 1965. The output of xylene[2] in 1966 (including that produced for blending in motor fuels) was 329 million gallons, compared with 340 million gallons in 1965. About 98 percent of the 329 million gallons of xylene produced in 1966 was obtained from petroleum sources.

Production of crude naphthalene in 1966 (including 354 million pounds of petroleum-derived naphthalene) amounted to 848 million pounds, compared with 811 million pounds in 1965. In 1966 the output of creosote oil for wood preservation was 133 million gallons (100-percent creosote basis), compared with 124 million gallons in 1965. Production of road tar and tar (crude and refined) for other uses in 1966 was 68 million gallons, compared with 85 million gallons in 1965.

TABLE 3.--*Tar and tar crudes: Summary of U.S. production of specified products, average 1957-59, annual 1965 and 1966*

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

Chemical	Unit of quantity	Average 1957-59	1965	1966	Increase, or decrease (-)	
					1966 over 1957-59	1966 over 1965
					Percent	*Percent*
Tar[1]	1,000 gal--	760,816	802,738	801,867	5.4	-.1
Benzene:						
Tar distillers[2]	1,000 gal--	27,130	...	...	...	...
Coke-oven operators	1,000 gal--	139,121	121,917	113,932	-18.1	-6.6
Petroleum operators	1,000 gal--	155,694	704,993	841,340	440.4	19.3
Total	1,000 gal--	321,945	826,910	955,272	196.7	15.5
Toluene:						
Tar distillers	1,000 gal--	4,162	...	...	...	...
Coke-oven operators	1,000 gal--	31,007	24,816	22,791	-26.5	-8.2
Petroleum operators	1,000 gal--	204,421	524,013	561,103	174.5	7.1
Total	1,000 gal--	239,590	548,829	583,894	143.7	6.4
Xylene:						
Tar distillers	1,000 gal--	795	...	...	...	...
Coke-oven operators	1,000 gal--	8,908	6,741	6,124	-31.3	-9.2
Petroleum operators	1,000 gal--	180,021	[3]333,063	[3]322,560	79.2	-3.2
Total	1,000 gal--	189,724	339,804	328,684	73.2	-3.3
Naphthalene:						
Crude[4]	1,000 lb---	396,882	463,980	493,634	24.4	6.4
Petroleum naphthalene, all grades	1,000 lb---	...	346,620	354,068	...	2.1
Total	1,000 lb---	396,882	810,600	847,702	113.6	4.6
Creosote oil (Dead oil):[5]						
Distillate as such (100% creosote basis)	1,000 gal--	90,913	111,087	114,725	26.2	3.3
Creosote content of coal-tar solution (100% creosote basis)	1,000 gal--	14,172	12,515	18,141	28.0	45.0
Total	1,000 gal--	105,085	123,602	132,866	26.4	7.5

[1] Includes data for oil-gas, water-gas, and gas-retort tar reported to the American Gas Association for 1957-59 only, and for coal tar reported to the Division of Bituminous Coal, U.S. Bureau of Mines.

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

[3] Includes data for material produced for use in blending motor fuels. Statistics are not comparable with monthly figures, which included some o-xylene now shown on table 7A.

[4] Naphthalene solidifying at less than 79° C. Figures include production by tar distillers and coke-oven operators and represent combined data for the commercial grades of naphthalene to avoid disclosure of the operations of individual companies. Because of conversion between grades, the figures may include some duplication.

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

[2] Statistics on production and sales of benzene, toluene, and xylene by tar distillers cannot be shown because publication would reveal the operations of individual companies.

TABLE 4A.-- *Tar crudes: U.S. production and sales, 1966*

[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--	262,640	83,274	11,219	$0.14
Intermediate light oil: Coke-oven operators	1,000 gal--	5,978	3,622	128	.04
Light-oil distillates:					
Benzene, specification and industrial grades, total[2] [3]	1,000 gal--	955,272	606,050	147,305	.24
Coke-oven operators	1,000 gal--	113,932	112,095	27,333	.24
Petroleum operators	1,000 gal--	841,340	493,955	119,972	.24
Toluene, all grades, total[2] [3]	1,000 gal--	583,894	361,358	62,137	.17
Coke-oven operators	1,000 gal--	22,791	22,622	4,309	.19
Petroleum operators	1,000 gal--	561,103	338,736	57,828	.17
Xylene, all grades, total[2] [3]	1,000 gal--	328,684	236,792	42,585	.18
Coke-oven operators	1,000 gal--	6,124	6,410	1,405	.22
Petroleum operators	1,000 gal--	322,560	230,382	41,180	.18
Solvent naphtha:[2] Coke-oven operators	1,000 gal--	3,161	2,954	547	.18
Other light-oil distillates:[2] Coke-oven operators	1,000 gal--	6,348	3,076	272	.09
Naphthalene, crude (tar distillers and coke-oven operators), total[4]	1,000 lb---	493,634	270,896	11,077	.04
Solidifying at--					
Less than 74° C	1,000 lb---	85,770	...	...	...
74° C. to less than 79° C	1,000 lb---	407,864	...	...	...
Crude tar-acid oils:[2] Coke-oven operators	1,000 gal--	27,477	27,267	4,476	.16
Creosote oil (Dead oil) (tar distillers and coke-oven operators) (100% creosote basis), total[5]	1,000 gal--	132,866	114,336	[6]23,427	[6].20
Distillate as such (100% creosote basis)	1,000 gal--	114,725	96,193	18,414	.19
Creosote content of coal-tar solution (100% creosote basis)	1,000 gal--	18,141	18,143	[6]5,013	[6].28
All other distillate products[7]	1,000 gal--	...	14,760	2,657	.18
Tar, road	1,000 gal--	55,434	53,634	7,263	.14
Tar (crude and refined) for other uses[8]	1,000 gal--	12,489	9,492	1,986	.21
Pitch of tar:					
Hard (water softening point above 160° F.)	1,000 tons-	978	732	28,641	39.13
Other[9]	1,000 tons-	957	435	14,424	33.16

[1] Unit value per gallon, or ton, as specified.

[2] Data reported by tar distillers are not included because publication would disclose the operations of individual companies. Production of benzene and toluene by tar distillers increased in 1966, compared with 1965; production of xylene decreased. The annual production statistics for petroleum operators on benzene, toluene, and xylene are not comparable with the combined monthly production figures, due to fiscal year revisions.

[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] Statistics include only data for creosote oil sold for, or used in, wood preserving. In 1966, production of creosote in coal-tar solution (100% solution basis) amounted to 27,791 thousand gallons; sales were 27,604 thousand gallons, valued at 5,013 thousand dollars, with a unit value of $0.18 per gallon.

[6] Includes value of coal tar used in preparing creosote in coal-tar solution.

[7] Includes data for pyridine crude bases, 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.

[9] Includes soft and medium pitch of tar (water softening points less than 110° F., and 110° F. to 160° F. ASTM D61-24), pitch of tar coke, and pitch emulsion.

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. It is estimated that, after duplication has been eliminated insofar as possible, the net value of the output of these products and of tar burned as fuel was $552 million in 1966, compared with $500 million in 1965 and $460 million in 1964.

Crude Products from Petroleum and Natural Gas for Chemical Conversion

Crude products that are derived from petroleum and natural gas are related to the intermediates and finished products made from such crudes in much the same way that crude products derived from the distillation of coal tar are related to their intermediates and finished products. Many of the crude products derived from petroleum are identical with those derived from coal tar (e.g., benzene, toluene, and xylene). Considerable duplication exists in the statistics on the production and sales of petroleum crudes because some of these crude chemicals are converted to other crude products derived from petroleum and because data on some production and sales are reported at successive stages in the conversion processes (see table 5A[3]). Notwithstanding these duplications, the statistics are sufficiently accurate to indicate trends in the industry and to serve as a basis for general comparison. Many of the crude products for which data are included in the statistics may be used either as fuel or as basic materials from which to derive other chemicals, depending on prevailing economic conditions; but in this report every effort has been made to exclude data on materials that are used as fuel. However, data are included on toluene and xylene which are not used directly as fuel but in blending aviation and motor-grade gasolines. Statistics on the production and sales of crude products from petroleum and natural gas for chemical conversion for 1966 are given in table 5A[3].

TABLE 5A.--*Crude products from petroleum and natural gas for chemical conversion: U.S. production and sales, 1966*

[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	50,466,599	27,494,322	865,411	$0.031
AROMATICS AND NAPHTHENES[2]				
Total	14,798,697	10,029,162	260,532	.026
Benzene (1° and 2°), total	6,209,089	3,645,388	119,972	.033
Benzene, 1°	5,329,209	...	...	...
Benzene, 2°	879,880	...	...	...
Naphthalene, all grades	354,068	279,759	11,342	.040
Naphthenic acids, total	24,028	15,939	1,665	.104
Acid number 150-199	7,503	4,811	466	.097
All other	16,525	11,128	1,199	.108
Sodium carbolate and phenate, crude	8,724	8,802	264	.030
Toluene, all grades, total	4,079,217	2,462,610	57,828	.023
Nitration grade, 1°	2,580,995	1,785,497	43,293	.024
Pure commercial grade, 2°	196,297	...	...	...
Solvent grade, 90%	...	37,273	831	.022
All other[3]	1,301,925	639,840	13,704	.021
Xylenes, mixed, total	2,325,658	1,661,054	41,180	.025
3°	672,159	611,358	14,565	.024
All other[3]	1,653,499	1,049,696	26,615	.025
All other aromatics and naphthenes[4]	1,797,913	1,955,610	28,281	.014

See footnotes at end of table.

[3] See also table 5B, pt. III, which lists all the products reported and identifies the manufacturers.

TABLE 5A. --*Crude products from petroleum and natural gas for chemical conversion: U.S. production and sales, 1966*--Continued

Product	Production	Sales		
		Quantity	Value	Unit value[1]
ALIPHATIC HYDROCARBONS	*1,000 pounds*	*1,000 pounds*	*1,000 dollars*	*Per pound*
Total	35,667,902	17,465,160	604,879	$0.035
C_2 hydrocarbons, total	13,449,167	...	...	...
Acetylene[5]	715,005	...	...	...
Ethane	1,493,077	709,834	6,666	.009
Ethylene	11,241,085	3,276,767	135,370	.041
C_3 hydrocarbons, total	9,062,684	6,256,318	99,792	.016
Propane	4,385,234	3,612,301	42,956	.012
Propylene	4,677,450	2,644,017	56,836	.021
C_4 hydrocarbons, total	8,057,088	4,760,865	261,610	.055
1,3-Butadiene, grade for rubbers (elastomers)	2,921,803	1,865,705	185,621	.100
Butadiene and butylene fractions	878,895	150,492	5,613	.037
n-Butane	1,302,526	400,661	4,987	.012
1-Butene and 2-butene mixture[6]	1,580,592	1,340,947	37,655	.028
Isobutane	517,838	380,626	5,447	.014
Isobutylene	460,979	161,280	9,913	.061
All other[7]	394,455	461,154	12,374	.027
C_5 hydrocarbons, total	599,388	124,048	4,066	.033
Isoprene	147,462	...	...	...
All other[8]	451,926	...	...	...
All other aliphatic hydrocarbons and derivatives, total	4,499,575	2,337,328	97,375	.042
Alpha olefins[9]	261,832	162,535	7,935	.049
Diisobutylene (diisobutene)	34,034	27,178	2,040	.075
Heptenes, mixed	301,326	231,842	8,498	.037
Hexane	186,791	...	...	...
Nonene (Tripropylene)	289,284	111,202	6,920	.062
Polybutene[10]	153,373	157,857	11,671	.074
Tetrapropylene	457,259	305,660	8,181	.027
Hydrocarbon derivatives[11]	30,285	23,334	6,842	.293
All other[12]	2,785,391	1,317,720	45,288	.034

[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, "Tar Crudes."
[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, crude cresylic acid, sodium cresylate, alkyl aromatics, distillates, solvents, and miscellaneous cyclic hydrocarbons.
[5] Production figures on acetylene from calcium carbide for chemical synthesis are collected by the U.S. Bureau of the Census.
[6] The statistics represent principally the butene content of crude refinery gases from which butadiene is manufactured.
[7] Includes data for 1-butene, 2-butene, mixed butylenes, and mixed olefins.
[8] Includes data for pentanes, pentenes, and C_5 hydrocarbon mixtures.
[9] Includes data for the following molecular weight ranges: C_6-C_7; C_8-C_{10}; C_{11}-C_{15}; C_{16}-C_{20}; and C_{16}-C_{30}.
[10] Includes compounds having a molecular weight of 3,000 or less.
[11] Includes data for di-tert-butyldisulfide and miscellaneous mercaptans.
[12] Includes data for ethane-ethylene mixture, heptane, methane, propane-propylene mixture, octanes, eicosane, and hydrocarbon mixtures.

The output of crude products derived from petroleum and natural gas as a group amounted to 50,467 million pounds in 1966, or 13.4 percent more than the 44,510 million pounds reported for 1965 (table 1). The larger output in 1966 is accounted for chiefly by increased production of ethylene, benzene, propylene, toluene, and acetylene. Sales of crude chemicals from petroleum in 1966 was 27,494 million pounds, valued at $865 million, compared with 23,402 million pounds, valued at $705 million, in 1965.

The output of all aromatic and naphthenic products amounted to 14,799 million pounds in 1966, compared with 13,763 million pounds in 1965. Sales in 1966, which amounted to 10,029 million pounds, valued at $261 million, were 1,384 million pounds larger, and valued at $46 million more, than those in 1965. Naphthalene was produced from petroleum sources in substantially greater quantities in 1966 than in 1965. The output of 1° and 2° benzene from petroleum

amounted to 6,209 million pounds in 1966--19.3 percent more than the 5,203 million pounds produced in 1965. The output of toluene in 1966 was 4,079 million pounds--7.1 percent more than the 3,810 million pounds produced in 1965. Production of xylene was 2,326 million pounds in 1966, compared with 2,401 million pounds in 1965. These figures include toluene and xylene used in blends in aviation and motor-grade gasolines. The output of naphthenic acids amounted to 24 million pounds in 1966, about the same as that produced in 1965.

Production of all aliphatic hydrocarbons and derivatives from petroleum and natural gas w 35,668 million pounds in 1966, compared with 30,746 million pounds in 1965. Sales of these products were 17,465 million pounds, valued at $605 million, in 1966, compared with 14,757 million pounds, valued at $490 million, in 1965. The statistics on production of acetylene (tabl 5A) include only acetylene produced from hydrocarbons and used as a raw material in the production of other chemicals. Total production of acetylene for chemical synthesis is reported to the U.S. Bureau of the Census. In 1966, production of acetylene from hydrocarbon sources, amounted to 715 million pounds. Production of ethylene was 11,241 million pounds in 1966--17 percent more than the 9,570 million pounds produced in 1965. The output of propane and propy was 9,063 million pounds in 1966--13.7 percent more than the 7,972 million pounds produced i 1965. Production of 1,3-butadiene, one of the principal ingredients of S-type synthetic rubber, was 2,922 million pounds in 1966, compared with 2,685 million pounds in 1965. The output of 1,3-butadiene in 1966--8.8 percent more than that in 1965--was the largest on record.

The following tabulation shows the number of companies that reported production of organi chemical crudes in 1966:

Chemical group	*Number of companies*
Tar crudes	13
Petroleum crudes	73

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

General

On the basis of their principal uses, the synthetic organic chemicals covered in this report are classified either as intermediates or as finished products. Finished products, in turn, are grouped as follows: Dyes, synthetic organic pigments, medicinal chemicals, flavor and perfume materials, plastics and resin materials, rubber-processing chemicals, elastomers (synthetic rubbers), plasticizers, surface-active agents, pesticides and related products, and miscellaneous synthetic organic chemicals. Most of these groups are further subdivided, according to chemical classes, into cyclic and acyclic compounds. As most of the intermediates are used in the manufacture of finished products, aggregate figures that cover both intermediates and finished products necessarily include considerable duplication.

Total production of synthetic organic chemicals (intermediates and finished products combined) in 1966 was 100,627 million pounds, or 13.2 percent more than the output of 88,864 million pounds reported for 1965 (see table 6). Sales of synthetic organic chemicals in 1966 amounted to 52,720 million pounds, valued at $9,958 million, compared with 46,807 million pounds, valued at $9,021 million, in 1965. Production of all cyclic products (intermediates and finished products combined) in 1966 totaled 32,133 million pounds, or 13.8 percent more than the 28,229 million pounds produced in 1965. The output of acyclic organic chemicals in 1966 amounted to 68,494 million pounds--13.0 percent more than the 60,635 million pounds reported for 1965.

TABLE 6.--*Synthetic organic chemicals: Summary of U.S. production and sales of intermediates and finished products, average 1957-59, annual 1965 and 1966*

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

Chemical	Average 1957-59	1965	1966	Increase, or decrease (-)	
				1966 over 1957-59	1966 over 1965
				Percent	*Percent*
Organic chemicals, cyclic and acyclic, grand total:					
Production	45,598,853	88,864,092	100,626,696	120.7	13.2
Sales	23,744,812	46,807,057	52,719,594	122.0	12.6
Sales value	5,743,764	9,020,540	9,958,383	73.4	10.4
Cyclic, total:					
Production	14,381,651	28,229,128	32,132,902	123.4	13.8
Sales	8,829,037	16,499,189	18,867,433	113.7	14.4
Sales value	2,785,100	3,855,492	4,328,963	55.4	12.3
Acyclic, total:					
Production	31,217,202	60,634,964	68,493,794	119.4	13.0
Sales	14,915,775	30,307,868	33,852,161	127.0	11.7
Sales value	2,958,664	5,165,048	5,629,420	90.3	9.0
1. Intermediates, Cyclic					
Production	7,343,167	16,865,164	19,466,775	165.1	15.4
Sales	2,919,264	7,551,210	8,852,033	203.2	17.2
Sales value	481,920	814,383	925,092	92.0	13.6
2. Dyes, Cyclic					
Production	150,830	207,193	219,194	45.3	5.8
Sales	141,731	189,965	204,135	44.0	7.5
Sales value	182,513	292,284	331,453	81.6	13.4
3. Synthetic Organic Pigments, Cyclic					
Production	38,603	48,045	51,128	32.4	6.4
Sales	30,218	38,024	43,316	43.3	13.9
Sales value	58,648	93,635	107,594	83.5	14.9

TABLE 6.--*Synthetic organic chemicals: Summary of U.S. production and sales of intermediates and finished products, average 1957-59, annual 1965 and 1966*--Continued

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

Chemical	Average 1957-59	1965	1966	Increase, or decrease (-)	
				1966 over 1957-59	1966 over 1965
4. Medicinal Chemicals					
Cyclic:				*Percent*	*Percent*
Production	70,654	100,040	116,164	64.4	16.1
Sales	54,151	72,479	76,842	(1)	6.0
Sales value	535,297	321,158	356,646	(1)	11.0
Acyclic:					
Production	31,592	59,480	69,305	119.4	16.5
Sales	28,738	56,569	59,621	(1)	5.4
Sales value	35,660	41,011	41,762	(1)	1.8
5. Flavor and Perfume Materials					
Cyclic:					
Production	27,312	53,223	61,406	124.8	15.4
Sales	22,446	44,559	49,597	121.0	11.3
Sales value	33,903	56,800	60,915	79.7	7.2
Acyclic:					
Production	19,033	46,001	49,264	158.8	7.1
Sales	19,958	43,144	48,717	144.1	12.9
Sales value	21,912	28,180	31,719	44.8	12.6
6. Plastics and Resin Materials					
Cyclic:					
Production	2,278,862	4,452,975	5,066,571	122.3	13.8
Sales	1,900,032	3,689,722	4,254,211	123.9	15.3
Sales value	518,501	873,501	988,001	90.5	13.1
Acyclic:					
Production	2,628,779	7,231,900	8,518,301	224.0	17.8
Sales	2,438,853	6,363,044	7,217,427	195.9	13.4
Sales value	864,523	1,630,932	1,752,080	102.7	7.4
7. Rubber-Processing Chemicals					
Cyclic:					
Production	159,182	211,403	241,248	51.6	14.1
Sales	115,704	166,214	182,790	58.0	10.0
Sales value	74,479	109,204	123,581	65.9	13.2
Acyclic:					
Production	29,150	40,542	42,087	44.4	3.8
Sales	22,127	27,504	26,495	19.7	-3.7
Sales value	14,289	14,189	14,622	2.3	3.1
8. Elastomers (Synthetic Rubbers)					
Cyclic:					
Production	1,938,732	2,300,092	2,482,375	28.0	7.9
Sales	1,726,757	1,897,921	2,108,089	22.1	11.1
Sales value	404,897	442,722	463,222	14.4	4.6
Acyclic:					
Production	521,811	1,291,562	1,446,812	177.3	12.0
Sales	509,262	1,143,242	1,303,169	155.9	14.0
Sales value	199,627	400,726	454,796	127.8	13.5
9. Plasticizers					
Cyclic:					
Production	348,210	798,741	897,249	157.7	12.3
Sales	297,423	764,736	873,109	193.6	14.2
Sales value	83,509	133,044	156,967	88.0	18.0
Acyclic:					
Production	118,118	274,456	311,742	163.9	13.6
Sales	100,984	256,887	282,577	179.8	10.0
Sales value	38,772	81,348	89,034	129.6	9.4

See footnote at end of table.

TABLE 6.--*Synthetic organic chemicals: Summary of U.S. production and sales of intermediates and finished products, average 1957-59, annual 1965 and 1966*--Continued

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

Chemical	Average 1957-59	1965	1966	Increase, or decrease (-)	
				1966 over 1957-59	1966 over 1965
10. Surface-Active Agents				*Percent*	*Percent*
Cyclic:					
Production	852,314	1,371,320	1,385,217	62.5	1.0
Sales	800,432	877,202	879,235	(1)	0.2
Sales value	127,936	96,153	97,187	(1)	1.1
Acyclic:					
Production	502,715	1,799,158	1,936,100	(1)	7.6
Sales	432,135	820,660	886,818	(1)	8.1
Sales value	113,215	204,035	217,726	(1)	6.7
11. Pesticides and related products					
Cyclic:					
Production	440,384	682,671	776,909	76.4	13.8
Sales	375,627	582,344	605,229	61.1	3.9
Sales value	150,837	377,858	446,946	196.3	18.3
Acyclic:					
Production	105,080	194,526	236,201	124.8	21.4
Sales	91,938	181,561	217,027	136.1	19.5
Sales value	49,049	119,208	136,856	179.0	14.8
12. Miscellaneous					
Cyclic:					
Production	733,401	1,138,261	1,368,666	86.6	20.2
Sales	445,252	624,813	738,847	65.9	18.2
Sales value	132,660	244,750	271,359	104.6	10.9
Acyclic:					
Production	27,260,924	49,697,339	55,883,982	105.0	12.4
Sales	11,271,780	21,415,257	23,810,310	111.2	11.2
Sales value	1,621,617	2,645,419	2,890,825	78.3	9.3

[1] Data for 1966 are not comparable with those for average 1957-59.

The following tabulation shows, by chemical groups, the number of companies that reported production in 1966 of one or more of the chemicals included in the groups listed in table 6:

Chemical group	*Number of companies*	*Chemical group*	*Number of companies*
Intermediates	219	Rubber-processing chemicals	32
Dyes	50	Elastomers (synthetic rubbers)	29
Synthetic organic pigments	36	Plasticizers	55
Medicinals chemicals	111	Surface-active agents	201
Flavor and perfume materials	54	Pesticides and related products	87
Plastics and resin materials	305	Miscellaneous chemicals	313

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 classification of a given chemical as an intermediate is determined by the way in which the greater part of its output is consumed. Since many intermediates represent successive steps in production, the totals given necessarily include considerable duplication. In 1966, nearly half of the total output of cyclic intermediates was sold; the remainder was used by the producing plants in the manufacture of more advanced products. The statistics on cyclic intermediates for 1966 are given in table 7A[1].

Total production of cyclic intermediates in 1966--19,467 million pounds--was the largest on record, and was 15.4 percent larger than the output of 16,865 million pounds reported for 1965. The larger output of cyclic intermediates in 1966 was attributable to increased demand by the chemical products industries, particularly those industries that produce dyes, pesticides, plasticizers, and plastics and resin materials. Sales of cyclic intermediates in 1966 amounted to 8,852 million pounds, valued at $925 million, compared with 7,551 million pounds, valued at $814 million, in 1965. In terms of quantity, sales of cyclic intermediates in 1966 were 17.2 percent larger than those in 1965 and in terms of value, 13.6 percent larger.

TABLE 7A--*Cyclic intermediates: U.S. production and sales, 1966*

[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]

Chemical	Production	Sales		
		Quantity	Value	Unit value[1]
	1,000 pounds	*1,000 pounds*	*1,000 dollars*	*Per pound*
Total	19,466,775	8,852,033	925,092	$0.10
Acetanilide, tech	5,438	2,297	580	.25
Acetophenone, tech	965	714	216	.30
Alkylbenzenes[2]	714,901	560,076	43,548	.08
4'-Aminoacetanilide (Acetyl-p-phenylenediamine)	696	...	...	...
5-Amino-2-(p-aminoanilino)benzenesulfonic acid	7	...	...	...
1-Aminoanthraquinone and salt	1,883	...	...	...
2-Aminoanthraquinone and salt	1,054	...	...	...
6-Amino-3,4'-azodibenzenesulfonic acid (C.I. Acid Yellow 9)	33	...	...	...
1-Amino-4-benzamidoanthraquinone	41	...	...	...
1-Amino-5-benzamidoanthraquinone	108	...	...	...
7-(p-Aminobenzamido)-4-hydroxy-2-naphthalenesulfonic acid	37	...	...	...
2-Amino-p-benzenedisulfonic acid [SO_3H=1]	31	...	...	...
1-Amino-4-bromo-9,10-dihydro-9,10-dioxo-2-anthracenesulfonic acid and sodium salt	147	...	...	...
1-Amino-2-bromo-4-hydroxyanthraquinone	162	...	...	...
1-Amino-2-bromo-4-p-toluidinoanthraquinone	30	...	...	...
1-Amino-5-chloroanthraquinone	74	...	...	...
o-(3-Amino-4-chlorobenzoyl)benzoic acid	168	...	...	...
3-Amino-5-chloro-2-hydroxybenzenesulfonic acid	10	...	...	...

See footnotes at end of table.

[1] See also table 7B, pt. III, which lists these products alphabetically and identifies the manufacturers, and table 23 in the appendix, which shows imports of intermediates and related products during 1965 and 1966.

TABLE 7A. -- *Cyclic intermediates: U.S. production and sales, 1966*--Continued

Chemical	Production	Sales		
		Quantity	Value	Unit value[1]
	1,000 pounds	*1,000 pounds*	*1,000 dollars*	*Per pound*
6-Amino-4-chloro-m-toluenesulfonic acid [SO_3H=1]	882	...	...	...
1-Amino-2,4-dibromoanthraquinone	297	...	...	...
1-Amino-9,10-dihydro-9,10-dioxo-4-p-toluenesulfonamido-2-anthracenesulfonic acid, sodium salt	22	...	...	...
4-Amino-5-hydroxy-2,7-naphthalenedisulfonic acid (H acid), monosodium salt	2,924	...	...	...
4-Amino-3-hydroxy-1-naphthalenesulfonic acid (1,2,4-acid)	1,432	...	...	...
6-Amino-4-hydroxy-2-naphthalenesulfonic acid (Gamma acid), sodium salt	468	90	134	$1.49
7-Amino-4-hydroxy-2-naphthalenesulfonic acid (J acid), sodium salt	741	28	66	2.36
N-(4-Amino-3-methoxy-1-anthraquinonyl)-p-toluenesulfonamide	9	...	...	...
4'Amino-N-methylacetanilide	16	...	...	...
2-Amino-1,5-naphthalenedisulfonic acid	116	...	...	...
6-Amino-1,3-naphthalenedisulfonic acid (Amino I acid)	1,053	...	...	...
7-Amino-1,3-naphthalenedisulfonic acid (Amino G acid)	803	...	...	...
4-Amino-1-naphthalenesulfonic acid (Naphthionic acid)	224	...	...	...
5-Amino-2-naphthalenesulfonic acid (1,6-Cleve's acid)	82	25	16	.64
5(and 8)-Amino-2-naphthalenesulfonic acid (Cleve's acid, mixed)	192	93	91	.98
6-Amino-2-naphthalenesulfonic acid (Broenner's acid)	100	...	...	...
8-Amino-1-naphthalenesulfonic acid (Peri acid)	518	...	...	...
8-Amino-2-naphthalenesulfonic acid (1,7-Cleve's acid)	103	...	...	...
8-Amino-2-naphthol	48	...	...	...
2-Amino-5-nitrobenzenesulfonic acid [SO_3H=1]	72	...	...	...
4-Amino-4'nitro-2,2'-stilbenedisulfonic acid	51	...	...	...
3'-Aminooxanilic acid	22	...	...	...
p-[(p-Aminophenyl)azo]benzenesulfonic acid	248	...	...	...
4-Amino-m-toluenesulfonic acid [SO_3H=1]	217	...	...	...
6-Amino-m-toluenesulfonic acid [SO_3H=1]	360	162	153	.9
16-Aminoviolanthrone	9	...	...	...
Aniline (Aniline oil)	239,004	90,369	10,409	.1
7-Anilino-4-hydroxy-2-naphthalenesulfonic acid (Phenyl J acid)	48	...	...	...
Anilinomethanesulfonic acid and salt	285	...	...	...
8-Anilino-1-naphthalenesulfonic acid (Phenyl peri acid)	355	...	...	...
o-Anisidine	2,024	887	637	.7
o-Anisidinomethanesulfonic acid	447	...	...	...
Anthra[1,9-cd]pyrazol-6(2H)-one (Pyrazoleanthrone)	28	...	...	...
Benzaldehyde, tech	5,319	4,769	2,121	.4
1-Benzamido-5-chloroanthraquinone	97	...	...	...
7H-Benz[de]anthracen-7-one (Benzanthrone)	2,193	218	332	1.5
Benzidine hydrochloride and sulfate	1,251	...	...	...
Benzoic acid, tech	20,511	11,637	1,518	.1
2-Benzothiazolethiol (2-Mercaptobenzothiazole), sodium salt	25,552	...	...	...
o-Benzoylbenzoic acid	5,903	...	...	...
[3,3'-Bianthra[1,9-cd]pyrazole]-6,6'-(2H,2'H)dione (Pyrazoleanthrone yellow)	30	...	...	...
[4,4'-Bi-7H-benz[de]anthracene]-7,7'-dione	459	...	...	...
[1,1'-Binaphthalene]-8,8'-dicarboxylic acid	20	...	...	...
1,4-Bis[1-anthraquinonylamino]anthraquinone	71	...	...	...
4,4'-Bis[dimethylamino]benzophenone (Michler's ketone)	117	...	...	...
3-Bromo-7H-benz[de]anthracen-7-one (3-Bromobenzanthrone)	217	...	...	...
1-Bromo-4-(methylamino)anthraquinone	46	...	...	...
1-Chloroanthraquinone	227	...	...	...
2-Chloroanthraquinone	950	...	...	...
Chlorobenzene, mono-	576,749	130,570	7,795	.1
o-(p-Chlorobenzoyl)benzoic acid	1,570	...	...	...
1-Chloro-2,4-dinitrobenzene (Dinitrochlorobenzene)	8,535	1,508	242	.1
6-Chlorometanilic acid	27	...	...	...
1-Chloro-2-methylanthraquinone	178	...	...	...
2-Chloro-4-nitroaniline (o-Chloro-p-nitroaniline)	389	249	227	.9
4-Chloro-2-nitroaniline (p-Chloro-o-nitroaniline)	566	391	317	.8
1-Chloro-5-nitroanthraquinone	79	...	...	...
1-Chloro-2-nitrobenzene (Chloro-o-nitrobenzene)	36,226	12,315	1,030	.0
1-Chloro-3-nitrobenzene (Chloro-m-nitrobenzene)	7,908	...	...	...
1-Chloro-4-nitrobenzene (Chloro-p-nitrobenzene)	121,735	...	...	...
4-Chloro-3-nitrobenzenesulfonamide	320	...	...	...

See footnotes at end of table.

TABLE 7A. -- *Cyclic intermediates: U.S. production and sales, 1966*--Continued

Chemical	Production	Sales		
		Quantity	Value	Unit value[1]
	1,000 pounds	*1,000 pounds*	*1,000 dollars*	*Per pound*
4-Chloro-3-nitrobenzenesulfonyl chloride	500	...	...	...
o-(4-Chloro-3-nitrobenzoyl)benzoic acid	220	...	...	...
4-Chloro-3-nitrotoluene	102	...	...	...
α-Chlorotoluene (Benzyl chloride)	74,994	11,243	2,062	$0.18
5-Chloro-o-toluidine [NH_2=1](4-Chloro-o-toluidine [CH_3=1])	...	102	142	1.39
N-[(5-Chloro-o-tolyl)azo]sarcosine	35	...	...	...
[(4-Chloro-o-tolyl)thio]acetic acid	65	...	...	...
Cresols, total[3]	80,005	71,051	14,489	.20
o-Cresol	16,586	13,000	1,917	.15
(m,p)-Cresol	35,352	35,990	4,771	.13
All other[4]	28,067	22,061	7,801	.35
Cresylic acid, refined, total	54,507	51,109	6,327	.12
From coal tar[3]	17,665	16,132	2,106	.13
From petroleum	36,842	34,977	4,221	.12
Cumene	894,827	...	...	...
Cyclohexane	1,900,792	1,874,059	76,170	.04
Cyclohexanone	314,424	...	...	...
Cyclohexylamine	11,922	...	...	...
1,4-Diaminoanthraquinone	49	...	...	...
2,6-Diaminoanthraquinone	181	...	...	...
1,4-Diamino-2,3-dihydroanthraquinone	420	...	...	...
4,4'-Diamino-2,2'-stilbenedisulfonic acid	6,510	...	...	...
4,5'-Dibenzamido-1,1'-iminodianthraquinone	162	...	...	...
1,5-Dibenzoylnaphthalene	288	...	...	...
3,9-Dibromo-7H-benz[de]anthracen-7-one	502	...	...	...
2,5-Dichloroaniline and hydrochloride [NH_2=1]	206	...	...	...
1,5-Dichloroanthraquinone	173	...	...	...
1,8-Dichloroanthraquinone	64	...	...	..
o-Dichlorobenzene	51,386	50,726	5,065	.10
p-Dichlorobenzene	66,307	65,569	5,893	.09
3,3'-Dichlorobenzidine base and salts	2,790	3,050	3,923	1.29
2,5-Dichloro-4-(3-methyl-5-oxo-2-pyrazolin-1-yl)benzenesulfonic acid	347	...	...	...
2,6-Dichloro-4-nitroaniline	607	431	486	1.13
1,4-Dichloro-2-nitrobenzene (Nitro-p-dichlorobenzene)	793	...	...	...
Dicyclopentadiene (includes cyclopentadiene)	49,672	23,008	1,503	.07
p-(Diethylamino)benzaldehyde	21	...	...	...
N,N-Diethylaniline	1,901	970	500	.52
9,10-Dihydro-1,4-dihydroxy-9,10-dioxo-2-anthracenesulfonic acid (2-Quinizarinsulfonic acid)	37	26	74	2.85
9,10-Dihydro-9,10-dioxo-1,5-anthracenedisulfonic acid and disodium salt	698	...	...	...
9,10-Dihydro-9,10-dioxo-1,8-anthracenedisulfonic acid, potassium salt	286	...	...	...
9,10-Dihydro-9,10-dioxo-2,6-anthracenedisulfonic acid and salt	323	...	...	...
9,10-Dihydro-9,10-dioxo-1-anthracenesulfonic acid and salt (Gold salt)	3,501	...	...	...
9,10-Dihydro-5-nitro-9,10-dioxo-1-anthracenesulfonic acid	83	...	...	...
1,4-Dihydroxyanthraquinone (Quinizarin)	2,346	145	174	1.20
1,5-Dihydroxyanthraquinone (Anthrarufin)	157	...	...	...
1,8-Dihydroxyanthraquinone (Chrysazin)	193	...	...	...
1,5-Dihydroxy-4,8-dinitroanthraquinone	95	...	...	...
1,8-Dihydroxy-4,5-dinitroanthraquinone (4,5-Dinitrochrysazin)	275	...	...	...
16,17-Dihydroxyviolanthrone (Dihydroxydibenzanthrone)	320	...	...	...
3,3'-Dimethoxybenzidine (o-Dianisidine)	518	488	901	1.85
N,N-Dimethylaniline	13,452	...	...	...
N,N-Dimethylbenzylamine	81	61	89	1.46
2,2'-Dimethyl-1,1'-bianthraquinone	116	...	...	...
N,N-Dimethyl-p-nitrosoaniline	45	...	...	...
2,4-Dinitroaniline	206	100	74	.74
1,5(and 1,8)-Dinitroanthraquinone	235	...	...	...
2,4-Dinitrophenol, tech	971	...	...	...

See footnotes at end of table.

TABLE 7A. -- *Cyclic intermediates: U.S. production and sales, 1966*--Continued

Chemical	Production	Sales		
		Quantity	Value	Unit value[1]
	1,000 pounds	*1,000 pounds*	*1,000 dollars*	*Per pound*
4,4′-Dinitrostilbene-2,2′-disulfonic acid	9,376	...	...	...
2,4-Dinitrotoluene	...	6,517	525	$0.08
1,5-Diphenoxyanthraquinone	116	...	...	...
Diphenylamine	31,615	28,569	7,555	.26
1,4-Di-p-toluidinoanthraquinone	195	...	...	...
Divinylbenzene	2,663	1,971	1,519	.77
p-Dodecylphenol	13,525	...	...	...
N-Ethylaniline, refined	1,505	1,042	524	.50
Ethylbenzene[5]	3,245,000	459,471	18,269	.04
N-Ethyl-N-phenylbenzylamine	692	...	...	...
Hydroquinone, tech	13,652	12,056	8,537	.71
p-Hydroxybenzenesulfonic acid	6,132	6,392	868	.14
p-Hydroxybenzoic acid, methyl ester	252	223	290	1.30
p-Hydroxybenzoic acid, propyl ester	42	37	75	2.03
4-Hydroxymetanilamide	105	...	...	...
4-Hydroxymetanilic acid	119	...	...	...
3-Hydroxy-2,7-naphthalenedisulfonic acid, disodium salt	1,958	790	708	.90
6-Hydroxy-2-naphthalenesulfonic acid and sodium salt	587	226	181	.80
3-Hydroxy-2-naphtho-o-toluidide	652	...	...	...
N-(7-Hydroxy-1-naphthyl)acetamide	37	...	...	...
1,1′-Iminobis[4-aminoanthraquinone]	152	...	...	...
7,7′-Iminobis[4-hydroxy-2-naphthalenesulfonic acid]	36	...	...	...
1,1′-Iminobis[4-nitroanthraquinone]	143	...	...	...
1,1′-Iminodianthraquinone (1,1′-Dianthrimide)	169	...	...	...
Isocyanic acid derivatives, total	223,488	188,127	61,946	.33
Diphenylmethane 4,4′-diisocyanate (MDI)	6,135	...	...	...
Toluene 2,4- and 2,6-diisocyanate (80/20 mixture)	173,283	157,372	47,658	.30
Other isocyanic acid derivatives	44,070	30,755	14,288	.46
4,4′-Isopropylidenediphenol (Bisphenol A)	126,427	74,061	15,022	.20
Isoviolanthrone (Isodibenzanthrone)	31	...	...	...
Leuco quinizarin (1,4,9,10-Anthratetrol)	106	...	...	...
2,4-Lutidine	...	540	190	.35
Melamine	82,177	58,315	14,716	.25
dl-p-Mentha-1,8-diene (Limonene)	...	12,727	732	.06
o-Mercaptobenzoic acid (Thiosalicylic acid)	17	14	87	6.21
1-(Methylamino)anthraquinone	321	...	...	...
4,4′-Methylenebis[N,N-dimethylaniline] (Methane base)	1,224	477	274	.57
4,4′-Methylenedianiline	1,532	...	...	...
m-(3-Methyl-5-oxo-2-pyrazolin-1-yl)benzenesulfonamide	19	...	...	...
p-(3-Methyl-5-oxo-2-pyrazolin-1-yl)benzenesulfonic acid	188	...	...	...
4-(3-Methyl-5-oxo-2-pyrazolin-1-yl)-m-toluenesulfonic acid [SO_3H=1]	9	...	...	...
3-Methyl-1-phenyl-2-pyrazolin-5-one (Developer Z)	187	174	290	1.67
α-Methylstyrene	13,215	12,142	1,187	.10
Naphthalene, solidifying at 79° C. or above (refined flake) (from domestic crude)	2,890	...	...	...
2,7-Naphthalenedisulfonic acid	67	...	...	...
1,4,5,8-Naphthalenetetracarboxylic acid	69	...	...	...
1-Naphthol (α-Naphthol)	...	810	515	.64
Naphthostyril	27	...	...	...
Naphth[1,2-d][1,2,3]oxadiazole-5-sulfonic acid	1,018	...	...	...
p-Nitroaniline	10,750	...	...	...
5-Nitro-o-anisidine [NH_2=1]	250	...	...	...
Nitrobenzene	326,853	13,612	1,239	.09
m-Nitrobenzenesulfonic acid and sodium salt	3,711	2,705	922	.34
7(and 8)-Nitronaphth[1,2-d][1,2,3]oxadiazole-5-sulfonic acid	969	...	...	...
p-Nitrophenol and sodium salt	20,025	17,920	6,866	.38
3-Nitro-p-toluenesulfonic acid[SO_3H=1]	87	...	...	...
5-Nitro-o-toluenesulfonic acid [SO_3H=1]	11,261	...	...	...
2-Nitro-p-toluidine [NH_2=1]	1,208	...	...	...
5-Nitro-o-toluidine [NH_2=1]	367	183	292	1.60
16-Nitroviolanthrone	68	...	...	...
Nonylphenol	64,565	26,698	3,010	.11
1-[7-Oxo-7H-benz[de]anthracen-3-yl)amino]anthraquinone	548	...	...	...

See footnotes at end of table.

TABLE 7A. --*Cyclic intermediates: U.S. production and sales, 1966*--Continued

Chemical	Production	Sales		
		Quantity	Value	Unit value[1]
	1,000 pounds	*1,000 pounds*	*1,000 dollars*	*Per pound*
1,1'-[(7-Oxo-7H-benz[de]anthracen-3,9-ylene)diimino]di-anthraquinone	898	...	...	...
5-Oxo-1-phenyl-2-pyrazoline-3-carboxylic acid, ethyl ester	66	...	...	...
Phenol, grand total[3]	1,346,621	571,047	53,933	$0.09
Natural, total	57,135	52,272	5,034	.10
From coal tar	39,850	37,778	3,511	.09
From petroleum	17,285	14,494	1,523	.11
Synthetic, total	1,289,486	518,775	48,899	.09
From cumene	613,435	280,374	25,602	.09
Other synthetic	676,051	238,401	23,297	.10
Phenylacetic acid and salts	4,628	...	...	...
Phenylacetonitrile (α-Tolunitrile)	...	414	211	.51
p-Phenylazoaniline (C.I. Solvent Yellow 1) and hydrochloride	131	...	...	...
p-Phenylenediamine	652	...	...	...
1-Phenyl-1,2-propanedione, 2-oxime	246	...	...	...
Phthalic anhydride	675,180	365,373	34,617	.09
Picolines, total[3]	...	3,420	1,147	.34
2-Picoline (α-Picoline)	...	1,397	487	.35
Other picolines	...	2,023	660	.33
Piperidine	505	...	...	...
Propiophenone	881	457	531	1.16
8,16-Pyranthrenedione	9	...	...	...
2° Pyridine[3]	4,987	5,068	2,800	.55
Quinaldine	14	...	...	...
Salicylaldehyde	2,534	2,018	2,017	1.00
Salicylic acid, tech	...	3,915	1,370	.35
Styrene, all grades	3,191,548	1,509,071	121,173	.08
Terephthalic acid	513,868	...	...	...
Terephthalic acid, dimethyl ester	797,470	279,081	58,932	.21
1,4,5,8-Tetrachloroanthraquinone	131	...	...	...
1,4,5,8-Tetrahydroxyanthraquinone, leuco derivative	120	...	...	...
1,4,5,8-Tetrakis (1-anthraquinonylamino)anthraquinone (Pentanthrimide)	236	...	...	...
4,4'-Thiodianiline	13	...	...	...
Toluene-2,4-diamine (4-m-Tolylenediamine)	68,468	...	...	...
o(and p)-Toluenesulfonic acid	6,926	6,125	843	.14
o-(p-Toluoyl)benzoic acid	427	...	...	...
4-(o-Tolylazo)-o-toluidine (C.I. Solvent Yel[illegible]3)	448	...	...	...
1,3,3-Trimethyl-$\Delta^{2,\alpha}$-indolineacetaldehyde	143	...	...	...
1,3,3-Trimethyl-2-methyleneindoline (Trimethyl base)	284	...	...	...
7,7'-Ureylenebis[4-hydroxy-2-naphthalenesulfonic acid] (J acid urea)	393	...	...	...
Violanthrone (Dibenzanthrone)	476	25	212	8.48
o-Xylene	403,211	397,224	10,120	.03
p-Xylene	518,801	459,955	37,965	.08
All other cyclic intermediates	2,369,123	1,354,505	265,578	.20

[1] Calculated from rounded figures.

[2] Principally straight-chain dodecylbenzene, tridecylbenzene and other straight-chain alkylbenzenes, but includes lesser amounts of branched-chain compounds.

[3] 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.

[4] Figures include (o,m,p)-cresol from tar and some m-cresol and p-cresol.

[5] Does not include ethylbenzene produced and consumed in continuous-process styrene manufacture.

In 1966, production of ethylbenzene was 3,245 million pounds, or 7.4 percent larger than the 3,023 million pounds reported for 1965. Output of styrene in 1966 was 3,192 million pounds, an increase of 11.4 percent over the 2,864 million pounds in 1965. Other intermediates whose production exceeded one billion pounds in 1966 were cyclohexane (1,901 million pounds), and phenol (1,347 million pounds). The output of other large-volume intermediates in 1966 compared with production in 1965 was as follows: Cumene, 895 million pounds (35.0 percent larger than in 1965); terephthalic acid, dimethyl ester, 797 million pounds (46.4 percent larger); alkylbenzenes, 715 million pounds (14.4 percent larger); phthalic anhydride, 675 million pounds (11.0 percent larger); chlorobenzene, 577 million pounds (5.6 percent larger); p-xylene, 519 million pounds (30.9 percent larger); o-xylene, 403 million pounds (14.8 percent larger); aniline, 239 million pounds (22.2 percent larger); and isocyanates, 223 million pounds (21.3 percent larger).

Dyes

The synthetic dyes produced in the United States are all derived in whole or in part from cyclic intermediates. Approximately two-thirds of the dyes consumed in the United States are used by the textile industry to dye natural and synthetic fibers or fabrics; about one-sixth are used for coloring paper; and the rest are used chiefly in the production of organic pigments and in the dyeing of leather and plastics. Of the several thousand different synthetic dyes that are known, more than one thousand five hundred are manufactured annually by one or more domestic producers. The large number of dyes results from the many different types of materials to which dyes are applied, the different conditions of service for which dyes are required, and the costs that a particular use can bear. Dyes are sold as pastes, powders, lumps, and solutions; concentrations vary from 6 percent to 100 percent. The concentration, form, and purity of a dye are determined largely by the use for which it is intended.

Table 8A[2] shows U.S. production and sales of dyes in 1966, total and by individual dyes using *Colour Index* classification and terminology.

Total domestic production of dyes in 1966 amounted to 219 million pounds, or 5.8 percent more than the 207 million pounds produced in 1965 (table 8A). Sales of dyes in 1966 amounted to 204 million pounds, valued at $331 million, compared with 190 million pounds, valued at $292 million, in 1965. In terms of quantity sales of dyes in 1966 were 7.5 percent larger than in 1965 and in terms of value, 13.4 percent larger. The average unit value of sales of all dyes in 1966 was $1.62 a pound, or 5.2 percent greater than the $1.54 a pound reported in 1965.

For many important individual low- and medium-priced dyes, for which statistics are given in table 8A, production was larger in 1966 than in 1965. The output of Vat Black 27 and Acid Blue 9 more than doubled in 1966 compared with 1965. The output of Vat Black 27 was 1.5 million pounds in 1966 compared with 747,000 pounds in 1965; that of Acid Blue 9 was 1.5 million pounds in 1966, compared with 748,000 pounds in 1965. Other important dyes whose output was substantially larger in 1966 than in 1965 were Vat Green 8 (76.1 percent), Vat Yellow 4 (36.0 percent), Vat Green 3 (35.2 percent), Disperse Yellow 3 (33.7 percent), Vat Black 25 (31.5 percent), Direct Brown 95 (30.5 percent), Basic Yellow 11 (27.0 percent), Basic Brown 4 (26.4 percent) and Direct Yellow 106 (17.2 percent).

On the other hand, the output of a few important dyes was smaller in 1966 than in 1965. Production of Vat Blue 18 was 929,000 pounds in 1966, or 35.2 percent less than the 1.4 million pounds produced in 1965; that of Mordant Black 17 was 656,000 pounds, or 32.4 percent less than the 970,000 pounds produced in 1965. The output of Vat Orange 15 was 27.5 percent smaller in 1966 than in 1965; that of Coupling Component 7 was 21.5 percent smaller; and that of Direct Blue 2 was 19.0 percent smaller.

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[2] See also table 8B, pt. III, which lists these products and identifies the manufacturers, and the appendix (table 23), which shows imports of dyes during the years 1965-66.

TABLE 8A.--*Benzenoid dyes: U.S. production and sales, 1966*

[Listed below are all benzenoid 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	219,194	204,135	331,453	$1.62
ACID DYES				
Total	23,194	20,410	43,762	2.14
Acid yellow dyes, total	4,100	3,596	8,435	2.35
Acid Yellow 3	16	34	131	3.85
Acid Yellow 11	...	54	112	2.07
Acid Yellow 17	492	542	1,187	2.19
Acid Yellow 23	464	347	805	2.32
Acid Yellow 36	278	253	379	1.50
Acid Yellow 40	176	167	462	2.77
Acid Yellow 42	53	57	99	1.74
Acid Yellow 44	47	35	109	3.11
Acid Yellow 54	69	73	160	2.19
Acid Yellow 73	...	82	185	2.26
Acid Yellow 99	91	90	206	2.29
Acid Yellow 124	81	99	239	2.41
Acid Yellow 151	...	186	469	2.52
All other	2,333	1,577	3,892	2.47
Acid orange dyes, total	3,126	2,951	4,637	1.57
Acid Orange 1	...	55	119	2.16
Acid Orange 7	635	637	651	1.02
Acid Orange 8	414	401	485	1.21
Acid Orange 10	404	341	433	1.27
Acid Orange 24	643	597	819	1.37
Acid Orange 60	69	62	153	2.47
Acid Orange 64	54	...	...	...
Acid Orange 116	297	273	593	2.17
All other	610	585	1,384	2.37
Acid red dyes, total	3,854	3,166	6,291	1.99
Acid Red 1	518	520	475	.91
Acid Red 4	105	95	178	1.87
Acid Red 14	107	103	152	1.48
Acid Red 18	138	151	162	1.07
Acid Red 26	137	133	169	1.27
Acid Red 37	59	59	188	3.19
Acid Red 73	256	247	580	2.35
Acid Red 85	200	181	321	1.77
Acid Red 87	678	109	197	1.81
Acid Red 88	168	148	221	1.49
Acid Red 89	57	46	79	1.72
Acid Red 114	98	85	174	2.05
Acid Red 137	170	152	458	3.01
Acid Red 151	141	132	270	2.05
Acid Red 182	48	48	152	3.17
Acid Red 186	22	25	74	2.96
All other	952	932	2,441	2.62
Acid violet dyes, total	713	612	1,238	2.02
Acid Violet 1	79	61	91	1.49
Acid Violet 3	109	86	162	1.88
Acid Violet 7	210	170	228	1.34
Acid Violet 12	64	56	84	1.50
Acid Violet 49	75	87	214	2.46
All other	176	152	459	3.02

See footnotes at end of table.

TABLE 8A.--*Benzenoid dyes: U.S. production and sales, 1966*--Continued

Dye	Production	Sales		
		Quantity	Value	Unit value[1]
ACID DYES--Continued	*1,000 pounds*	*1,000 pounds*	*1,000 dollars*	*Per pound*
Acid blue dyes, total	4,632	3,478	10,525	$3.03
Acid Blue 7	92	78	240	3.08
Acid Blue 9	1,514	...	...	...
Acid Blue 25	141	115	620	5.39
Acid Blue 40	43	29	124	4.28
Acid Blue 41	85	69	249	3.61
Acid Blue 43	19	19	129	6.79
Acid Blue 45	667	591	1,920	3.25
Acid Blue 62	27	27	168	6.22
Acid Blue 78	40	38	263	6.92
Acid Blue 90	18	18	156	8.67
Acid Blue 113	564	517	749	1.45
Acid Blue 158 and 158A	255	183	405	2.21
All other	1,167	1,794	5,502	3.07
Acid green dyes, total	1,274	1,136	3,271	2.88
Acid Green 3	206	172	220	1.28
Acid Green 9	...	30	134	4.47
Acid Green 12	...	14	59	4.21
Acid Green 16	79	80	301	3.76
Acid Green 20	45	54	104	1.93
Acid Green 25	373	347	1,025	2.95
All other	571	439	1,428	3.25
Acid brown dyes, total	867	848	1,923	2.27
Acid Brown 14	324	322	443	1.38
All other	543	526	1,480	2.81
Acid black dyes, total	4,628	4,623	7,442	1.61
Acid Black 1	1,260	1,214	1,298	1.07
Acid Black 24	129	106	177	1.67
Acid Black 48	18	26	149	5.73
Acid Black 107	142	205	550	2.68
All other	3,079	3,072	5,268	1.71
AZOIC DYES AND COMPONENTS				
Azoic Compositions				
Total	2,376	2,204	4,473	2.03
Azoic Yellow 1	34	...	...	...
Azoic Orange 3	51	49	97	1.98
Azoic red dyes, total	669	638	1,192	1.87
Azoic Red 1	202	192	354	1.84
Azoic Red 6	313	299	517	1.73
All other	154	147	321	2.18
Azoic Violet 1	177	169	337	1.99
Azoic Blue 2	17	13	26	2.00
Azoic Blue 3	161	147	286	1.95
Azoic Brown 9	165	165	505	3.06
Azoic black dyes	830	763	1,523	2.00
All other azoic compositions	272	260	507	1.95
Azoic Diazo Components, Bases (Fast Color Bases)				
Total	1,493	1,334	2,185	1.64
Azoic Diazo Component 4, base	81	73	113	1.55
Azoic Diazo Component 9, base	82	68	54	.79
Azoic Diazo Component 10, base	59	60	197	3.28
Azoic Diazo Component 12, base	188	201	238	1.18

See footnotes at end of table.

TABLE 8A.--*Benzenoid dyes: U.S. production and sales, 1966*--Continued

Dye	Production	Sales		
		Quantity	Value	Unit value[1]
AZOIC DYES AND COMPONENTS--Continued				
Azoic Diazo Components, Bases (Fast Color Bases)--Continued	*1,000 pounds*	*1,000 pounds*	*1,000 dollars*	*Per pound*
Azoic Diazo Component 13, base	308	380	472	$1.24
Azoic Diazo Component 32, base	246	261	463	1.77
Azoic Diazo Component 48, base	156	35	64	1.83
All other azoic diazo components, bases	373	256	584	2.28
Azoic Diazo Components, Salts (Fast Color Salts)				
Total	2,444	2,401	2,676	1.11
Azoic Diazo Component 1, salt	92	87	112	1.29
Azoic Diazo Component 2, salt	23	8	11	2.25
Azoic Diazo Component 3, salt	294	294	188	.64
Azoic Diazo Component 5, salt	314	331	381	1.15
Azoic Diazo Component 6, salt	40	51	58	1.14
Azoic Diazo Component 8, salt	117	132	135	1.02
Azoic Diazo Component 9, salt	267	251	163	.65
Azoic Diazo Component 10, salt	88	82	117	1.43
Azoic Diazo Component 12, salt	80	67	74	1.10
Azoic Diazo Component 13, salt	257	298	220	.74
Azoic Diazo Component 28, salt	344	344	404	1.17
Azoic Diazo Component 36, salt	...	41	69	1.68
Azoic Diazo Component 44, salt	...	8	13	1.62
Azoic Diazo Component 48, salt	...	10	13	1.30
Azoic Diazo Component 49, salt	70	55	175	3.18
All other azoic diazo components, salts	458	342	543	1.59
Azoic Coupling Components (Naphthol AS and Derivatives)				
Total	3,071	2,478	4,978	2.01
Azoic Coupling Component 2	286	268	281	1.05
Azoic Coupling Component 3	28	15	53	3.53
Azoic Coupling Component 4	39	27	57	2.11
Azoic Coupling Component 5	...	8	21	2.63
Azoic Coupling Component 7	621	640	1,270	1.98
Azoic Coupling Component 11	27	...	...	...
Azoic Coupling Component 14	226	161	357	2.22
Azoic Coupling Component 17	189	...	...	...
Azoic Coupling Component 18	693	553	651	1.18
Azoic Coupling Component 19	12	...	...	...
Azoic Coupling Component 20	149	90	203	2.26
Azoic Coupling Component 21	133	90	224	2.49
Azoic Coupling Component 24	...	7	38	5.43
Azoic Coupling Component 29	48	22	73	3.32
Azoic Coupling Component 43	...	25	65	2.60
All other azoic coupling components	620	572	1,685	2.95
BASIC DYES				
Total	11,136	10,420	26,674	2.56
Basic yellow dyes, total	2,231	2,170	6,669	3.07
Basic Yellow 2	497	499	1,027	2.06
Basic Yellow 11	612	551	2,184	3.96
Basic Yellow 13	199	170	603	3.55
All other	923	950	2,855	3.01
Basic orange dyes, total	1,384	1,421	2,657	1.87
Basic Orange 1	347	356	380	1.07
Basic Orange 2	634	612	802	1.31

See footnotes at end of table.

TABLE 8A.--*Benzenoid dyes: U.S. production and sales, 1966*--Continued

Dye	Production	Sales		
		Quantity	Value	Unit value[1]
BASIC DYES--Continued	*1,000 pounds*	*1,000 pounds*	*1,000 dollars*	*Per pound*
Basic orange dyes--Continued				
Basic Orange 21	268	341	1,071	$3.14
All other	135	112	404	3.61
Basic red dyes, total	1,238	1,190	3,990	3.35
Basic Red 14	302	335	1,033	3.08
All other	936	855	2,957	3.46
Basic violet dyes, total	3,036	2,870	5,922	2.06
Basic Violet 1	1,036	892	1,129	1.27
Basic Violet 4	38	38	112	2.95
Basic Violet 16	93	107	377	3.52
All other	1,869	1,833	4,304	2.35
Basic blue dyes, total	1,603	1,275	4,428	3.47
Basic Blue 1	33	31	133	4.29
Basic Blue 5	30	...	...	...
Basic Blue 7	192	...	...	...
Basic Blue 9	384	310	721	2.33
Basic Blue 26	65	57	175	3.07
All other	899	877	3,399	3.88
Basic Green 1	79	80	259	3.24
Basic Green 4	646	610	1,562	2.56
Basic Brown 1	179	205	330	1.61
Basic Brown 4	684	543	682	1.26
All other basic dyes	56	56	175	3.12
DIRECT DYES				
Total	37,343	36,733	56,920	1.55
Direct yellow dyes, total	8,217	8,181	13,497	1.65
Direct Yellow 4	436	442	909	2.06
Direct Yellow 5	170	167	477	2.86
Direct Yellow 6	868	841	1,280	1.52
Direct Yellow 11	925	955	993	1.04
Direct Yellow 12	415	414	1,047	2.53
Direct Yellow 26	11	8	24	3.00
Direct Yellow 28	287	274	537	1.96
Direct Yellow 29	67	88	140	1.59
Direct Yellow 44	470	513	908	1.77
Direct Yellow 50	457	433	936	2.16
Direct Yellow 84	...	364	525	1.44
Direct Yellow 105	244	225	544	2.42
Direct Yellow 106	810	877	1,482	1.69
All other	3,057	2,580	3,695	1.43
Direct orange dyes, total	2,336	2,206	5,142	2.33
Direct Orange 1	25	30	55	1.83
Direct Orange 8	167	162	239	1.48
Direct Orange 15	230	204	246	1.21
Direct Orange 26	43	62	133	2.15
Direct Orange 29	67	84	181	2.15
Direct Orange 34	135	128	289	2.26
Direct Orange 37	57	53	131	2.47
Direct Orange 39	156	159	319	2.01
Direct Orange 72	317	302	702	2.32
Direct Orange 73	110	99	364	3.68
Direct Orange 81	86	87	261	3.00
Direct Orange 102	241	215	560	2.60
All other	702	621	1,662	2.68

See footnotes at end of table.

TABLE 8A.--*Benzenoid dyes: U.S. production and sales, 1966*--Continued

Dye	Production	Sales		
		Quantity	Value	Unit value[1]
DIRECT DYES--Continued	*1,000 pounds*	*1,000 pounds*	*1,000 dollars*	*Per pound*
Direct red dyes, total	4,406	4,376	9,566	$2.19
Direct Red 1	228	221	386	1.75
Direct Red 2	351	379	687	1.81
Direct Red 4	33	33	92	2.79
Direct Red 10	...	19	30	1.58
Direct Red 13	181	171	276	1.61
Direct Red 16	99	88	168	1.91
Direct Red 23	259	253	601	2.38
Direct Red 24	260	262	524	2.00
Direct Red 26	142	124	305	2.46
Direct Red 28	230	239	359	1.50
Direct Red 31	26	25	100	4.00
Direct Red 37	78	77	209	2.71
Direct Red 39	66	63	180	2.86
Direct Red 72	294	276	569	2.06
Direct Red 75	...	7	25	3.57
Direct Red 79	273	353	826	2.34
Direct Red 80	465	468	846	1.81
Direct Red 81	376	384	953	2.48
Direct Red 83	259	233	375	1.61
Direct Red 84	...	16	29	1.81
Direct Red 122	40	...	...	...
Direct Red 149	108	96	358	3.73
Direct Red 153	26	24	82	3.42
All other	612	565	1,586	2.81
Direct violet dyes, total	337	344	1,050	3.05
Direct Violet 1	18	21	39	1.86
Direct Violet 9	196	193	409	2.12
All other	123	130	602	4.63
Direct blue dyes, total	8,109	7,650	11,763	1.54
Direct Blue 1	437	404	818	2.02
Direct Blue 2	1,821	1,753	1,613	.92
Direct Blue 6	555	547	332	.61
Direct Blue 8	64	48	92	1.92
Direct Blue 15	86	72	113	1.57
Direct Blue 22	23	24	43	1.79
Direct Blue 24	...	31	42	1.35
Direct Blue 25	75	71	188	2.65
Direct Blue 67	...	26	108	4.15
Direct Blue 76	535	469	864	1.84
Direct Blue 78	129	146	404	2.77
Direct Blue 80	595	535	817	1.53
Direct Blue 86	1,143	1,054	1,608	1.53
Direct Blue 98	159	162	283	1.75
Direct Blue 120 and 120A	313	268	580	2.16
Direct Blue 126	292	233	691	2.97
All other	1,882	1,807	3,167	1.75
Direct green dyes, total	1,526	1,414	3,305	2.34
Direct Green 1	366	291	366	1.26
Direct Green 6	516	483	588	1.22
Direct Green 8	36	40	54	1.35
Direct Green 12	...	14	16	1.14
All other	608	586	2,281	3.89
Direct brown dyes, total	2,046	2,061	2,867	1.39
Direct Brown 1	143	140	187	1.34
Direct Brown 1A	83	90	137	1.52
Direct Brown 2	204	221	337	1.52
Direct Brown 6	125	107	118	1.10
Direct Brown 31	113	133	404	3.04
Direct Brown 74	91	72	111	1.54
Direct Brown 95	731	771	722	.94

See footnotes at end of table.

TABLE 8A. --*Benzenoid dyes: U.S; production and sales, 1966*--Continued

Dye	Production	Sales		
		Quantity	Value	Unit value[1]
DIRECT DYES--Continued	*1,000 pounds*	*1,000 pounds*	*1,000 dollars*	*Per pound*
Direct brown dyes--Continued				
Direct Brown 111	48	64	225	$3.52
Direct Brown 154	339	320	322	1.01
All other	169	143	304	2.13
Direct black dyes, total	10,366	10,501	9,730	.93
Direct Black 4	375	286	295	1.03
Direct Black 9	64	60	90	1.50
Direct Black 19	121	...	...	...
Direct Black 22	766	818	702	.86
Direct Black 38	6,215	6,202	4,813	.78
Direct Black 51	101	81	252	3.11
Direct Black 80	1,926	1,917	1,718	.90
All other	798	1,137	1,860	1.64
DISPERSE DYES				
Total	16,696	14,849	38,060	2.56
Disperse yellow dyes, total	3,702	3,365	6,452	1.92
Disperse Yellow 3	1,725	1,479	2,386	1.61
Disperse Yellow 5	...	36	124	3.44
Disperse Yellow 23	111	103	260	2.52
Disperse Yellow 33	274	302	553	1.83
Disperse Yellow 34	225	233	393	1.69
Disperse Yellow 42	546	467	862	1.85
All other	821	745	1,874	2.52
Disperse orange dyes, total	1,291	970	1,983	2.04
Disperse Orange 3	124	114	193	1.69
Disperse Orange 5	...	127	320	2.52
Disperse Orange 17	150	113	170	1.50
All other	1,017	616	1,300	2.11
Disperse red dyes, total	2,465	2,179	6,947	3.19
Disperse Red 1	246	208	356	1.71
Disperse Red 5	181	82	108	1.32
Disperse Red 11	...	34	225	6.62
Disperse Red 13	28	26	36	1.38
Disperse Red 15	118	106	304	2.87
Disperse Red 17	163	130	171	1.32
Disperse Red 60	97	93	339	3.65
All other	1,632	1,500	5,408	3.61
Disperse violet dyes, total	354	306	939	3.07
Disperse Violet 1	60	47	147	3.13
Disperse Violet 4	40	26	84	3.23
Disperse Violet 27	110	93	141	1.52
All other	144	140	567	4.05
Disperse blue dyes, total	6,768	5,930	18,501	3.12
Disperse Blue 1	245	205	768	3.75
Disperse Blue 3	1,833	1,779	2,848	1.60
Disperse Blue 7	326	353	2,473	7.01
Disperse Blue 64	131	105	302	2.88
All other	4,233	3,488	12,110	3.47
Disperse black dyes, total	1,839	1,858	2,683	1.44
Disperse Black 1	156	142	250	1.76
Disperse Black 9	1,279	...	...	...
All other	404	1,716	2,433	1.42
All other disperse dyes	277	241	555	2.30

See footnotes at end of table.

TABLE 8A. --*Benzenoid dyes: U.S. production and sales, 1966*--Continued

Dye	Production	Sales		
		Quantity	Value	Unit value[1]
VAT DYES	*1,000 pounds*	*1,000 pounds*	*1,000 dollars*	*Per pound*
Total	57,456	54,431	57,875	$1.06
Vat yellow dyes, total	4,569	4,442	6,619	1.49
Vat Yellow 2, 8-1/2%	2,405	2,516	2,265	.90
Vat Yellow 4, 12-1/2%	1,038	807	1,163	1.44
Solubilized Vat Yellow 4	...	5	44	8.80
All other	1,126	1,114	3,147	2.82
Vat orange dyes, total	2,975	2,650	6,743	2.54
Vat Orange 1, 20%	969	662	1,780	2.69
Solubilized Vat Orange 1, 26%	...	8	74	9.25
Vat Orange 2, 12%	337	300	605	2.02
Vat Orange 3, 13-1/2%	...	81	199	2.46
Vat Orange 5, 10%	192	142	241	1.70
Solubilized Vat Orange 5, 30%	...	5	52	10.40
Vat Orange 7, 11%	312	...	...	...
Vat Orange 9, 12%	237	167	402	2.41
Vat Orange 15, 10%	498	494	1,153	2.33
All other	430	791	2,237	3.24
Vat red dyes, total	1,399	1,260	3,111	2.47
Vat Red 1, 13%	523	478	840	1.76
Vat Red 10	...	95	459	4.83
Vat Red 13, 11%	139	139	393	2.83
Vat Red 15, 10%	274	220	212	.96
Vat Red 32, 20%	30	...	...	...
All other	433	328	1,207	3.68
Vat violet dyes, total	753	879	1,839	2.09
Vat Violet 1, 11%	204	239	577	2.41
Vat Violet 2, 20%	73	62	132	2.13
Vat Violet 9, 12%	...	114	387	3.39
Vat Violet 13, 6-1/4%	316	377	511	1.36
Vat Violet 17	...	41	121	2.95
All other	160	46	111	2.41
Vat blue dyes, total	17,822	16,808	12,508	.74
Vat Blue 6, 8-1/3%	3,153	3,109	3,440	1.11
Vat Blue 16	...	109	256	2.35
Vat Blue 18, 13%	929	941	1,576	1.67
Vat Blue 20, 14%	1,088	1,004	1,367	1.36
All other	12,652	11,645	5,869	.50
Vat green dyes, total	14,858	13,677	10,305	.75
Vat Green 1, 6%	4,052	3,916	2,586	.66
Vat Green 3, 10%	5,369	5,002	3,675	.73
Solubilized Vat Green 3, 26%	8	11	73	6.64
Vat Green 8, 8-1/2%	3,549	2,954	2,325	.79
Vat Green 9, 12-1/2%	1,371	1,469	1,267	.86
All other	509	325	379	1.17
Vat brown dyes, total	4,279	4,189	6,994	1.67
Vat Brown 1, 11%	609	626	1,031	1.65
Vat Brown 3, 11%	1,215	1,300	2,152	1.66
Vat Brown 5, 13%	105	132	210	1.59
All other	2,350	2,131	3,601	1.69
Vat black dyes, total	10,801	10,526	9,756	.93
Vat Black 9, 16%	154	204	544	2.67
Vat Black 25, 12-1/2%	5,937	5,857	4,431	.76
Vat Black 27, 12-1/2%	1,523	1,385	1,670	1.21
All other	3,187	3,080	3,111	1.01
All other dyes[3]	482	466	763	1.64

[1] Calculated from rounded figures.
[2] Production and sales quantities of C.I. Leuco Sulfur and C.I. Solubilized Sulfur dyes are reported in terms of the usual commercial concentration of the C.I. Sulfur dyes.
[3] 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 9 summarizes production and sales of dyes in 1966, by class of application. Four application classes of dyes accounted for approximately two-thirds of all the dyes produced. Vat dyes accounted for 26.2 percent of the total; direct dyes, for 17.0 percent; and fluorescent brighteners and acid dyes, each for 10.6 percent of the above classes, the output of vat dyes remained about the same in 1966 as in 1965. The output of fluorescent brighteners was 19.5 percent larger in 1966 than in 1965; that of acid dyes was 13.7 percent larger; and direct dyes was 3.5 percent larger.

Of the remaining classes, the output of the fiber-reactive dyes was 1.9 million pounds in 1966, or 20.4 percent more than the 1.6 million pounds produced in 1965. Production of food, drug, and cosmetic colors was 15.1 percent larger in 1966 than in 1965; solvent dyes, 9.5 percent larger; and sulfur dyes, 7.0 percent larger. On the other hand, the output of mordant dyes was 9.6 percent smaller in 1966 than in 1965; and that of the azoic dyes and components, 2.9 percent smaller.

Table 10 shows production and sales of dyes, by chemical class. In 1966, three chemical classes of dyes accounted for two-thirds of all the dyes produced: Azo dyes accounted for 31.8 percent of the total; anthraquinone dyes, for 24.7 percent; and stilbene dyes, for 11.2 percent. The output of each of these three classes was larger in 1966 than in 1965: Stilbene dyes were 15.0 percent larger; anthraquinone dyes, 13.7 percent larger; and azo dyes, 4.8 percent larger. Of the remaining chemical classes for which statistics are published, the output of sulfur dyes was 7.0 percent larger in 1966 than in 1965, and that of triarylmethane dyes was 18.6 percent larger. On the other hand, the output of phthalocyanine dyes was 18.8 percent smaller in 1966 than in 1965, that of indigoid dyes, 8.5 percent smaller; and azoic dyes, 3.7 percent smaller.

TABLE 9.-- *Benzenoid dyes: U.S. production and sales, by class of application, 1966*

Class of application	Production	Sales		
		Quantity	Value	Unit value[1]
	1,000 pounds	*1,000 pounds*	*1,000 dollars*	*Per pound*
Total	219,194	204,135	331,453	$1.62
Acid	23,194	20,410	43,762	2.14
Azoic dyes and components:				
Azoic compositions	2,376	2,204	4,473	2.03
Azoic diazo components, bases (Fast color bases)	1,493	1,334	2,185	1.64
Azoic diazo components, salts (Fast color salts)	2,444	2,401	2,676	1.11
Azoic coupling components (Naphthol AS and derivatives)	3,071	2,478	4,978	2.01
Basic	11,136	10,420	26,674	2.56
Direct	37,343	36,733	56,920	1.55
Disperse	16,696	14,849	38,060	2.56
Fiber-reactive	1,909	1,899	7,906	4.16
Fluorescent brightening agents	23,212	20,829	40,703	1.95
Food, drug, and cosmetic colors	3,363	3,109	11,474	3.69
Mordant	4,288	3,509	5,285	1.51
Solvent	10,772	9,827	16,685	1.70
Sulfur[2]	19,959	19,236	11,034	.57
Vat	57,456	54,431	57,875	1.06
All other[3]	482	466	763	1.64

[1] Calculated from rounded figures.

[2] Production and sales quantities of C.I. Leuco Sulfur and C.I. Solubilized Sulfur dyes are reported in terms of the usual commercial concentration of the C.I. Sulfur dyes.

[3] 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.-- *Benzenoid dyes: U.S. production and sales, by chemical class, 1966*

Chemical class	Production	Sales		
		Quantity	Value	Unit value[1]
	1,000 pounds	*1,000 pounds*	*1,000 dollars*	*Per pound*
Total	219,194	204,135	331,453	$1.62
Anthraquinone	54,227	50,937	85,501	1.68
Azo, total	69,709	66,277	121,299	1.83
Monoazo	25,814	23,624	49,679	2.10
Disazo	20,070	19,295	35,284	1.83
Trisazo	13,749	13,341	15,253	1.14
Polyazo	2,720	2,935	5,002	1.70
Not specified	7,356	7,082	16,081	2.27
Azoic	9,394	8,430	14,344	1.70
Cyanine	514	505	1,636	3.24
Indigoid	5,251	5,604	3,590	.64
Ketone imine	502	505	1,051	2.08
Methine	1,281	1,327	4,590	3.46
Nitro	1,429	1,378	2,519	1.83
Oxazine	252	176	789	4.48
Phthalocyanine	1,783	1,787	4,660	2.61
Quinoline	523	597	1,934	3.24
Stilbene	24,518	21,760	35,143	1.62
Sulfur[2]	19,959	19,236	11,034	.57
Thiazole	586	549	1,176	2.14
Triarylmethane	7,936	6,592	15,037	2.28
Xanthene	1,874	911	4,585	5.03
All other[3]	19,456	17,564	22,565	1.28

[1] Calculated from rounded figures.
[2] Production and sales quantities of C.I. Leuco Sulfur and C.I. Solubilized Sulfur dyes are reported in terms of the usual commercial concentration of the C.I. Sulfur dyes.
[3] Includes acridine, aminoketone, azine, coumarin, hydroxyketone, nitroso, oxidation bases, thiazine, vat sulfur, and miscellaneous dyes. Statistics for these groups of dyes may not be published separately because publication would disclose information received in confidence.

Pigments

As the terms are used in this report, synthetic organic pigments are toners and lakes derived in whole or in part from benzenoid chemicals and colors. They are used in paints and related products, in printing inks, and in plastics and resin materials.

Statistics on production and sales of all benzenoid pigments in 1966 are given in table 11A[3]. Statistics on sales of a few selected pigments by commercial forms (dry full-strength form, dry extended form, dry dispersions, aqueous dispersions, and flushed colors) are given in table 12. Prior to 1961, statistics for toners included the quantities and values of extenders and diluents. Beginning in 1961, data were collected for both the full-strength and extended toners on a full-strength-toner-content basis. Individual toners and lakes are identified in this report by the names used in the second edition of the *Colour Index*.

Total production of benzenoid pigments in 1966 was 51.1 million pounds--6.4 percent more than the 48.0 million pounds produced in 1965 and 16.1 percent more than the 44.1 million pounds produced in 1964. Total sales of benzenoid pigments in 1966 amounted to 43.3 million pounds, valued at $107.6 million, compared with 38.0 million pounds, valued at $93.6 million, in 1965 and 35.1 million pounds, valued at $84.1 million, in 1964. In terms of quantity, sales of benzenoid pigments in 1966 were 13.9 percent larger than in 1965 and 23.5 percent larger than in 1964; in terms of value, sales in 1966 were 14.9 percent larger than in 1965 and 27.9 percent larger than in 1964.

Production of toners in 1966 amounted to 46.6 million pounds--6.7 percent more than the 43.7 million pounds reported for 1965. Sales in 1966 were 39.1 million pounds, valued at $103.6 million, compared with 34.1 million pounds, valued at $89.9 million, in 1965. Sales in 1966 were thus 14.7 percent larger than those in 1965 in terms of quantity, and 15.3 percent larger in terms of value. The individual toners listed in the report which were produced in the largest quantities in 1966 were Pigment Blue 15, alpha form, 5.0 million pounds; Pigment Green 7, 4.1 million pounds; Pigment Yellow 12, 4.1 million pounds; Pigment Red 49, barium toner, 3.5

[3] See also table 11B, pt. III, which lists these products and identifies the manufacturers, and table 23 in the appendix, which shows imports of benzenoid pigments during the years 1965-66.

million pounds; Pigment Blue 19, 2.7 million pounds; Pigment Blue 15, beta form, 2.7 million pounds; and Pigment Red 48, 2.5 million pounds.

Production of lakes totaled 4.5 million pounds in 1966--3.5 percent more than the 4.3 million pounds reported for 1965. Sales of lakes in 1966 amounted to 4.2 million pounds, valued at $4.0 million, compared with sales in 1965 of 3.9 million pounds, valued at $3.8 million. Sales in 1966 were thus 7.2 percent larger than those in 1965 in terms of quantity, and 5.5 percent larger in terms of value.

For each of 14 selected pigments, or groups of pigments, table 12 gives data on sales by commercial forms. Pigment Yellow 12, Pigment Red 90, and Pigment Blue 19 were sold principally in the flushed form. The remaining 11 pigments, or groups of pigments, for which statistics are published were sold principally in the dry full-strength form. Statistics on sales by commercial forms could not be published for Pigment Red 49, sodium toner, or for Pigment Blue 24 without revealing the operations of individual companies.

TABLE 11A.--*Benzenoid pigments: U.S. production and sales, 1966*

[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]

Pigment	Production	Sales		
		Quantity	Value	Unit value[1]
	1,000 pounds	*1,000 pounds*	*1,000 dollars*	*Per pound*
Grand total	51,128	43,316	107,594	$2.48
TONERS				
Total	46,628	39,113	103,627	2.65
Yellow toners, total	7,917	5,241	14,450	2.76
Hansa yellows, total	1,270	957	2,410	2.52
Pigment Yellow 1, C.I. 11 680	589	395	763	1.93
Pigment Yellow 3, C.I. 11 710	177	110	252	2.29
Pigment Yellow 73	257	...	...	...
Pigment Yellow 74, C.I. 11 741	113	108	371	3.44
Other Hansa yellows	134	344	1,024	2.98
Benzidine yellows, total	6,357	4,153	10,450	2.52
Pigment Yellow 12, C.I. 21 090	4,117	2,378	5,138	2.16
Pigment Yellow 13, C.I. 21 100	317	210	718	3.42
Pigment Yellow 14, C.I. 21 095	1,409	1,163	2,866	2.46
Pigment Yellow 17, C.I. 21 105	273	176	588	3.34
Other benzidine yellows	241	226	1,140	5.04
All other	290	131	1,590	12.14
Orange toners, total	830	763	2,890	3.79
Pigment Orange 2, C.I. 12 060	35	37	55	1.49
Pigment Orange 5, C.I. 12 075	248	202	315	1.56
Pigment Orange 13, C.I. 21 110	155	146	481	3.29
Pigment Orange 16, C.I. 21 160	222	214	592	2.77
(Vat Orange 7), C.I. 71 105	11	11	239	21.73
All other	159	153	1,208	7.90
Red and violet toners, total	21,519	18,835	44,621	2.37
Naphthol reds, total	856	659	2,891	4.39
Pigment Red 2, C.I. 12 310	67	46	121	2.63
Pigment Red 5, C.I. 12 490	114	67	338	5.04
Pigment Red 13, C.I. 12 395	4	3	15	5.00
Pigment Red 17, C.I. 12 390	66	64	198	3.09
Pigment Red 18, C.I. 12 350	17	...	...	...
Pigment Red 22, C.I. 12 315	75	83	246	2.96
Pigment Red 23, C.I. 12 355	181	157	526	3.35
Other naphthol reds	332	239	1,447	6.05
Pigment Red 1, C.I. 12 070, dark	223	178	218	1.22
Pigment Red 1, C.I. 12 070, light	217	179	215	1.20
Pigment Red 3, C.I. 12 120	1,843	1,530	2,325	1.52

See footnotes at end of table.

TABLE 11A.--*Benzenoid pigments: U.S. production and sales, 1966*--Continued

Pigment	Production	Sales		
		Quantity	Value	Unit value[1]
TONERS--Continued				
Red and violet toners--Continued	*1,000 pounds*	*1,000 pounds*	*1,000 dollars*	*Per pound*
Pigment Red 4, C.I. 12 085	335	274	386	$1.41
Pigment Red 6, C.I. 12 090	...	34	53	1.56
Pigment Red 38, C.I. 21 120	151	128	571	4.46
Pigment Red 48, C.I. 15 865	2,545	2,443	4,500	1.84
Pigment Red 49, C.I. 15 630:				
Barium toner	3,498	3,415	3,331	.98
Calcium toner	1,454	1,419	1,442	1.02
Sodium toner	211	267	273	1.02
Pigment Red 52, C.I. 15 860	1,309	1,226	1,836	1.50
Pigment Red 53, C.I. 15 585, barium toner	2,110	1,729	2,223	1.29
Pigment Red 54, C.I. 14 830, calcium toner	59	67	153	2.28
Pigment Red 57, C.I. 15 850, calcium toner	1,017	867	1,290	1.49
Pigment Red 63, C.I. 15 880	64	53	100	1.89
Pigment Red 81, C.I. 45 160, PMA	337	269	1,649	6.13
Pigment Red 81, C.I. 45 160, PTA	151	146	894	6.12
Pigment Red 90, C.I. 45 380	1,507	812	1,508	1.86
Pigment Violet 1, C.I. 45 170, PMA	99	99	293	2.96
Pigment Violet 1, C.I. 45 170, PTA	63	57	379	6.65
Pigment Violet 3, C.I. 42 535, fugitive	574	560	815	1.46
Pigment Violet 3, C.I. 42 535, PMA	387	355	1,054	2.97
Pigment Violet 3, C.I. 42 535, PTA	43	39	174	4.46
Pigment Violet 23	62	74	1,412	19.08
All other	2,404	1,956	14,636	7.48
Blue toners, total	11,046	9,722	27,935	2.87
Pigment Blue 1, C.I. 42 595, PMA	180	170	840	4.94
Pigment Blue 1, C.I. 42 595, PTA	29	28	136	4.86
Pigment Blue 2, C.I. 44 045, fugitive, PMA, and PTA	13	10	35	3.50
Pigment Blue 9, C.I. 42 025, PTA	6	...	...	...
Pigment Blue 14, C.I. 42 600, PMA	73	73	566	7.75
Pigment Blue 15, C.I. 74 160, alpha form	4,981	4,130	11,159	2.70
Pigment Blue 15, C.I. 74 160, beta form	2,685	2,369	7,166	3.02
Pigment Blue 19, C.I. 42 750A	2,681	2,637	6,196	2.35
Pigment Blue 22, C.I. 69 810	77	37	684	18.49
Pigment Blue 25, C.I. 21 180	137	...	...	...
All other	184	268	1,153	4.30
Green toners, total	4,905	4,131	13,116	3.18
Pigment Green 1, C.I. 42 040, PMA	...	6	29	4.83
Pigment Green 1, C.I. 42 040, PTA	12	9	57	6.33
Pigment Green 2, C.I. 42 040 and 49 005, PMA	76	69	312	4.52
Pigment Green 2, C.I. 42 040 and 49 005, PTA	51	41	254	6.20
Pigment Green 4, C.I. 42 000, PMA	...	4	15	3.75
Pigment Green 4, C.I. 42 000, PTA	6	7	31	4.43
Pigment Green 7, C.I. 74 260	4,113	3,440	10,634	3.09
Pigment Green 8, C.I. 10 006	220	187	240	1.28
Pigment Green 36, C.I. 74 265	208	208	706	3.39
All other	219	160	838	5.24
Brown toners, total	189	157	350	2.23
Pigment Brown 3, C.I. 21 010, PMA	4	4	14	3.50
Pigment Brown 5, C.I. 15 800	149	127	196	1.54
All other	36	26	140	5.38
Black toners	222	264	265	1.00
LAKES				
Total	4,500	4,203	3,967	.94
Yellow lakes	174	...	...	...

See footnotes at end of table.

TABLE 11A.--*Benzenoid pigments: U.S. production and sales, 1966*--Continued

Pigment	Production	Sales		
		Quantity	Value	Unit value[1]
LAKES--Continued	*1,000 pounds*	*1,000 pounds*	*1,000 dollars*	*Per pound*
Red lakes:				
Pigment Red 60, C.I. 16 105	264	247	435	$1.76
Pigment Red 83, C.I. 58 000	95	89	270	3.03
(Acid Red 26), C.I. 16 150	605	596	275	.46
Violet lakes, total	197	146	305	2.09
Pigment Violet 5, C.I. 58 055	184	132	289	2.19
All other	13	14	16	1.14
Blue lakes: Pigment Blue 24, C.I. 42 090	...	1,958	1,868	.95
Black lakes: (Natural Black 3), C.I. 75 291	63	77	73	.95
All other lakes[2]	3,102	1,090	741	.68

[1] Calculated from rounded figures.
[2] Includes all brown, green, and orange lakes, "all other" blue, "all other" red, and "all other" black lakes, production of Pigment Blue 24 and sales of yellow lakes.

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

TABLE 12.-- *U.S sales of selected dry full-strength colors, dry extended colors, dry dispersions, aqueous dispersions, and flushed colors, 1966*

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	2,378	5,344	$2.25
Dry full-strength toner	700	1,460	2.09
Dry extended toner, dry dispersions, aqueous dispersions[3] and flushed color[4]	1,678	3,884	2.31
Pigment Yellow 13, C.I. 21 100; Pigment Yellow 14, C.I. 21 095; Pigment Yellow 17, C.I. 21 105; and other benzidine yellows, total	1,775	5,260	2.96
Dry full-strength toner	1,230	3,735	3.04
Dry extended toner and dry dispersions[4]	40	104	2.60
Aqueous dispersions[3]	315	851	2.70
Flushed color	190	570	3.00
Pigment Red 3, C.I. 12 120, total	1,530	2,378	1.55
Dry full-strength toner and dry extended toner[4]	977	1,473	1.51
Aqueous dispersions[3]	91	105	1.15
Flushed color	462	800	1.73
Pigment Red 48, C.I. 15 865, total	2,443	4,500	1.84
Dry full-strength toner	2,256	4,122	1.83
Dry extended toner and dry dispersions[4]	85	178	2.09
Aqueous dispersions[3]	32	75	2.34
Flushed color	70	125	1.80
Pigment Red 49, C.I. 15 630, barium toner, total	3,415	3,427	1.00
Dry full-strength toner	2,535	2,467	.97
Dry extended toner and aqueous dispersions[3] [4]	11	13	1.18
Flushed color	869	947	1.09
Pigment Red 49, C.I. 15 630, calcium toner, total	1,419	1,567	1.10
Dry full-strength toner and dry dispersions[4]	1,153	1,169	1.01
Aqueous dispersions[3] and flushed color[4]	266	398	1.50

See footnotes at end of table.

TABLE 12.--*U.S. sales of selected dry full-strength colors, dry extended colors, dry dispersions, aqueous dispersions, and flushed colors, 1966*--Continued

Selected pigments by commercial forms	Sales		
	Quantity[1]	Value	Unit Value[2]
	1,000 pounds	*1,000 dollars*	*Per pound*
Pigment Red 49, C.I. 15 630, sodium toner[4]	267	287	$1.07
Pigment Red 53, C.I. 15 585, barium toner, total	1,729	2,260	1.31
Dry full-strength toner, dry extended toner, and dry dispersions[4]	1,043	1,340	1.28
Aqueous dispersions[3] and flushed color[4]	686	920	1.34
Pigment Red 90, C.I. 45 380, total	812	1,605	1.98
Dry full-strength toner and dry extended toner[4]	43	89	2.07
Dry dispersions and flushed color[4]	769	1,516	1.97
Pigment Violet 3, C.I. 42 535, fugitive, total	560	815	1.46
Dry full-strength toner and dry extended toner[4]	317	475	1.50
Flushed color	243	340	1.40
Pigment Violet 3, C.I. 42 535, permanent (PMA and PTA), total	394	1,238	3.14
Dry full-strength toner	250	781	3.12
Dry extended toner, dry dispersions and aqueous dispersions[3 4]	43	173	4.02
Flushed color	101	284	2.81
Pigment Blue 15, C.I. 74 160, alpha form, total	4,130	11,489	2.78
Dry full-strength toner	1,759	4,429	2.52
Dry extended toner	860	2,839	3.30
Dry dispersions	108	397	3.68
Aqueous dispersions[3]	1,163	2,921	2.51
Flushed color	240	903	3.76
Pigment Blue 15, C.I. 74 160, beta form, total	2,369	7,166	3.02
Dry full-strength toner	1,078	3,391	3.15
Dry extended toner, dry dispersions and aqueous dispersions[3 4]	814	2,357	2.90
Flushed color	477	1,418	2.97
Pigment Blue 19, C.I. 42 750A, total	2,637	6,196	2.35
Dry full-strength toner and dry extended toner[4]	248	605	2.44
Aqueous dispersions[3] and flushed color[4]	2,389	5,591	2.34
Pigment Blue 24, C.I. 42 090[4]	1,958	2,291	1.17
Pigment Green 7, C.I. 74, 260, total	3,440	10,854	3.16
Dry full-strength toner	1,607	5,155	3.21
Dry extended toner	342	1,281	3.75
Dry dispersions	127	544	4.28
Aqueous dispersions[3]	1,190	3,331	2.80
Flushed color	174	543	3.12

[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] Includes presscake.
[4] Separate data on these commercial forms may not be published without revealing the operations of individual companies.

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

Medicinal Chemicals

Medicinal chemicals include the medicinal and feed grades of all organic chemicals having therapeutic value, whether obtained by chemical synthesis, by fermentation, by extraction from naturally occurring plant or animal substances, or by refining a technical grade product. They include antibiotics and other anti-infective agents, antihistamines, autonomic drugs, cardiovascular agents, central nervous system depressants and stimulants, hormones and synthetic substitutes, vitamins, and other therapeutic agents for human or veterinary use and for animal feed supplements. Statistics on production and sales of medicinal chemicals grouped by pharmacological class are given in table 13A[4].

The statistics shown are for bulk chemicals only; finished pharmaceutical preparations and products put up in pills, capsules, tablets, or other measured doses are excluded.[5] The difference between production and sales reflects inventory changes, processing losses, and captive consumption of medicinal chemicals processed into ethical and proprietary pharmaceutical products by the primary manufacturer. In some instances, the difference may also include quantities of medicinal grade products used as intermediates, e.g., penicillin G salts used as intermediates in the manufacture of the semi-synthetic penicillins. All quantities are given in terms of 100-percent content of the pure bulk drug.

Sales of antibiotics in 1965 and 1966 cannot be compared with those for earlier years because the reporting instructions were changed in 1965 to exclude sales of antibiotics in mixtures, formulations, capsules, pills, tablets, etc. For the years prior to 1965, sales data for antibiotics represented all sales by the primary producers, including finished pharmaceutical preparations.

Total U.S. production of bulk medicinal chemicals in 1966 amounted to 185 million pounds, or 16.3 percent more than the 160 million pounds produced in 1965, and 28.7 percent more than the 144 million pounds produced in 1964. Total sales of bulk medicinal chemicals in 1966 amounted to 136 million pounds, valued at $398 million, compared with sales in 1965 or 129 million pounds, valued at $362 million. Sales in 1966 were thus 5.7 percent greater than in 1965, in terms of quantity, and 10.0 percent greater, in terms of value.

Production of the more important groups of medicinal chemicals in 1966 was as follows: Antibiotics, 9.7 million pounds (29.5 percent larger than in 1965), of which 5.4 million pounds was for medicinal use and 4.2 million pounds was for other uses; anti-infective agents other than antibiotics, 33.5 million pounds (22.0 percent larger than in 1965); central depressants and stimulants, 48.3 million pounds (12.9 percent larger); and vitamins, 17.6 million pounds (7.9 percent larger). Production of some of the more important individual products listed in the table was as follows: Choline chloride, 36.2 million pounds (16.2 percent larger than in 1965); aspirin, 34.1 million pounds (17.3 percent larger); methionine and its hydroxy analogue, 13.9 million pounds (33.7 percent larger); salicylic acid, 11.4 million pounds (15.5 percent larger); piperazine base and salts, 8.7 million pounds (33.3 percent larger); ascorbic acid, 7.6 million pounds (4.2 percent larger); anti-infective sulfonamides, 5.4 million pounds (15.3 percent larger); penicillins, 1,676 trillion units (24.8 percent larger); tetracyclines, 1.7 million kilograms (44.2 percent larger); vitamin A, 944 trillion units (57.7 percent larger); and vitamin E, 277 billion units.

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[4] See also table 13B, pt. III, which lists these products and identifies the manufacturers, and table 23 in the appendix, which shows imports of benzenoid medicinal chemicals and pharmaceuticals during the years 1965-66.

[5] Complementary statistics on the dollar value of manufacturers' shipments of finished pharmaceutical preparations, except biologicals, are published annually by the U.S. Department of Commerce, Bureau of the Census, in Current Industrial Reports, Series MA-M28G. Many pharmaceutical manufacturers who report to the Bureau of the Census are excluded from the Tariff Commission report because they are not primary producers of medicinal chemicals, that is, they do not themselves produce the bulk drugs which go into their pharmaceutical products but purchase their drug requirements from domestic or foreign producers.

TABLE 13A.--*Medicinal chemicals: U.S. production and sales, 1966*

[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 all medicinal chemicals for which data on production or sales were reported and identifies the manufacturer of each]

Chemical	Production[1]	Sales[1]		
		Quantity	Value	Unit value[2]
	1,000 pounds	*1,000 pounds*	*1,000 dollars*	*Per pound*
Grand total	185,469	136,463	398,408	$2.92
Acyclic	69,305	59,621	41,762	.70
Benzenoid[3]	97,891	63,666	269,815	4.24
Cyclic nonbenzenoid[4]	18,273	13,176	86,831	6.59
Antibiotics, total[5]	9,652	4,788	99,263	20.73
For medicinal use, total	5,445	2,410	62,388	25.89
Antifungal and antitubercular antibiotics	947	729	10,233	14.04
Bacitracin	12	8	913	114.12
Penicillins, total	2,092	878	16,078	18.31
Penicillin G, potassium	813	...	...	...
Penicillin G, procaine	754	458	4,024	8.79
All other	525	420	12,054	28.70
Other antibiotics for medicinal use	2,394	795	35,164	44.23
For other uses, total	4,207	2,378	36,875	15.51
Bacitracin	179	168	3,316	19.74
Penicillin G salts[6]	868	756	5,688	7.52
All other	3,160	1,454	27,871	19.17
Anticoagulants, total	10	6	977	162.83
Sodium heparin	2	1	840	[7] 603.45
All other	8	5	137	27.40
Antihistamines, total	399	230	5,402	23.49
Antinauseants	52	...	...	...
Chlorpheniramine maleate	41	12	235	19.58
Pheniramine maleate	18	15	298	19.87
All other	288	203	4,869	23.99
Anti-infective agents, total	33,532	21,685	82,973	3.83
Arsenic, bismuth, and mercury compounds	4,230	...	...	...
Caprylates and undecylenates	523	470	565	1.20
p-Hydroxybenzoic acid esters, total	610	585	1,141	1.95
Methylparaben	397	379	718	1.89
All other	213	206	423	2.05
5-Nitrofurane, -imidazole, and -thiazole derivatives	602	...	...	...
Phenolic antiseptics and disinfectants	334	285	493	1.73
Piperazine base and salts, total	8,681	6,098	4,855	.80
Piperazine	4,033	1,228	1,408	1.15
All other	4,648	4,870	3,447	.71
Quinoline derivatives, total	934	...	...	...
Diiodohydroxyquin	28	13	49	3.77
Oxyquinoline benzoate	...	4	15	3.75
Oxyquinoline sulfate	7	13	46	3.54
All other	899	...	...	...
Sulfonamides	5,450	1,530	6,712	4.39
Groups listed above for which separate sales data may not be shown	...	2,762	10,701	3.87
Other anti-infective agents, total	12,168	9,925	58,396	5.88
Anthelmintic, antifungal, antiprotozoan, and antiviral agents	8,677	8,309	55,428	6.67
Urinary antiseptics	722	673	1,189	1.77
All other	2,769	943	1,779	1.89
Antineoplastic agents and local anesthetics, total	824	684	1,652	2.42
Lidocaine	...	4	125	31.25
All other	824	680	1,527	2.25

See footnotes at end of table.

TABLE 13A. --*Medicinal chemicals: U.S. production and sales, 1966*--Continued

Chemical	Production[1]	Sales[1]		
		Quantity	Value	Unit value[2]
	1,000 pounds	*1,000 pounds*	*1,000 dollars*	*Per pound*
Autonomic drugs, total	608	407	7,813	$19.20
Parasympatholytic (anticholinergic) agents:				
Homatropine methylbromide	1	1	39	[7] 37.13
Quaternary ammonium compounds (except tropane derivatives)	65	27	1,219	45.15
Sympathomimetic (adrenergic) agents, total	481	348	4,632	13.31
Isoproterenol salts	2	1	21	[7] 30.03
Phenylephrine	...	7	245	35.00
Phenylpropanolamine hydrochloride	280	259	1,812	7.00
All other	199	81	2,554	31.53
Other autonomic drugs	61	31	1,923	62.03
Cardiovascular agents, total	891	473	14,460	30.57
Cardiac drugs	31	5	35	7.00
Rauwolfia and veratrum alkaloids	1	([8])	274	[7] 568.63
Other cardiovascular agents	859	468	14,151	30.24
Central depressants and stimulants, total	48,330	32,726	57,891	1.77
Amphetamines, total	67	65	545	8.38
Dextroamphetamine sulfate	24	...	...	...
Methamphetamine base and hydrochloride	...	28	261	9.32
All other	43	37	284	7.68
Anticonvulsants, hypnotics, and sedatives (except barbiturates)[9]	744	...	...	...
Antidepressants	63	...	...	...
Barbiturates, total	977	463	1,973	4.26
Butabarbital, sodium	46	33	254	7.70
Phenobarbital, sodium	7	...	...	...
All other	924	430	1,719	4.00
Hydrocodone bitartrate	1	1	295	[7] 278.25
Salicylates, total	37,553	...	...	...
Aspirin	34,114	([10])	([10])	([10])
All other	3,439	...	...	...
Skeletal muscle relaxants	136	110	643	5.85
Tranquilizers, total	1,583	1,314	5,813	4.42
Meprobamate	1,206	1,244	3,163	2.54
Phenothiazine derivatives	...	7	1,694	242.00
Other tranquilizers[9]	377	63	956	15.17
Other central depressants and stimulants[11]	7,206	30,773	48,622	1.58
Dermatological agents, total	12,833	9,902	4,463	.45
Allantoin	22	...	...	...
Bismuth subgallate	27	...	...	...
Salicylic acid	11,400	8,388	3,194	.38
All other	1,384	1,514	1,269	.84
Expectorants and mucolytic agents, total	1,336	1,319	2,119	1.61
Guaiacol and its derivatives	924	913	1,568	1.72
All other	412	406	551	1.36
Gastrointestinal agents, total	52,002	48,835	20,049	.41
Choleretics and hydrocholeretics	137	...	...	...
Choline salts, total	36,537	35,225	5,845	.17
Choline chloride (all grades)	36,198	34,955	5,546	.16
All other	339	270	299	1.11
Methionine and its hydroxy analogue	13,904	12,268	11,164	.91
Other gastrointestinal agents	1,424	1,342	3,040	2.27
Hormones and synthetic substitutes, total	1,503	369	19,747	53.51
Antithyroid agents	6	...	...	...
Estrogens	...	18	650	36.11
Prednisone	3	...	...	...
Synthetic hypoglycemic agents	1,298	313	916	2.93
Other hormones and synthetic substitutes	196	38	18,181	478.45

See footnotes at end of table.

TABLE 13A. --*Medicinal chemicals: U.S. production and sales, 1966*--Continued

Chemical	Production[1]	Sales[1]		
		Quantity	Value	Unit value[2]
	1,000 pounds	*1,000 pounds*	*1,000 dollars*	*Per pound*
Renal-acting and edema-reducing agents, total	1,283	176	2,932	$16.66
Mercurial diuretics	9	1	46	7 49.18
Theobromine and theophylline derivatives, total	111	96	277	2.89
Aminophylline	37	...	...	...
All other	74	96	277	2.89
Other renal-acting and edema-reducing agents	1,163	79	2,609	33.03
Therapeutic nutrients, total	4,245	2,507	2,807	1.12
Amino acids and salts, total	1,489	1,463	1,913	1.31
Glutamic acid	...	59	91	1.54
Potassium glutamate	25	...	...	...
All other	1,464	1,404	1,822	1.30
Calcium gluconate	...	554	350	.63
Other therapeutic nutrients	2,756	490	544	1.11
Vitamins, total	17,582	12,042	70,752	5.88
Vitamin A alcohol and esters, total[12]	1,016	756	18,817	24.89
Vitamin A palmitate (feed grade)	640	560	11,344	20.26
All other	376	196	7,473	38.13
Vitamin B-complex, total	6,276	4,918	28,584	5.81
Cyanocobalamin (except U.S.P. crystalline)[12]	2	...	...	...
Niacin (all grades)	2,206	1,787	2,106	1.18
Niacinamide	1,046	952	1,854	1.95
Pantothenic acid and derivatives, total	1,523	940	3,251	3.46
Calcium pantothenate (racemic) (feed grade)	1,135	607	1,765	2.91
All other	388	333	1,486	4.46
Riboflavin (all grades)	705	590	6,176	10.47
Other B-complex vitamins	794	649	15,197	23.42
Vitamin C, total	9,600	5,872	12,201	2.08
Ascorbic acid	7,581	4,543	9,163	2.02
All other	2,019	1,329	3,038	2.29
Vitamin E[12]	507	406	7,908	19.48
Vitamin K	156	72	981	13.62
Other vitamins	27	18	2,261	125.61
Miscellaneous medicinal chemicals[13]	439	314	5,108	16.27

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

[2] Calculated from rounded figures except as noted.

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

[4] Includes antibiotics of unknown structure.

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

Footnotes for table 13A--Continued

tabulation shows statistics for all individually publishable antibiotics in terms of kilograms of antibiotic base (Kg.) or billions of U.S.P. units (BU):

Antibiotic	Unit of quantity	Production	Sales		
			Quantity	Value	Unit value
				1,000 dollars	
Bacitracin, total	----BU-----	4,331	3,986	4,229	$1,060.96
For medicinal use	----BU-----	267	181	913	5,044.20
For other uses	----BU-----	4,064	3,805	3,316	871.48
Neomycin, for all uses	----Kg-----	88,801	48,136	2,928	60.83
Penicillins, total	----BU-----	1,676,281	853,571	21,766	25.50
For medicinal use, total	----BU-----	1,278,564	507,328	16,078	31.69
Penicillin G, potassium	----BU-----	587,543	...	...	...
Penicillin G, procaine	----BU-----	345,171	209,670	4,024	19.19
All other	----BU-----	345,850	297,658	12,054	40.50
For other uses: Penicillin G salts	----BU-----	397,717	346,243	5,688	16.43
Streptomycin, for all uses	----Kg-----	360,317	...	...	...
Tetracyclines, for all uses	----Kg-----	1,668,078	667,486	37,617	56.36

[6] Chiefly procaine penicillin G.

[7] Calculated from full figures.

[8] Sales of rauwolfia and veratrum alkaloids amounted to 482 pounds.

[9] Includes 2 or more of the following 6 drugs which are subject to Federal control under the Drug Abuse Control Act: Chlordiazepoxide hydrochloride, diazepam, ethchlorvynol, ethinamate, glutethimide, and methylprylon. U.S. production of these 6 drugs amounted to 508 thousand pounds in 1966.

[10] Sales data for 1965 and earlier years included some sales of aspirin tablets which were inadvertently reported as bulk sales. Statistics for sales of bulk aspirin (excluding tablets) in 1966 cannot be published without disclosing the operations of individual producers.

[11] Includes sales of anticonvulsants, hypnotics, and sedatives (except barbiturates), of antidepressants, and of salicylates.

[12] All quantities for vitamins A, B_{12}, D_2, D_3, and E were reported in terms of grams or units, but were converted to pounds for inclusion in the main statistical table (1.317 billion units of vitamin A acetate, 0.824 billion units of vitamin A palmitate, 453.6 grams of vitamin B_{12}, 18.14 billion units of vitamins D_2 and D_3, 617,000 units of d-alpha tocopheryl acetate, 454,000 units of dl-alpha tocopheryl acetate, etc. = 1 pound). The following tabulation shows statistics for these vitamins, except for the D vitamins, which were not separately publishable, in terms of kilograms (Kg.), millions of international units (MU), or billions of U.S.P. units (BU):

Vitamin	Unit of quantity	Production	Sales		
			Quantity	Value	Unit value
				1,000 dollars	
Cyanocobalamin (Vitamin B_{12}) (except U.S.P. crystalline)	----Kg-----	762	...	...	...
Vitamin A alcohol and esters, total	----BU-----	943,652	655,512	18,817	$28.7(
Vitamin A palmitate (feed grade)	----BU-----	527,584	461,755	11,344	24.5'
All other	----BU-----	416,068	193,757	7,473	38.5'
Vitamin E	----MU-----	276,863	233,830	7,908	33.8;

[13] Includes diagnostic agents, hematological agents (except anticoagulants), smooth-muscle relaxants, and miscellaneous unclassified medicinal chemicals.

Flavor and Perfume Materials

Flavor and perfume materials are organic chemicals used in the manufacture of foods, beverages, cosmetics, and soaps. Aromatic organic chemicals are utilized to neutralize or to mask unpleasant odors in industrial processes and products as well as in consumer products. Most of them have desirable flavors or odors, and some have the ability to enhance natural flavors when added to certain foods. This report includes data on materials derived from natural products by actual chemical processes and from coal tar. These materials are grouped as either cyclic or acyclic materials, according to their chemical structures. Cyclic materials are further classified as (1) benzenoid and naphthalenoid, and (2) terpenoid, heterocyclic, and alicyclic. Not included are 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 plant and animal sources. Statistics on production and sales of flavor and perfume materials in 1966 are given in table 14A.[6]

Total domestic production of flavor and perfume materials covered in this report in 1966 amounted to 110.7 million pounds, or 11.5 percent more than the 99.2 million pounds produced in 1965. Sales of these materials in 1966 amounted to 98.3 million pounds, valued at $92.6 million, in 1966.

Production of cyclic flavor and perfume materials in 1966 amounted to 61.4 million pounds--15.4 percent more than the 53.2 million pounds produced in 1965. Sales of cyclic flavor and perfume materials in 1966 were 49.6 million pounds, valued at $60.9 million, compared with 44.6 million pounds, valued at $56.8 million, in 1965. The individual chemical in the cyclic group that was produced in the greatest volume in 1966, supplanting methyl salicylate which was the leader for some years, was benzyl alcohol (5.1 million pounds). In 1966, production of synthetic sweeteners, as a group, amounted to 17.3 million pounds, an increase of 35 percent over the output of 12.8 million pounds in 1965. The average unit value of sales of all synthetic sweeteners in 1966 was $0.68 per pound, compared with $0.89 per pound in 1965. Reflecting this lower unit value, total value of sales for synthetic sweeteners was $8.3 million in 1966, compared with $9.0 million in 1965.

The output of acyclic flavor and perfume materials in 1966 amounted to 49.3 million pounds, 7.1 percent more than the 46.0 million pounds produced in 1965. Monosodium glutamate was by far the most important of the acyclic chemicals, and the individual flavor and perfume chemical produced in the greatest volume; output of this flavor-enhancing chemical totaled 45.7 million pounds in 1966, compared with 43.1 million pounds in 1965. Sales of acyclic flavor and perfume materials in 1966 amounted to 48.7 million pounds, valued at $31.7 million, compared with 43.1 million pounds, valued at $28.2 million, in 1965.

TABLE 14A.--*Flavor and perfume materials: U.S. production and sales, 1966*

[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 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	110,670	98,314	92,634	$0.94
FLAVOR AND PERFUME MATERIALS, CYCLIC				
Total	61,406	49,597	60,915	1.23
Benzenoid and Naphthalenoid				
Total	26,972	24,052	27,030	1.12
4-Allyl-2-methoxyphenol (Eugenol)	336	304	526	1.73
Anethole (p-Propenylanisole)	1,983	1,907	1,230	.65
p-Anisaldehyde (p-Methoxybenzaldehyde)	1,022	979	1,367	1.40
Benzophenone[2]	182	124	128	1.03
Benzyl acetate	1,122	1,041	453	.43
Benzyl alcohol[2]	5,110	4,595	1,758	.38
Benzyl butyrate	9	6	8	1.36
Benzyl cinnamate	4	5	19	3.94
Benzyl ether	122	102	19	.19
Benzyl phenylacetate (Benzyl α-toluate)	...	2	6	2.52
Benzyl propionate	...	12	13	1.05

See footnotes at end of table.

[6] See also table 14B, pt. III, which lists these products and identifies the manufacturers, and table 23 in the appendix, which shows imports of benzenoid flavor and perfume materials during the years 1965-66.

TABLE 14A.--*Flavor and perfume materials: U.S. production and sales, 1966*--Continued

Material	Production	Sales		
		Quantity	Value	Unit value[1]
FLAVOR AND PERFUME MATERIALS, CYCLIC--Continued				
Benzenoid and Naphthalenoid--Continued	*1,000 pounds*	*1,000 pounds*	*1,000 dollars*	*Per pound*
Benzyl salicylate	304	270	335	$1.24
Cinnamaldehyde	1,319	1,207	852	.71
Cinnamyl acetate	15	3	8	2.53
Cinnamyl alcohol	215	175	241	1.37
2-Ethoxynaphthalene	19	...	...	...
Isobutyl phenylacetate (Isobutyl α-toluate)	27	25	22	.88
Isobutyl salicylate	85	51	44	.87
Isopentyl salicylate (Isoamyl salicylate)	538	502	340	.68
4'-Methoxyacetophenone	20	17	40	2.36
2-Methoxy-4-propenylphenol (Isoeugenol)	142	128	351	2.73
p-Methylanisole (p-Cresyl methyl ether)	...	13	13	.99
Methyl anthranilate	...	180	340	1.89
α-Methylcinnamaldehyde	16	12	26	2.08
Methyl cinnamate	76	...	...	...
Methyl salicylate (Synthetic wintergreen oil)	3,994	4,001	1,874	.47
α-Pentylcinnamaldehyde (α-Amylcinnamaldehyde)	436	485	606	1.25
Phenethyl isobutyrate	12	10	21	2.11
Phenethyl phenylacetate (Phenethyl α-toluate)	37	24	66	2.76
Phenethyl propionate	2	1	3	2.77
3-Phenyl-1-propanol (Hydrocinnamic alcohol)	26	19	35	1.86
4-Propenylveratrole (Isoeugenyl methyl ether)	...	11	40	3.64
p-Tolyl acetate (p-Cresyl acetate)	4	3	9	3.28
α-(Trichloromethyl)benzyl acetate (Rosetone)	92	81	207	2.57
All other benzenoid and naphthalenoid materials	9,703	7,757	16,030	2.07
Terpenoid, Heterocyclic, and Alicyclic				
Total	34,434	25,545	33,885	1.33
Cedryl acetate	...	151	368	2.43
Citral a (Geranial)	316	84	323	3.86
Citronellol	653	544	822	1.51
Citronellyl acetate	21	22	37	1.67
Citronellyl formate	32	17	34	2.03
Coumarin	1,031	1,192	2,377	1.99
Essential oils, chemically modified	254	246	707	2.88
Geraniol	1,117	887	1,159	1.31
Geranyl acetate	91	91	156	1.72
Geranyl formate	14	11	24	2.20
Hydroxycitronellal	513	514	1,973	3.84
Hydroxycitronellal, dimethyl acetal	15	9	54	6.33
Ionones	340	305	998	3.28
Isobornyl acetate	978	997	378	.38
Menthol, synthetic, tech. & U.S.P	574	551	2,151	3.91
Menthone	32	21	75	3.60
Methylionones	520	377	1,681	4.46
Nerol	10	6	34	5.90
Piperonal (Heliotropin)	253	263	568	2.16
Rhodinol	11	8	221	27.11
Sweeteners, synthetic	17,346	12,181	8,317	.68
Terpineols	3,543	3,546	1,132	.32
α-Terpinyl acetate	473	433	269	.62
Vetivenyl acetate	30	25	457	18.39
All other terpenoid, heterocyclic and alicyclic materials	6,267	3,064	9,570	3.12
FLAVOR AND PERFUME MATERIALS, ACYCLIC				
Total	49,264	48,717	31,719	.65
Allyl hexanoate (Allyl caproate)	9	9	23	2.69
Ethyl butyrate	355	328	221	.68
Ethyl heptanoate (Ethyl enanthate)	9	...	...	...
Glutamic acid, monosodium salt (Monosodium glutamate)	45,727	45,397	28,662	.63
4-Hydroxyundecanoic acid, γ-lactone (γ-Undecalactone)	11	9	45	5.00
Isopentyl butyrate (Isoamyl butyrate)	80	58	47	.81
All other acyclic materials	3,073	2,916	2,721	.93

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

Plastics and Resin Materials

Plastics and resin materials are condensation and polymerization products of organic chemicals, containing necessary plasticizers, fillers, extenders, stabilizers, and coloring agents. At some stage in their manufacture they exist in such physical condition that they can be shaped or otherwise processed by the application of heat and pressure. Some types of plastics materials may be molded, cast, or extruded into semifinished or finished forms. Other types are used as adhesives, for the treatment of textiles and paper, and for protective coatings. (Statistics on U.S. production and sales of synthetic plastics and resin materials for 1966 are given in table 15A [7]). In general, the statistics follow the outline of the Tariff Commission's monthly report on the production and sales of synthetic plastics and resin materials (S.O.C. Series P-66). However, the data given include some companies which are not covered in the monthly reports, and

TABLE 15A.--*Plastics and resin materials: U.S. production and sales, by chemical classes and uses, 1966*

[Quantities and values are given in terms of the total weight of the materials (dry basis). Listed below are all plastics and resin materials for which any reported data on production or sales may be published. (Leaders are used where the reported data are accepted in confidence and may not be published or where no data were reported.) Table 15B in pt. III lists all plastics and resin materials for which data on production or sales were reported and identifies the manufacturer of each]

Kind and use	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	13,584,872	11,471,638	2,740,081	$0.24
Plastics and resin materials, benzenoid	5,066,571	4,254,211	988,001	.23
Plastics and resin materials, nonbenzenoid	8,518,301	7,217,427	1,752,080	.24
THERMOSETTING RESINS				
Total	3,647,341	2,913,716	756,632	.26
Alkyd resins, total	666,063	350,845	90,053	.26
Domestic:				
Phthalic anhydride type	584,543	285,692	73,308	.26
Polybasic acid type	81,520	60,202	15,472	.26
Sales for export	...	4,951	1,273	.26
Coumarone-indene and petroleum polymer resins, total	334,496	319,741	34,821	.11
Floor tile	70,283	70,076	...	...
Rubber compounding	66,547	65,613	...	...
All other uses	197,666	158,272	...	...
Sales for export	...	25,780	...	...
Epoxy resins:				
Unmodified, total	139,791	133,095	68,264	.51
Bonding and adhesives	...	15,144	...	...
Protective coatings	...	54,358	...	...
Reinforced plastics	...	27,672	...	...
All other uses	...	17,451	...	...
Sales for export	...	18,470	...	...
Modified	4,590	4,024	4,451	1.11
Polyester resins,[3] total	470,046	406,658	122,627	.30
Reinforced plastics:				
Sheets, flat and corrugated	...	39,344	...	...
All other	...	253,772	...	...
Surface coatings	...	6,547	...	...
All other uses	...	95,192	...	...
Sales for export	...	11,803	...	...

See footnotes at end of table.

[7] See also table 15B, pt. III which lists these products by chemical type and by end uses, and identifies the manufacturers.

TABLE 15A.--*Plastics and resin materials: U.S. production and sales, by chemical classes and uses, 1966*--Continued

Kind and use	Production	Sales		
		Quantity	Value	Unit value[1]
	1,000 pounds, dry basis[2]	*1,000 pounds, dry basis*[2]	*1,000 dollars*	*Per pound*
THERMOSETTING RESINS--Continued				
Phenolic and other tar acid resins, total	1,046,742	855,804	203,559	$0.24
Molding materials	307,481	278,278	...	...
Bonding and adhesive resins for:				
Laminating	143,114	86,972	...	...
Coated and bonded abrasives	31,544	21,958	...	...
Friction materials	43,955	38,097	...	...
Thermal insulation	128,061	62,054	...	...
Foundry or shell molding	76,854	72,671	...	...
Plywood	156,028	146,138	...	...
Fibrous and granulated wood	42,866	36,121	...	...
Protective coatings, unmodified and modified	34,291	26,760	...	...
All other uses	82,548	72,987	...	...
Sales for export	...	13,768	...	...
Polyurethane and diisocyanate resins	71,514	48,528	28,809	.59
Rosin modifications, total	130,796	129,909	27,825	.21
Rosin and rosin esters, unmodified (ester gums)	56,117	58,770	12,105	.21
All other	74,679	71,139	15,720	.22
Silicone resins	9,029	8,956	17,023	1.90
Urea and melamine resins, total	718,322	611,072	144,111	.24
Textile treating and coating resins	81,221	73,612	...	...
Paper treating and coating resins	64,822	48,624	...	...
Bonding and adhesive resins for:				
Laminating	59,851	38,777	...	...
Plywood	142,490	121,936	...	...
Fibrous and granulated wood	159,545	147,482	...	...
Protective coatings	63,575	38,562	...	...
All other uses (including molding)	146,818	125,611	...	...
Sales for export	...	16,468	...	...
All other thermosetting resins[4]	55,952	45,084	15,089	.59
THERMOPLASTIC RESINS				
Total	9,937,531	8,557,922	1,983,449	.23
Cellulose plastics materials, total	186,707	183,462	122,513	.67
Sheets, continuous:				
Under 0.003 gage	21,335	22,442	...	...
0.003 gage and over	48,734	49,584	...	...
All other sheets, rods, and tubes	5,827	6,432	...	...
Molding and extrusion materials	110,811	105,004	...	...
Polyamide resins, total	92,618	82,133	72,604	.88
Nylon type	70,300	61,823	59,521	.96
Non-nylon type	22,318	20,310	13,083	.64
Polyolefin plastics materials:				
Polyethylene, density 0.940 and below:				
Production and sales	[5] 2,647,615	2,320,740	401,090	.17
Used by reporting companies in processing	...	226,745	...	...
Sales and use, total	...	2,547,485	...	...
Injection molding	...	323,464	...	...
Blow molding	...	42,503	...	...
Film and sheet	...	1,100,493	...	...
Extrusion coating on paper and other substrates	...	313,164	...	...
Wire and cable	...	275,768	...	...
All other extruded products, including pipe and conduit	...	40,023	...	...
All other domestic uses	...	188,490	...	...
Export sales	...	263,580	...	...

See footnotes at end of table.

TABLE 15A.--*Plastics and resin materials: U.S. production and sales, by chemical classes and uses, 1966*--Continued

Kind and use	Production	Sales		
		Quantity	Value	Unit value[1]
THERMOPLASTIC RESINS--Continued	*1,000 pounds, dry basis*[2]	*1,000 pounds, dry basis*[2]	*1,000 dollars*	*Per pound*
Polyolefin plastics materials--Continued				
Polyethylene, density over 0.940:				
Production and sales	[6] 910,343	830,640	145,967	$0.18
Used by reporting companies in processing	...	60,244	...	...
Sales and use, total	...	890,884	...	...
Injection molding	...	178,800	...	...
Blow molding	...	346,864	...	...
Film and sheet	...	45,423	...	...
Extrusion coating on paper and other substrates	...	6,715	...	...
Wire and cable	...	30,193	...	...
Pipe and conduit	...	39,059	...	...
Other extruded products	...	22,384	...	...
All other domestic uses	...	139,068	...	...
Export sales	...	82,378	...	...
Polypropylene:				
Production and sales	553,533	372,475	84,211	.23
Used by reporting companies in processing	...	172,009	...	...
Sales and use, total	...	544,484	...	...
Molding	...	238,568	...	...
Extrusion	...	232,373	...	...
All other uses (including export)	...	73,543	...	...
Styrene type plastics materials, total	2,384,519	2,172,345	430,194	.15
ABS and SAN resins[7]:				
Production and sales	361,645	[8] 362,446	119,002	.33
Sales and use, total	...	362,446	...	...
Molding	...	159,988	...	...
Extrusion	...	111,132	...	...
All other domestic uses	...	50,380	...	...
Export sales	...	40,946	...	...
Styrene and styrene copolymer resins:				
Production[9] and sales	2,022,874	1,809,899	311,192	.17
Used by reporting companies in processing	...	245,676	...	...
Sales and use, total	...	2,055,575	...	...
Molding	...	1,024,729	...	...
Textile and paper treating and coating	...	207,337	...	...
Emulsion paint	...	42,332	...	...
Extrusion	...	245,022	...	...
All other domestic uses	...	446,047	...	...
Export sales	...	90,108	...	...
Vinyl resins (resin content):				
Polyvinyl chloride and copolymers:				
Production and sales, total	2,163,561	1,816,457	301,743	.17
Suspension homopolymers	1,224,286	...	...	...
Suspension copolymers	657,768	...	...	...
Dispersions (paste)	281,507	...	...	...
Used by reporting companies in processing	...	309,984	...	...
Sales and use, total	...	2,126,441	...	...
Calendering, except flooring	...	438,882	...	...
Flooring:				
Calendered	...	296,800	...	...
Coated	...	62,202	...	...
Paper and textile uses:				
Coating	...	117,217	...	...
Other	...	15,576	...	...
Protective coatings and adhesives	...	54,418	...	...
Wire and cable	...	225,967	...	...
Extruded film and sheet	...	65,956	...	...
Other extruded products	...	281,558	...	...
Sound records	...	114,396	...	...
Injection and blow molding	...	64,608	...	...
Plastisol formulating and molding	...	91,953	...	...
All other domestic uses	...	227,676	...	...
Export sales	...	69,232	...	...

See footnotes at end of table.

TABLE 15A.--*Plastics and resin materials: U.S. production and sales, by chemical classes and uses, 1966*--Continued

Kind and use	Production	Sales		
		Quantity	Value	Unit value[1]
THERMOPLASTIC RESINS--Continued	*1,000 pounds, dry basis*[2]	*1,000 pounds, dry basis*[2]	*1,000 dollars*	*Per pound*
Vinyl resins (resin content)--Continued				
Polyvinyl acetate:				
Production and sales, total	335,961	231,429	66,354	$0.29
Latexes	238,442	...	...	...
Resins	97,519	...	...	...
Used by reporting companies in processing	...	73,992	...	...
Sales and use, total	...	305,421	...	...
Emulsion paints	...	110,090	...	...
Adhesives	...	105,444	...	...
Paper treating	...	25,702	...	...
Textile treating	...	10,205	...	...
All other domestic uses	...	51,719	...	...
Export sales	...	2,261	...	...
Polyvinyl alcohol	38,337	[8] 37,926	16,438	.43
Other vinyl resins	[10] 132,098	[8] 129,424	67,784	.52
All other thermoplastic resins[11]	492,239	380,891	274,551	.72

[1] Calculated from rounded figures.
[2] For the purpose 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] The term "polyester resins" includes unsaturated alkyds copolymerized with a monomer such as styrene, and polyallyl resins such as diallyl phthalate and allyl diglycol carbonate.
[4] Includes data for acetone-formaldehyde resins, styrene-alkyd polyesters, toluenesulfonamide resins, silicone resins, and other thermosetting resins which were produced in small quantities. Also included are saturated polyesters for urethanes.
[5] Represents production of polyethylene by the high pressure process and of ethylene copolymers.
[6] Represents production of polyethylene by the low pressure process.
[7] ABS resins are polymers of acrylonitrile, styrene, and butadiene. SAN resins are polymers of styrene and acrylonitrile.
[8] Data for intra-company consumption may not be shown separately, and are included with sales at an estimated unit value.
[9] Includes straight polystyrene, 848,429 thousand pounds; rubber modified polystyrene, 724,413 thousand pounds; styrene-butadiene copolymers, 306,603 thousand pounds; and all other, 143,429 thousand pounds.
[10] Includes data for polyvinyl butyral, polyvinyl formal, and polyvinylidene chloride.
[11] Includes data for acrylic, fluorocarbon, polycarbonate, polyoxymethylene, polyterpene, and other thermoplastic resins.

also some adjusted figures supplied by the original reporting companies. Consequently, many of the figures given in table 15A are revised from those shown in the Commission's monthly release dated April 11, 1967, which contained year-end cumulative monthly totals for 1966. The end use breakdowns used were developed with the advice of representatives of the plastics industry, and the data reported are the producers' determination of the markets of their materials.

Total U.S. production of synthetic plastics and resin materials in 1966 amounted to 13,585 million pounds, or 16.3 percent more than the 11,685 million pounds reported for 1965. Sales in 1966 were 11,472 million pounds, valued at $2,740 million. Production of benzenoid plastics and resin materials in 1966 amounted to 5,067 million pounds and that of nonbenzenoid materials to 8,518 million pounds. These figures compare with the benzenoid production in 1965 of 4,453 million pounds, and nonbenzenoid production of 7,232 million pounds.

The 1966 output of all types of thermosetting resins totaled 3,647 million pounds, compared with 3,237 million pounds in 1965. In 1966 phenolic and other tar acid resins were produced in the largest quantity in the thermosetting group, and exceeded one billion pounds for the first time. Output of phenolic resins amounted to 1,047 million pounds in 1966, compared with 922 million pounds in 1965. Production of urea and melamine resins in 1966 was 718 million pounds, and that of alkyd resins was 666 million pounds. Other thermosetting resins produced in significant amounts in 1966 were polyester resins (470 million pounds); coumarone-indene resins (334 million pounds); epoxy resins (140 million pounds); and polyurethane resins (72 million pounds).

The total output of thermoplastic resins in 1966 amounted to 9,938 million pounds, compared with 8,448 million pounds in 1965. In 1966, as in previous years, polyethylene, polystyrene, and polyvinyl chloride were the resins produced in the largest volume. The output of high-pressure polyethylene in 1966 was 2,648 million pounds, which corresponds to the output of 2,26[illegible] million pounds of low-density polyethylene reported for 1965. Production of low-pressure polyethylene in 1966 was 910 million pounds, corresponding to the 784 million pounds of high-density polyethylene produced in 1965.

The total production of styrene-type plastics materials in 1966 was 2,385 million pounds, compared with 2,033 million pounds in 1965. These totals include the ABS and SAN types of resins, for which data are shown for the first time for 1966. In 1966, output of ABS and SAN resins combined amounted to 362 million pounds. Sales were 362 million pounds, valued at $119 million. Output of other styrene-type resins in 1966, including straight polystyrene, rubber-modified polystyrene, styrene-butadiene copolymer and others, amounted to 2,023 million pounds.

Polyvinyl chloride resin production in 1966 amounted to 2,164 million pounds, compared with 1,837 million pounds in 1965. Polyvinyl alcohol production in 1966 was 38.3 million pounds, and that of other vinyl resins including polyvinyl butyral, polyvinyl formal, and polyvinylidene chloride amounted to 132 million pounds. All data on vinyl resins are reported on a resin content basis.

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, blowing agents, and peptizers. Statistics on production and sales of rubber-processing chemicals in 1966 are given in table 16A.[8]

TABLE 16A. --*Rubber-processing chemicals: U.S. production and sales, 1966*

[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 16B 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	283,335	209,285	138,203	$0.66
RUBBER-PROCESSING CHEMICALS, CYCLIC				
Total	241,248	182,790	123,581	.68
Accelerators, activators, and vulcanizing agents, total	79,518	58,358	34,946	.60
Aldehyde-amine reaction products	2,718	2,054	2,168	1.06
Dithiocarbamic acid derivatives	...	144	269	1.87
Thiazole derivatives, total	65,064	45,120	23,890	.53
N-Cyclohexyl-2-benzothiazolesulfenamide	6,563	4,396	2,738	.62
2,2'-Dithiobis(benzothiazole)	23,263	10,947	5,487	.50
2-Mercaptobenzothiazole	6,326	...	...	...
All other	28,912	29,777	15,665	.53
All other accelerators	11,736	11,040	8,619	.78
Antioxidants, antiozonants, and stabilizers, total	148,668	113,040	78,489	.69
Amino compounds, total	115,794	89,126	60,381	.68
Substituted p-phenylenediamines, total	49,495	37,220	32,790	.88
N,N'-Diphenyl-p-phenylenediamine	2,283	2,284	2,311	1.01
All other	47,212	34,936	30,479	.87
Octyldiphenylamine	2,752	2,408	1,298	.54
N-Phenyl-2-naphthylamine	5,313	...	...	...
All other amino antioxidants, antiozonants, and stabilizers	58,234	49,498	26,293	.53
Phenolic and phosphite antioxidants and stabilizers, total	32,874	23,914	18,108	.76
Polyphenolics (including bisphenols)	6,555	6,535	8,563	1.31
Phenol, alkylated	12,406	6,286	3,488	.55
All other phenolic and phosphite antioxidants and stabilizers	13,913	11,093	6,057	.55
Blowing agents	3,681	3,304	4,874	1.48
Peptizers	5,172	4,913	3,160	.64
All other cyclic rubber-processing chemicals, total	4,209	3,175	2,112	.67
N-Nitrosodiphenylamine	2,773	...	...	...
All other[2]	1,436	...	...	...

See footnotes at end of table.

[8] See also table 16B, pt. III, which lists these products and identifies the manufacturer.

TABLE 16A. --*Rubber-processing chemicals: U.S. production and sales, 1966* --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	42,087	26,495	14,622	$0.55
Accelerators, activators, and vulcanizing agents, total	19,925	14,463	8,919	.62
Dithiocarbamic acid derivatives, total[3]	7,485	6,082	4,634	.76
Dibutyldithiocarbamic acid, zinc salt	1,741	1,419	1,367	.96
Diethyldithiocarbamic acid, zinc salt	1,513	1,115	653	.59
Dimethyldithiocarbamic acid, zinc salt	1,736	1,461	682	.47
All other	2,495	2,087	1,932	.93
Thiurams, total[4]	11,994	8,116	3,975	.49
Bis(diethylthiocarbamoyl) disulfide	...	1,087	501	.46
Bis(dimethylthiocarbamoyl) disulfide	6,731	5,335	2,258	.42
Bis(dimethylthiocarbamoyl) sulfide	1,338	...	...	...
All other	3,925	1,694	1,216	.72
All other accelerators, activators, and vulcanizing agents	446	265	310	1.17
Dodecyl mercaptans	12,658	7,860	3,629	.46
Dimethyldithiocarbamic acid, sodium salt	5,663	2,351	1,080	.46
All other acyclic rubber-processing chemicals[5]	3,841	1,821	994	.55

[1] Calculated from rounded figures.
[2] Includes tackifiers and physical-property improvers.
[3] 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 table 20A, "Pesticides and Related Products."
[4] Includes data for small amounts of tetramethylthiuram sulfides for uses other than in the processing of natural and synthetic rubbers.
[5] Includes blowing agents, polymerization regulators, shortstops, and conditioning and lubricating agents.

Production of rubber-processing chemicals as a group in 1966 amounted to 283 million pounds, or 12.5 percent more than the 252 million pounds reported for 1965. The larger total output of rubber-processing chemicals in 1966 is attributable principally to increased production of amino antioxidants and thiazole accelerators. Sales of rubber-processing chemicals in 1966 amounted to 209 million pounds, valued at $138 million, compared with 194 million pounds, valued at $123 million, in 1965.

The output of cyclic rubber-processing chemicals in 1966 amounted to 241 million pounds, or 14.1 percent more than the 211 million pounds reported for 1965. Sales in 1966 were 183 million pounds, valued at $124 million, compared with 166 million pounds, valued at $109 million, in 1965. Of the total output of cyclic rubber-processing chemicals in 1966, accelerators accounted for 33.0 percent and antioxidants for 61.6 percent. Production of amino and phenolic and phosphite antioxidants, which amounted to 148.7 million pounds in 1966, included 115.8 million pounds of amino compounds and 32.9 million pounds of phenolic and phosphite compounds. Sales of amino antioxidants in 1966 were 89.1 million pounds, valued at $60.4 million; sales of phenolic and phosphite antioxidants were 23.9 million pounds, valued at $18.1 million.

Production of acyclic rubber-processing chemicals in 1966 amounted to 42.1 million pounds an increase of 3.8 percent over the 40.5 million pounds reported for 1965. Sales in 1966 totaled 26.5 million pounds, valued at $14.6 million, compared with 27.5 million pounds, valued at $14.2 million, in 1965. Accelerators, principally dithiocarbamic acid derivatives and tetramethylthiuram sulfides, accounted for 47.3 percent of the output of acyclic rubber-processing chemicals for 1966. Dodecyl mercaptans accounted for 30.1 percent. Blowing agents, peptizers, modifiers, shortstops, and lubricating and conditioning agents accounted for the remainder of the output of acyclic compounds.

Elastomers (Synthetic Rubbers)

Elastomers are a group of high polymeric materials which have properties similar to those found in natural rubber. The term "elastomers", as used in this report, is specifically 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 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.

Statistics on production and sales of elastomers are given in table 17A.[9] The total domestic output of all types of synthetic elastomers in 1966 was 3,929 million pounds, compared with 3,592 million pounds, reported for 1965. Sales of these elastomers amounted to 3,411 million pounds, valued at $918 million in 1966, compared with 3,041 million pounds, valued at $843 million, in 1965.

Production of cyclic elastomers in 1966 amounted to 2,482 million pounds, compared with 2,300 million pounds in 1965. Of the total U.S. production of cyclic elastomers in 1966, the polybutadiene-styrene type (including vinylpyridine) accounted for 2,470 million pounds, and the polyurethane type for 12 million pounds. Sales of cyclic elastomers in 1966 were 2,108 million pounds, valued at $463 million, compared with 1,898 million pounds, valued at $443 million, in the previous year.

TABLE 17A.--*Elastomers (synthetic rubbers):*[1] *U.S. production and sales, 1966*

[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 17B in pt. III lists 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	*1,000 pounds*	*1,000 dollars*	*Per pound*
Grand total	3,929,187	3,411,258	918,018	$0.27
ELASTOMERS, CYCLIC				
Total	2,482,375	2,108,089	463,222	.22
Polybutadiene-styrene type (S-type)[3]	2,448,092	[4] 2,086,856	446,413	.21
Polybutadiene-styrene-vinylpyridine type	21,907	10,955	6,428	.59
Polyurethane type	12,376	10,278	10,381	1.01
ELASTOMERS, ACYCLIC				
Total	1,446,812	1,303,169	454,796	.35
Polybutadiene-acrylonitrile type (N-type)	157,122	131,942	58,869	.45
Polyisobutylene-isoprene type (Butyl)	230,685	...	...	...
Silicone elastomers	13,392	10,751	39,307	3.66
Stereo elastomers, total	612,689	506,148	107,362	.21
Stereo polybutadiene	416,922	342,903	67,476	.20
All other stereo elastomers	195,767	163,245	39,886	.24
All other acyclic elastomers[5]	432,924	654,328	249,258	.38

[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] Partly estimated.

[5] Includes data for polyacrylate, polyalkalene sulfide, polychloroprene, polyisobutylene elastomers, and for sales of polyisobutylene-isoprene elastomers.

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

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

The U.S. production of acyclic elastomers in 1966 was 1,447 million pounds, compared with 1,292 million pounds in 1965. Sales of these products in 1966 amounted to 1,303 million pounds, valued at $455 million. Of the 1966 production of acyclic elastomers, stereo elastomers were produced in the largest amount (613 million pounds), followed by the polyisobutylene-isoprene type (231 million pounds), and the polybutadiene-acrylonitrile type (N-type) (157 million pounds). The stereo elastomers are composed principally of polybutadiene, polyisoprene, and ethylene-propylene rubber. Production of silicone elastomers in 1966 was 13.4 million pounds, and of other acyclic elastomers was 433 million pounds. This latter figure includes data for polyacrylate, polyalkalene sulfide, polychloroprene, polyisobutylene, and other types of elastomers of lesser importance.

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 18A.[10]

Total U.S. production of plasticizers in 1966 amounted to 1,209 million pounds--representing an increase of 12.7 percent over the output of 1,073 million pounds reported for 1965. Sales in 1966 of the plasticizers covered by this report amounted to 1,156 million pounds, valued at $246 million, compared with 1,022 million pounds, valued at $214 million, in 1965--increases of 13.1 percent in quantity and 14.7 percent in value.

TABLE 18A.--*Plasticizers:*[1] *U.S. production and sales, 1966*

[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 18B 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[2]
	1,000 pounds	*1,000 pounds*	*1,000 dollars*	*Per pound*
Grand total	1,208,991	1,155,686	246,001	$0.21
PLASTICIZERS, CYCLIC				
Total	897,249	873,109	156,967	.18
Phosphoric acid esters:				
Cresyl diphenyl phosphate	19,956	20,147	5,309	.26
Tricresyl phosphate	39,812	39,147	11,909	.30
Triphenyl phosphate	8,847	...	...	...
Phthalic anhydride esters, total	754,473	742,433	116,826	.16
Butyl octyl phthalates (including butyl 2-ethylhexyl phthalate)	17,222	17,544	2,436	.14
Dibutyl phthalate	20,236	19,307	3,675	.19
Dicyclohexyl phthalate	6,739	...	...	...
Diethyl phthalate	21,451	16,220	2,885	.18
Dihexyl phthalate	987	716	110	.15
Diisodecyl phthalate	103,311	107,500	15,800	.15
Di(2-methoxyethyl) phthalate	13,809	12,340	2,537	.21
Dimethyl phthalate	4,433	4,247	847	.20
Dioctyl phthalates, total[3]	376,800	375,800	54,111	.14
Di(2-ethylhexyl) phthalate	253,000	253,000	35,420	.14
Diiso-octyl phthalate	103,000	103,000	15,450	.15
Mixed dioctyl phthalates (including dicapryl phthalate and dioctyl isophthalates)	20,800	19,800	3,241	.16
Di-tridecyl phthalate	19,379	19,850	4,363	.22
Glycolate phthalate esters	4,800	4,334	1,736	.40
n-Octyl n-decyl phthalate	35,036	34,812	6,090	.17
All other phthalic anhydride esters	130,270	129,763	22,236	.17
Trimellitic acid esters	2,536	2,620	1,080	.41
All other cyclic plasticizers[4]	71,625	68,762	21,843	.32

See footnotes at end of table.

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

TABLE 18A.--*Plasticizers:*[1] *U.S. production and sales, 1966*--Continued

Chemical	Production	Sales		
		Quantity	Value	Unit value[2]
PLASTICIZERS, ACYCLIC	*1,000 pounds*	*1,000 pounds*	*1,000 dollars*	*Per pound*
Total	311,742	282,577	89,034	$0.32
Adipic acid esters, total	51,797	50,485	13,411	.27
Di(2-(2-butoxyethoxy)ethyl) adipate	1,413	1,322	622	.47
Di(2-ethylhexyl) adipate	22,278	20,647	4,875	.24
Diisodecyl adipate	6,428	6,669	1,788	.27
n-Octyl n-decyl adipate	10,833	10,930	2,665	.24
All other	10,845	10,917	3,461	.32
Azelaic acid esters	15,664	18,129	5,117	.28
Complex linear polyesters and polymeric plasticizers[5]	47,893	45,278	17,773	.39
Epoxidized esters, total	86,635	81,630	22,187	.27
Epoxidized soya oils	59,178	55,122	15,004	.27
2-Ethylhexyl epoxytallates	...	11,056	2,783	.25
Octyl epoxytallates	11,511	11,463	2,929	.26
All other	15,946	3,989	1,471	.37
Glycerol monoricinoleate	441	379	131	.35
Isopropyl myristate	1,161	1,125	541	.48
Oleic acid esters:				
Butyl oleate	3,172	1,847	401	.22
Glycerol trioleate (Triolein)	2,785	2,461	537	.22
Methyl oleate	2,973	2,096	417	.20
Propyl oleates (including normal and iso)	1,500	1,362	269	.20
Phosphoric acid esters	13,566	10,962	4,389	.40
Sebacic acid esters:				
Dibutyl sebacate	5,425	3,604	2,109	.59
Di(2-ethylhexyl) sebacate	7,189	6,895	3,520	.51
Stearic acid esters, total	7,237	7,043	1,730	.25
n-Butyl stearate	4,192	4,118	975	.24
All other	3,045	2,925	755	.26
Triethylene glycol di(caprylate-caprate)	1,763	1,644	569	.35
All other acyclic plasticizers[6]	62,541	47,637	15,933	.33

[1] Does not include data for clearly defined extenders or secondary plasticizers.
[2] Calculated from rounded figures.
[3] Statistics for the dioctyl phthalates are partly estimated because part of the data which were published in the preliminary report were erroneously reported.
[4] Includes data for alkylated naphthalene, glycol dibenzoates, hydrogenated terphenyls, phosphate esters (including sales of triphenyl phosphate), toluenesulfonamides, tetrahydrofurfuryl oleate, and other cyclic plasticizers.
[5] Adipic acid polyesters account for most of the production of complex linear polyesters and polymeric plasticizers.
[6] Includes data for citric and acetylcitric, lauric, myristic, oleic, palmitic, pelargonic, ricinoleic, sebacic, and tartaric acid esters, glycerol and glycol esters, and other acyclic plasticizers.

Note.--The total production and sales statistics are included in this report for some items that are not used exclusively as plasticizers.

Production of cyclic plasticizers in 1966, which consisted chiefly of the esters of phthalic anhydride and phosphoric acid, amounted to 897 million pounds, compared with 799 million pounds in 1965. Sales of cyclic plasticizers in 1966 amounted to 873 million pounds, valued at $157 million, compared with 765 million pounds, valued at $133 million, in the previous year.

Production of acyclic plasticizers in 1966 amounted to 312 million pounds, compared with 274 million pounds in 1965. Sales of acyclic plasticizers in 1966 amounted to 283 million pounds, valued at $89 million, compared with 257 million pounds, valued at $81 million, in 1965. Production of complex linear polyesters in 1966 amounted to 48 million pounds, and that of epoxidized esters, to 87 million pounds. Other products included in the acyclic class are the esters of adipic, azelaic, oleic, sebacic, and stearic acids.

Surface-Active Agents

The surface-active agents included in this report are organic chemicals that reduce the surface tension of water or other solvents and are used chiefly as detergents, dispersing agents, emulsifiers, foaming agents, or wetting agents in either aqueous or nonaqueous systems. Waxes and products used chiefly as plasticizers are excluded. Surface-active agents are produced from natural fats and oils; from silvichemicals such as lignin, rosin, and tall oil; and from chemical intermediates derived from coal-tar and petroleum. A major part of the output of the bulk chemicals shown in this report is consumed in the form of packaged soaps and detergents for household and industrial use. The remainder is used in the processing of textiles and leather, in ore flotation and oil drilling operations, and in the manufacture of agricultural sprays, cosmetics, elastomers, foods, lubricants, paints, pharmaceuticals, and many other products. Table 19A[11] shows statistics for production and sales of surface-active agents grouped by ionic class and by chemical class and subclass. All quantities are reported in terms of 100-percent organic surface-active ingredient and thus exclude all inorganic salts, water, and other diluents.

TABLE 19A. --*Surface-active agents: U.S. production and sales, 1966*

[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 19B 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[2]		
		Quantity[1]	Value	Unit value[3]
	1,000 pounds	*1,000 pounds*	*1,000 dollars*	*Per pound*
Grand total	3,321,317	1,766,053	314,913	$0.18
Benzenoid[4]	943,680	449,685	81,468	.18
Nonbenzenoid[5]	2,377,637	1,316,368	233,445	.18
Amphoteric Surface-Active Agents	5,052	4,852	3,225	.66
Anionic Surface-Active Agents				
Total	2,468,729	1,111,517	141,424	.13
Carboxylic acids (and salts thereof), total	962,222	...	...	...
Amine salts of fatty, rosin, and tall oil acids	1,236	502	326	.65
Carboxylic acids having amide or ester linkages, total	16,841	2,678	1,283	.48
N-Lauroylsarcosine, sodium salt	...	901	605	.67
All other	16,841	1,777	678	.38
Potassium and sodium salts of fatty, rosin, and tall oil acids, total	944,145	...	...	...
Coconut oil acids, potassium and sodium salts, total	106,568	3,723	955	.26
Potassium salt	14,138	...	...	...
Sodium salt	92,430	...	...	...
Corn oil acids, potassium and sodium salts	617	617	102	.17
Oleic acid, potassium salt	3,847	337	62	.18
Oleic acid, sodium salt	2,176	1,130	253	.22
Stearic acid, potassium and sodium salts	2,258	918	324	.35
Tall oil acids, potassium and sodium salts, total	28,635	13,796	2,071	.15
Potassium salt	15,597	...	...	...
Sodium salt	13,038	...	...	...
Tallow acids, sodium salt	493,847	33,361	4,768	.14
All other	306,197	...	...	...
Phosphoric and polyphosphoric acid esters (and salts thereof), total	12,956	8,796	4,680	.53
Alcohols and phenols, ethoxylated and phosphated, total	7,866	5,227	2,479	.47
Mixed linear alcohols, ethoxylated and phosphated	154	...	...	...
Nonylphenol, ethoxylated and phosphated	3,588	2,037	731	.36
All other	4,124	3,190	1,748	.55
Alcohols, phosphated or polyphosphated, total	5,090	3,569	2,201	.62
2-Ethylhexyl phosphate, sodium salt	107	111	27	.24
All other	4,983	3,458	2,174	.63

See footnotes at end of table.

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

TABLE 19A. --*Surface-active agents: U.S. production and sales, 1966*--Continued

Chemical	Production[1]	Sales[2]		
		Quantity[1]	Value	Unit value[3]
Anionic Surface-Active Agents--Continued	*1,000 pounds*	*1,000 pounds*	*1,000 dollars*	*Per pound*
Sulfonic acids (and salts thereof), total	...	670,985	60,025	$0.09
Alkylbenzenesulfonates, total	596,416	137,936	22,560	.16
Dodecylbenzenesulfonates, total	506,544	132,873	21,496	.16
Dodecylbenzenesulfonic acid	92,142	31,868	4,500	.14
Dodecylbenzenesulfonic acid, calcium salt	11,287	6,888	2,610	.38
Dodecylbenzenesulfonic acid, isopropanolamine salt	355	...	...	...
Dodecylbenzenesulfonic acid, isopropylamine salt	3,780	...	...	...
Dodecylbenzenesulfonic acid, sodium salt	391,921	84,634	11,764	.14
Dodecylbenzenesulfonic acid, triethanolamine salt	4,124	4,317	1,066	.25
All other	2,935	5,166	1,556	.30
Other alkylbenzenesulfonates, total	89,872	5,063	1,064	.21
Tridecylbenzenesulfonic acid	387	387	50	.13
Tridecylbenzenesulfonic acid, sodium salt	...	787	329	.42
All other	89,485	3,889	685	.18
Benzene-, cumene-, toluene-, and xylenesulfonates, total	70,922	70,791	5,117	.07
Xylenesulfonic acid, ammonium salt	16,781	18,780	1,286	.07
Xylenesulfonic acid, sodium salt	22,127	20,159	1,807	.09
All other	32,014	31,852	2,024	.06
Ligninsulfonates, total	441,537	429,550	15,719	.04
Ligninsulfonic acid, calcium salt	284,018	272,933	7,109	.03
Ligninsulfonic acid, sodium salt	54,308	53,406	4,097	.08
All other	103,211	103,211	4,513	.04
Naphthalenesulfonates, total	8,277	6,614	2,615	.40
Butylnaphthalenesulfonic acid, sodium salt	834	...	...	...
All other	7,443	6,614	2,615	.40
Other sulfonic acids, total	...	26,094	14,014	.54
N-Methyl-N-oleoyltaurine, sodium salt	2,797	2,589	1,335	.52
Sulfosuccinamic acid derivatives	1,714	1,579	857	.54
Sulfosuccinic acid esters, total	7,736	7,275	3,903	.54
Sulfosuccinic acid, bis(2-ethylhexyl) ester, sodium salt	5,373	4,926	2,721	.55
All other	2,363	2,349	1,182	.50
All other sulfonic acids	...	14,651	7,919	.54
Sulfuric acid esters (and salts thereof):				
Acids, amides, and esters, sulfated, total	21,504	14,466	4,346	.30
Coconut oil acids - ethanolamine condensate, sulfated, potassium salt	28	28	29	1.04
Esters of sulfated oleic acid, total	6,597	4,806	1,343	.28
Butyl oleate, sulfated, sodium salt	3,432	1,772	401	.23
Isopropyl oleate, sulfated, sodium salt	357	355	133	.37
Propyl oleate, sulfated, sodium salt	512	489	153	.31
All other	2,296	2,190	656	.30
Oleic acid, sulfated, disodium salt	8,699	...	...	...
Tall oil, sulfated, sodium salt	768	734	179	.24
All other	5,412	8,898	2,795	.31
Alcohols and phenols, sulfated, total	...	28,126	12,235	.43
Dodecyl sulfate salts, total	39,617	...	...	...
Dodecyl sulfate, magnesium salt	239	225	69	.31
Dodecyl sulfate, sodium salt	14,862	11,117	5,129	.46
Dodecyl sulfate, triethanolamine salt	8,493	...	...	...
All other	16,023	...	...	...
2-Ethylhexyl sulfate, sodium salt	1,582	...	...	...
Octadecyl sulfate, sodium salt	...	309	163	.53
Octyl sulfate, sodium salt	172	185	76	.41
All other	...	16,290	6,798	.42
Ethers, sulfated, total	137,669	...	...	...
Alkylphenols, ethoxylated and sulfated	9,601	8,166	1,911	.23
Dodecyl alcohol, ethoxylated and sulfated, ammonium salt	367	...	...	...
Dodecyl alcohol, ethoxylated and sulfated, sodium salt	2,718	2,065	723	.35
Mixed linear alcohols, ethoxylated and sulfated, sodium salt	4,310	4,531	670	.15
All other	120,673	...	...	...

See footnotes at end of table.

TABLE 19A. --*Surface-active agents: U.S. production and sales, 1966*--Continued

Chemical	Production[1]	Sales[2]		
		Quantity[1]	Value	Unit value[3]
Anionic Surface-Active Agents--Continued				
	1,000 pounds	*1,000 pounds*	*1,000 dollars*	*Per pound*
Sulfuric acid esters (and salts thereof)--Continued				
Natural fats and oils, sulfated, total	30,421	19,520	3,824	$0.20
Castor oil, sulfated, sodium salt	6,504	3,954	1,175	.30
Coconut oil, sulfated, sodium salt	2,100	578	142	.25
Cod oil, sulfated, sodium salt	1,934	1,427	226	.16
Neat's-foot oil, sulfated, sodium salt	1,469	743	152	.20
Peanut oil, sulfated, sodium salt	962	...	...	...
Ricebran oil, sulfated, sodium salt	238	...	...	...
Soybean oil, sulfated, sodium salt	247	138	46	.33
Sperm oil, sulfated, sodium salt	5,963	3,535	654	.18
Tallow, sulfated, sodium salt	9,502	7,135	931	.13
All other	1,502	2,010	498	.25
Other anionic surface-active agents[6]	133,187	297,800	42,866	.14
Cationic Surface-Active Agents				
Total	161,843	126,882	50,918	.40
Amine oxides and oxygen-containing amines (except those having amide linkages), total	38,518	...	...	...
2-(8-Heptadecenyl)-1-(2-hydroxyethyl)-2-imidazoline	685	630	257	.41
2-Heptadecyl-1-(2-hydroxyethyl)-2-imidazoline	464	458	210	.46
(Mixed alkyl)amine, ethoxylated	3,384	...	...	...
Rosin amine, ethoxylated	1,084	...	...	...
(Soybean oil alkyl)amine, ethoxylated	779	796	375	.47
(Tallow alkyl)amine, ethoxylated	1,400	1,312	869	.66
All other	30,722	...	...	...
Amines and amine oxides having amide linkages, total	17,451	15,364	6,992	.46
Carboxylic acid - diamine and polyamine condensates, total	9,067	8,759	3,029	.35
Coconut oil acids - diethylenetriamine condensate	...	75	45	.60
Oleic acid - diethylenetriamine condensate	302	202	62	.31
All other	8,765	8,482	2,922	.34
Carboxylic acid - diamine and polyamine condensates, ethoxylated, total	7,046	5,337	3,607	.68
Oleic acid - ethylenediamine condensate, monoethoxylated	4,579	...	...	...
Stearic acid - ethylenediamine condensate, monoethoxylated	2,286	...	...	...
All other	181	5,337	3,607	.68
Other amines and amine oxides having amide linkages	1,338	1,268	356	.28
Amines, not containing oxygen (and salts thereof), total	59,636	...	...	...
Amine salts	2,135	1,936	697	.36
Diamines and polyamines, total	11,761	10,405	3,602	.35
N-(Coconut oil alkyl)trimethylenediamine	1,839	1,291	636	.49
N-(9-Octadecenyl)trimethylenediamine	1,807	1,716	678	.40
N-(Tallow alkyl)trimethylenediamine	3,905	3,895	1,540	.40
All other	4,210	3,503	748	.21
Primary monoamines, total	32,252	26,083	8,292	.32
(Coconut oil alkyl)amine	1,910	1,203	657	.55
Dodecylamine	1,605	...	...	...
(Hydrogenated tallow alkyl)amine	11,292	10,071	2,267	.23
9-Octadecenylamine	1,804	872	379	.43
Octadecylamine	...	700	324	.46
(Tallow alkyl)amine	5,670	4,179	1,220	.29
All other	9,971	9,058	3,445	.38
Secondary and tertiary monoamines, total	13,488	...	...	...
N,N-Dimethyloctadecylamine	233	254	133	.52
All other	13,255	...	...	...
Groups listed above for which separate sales data may not be shown	...	25,146	9,157	.36

See footnotes at end of table.

TABLE 19A. --*Surface-active agents: U.S. production and sales, 1966* --Continued

Chemical	Production[1]	Sales[2]		
		Quantity[1]	Value	Unit value[3]
Cationic Surface-Active Agents--Continued	*1,000 pounds*	*1,000 pounds*	*1,000 dollars*	*Per pound*
Oxygen-containing quaternary ammonium salts (except those having amide linkages)	2,470	2,121	1,622	$0.76
Quaternary ammonium salts having amide linkages	4,780	4,596	1,956	.43
Quaternary ammonium salts, not containing oxygen, total	38,988	37,781	16,756	.44
Acyclic, total	31,559	30,959	11,021	.36
Bis(coconut oil alkyl)dimethylammonium chloride	1,609	1,620	874	.54
Bis(hydrogenated tallow alkyl)dimethylammonium chloride	18,387	17,840	4,759	.27
Dodecyltrimethylammonium bromide and chloride	141	...	...	...
Hexadecyltrimethylammonium bromide	65	73	168	2.30
N,N,N′,N′,N′-Pentamethyl-N-(tallow alkyl)trimethylene-bis-[ammonium chloride]	77	59	51	.86
All other	11,280	11,367	5,169	.45
Benzenoid, total	7,429	6,822	5,735	.84
Benzyl(coconut oil alkyl)dimethylammonium chloride	346	346	287	.83
Benzyldimethyl(mixed alkyl)ammonium chloride	3,588	3,052	2,551	.84
Benzyldimethyloctadecylammonium chloride	413	396	356	.90
Benzyldodecyldimethylammonium chloride	553	521	374	.72
(3,4-Dichlorobenzyl)dodecyldimethylammonium chloride	43	35	25	.71
(Dodecylbenzyl)trimethylammonium chloride	66	77	52	.68
All other	2,420	2,395	2,090	.87
Nonionic Surface-Active Agents				
Total	685,693	522,802	119,346	.23
Carboxylic acid amides, total	93,020	63,240	18,575	.29
Carboxylic acid - alkanolamine condensates, total	80,105	51,587	14,644	.28
Diethanolamine condensates (amine/acid ratio = 2/1), total	25,555	18,514	5,390	.29
Capric acid	110	98	43	.44
Coconut oil acids	13,194	10,687	3,278	.31
Lauric acid	5,450	2,730	833	.31
Oleic acid	2,113	2,020	567	.28
Stearic acid	864	572	239	.42
Tall oil acids	574	...	...	...
All other	3,250	2,407	430	.18
Diethanolamine condensates (amine/acid ratio = 2/1), total	37,380	...	...	...
Coconut oil acids	17,826	17,343	4,504	.26
Lauric acid	17,069	...	...	...
Oleic acid	769	773	277	.36
Stearic acid	1,037	1,035	467	.45
All other	679	...	...	...
Ethanolamine condensates (amine/acid ratio = 2/1), total	1,156	1,142	341	.30
Coconut oil acids	1,025	1,013	287	.28
All other	131	129	54	.42
Ethanolamine condensates (other amine/acid ratios)	9,154	...	...	...
Isopropanolamine condensates, total	5,842	...	...	...
Lauric acid	866	542	181	.33
All other	4,976	...	...	...
Other alkanolamine condensates	1,018	12,238	3,484	.28
Carboxylic acid - alkanolamine condensates, ethoxylated	522	593	303	.51
Carboxylic acid - diamine and polyamine condensates (nonionic), total	12,393	11,060	3,628	.33
Stearic acid - ethylenediamine condensate (amine/acid ratio = 1/2)	12,193	10,864	3,564	.33
All other	200	196	64	.33
Carboxylic acid esters, total	146,370	120,871	39,916	.33
Anhydrosorbitol esters, total	13,787	8,962	3,384	.38
Anhydrosorbitol monoester of tall oil acids	435	...	...	...
Anhydrosorbitol monolaurate	2,381	...	...	...

See footnotes at end of table.

TABLE 19A. --*Surface-active agents: U.S. production and sales, 1966*--Continued

Chemical	Production[1]	Sales[2]		
		Quantity[1]	Value	Unit value[3]
Nonionic Surface-Active Agents--Continued				
Carboxylic acid esters--Continued	*1,000 pounds*	*1,000 pounds*	*1,000 dollars*	*Per pound*
Anhydrosorbitol esters--Continued				
Anhydrosorbitol trioleate	748	...	...	...
All other	10,223	8,962	3,384	$0.38
Ethoxylated anhydrosorbitol esters, total	12,349	12,856	5,339	.42
Ethoxylated anhydrosorbitol monolaurate	2,400	2,881	1,241	.43
Ethoxylated anhydrosorbitol mono-oleate	4,753	4,650	1,920	.41
Ethoxylated anhydrosorbitol monopalmitate	...	340	157	.46
Ethoxylated anhydrosorbitol monostearate	2,580	2,634	1,124	.43
Ethoxylated anhydrosorbitol trioleate	554	526	227	.43
Ethoxylated anhydrosorbitol tristearate	761	...	...	...
All other	1,301	1,825	670	.37
Ethylene glycol and diethylene glycol esters, total	4,291	3,892	1,306	.34
Diethylene glycol monolaurate	548	528	161	.30
Diethylene glycol mono-oleate	126	120	34	.28
Diethylene glycol monostearate	1,025	825	242	.29
Ethylene glycol distearate	490	437	137	.31
Ethylene glycol monostearate	1,016	854	329	.39
All other	1,086	1,128	403	.36
Glycerol esters, total	71,460	61,279	16,860	.28
Complex glycerol esters	4,259	2,976	1,257	.42
Glycerol esters of chemically defined acids, total	23,844	22,070	7,216	.33
Glycerol monolaurate	...	51	19	.37
Glycerol mono-oleate	1,927	1,588	565	.36
Glycerol monoricinoleate	...	52	29	.56
Glycerol monostearate	20,974	19,929	6,401	.32
All other	943	450	202	.45
Glycerol esters of mixed acids	43,357	36,233	8,387	.23
Natural fats and oils, ethoxylated, total	4,181	3,542	1,254	.35
Castor oil, ethoxylated	3,611	...	...	...
All other	570	3,542	1,254	.35
Polyethylene glycol esters, total	24,436	16,133	5,614	.35
Polyethylene glycol esters of chemically defined acids, total	19,068	11,640	4,441	.38
Polyethylene glycol dilaurate	989	808	263	.33
Polyethylene glycol dioleate	3,042	797	279	.35
Polyethylene glycol distearate	361	331	114	.34
Polyethylene glycol monolaurate	5,260	2,375	957	.40
Polyethylene glycol mono-oleate	3,509	2,606	953	.37
Polyethylene glycol monostearate	4,835	3,960	1,545	.39
All other	1,072	763	330	.43
Polyethylene glycol esters of rosin and tall oil acids, total	4,558	3,915	984	.25
Polyethylene glycol sesquiester of tall oil acids	3,771	3,138	740	.24
All other	787	777	244	.31
Polyethylene glycol esters of other mixed acids, total	810	578	189	.33
Polyethylene glycol sesquiester of coconut oil acids	258	181	50	.28
All other	552	397	139	.35
Polyglycerol esters	428	468	230	.49
Propanediol esters, total	3,534	2,079	591	.28
1,2-Propanediol monolaurate	142	145	69	.48
1,2-Propanediol monostearate	2,817	1,649	444	.27
All other	575	285	78	.27
Other carboxylic acid esters	11,904	11,660	5,338	.46
Ethers, total	443,871	337,431	59,760	.18
Benzenoid ethers, total	234,032	205,858	35,905	.17
Dinonylphenol, ethoxylated	...	1,821	410	.23
Dodecylphenol, ethoxylated	...	10,359	1,167	.11
Iso-octylphenol, ethoxylated	2,101	1,602	384	.24
Nonylphenol, ethoxylated	120,370	120,276	18,749	.16
Phenol, ethoxylated	6,507	...	...	...
All other	105,054	71,800	15,195	.21
Nonbenzenoid ethers, total	209,839	131,573	23,855	.18
Dodecyl alcohol, ethoxylated	...	2,224	898	.40
Hexadecyl alcohol, ethoxylated	...	485	259	.53

See footnotes at end of table.

TABLE 19A. -- *Surface-active agents: U.S. production and sales, 1966*--Continued

Chemical	Production[1]	Sales[2]		
		Quantity[1]	Value	Unit value[3]
Nonionic Surface-Active Agents--Continued				
Ethers--Continued	*1,000 pounds*	*1,000 pounds*	*1,000 dollars*	*Per pound*
Nonbenzenoid ethers--Continued				
Mixed linear alcohols, ethoxylated	104,448	81,516	10,299	$0.13
9-Octadecenyl alcohol, ethoxylated	3,684	2,597	1,358	.52
Octadecyl alcohol, ethylated	549	...	...	...
Tridecyl alcohol, ethoxylated	8,329	7,367	1,614	.22
All other	92,829	37,384	9,427	.25
Other nonionic surface-active agents	2,432	1,260	1,095	.87

[1] All quantities are given in terms of 100-percent organic surface-active ingredient.
[2] Sales include products sold as bulk surface-active agents only.
[3] Calculated from rounded figures.
[4] The term "benzenoid," as used in this report, describes any surface-active agent, except lignin derivatives, whose molecular structure includes 1 or more 6-membered carbocyclic or heterocyclic rings with conjugated double bonds (e.g., the benzene ring or the pyridine ring).
[5] Includes the ligninsulfonates, which were classed as benzenoid in previous years.
[6] Includes production of "all other" sulfonic acids and of "all other" sulfated alcohols and phenols; also includes sales of "all other" potassium and sodium salts of fatty, rosin, and tall oil acids and of "all other" sulfated ethers.

Note: The surface-active agents included in this report are organic chemicals that reduce the surface tension of water or other solvents and are used chiefly as detergents, dispersing agents, emulsifiers, foaming agents, or wetting agents in either aqueous or non aqueous systems. The properties which make a product useful as a surface-active agent are due to a molecular structure in which one or more polar functional groups are balanced by a large nonpolar group. The polar, or hydrophilic, groups, which may be anionic, cationic, or nonionic, tend to make the product miscible with water and other polar solvents and immiscible with oil. The nonpolar, or hydrophobic, group, which usually consists of a long-chain alkyl or alkylphenyl radical, tends to make the product miscible with oil and other nonpolar solvent and immiscible with water. Because of this balance between hydrophilic and hydrophobic tendencies, the molecules of surface-active agent concentrate at the liquid phase boundaries and reduce the interfacial tension of any system in which they are introduced. Thus at an oil/water interface they may promote the formation of a stable emulsion; at an air/water interface they may promote the formation of foam; and at a liquid/solid boundary they may act as detergents, dispersing agents, or wetting agents.

Total U.S. production of surface-active agents in 1966 amounted to 3,321 million pounds, or 4.8 percent more than the 3,170 million pounds reported for 1965. These statistics include data for fatty monoamines, which were previously reported in the section on Miscellaneous Organic Chemicals, and for potassium and sodium salts of fatty, rosin, and tall oil acids (soaps), which were for the most part not previously reported. Sales of bulk surface-active agents in 1966 amounted to 1,766 million pounds, valued at $315 million, compared with sales in 1965 of 1,698 million pounds, valued at $300 million. Sales in 1966 were thus 4.0 percent larger than in 1965 in terms of quantity and 4.9 percent larger in terms of value. Sales statistics for 1965 and 1966 reflect sales of bulk surface-active agents only, whereas sales data reported for earlier years included surface-active agents sold as active ingredients in formulated and packaged products, as well as strictly bulk materials. Thus the statistics for 1965 and 1966 are not strictly comparable with those for earlier years.

Production of anionic surface-active agents in 1966 amounted to 2,469 million pounds, or 74.3 percent of the total reported for 1966 and 4.7 percent more than the anionic output reported for 1965. Sales of anionics in 1966 amounted to 1,112 million pounds, valued at $141 million. Of the total anionic output, 944 million pounds consisted of potassium and sodium salts of fatty, rosin, and tall oil acids, of which 494 million pounds was the sodium salt of tallow acids and 92 million pounds was the sodium salt of coconut oil acids; 596 million pounds consisted of alkylbenzenesulfonates, of which 392 million pounds was the sodium salt of dodecylbenzenesulfonic acid and 92 million pounds was the free acid; and 442 million pounds consisted of ligninsulfonic acid salts, of which 284 million pounds was the calcium salt and 54 million pounds was the sodium salt.

Production of nonionic surface-active agents in 1966 amounted to 686 million pounds, or 20.6 percent of the total reported for 1966 and 4.0 percent more than the nonionic output reported for 1965. Sales of nonionics in 1966 amounted to 523 million pounds, valued at $119 million. Of the total nonionic output, 234 million pounds consisted of alkylphenol ethoxylates and other benzenoid ethers, of which 120 million pounds was nonylphenol ethoxylate; 210 million pounds consisted of alcohol ethoxylates and other nonbenzenoid ethers, of which 104 million pounds was mixed linear alcohol ethoxylate; 80 million pounds consisted of alkanolamides, of which 18 million pounds was coco diethanolamide (made with a 1/1 ratio of diethanolamine to coconut oil acids), 17 million pounds was lauric diethanolamide (1/1 ratio), and 13 million pounds was coco

diethanolamide (2/1 ratio); and 71 million pounds consisted of glycerol esters, of which 21 million pounds was glycerol monostearate.

Production of cationic surface-active agents in 1966 amounted to 162 million pounds, or 4.9 percent of the total reported for 1966 and 9.4 percent more than the cationic output reported for 1965. Sales of cationics in 1966 amounted to 127 million pounds, valued at $51 million. Of the total output of cationics, 39 million pounds consisted of quaternary ammonium salts not containing oxygen, of which 18 million pounds was bis(hydrogenated tallow alkyl)dimethylammonium chloride; and 32 million pounds consisted of primary monoamines not containing oxygen, of which 11 million pounds was (hydrogenated tallow alkyl)amine.

Production of amphoteric surface-active agents in 1966 amounted to 5.1 million pounds, or approximately 0.2 percent of the total reported for 1966 and 1.2 percent less than the amphoteric output reported for 1965. Sales in 1966 amounted to 4.9 million pounds, valued at $3.2 million.

The difference between production and sales reflects inventory changes and, for 1965 and 1966, captive consumption of soaps and surface-active agents by synthetic rubber producers and by manufacturers of cosmetics, packaged detergents, bar soaps, and other formulated consumer products. In some instances the difference may also reflect quantities of surface-active agents used as chemical intermediates, e.g. nonionic alcohol and alkylphenol ethoxylates which may be converted to anionic surface-active agents by phosphation or sulfation.

Pesticides and Related Products

This section of the report covers pesticides (fungicides, herbicides, insecticides, and rodenticides) and related products such as plant hormones, seed disinfectants, soil conditioners, soil fumigants and synergists. The data are given in terms of 100-percent active material; they thus exclude such materials as diluents, emulsifiers, and wetting agents. Statistics on production and sales of pesticides and related products in 1966 are given in table 20A.[12]

TABLE 20A.--*Pesticides and related products: U.S. production and sales, 1966*

[Listed below are all pesticides and related products for which any reported data on production or sales may be published. (Leaders are used where the reported data are accepted in confidence and may not be published or where no data were reported.) Table 20B 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	1,013,110	822,256	583,802	$0.71
PESTICIDES AND RELATED PRODUCTS, CYCLIC				
Total	776,909	605,229	446,946	.74
Fungicides, total	100,626	82,317	27,158	.33
3,5-Dimethyl-1,3,5,2H-tetrahydrothiadiazine-2-thione (DMTT)	1,110	1,031	509	.49
Mercury fungicides	1,035	970	3,900	4.02
Naphthenic acid, copper salt	3,211	3,124	833	.27
Pentachlorophenol (PCP)	43,262	39,022	6,185	.16
8-Quinolinol (8-Hydroxyquinoline), copper salt	426	390	924	2.37
2,4,5-Trichlorophenol and salts	17,929	...	...	...
All other[2]	33,653	37,780	14,807	.39
Herbicides and plant hormones, total	266,047	171,439	213,642	1.25
Dinitrobutylphenol (DNBP)	...	2,825	1,463	.52
Dinitrobutylphenol, ammonium salt	85	70	110	1.57

See footnotes at end of table.

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

TABLE 20A.--*Pesticides and related products: U.S. production and sales, 1966*--Continued

Product	Production	Sales		
		Quantity	Value	Unit value[1]
PESTICIDES AND RELATED PRODUCTS, CYCLIC--Continued				
	1,000 pounds	*1,000 pounds*	*1,000 dollars*	*Per pound*
Herbicides and plant hormones--Continued				
1-Naphthaleneacetic acid and esters and salts	32	31	137	$4.42
Phenoxyacetic acid derivatives:				
2,4-Dichlorophenoxyacetic acid (2,4-D)	68,182	28,021	8,785	.31
2,4-Dichlorophenoxyacetic acid esters and salts, total	72,522	55,281	22,867	.41
2,4-Dichlorophenoxyacetic acid, n-butyl ester	17,966	20,401	9,603	.47
2,4-Dichlorophenoxyacetic acid, dimethylamine salt	15,266	11,669	4,829	.41
2,4-Dichlorophenoxyacetic acid, iso-octyl ester	8,328	8,181	2,979	.36
2,4-Dichlorophenoxyacetic acid, isopropyl ester	...	2,598	880	.34
All other	30,962	12,432	4,576	.37
2,4,5-Trichlorophenoxyacetic acid (2,4,5-T)	15,489	5,096	4,705	.92
2,4,5-Trichlorophenoxyacetic acid esters and salts, total	18,059	10,037	8,119	.81
2,4,5-Trichlorophenoxyacetic acid, n-butyl ester	10,146	...	...	...
2,4,5-Trichlorophenoxyacetic acid, iso-octyl ester	2,120	2,292	2,116	.92
All other	5,793	7,745	6,003	.76
Phenylmercury acetate (PMA)	502	309	2,366	7.66
All other[3]	91,176	69,769	165,090	2.37
Insecticides and rodenticides, total	410,236	351,473	206,146	.59
Aldrin-toxaphene group[4]	130,470	128,161	65,745	.51
α-Bis(p-chlorophenyl) β,β,β-trichloroethane (DDT)	141,349	101,466	16,814	.17
Hexachlorocyclohexane (Benzene hexachloride) and lindane	...	8,522	2,018	.24
Organophosphorus insecticides, total	73,342	57,084	66,426	1.16
0,0-Diethyl 0-p-nitrophenyl phosphorothioate (Parathion)	19,444	15,536	10,651	.69
0,0-Dimethyl 0-p-nitrophenyl phosphorothioate (Methyl parathion)	35,862	26,973	18,709	.69
All other[5]	18,036	14,575	37,066	2.54
All other[6]	65,075	56,240	55,143	.98
PESTICIDES AND RELATED PRODUCTS ACYCLIC				
Total	236,201	217,027	136,856	.63
Fungicides, total	36,780	36,080	26,117	.72
Dimethyldithiocarbamic acid, ferric salt (Ferbam)	1,379	1,679	626	.37
Ethylene bis(dithiocarbamic acid), disodium salt (Nabam)	2,053	2,209	930	.42
Ethylene bis(dithiocarbamic acid), zinc salt (Zineb)	4,721	4,326	1,895	.44
All other[7]	28,627	27,866	22,666	.81
Herbicides and plant hormones[8]	57,645	50,063	43,993	.88
Insecticides, rodenticides, and soil conditioners and fumigants, total	141,776	130,884	66,746	.51
1,2-Dibromo-3-chloropropane (DBCP)	8,722	5,266	2,658	.50
Methyl bromide (Bromoethane)	16,345	16,324	6,652	.41
Organophosphorus insecticides, total	46,580	39,976	48,249	1.21
Tetraethyl pyrophosphate (TEPP)	...	287	280	.98
Other organic phosphorous insecticides[9]	46,580	39,689	47,969	1.21
All other insecticides, rodenticides, and soil conditioners and fumigants[10]	70,129	69,318	9,187	.13

[1] Calculated from rounded figures.

[2] Includes captan, dichlone, folpet, glyodin, pentachloronitrobenzene, sodium pentachlorophenate, tri- and tetrachlorophenols, and others.

[3] Includes dimethylurea compounds, dinitrophenol compounds, endothal, isopropyl carbanilates (IPC and CIPC), maleic hydrazide, propanil, triazines, uracils, and others.

[4] Includes aldrin, chlordan, dieldrin, endrin, heptachlor, terpene polychlorinates, and toxaphene.

[5] Includes carbophenothion, diazinon, ronnel, other phosphorothioates and phosphorodithioates, and others.

[6] Includes DDD, 4,4-Dichlorobenzilate, dicofol, endosulfan, methoxychlor, and other chlorinated insecticides, carbaryl, DEET, small amounts of rodenticides and insect repellents, hexachlorocyclohexane and lindane (production only), synergists, and others.

[7] Includes dithiocarbamates including dodine, maneb, mercury compounds, PETD and others.

[8] Includes CDAA, methanearsonic acid's disodium salt and sodium salt, thiocarbamate and organophosphorus herbicides, sodium dichloropropionate, sodium TCA, and others.

[9] Includes DDVP, disulfoton, ethion, malathion, naled, phorate, TEPP (production only), and others.

[10] Includes soil conditioners and fumigants, metaldehyde (which is a molluscicide), small quantities of rodenticides, and others.

Note: Sale of gamma isomer content in benzenehexachloride and lindane is not publishable for 1966 because publication would reveal the operations of the individual producers. Production of gamma isomer content has not been publishable since 1963.

Production of pesticides and related products in 1966 amounted to 1,013 million pounds--about 15 percent more than the 877 million pounds reported for 1965. Sales in 1966 were 822 million pounds, valued at $584 million, compared with 764 million pounds, valued at $497 million in 1965.

The output of cyclic pesticides and related products included in the cyclic group amounted to 777 million pounds in 1966--about 14 percent more than the 683 million pounds produced in 1965. Sales in 1966 were 605 million pounds, valued at $447 million, compared with 582 million pounds, valued at $378 million, in 1965.

Production of acyclic pesticides and related products in 1966 amounted to 236 million pounds, compared with the 195 million pounds reported for 1965. Sales in 1966 were 217 million pounds, valued at $137 million, compared with 182 million pounds, valued at $119 million, in 1965.

Miscellaneous Chemicals

The term miscellaneous chemicals comprises those synthetic organic products that are not included in the other use groups covered by this report. They include products that are employed in a great variety of uses: The number of chemicals used exclusively for only one purpose is not large. Among the products covered are those used for gasoline and lubricating oil additives, paint driers, photographic chemicals, tanning materials, flotation reagents, refrigerants, textile polymers, sequestering agents, organic fertilizers, antifreeze chemicals, solvents, and acyclic intermediates. Statistics on production and sales of miscellaneous chemicals in 1966 are given in table 21A.[13]

Production of miscellaneous cyclic and acyclic chemicals in 1966 totaled 57.3 billion pounds or 13 percent more than the output of 50.8 billion pounds reported for 1965. Sales of miscellaneous chemicals in 1966 amounted to 24.5 billion pounds, valued at $3.2 billion, compared with 22.0 billion pounds, valued at $2.9 billion, in 1965.

The total output of miscellaneous cyclic chemicals in 1966 was 1.4 billion pounds, or 20 percent more than the output of 1.1 billion pounds, reported for 1965. Sales in 1966 totaled 739 million pounds, valued at $271 million, compared with 625 million pounds, valued at $245 million, in 1965. In 1966 the most important groups of cyclic compounds were the lubricating oil additives, the output of which was 390 million pounds, and synthetic tanning materials, the output of which was 36 million pounds.

Total production of miscellaneous acyclic chemicals in 1966 was 55.9 billion pounds or 12 percent more than the output of 49.7 billion pounds reported for 1965. Sales in 1966 totaled 23.8 billion pounds, valued at $2.9 billion, compared with 21.4 billion pounds, valued at $2.6 billion, in 1965. The statistics for acyclic chemicals have been regrouped primarily by chemical function. The order of precedence of these functional groups is generally that used in naming and indexing chemical pounds by *Chemical Abstracts,* but other important considerations are comparability with statistics for earlier years and the need for groupings that will not reveal the operations of individual producers. Some of the groupings by use found in earlier reports have been omitted for 1966, as such groupings are difficult to maintain due to the variety of uses and frequent shifts in principal usage for many important items.

In 1966, the most important groups of acyclic chemicals were the halogenated hydrocarbons, the nitrogenous compounds, monohydric alcohols, and aldehydes and ketones. Production of halogenated hydrocarbons, which are used as solvents, intermediates, refrigerants, and aerosol propellants, totaled 11.6 billion pounds. The most important chemicals in this group were dichloroethane (production of 3.6 billion pounds in 1966 compared with 2.5 billion pounds in 1965) and vinyl chloride (2.5 billion pounds compared with 2.0 billion pounds). Output of nitrogenous compounds totaled 8.9 billion pounds. The most important chemical in this group was urea (used principally in fertilizers and as a feed additive), production of which was 3.4 billion pounds in 1966 compared with 2.6 billion pounds in 1965.

Monohydric alcohols, which are used largely as solvents and intermediates, were the third largest group in 1966, with production of 8.8 billion pounds. The most important items in the group were synthetic methanol, production of 3.3 billion pounds in 1966 compared with 2.9 billion pounds in 1965; synthetic ethyl alcohol, 1.9 billion pounds compared with 2.0 billion pounds, and isopropyl alcohol, 1.7 billion pounds compared with 1.5 billion pounds. Aldehydes and ketones, which are also used largely as solvents and intermediates, were the next largest group, with production of 8.3 billion pounds. The most important items in the group were formaldehyde, production of 3.7 billion pounds in 1966 compared with 3.1 billion pounds in 1965; acetaldehyde, 1.3 billion pounds compared with 1.2 billion pounds; and acetone, 1.3 billion pounds compared with 1.1 billion pounds.

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

TABLE 21A.--*Miscellaneous chemicals: U.S. production and sales, 1966*

[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 21B 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	57,252,648	24,549,157	3,162,184	$0.13
MISCELLANEOUS CHEMICALS, CYCLIC				
Total	1,368,666	738,847	271,359	.37
Benzoic acid salts: Sodium benzoate, tech. and U.S.P.	9,493	8,442	2,461	.29
Benzoyl peroxide	5,039	5,002	4,887	.98
Butyl benzoate	635	...	...	...
Cyclopropane	122	135	2,022	14.98
2,6-Di-tert-butyl-p-cresol:				
Food grade	7,310	8,426	4,862	.58
Tech	14,702	14,990	8,429	.56
p-Dimethoxybenzene (Dimethyl ether of hydroquinone)	918	...	...	...
Flotation reagents	6,109	...	...	...
Gasoline additives, total[2]	18,587	13,688	10,040	.73
N,N'-Di-sec-butyl-p-phenylenediamine	2,731	1,764	1,528	.87
N,N'-Disalicylidene-1,2-propanediamine	902	938	1,455	1.55
All other	14,954	10,986	7,057	.64
Hexamethylenetetramine, tech	78,761	61,643	10,822	.18
Lubricating oil and grease additives, total	389,838	243,407	51,428	.21
Oil-soluble petroleum sulfonate, barium salt	41,479	...	...	...
Oil-soluble petroleum sulfonate, calcium salt	132,256	...	...	...
Oil-soluble petroleum sulfonate, sodium salt	73,177	50,084	10,006	.20
All other	142,926	193,323	41,422	.21
Morpholine	18,889	18,493	8,209	.44
Naphthenic acid salts, total[3] [4]	23,317	20,127	6,934	.34
Calcium naphthenate	1,892	1,353	593	.44
Cobalt naphthenate	3,612	3,069	2,038	.66
Iron naphthenate	296	294	100	.34
Lead naphthenate	14,267	12,621	2,841	.23
Manganese naphthenate	1,652	1,253	460	.37
Zinc naphthenate	1,107	1,040	465	.45
All other	491	497	437	.88
Photographic chemicals:				
Benzotriazole	28	31	149	4.81
2,5-Diethoxy-4-morpholinobenzenediazonium chlorozincate-	24	26	307	11.81
p-Diethylaminobenzenediazonium chloride (p-Diazo-N,N-diethylaniline) - zinc chloride	119	112	276	2.46
N,N-Diethyltoluene-2,5-diamine, monohydrochloride	168	234	654	2.79
Pinene (α- and β-)	89,766	51,428	5,437	.11
Propyl gallate	117	...	...	...
Tall oil salts, total[3]	10,296	10,202	3,588	.35
Calcium tallate	2,792	2,797	975	.35
Cobalt tallate	2,753	2,728	1,419	.52
Lead tallate	3,608	3,519	851	.24
Manganese tallate	711	682	214	.31
All other	432	476	129	.27
Tanning materials, synthetic, total	36,343	35,702	7,683	.22
2-Naphthalenesulfonic acid, formaldehyde condensate and salts	31,983	31,530	5,726	.18
All other	4,360	4,172	1,957	.47

See footnotes at end of table.

TABLE 21A.--*Miscellaneous chemicals: U.S. production and sales, 1966*--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, total	2,441	1,783	1,277	$0.72
1,3-Bis(hydroxymethyl)-2-imidazolidone (Dimethylol ethylene urea)	92	135	50	.37
All other	2,349	1,648	1,227	.74
All other miscellaneous cyclic chemicals	655,644	244,976	141,894	.58
MISCELLANEOUS CHEMICALS, ACYCLIC				
Total	55,883,982	23,810,310	2,890,825	.12
Cellulose Esters and Ethers				
Total	1,026,063	301,736	122,596	.41
Cellulose esters, total	930,130	211,213	72,107	.34
Cellulose acetate	750,304	...	...	...
All other	179,826	211,213	72,107	.34
Cellulose ethers, total	95,933	90,523	50,489	.56
Sodium carboxymethylcellulose, 100%	48,736	48,355	20,758	.43
All other	47,197	42,168	29,731	.70
Lubricating Oil Additives				
Total	456,986	178,369	37,582	.21
Phosphorodithioates (Dithiophosphates)	100,819	49,268	12,265	.25
Sulfurized lard oil	3,132	...	...	...
Sulfurized sperm oil	23,073	...	...	...
All other	329,962	129,101	25,317	.20
Nitrogenous Compounds				
Total[5]	8,869,388	4,323,581	420,026	.10
Acrylonitrile	716,074	318,169	40,285	.13
Amines, total	784,337	197,237	58,130	.29
n-Butylamine, mono-	1,483	881	408	.46
Di-n-butylamine	...	1,862	816	.44
Di-n-propylamine	6,356	6,685	2,526	.38
Ethylamines, mono-, di-, and tri-	25,393	17,636	4,932	.28
Isopropylamines, mono-, and di-	11,078	10,982	2,029	.18
Methylamines, mono-, di-, and tri-	105,216	62,712	8,351	.13
All other	634,811	96,479	39,068	.40
1,1'-Azobisformamide	2,991	2,419	2,698	1.12
Caprolactam (2-Oxohexamethylenimine)	...	141,809	34,997	.25
2-Chloro-N,N-dimethylethylamine (Dimethylaminoethyl chloride) hydrochloride	299	316	376	1.19
2-Diethylaminoethanol	...	2,854	1,199	.42
2-Dimethylaminoethanol	2,303	1,792	1,133	.62
Ethanolamines, total	207,794	170,977	28,477	.17
2-Aminoethanol (Monoethanolamine)	70,262	57,581	10,538	.18
2,2'-Iminodiethanol (Diethanolamine)	79,246	55,831	7,908	.14
2,2',2''-Nitrilotriethanol (Triethanolamine)	58,286	57,565	10,031	.17
2-Methyllactonitrile (Acetone cyanohydrin)	401,128	...	...	...
Nitriloacids and salts, total	44,904	29,296	11,919	.41
(Ethylenedinitrilo)tetraacetic acid, disodium salt	579	685	437	.64
(Ethylenedinitrilo)tetraacetic acid, tetrasodium salt	24,773	15,118	5,622	.37
(Ethylenedinitrilo)tetraacetic acid, trisodium salt	473	505	219	.43
(N-Hydroxyethylethylenedinitrilo)triacetic acid, trisodium salt	4,187	3,405	1,612	.47
All other	14,892	9,583	4,029	.42
Nylon, 6 and 6/6 polymer for fiber	1,001,689	...	...	...
Oleamide	3,042	...	...	...
Pentaerythritol tetranitrate	5,249	3,169	2,420	.76

See footnotes at end of table.

TABLE 21A.--*Miscellaneous chemicals: U.S. production and sales, 1966*--Continued

Chemical	Production	Sales		
		Quantity	Value	Unit value[1]
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued				
Nitrogenous Compounds--Continued	*1,000 pounds*	*1,000 pounds*	*1,000 dollars*	*Per pound*
Sarcosine and salt	1,751	1,009	590	$0.58
Stearamide	1,327	...	...	...
Urea in compounds or mixtures (100% basis), total	[6] 3,432,703	3,263,426	[7] 135,731	.04
In feed compounds	385,961	384,053	14,570	.04
In liquid fertilizer	1,331,692	1,244,652	51,131	.04
In solid fertilizer	1,387,079	1,415,091	60,861	.04
All other	327,971	219,630	9,169	.04
All other nitrogenous compounds	2,263,797	191,108	102,071	.53
Acids, Acyl Halides and Anhydrides				
Total	5,103,665	1,045,584	156,153	.15
Acetic acid, synthetic, 100%[8]	1,408,768	333,955	23,042	.07
Acetic anhydride, 100%	1,596,825	...	...	...
Acrylic acid	62,477	11,080	3,180	.29
Adipic acid	964,457	88,585	18,803	.21
Butyric acid	...	979	200	.20
Chloroacetic acid, mono-	66,094	...	...	...
Decanoyl chloride	1,362	...	...	...
Formic acid, 90%	27,208	25,880	3,361	.13
Fumaric acid	46,125	37,084	6,313	.17
Gluconic acid, tech	3,828	3,677	1,233	.34
Lauroyl chloride	10,756	...	...	...
Maleic anhydride	168,575	118,946	15,106	.13
Oxalic acid	22,854	22,412	4,713	.21
Palmitoyl chloride	281	...	...	...
Propionic acid	36,989	23,786	2,479	.10
All other acids, acyl halides and anhydrides	687,066	379,200	77,723	.20
Salts of Organic Acids				
Total	241,971	189,187	61,572	.33
Acetic acid salts, total	27,634	25,391	5,612	.22
Ammonium acetate	641	610	228	.37
Copper acetate	294	186	135	.73
Potassium acetate	3,351	3,206	710	.22
Sodium acetate	17,401	15,716	2,449	.16
Zinc acetate	286	459	199	.43
Zirconium acetate	340	319	114	.36
All other	5,321	4,895	1,777	.36
2-Ethylhexanoic acid (α-Ethylcaproic acid) salts, total	4,262	3,235	2,474	.76
Calcium 2-ethylhexanoate	...	331	149	.45
Cobalt 2-ethylhexanoate	701	608	688	1.13
Lead 2-ethylhexanoate	241	231	86	.37
Zinc 2-ethylhexanoate	413	385	194	.50
Zirconium 2-ethylhexanoate	814	835	580	.69
All other	2,093	845	777	.92
Formic acid, aluminum salt	337	...	...	...
Gluconic acid, sodium salt, tech	11,618	10,014	2,870	.29
Linoleic acid salts, total[3]	346	346	111	.32
Calcium linoleate	144	142	28	.20
Cobalt linoleate	23	28	15	.54
All other	179	176	68	.39
Mercaptoacetic (Thioglycolic) acid, salts	4,250	3,955	6,423	1.62
Oleic acid salts[9]	337	455	329	.72
Oxalic acid salts	12,260	5,310	1,566	.29
Palmitic acid aluminum salt	131	...	...	...
Polyacrylic acid salts	2,806	3,527	4,147	1.18
Propionic acid salts, total	12,311	13,991	2,683	.19
Calcium propionate	12,311	9,288	1,792	.19
Sodium propionate	...	4,703	891	.19

See footnotes at end of table.

TABLE 21A.--*Miscellaneous chemicals: U.S. production and sales, 1966*--Continued

Chemical	Production	Sales		
		Quantity	Value	Unit value[1]
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued				
Salts of Organic Acids--Continued	*1,000 pounds*	*1,000 pounds*	*1,000 dollars*	*Per pound*
Stearic acid salts, total[10]	43,871	40,303	13,173	$0.33
Aluminum stearates, total	5,825	5,606	2,044	.36
Aluminum distearate	4,241	4,090	1,474	.36
Aluminum monostearate	941	891	348	.39
Aluminum tristearate	643	625	222	.36
Calcium stearate	18,977	19,295	5,236	.27
Lead stearate	422	436	182	.42
Lithium stearate	452	494	261	.53
Magnesium stearate	2,458	2,399	888	.37
Zinc stearate	11,527	10,455	3,794	.36
All other	4,210	1,618	768	.47
All other salts of organic acids	121,808	82,660	22,184	.27
Aldehydes and Ketones				
Total	8,288,347	3,220,793	185,073	.06
Acetaldehyde	1,300,450	242,376	13,192	.05
Acetone, total	1,330,178	841,222	40,197	.05
From isopropyl alcohol	881,020	478,444	24,943	.05
All other	449,158	362,778	15,254	.04
2-Butanone (Methyl ethyl ketone)	399,077	351,783	38,896	.11
Chloral (Trichloroacetaldehyde)	70,456	...	...	...
Formaldehyde (37% by weight)	3,712,568	1,359,981	36,751	.03
4-Hydroxy-4-methyl-2-pentanone (Diacetone alcohol)	...	30,818	3,877	.13
4-Methyl-2-pentanone (Methyl isobutyl ketone)	198,387	167,977	20,635	.12
All other aldehydes and ketones	1,277,231	226,636	31,525	.14
Alcohols, Monohydric, Unsubstituted				
Total	8,813,287	4,264,844	280,652	.07
Alcohols, C_9 or lower, total	8,344,716	4,004,199	242,103	.06
Butyl alcohols:				
n-Butyl alcohol (n-Propylcarbinol)	396,934	234,469	22,111	.09
Isobutyl alcohol (Isopropylcarbinol)	92,918	73,947	5,577	.08
Ethyl alcohol, synthetic[11]	1,881,275	1,175,924	72,902	.06
2-Ethyl-1-hexanol	318,902	148,660	17,027	.11
Iso-octyl alcohols	99,994	98,721	11,711	.12
Isopropyl alcohol	1,714,308	695,079	41,565	.06
Methanol, synthetic	3,268,923	1,373,497	44,776	.03
All other, including mixtures	571,462	203,902	26,434	.13
Alcohols, C_{10} or higher, total	468,571	260,645	38,549	.15
Isodecyl alcohol	122,143	72,476	8,798	.12
1-Hexadecanol (Cetyl alcohol)	1,673	1,408	455	.32
All other, including mixtures	344,755	186.761	29,296	.16
Polyhydric Alcohols and Their Esters and Ethers				
Total	4,127,227	2,870,871	376,847	.13
Polyhydric alcohols, total	2,890,675	1,886,163	211,623	.11
Ethylene glycol	2,081,156	1,250,384	101,888	.08
Pentaerythritol	80,836	65,603	15,351	.23
Propylene glycol (1,2-Propanediol)	258,826	215,480	21,120	.10
Sorbitol	65,801	52,097	10,339	.20
All other	404,056	302,599	62,925	.21
Polyhydric alcohol esters	134,187	140,767	27,868	.20
Polyhydric alcohol ethers, total	1,102,365	843,941	137,356	.16
2-Butoxyethanol (Ethylene glycol monobutyl ether)	69,333	64,738	11,164	.17
2-(2-Butoxyethoxy)ethanol (Diethylene glycol monobutyl ether)	...	12,142	3,200	.26
Diethylene glycol	181,942	137,354	13,649	.10
Dipropylene glycol	36,601	34,146	3,849	.11

See footnotes at end of table.

TABLE 21A.--*Miscellaneous chemicals: U.S. production and sales, 1966*--Continued

Chemical	Production	Sales		
		Quantity	Value	Unit value[1]
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued				
Polyhydric Alcohols and Their Esters and Ethers--Continued	*1,000 pounds*	*1,000 pounds*	*1,000 dollars*	*Per pound*
Polyhydric alcohol ethers--Continued				
2-Ethoxyethanol (Ethylene glycol monoethyl ether)	...	49,437	7,842	$0.16
2-(2-Ethoxyethoxy)ethanol (Diethylene glycol monoethyl ether)	33,916	23,976	4,210	.18
2-[2-(2-Ethoxyethoxy)ethoxy]ethanol (Triethylene glycol monoethyl ether)	...	3,773	538	.14
Glycerol tri(polyoxypropylene) ether	173,896	149,250	26,760	.18
2-Methoxyethanol (Ethylene glycol monomethyl ether)	96,264	77,260	12,814	.17
2-(2-Methoxyethoxy)ethanol (Diethylene glycol monomethyl ether)	8,837	...	...	...
2-[2-(2-Methoxyethoxy)ethoxy]ethanol(Triethylene glycol monomethyl ether)	5,245	...	...	...
1-Methoxy-2-propanol	10,603	...	...	...
Polyethylene glycol	41,362	36,492	8,875	.24
Polypropylene glycol	100,558	86,522	14,147	.16
Triethylene glycol	59,065	49,894	8,307	.17
All other ethers of polyhydric alcohols	284,743	118,957	22,001	.18
Esters of Monohydric Alcohols				
Total	1,912,276	940,372	155,845	.17
Butyl acetates, total	129,543	135,215	12,885	.10
n-Butyl acetate	84,560	86,403	8,367	.10
All other	44,983	48,812	4,518	.09
Dibutyl maleate	6,233	...	...	...
Dilauryl 3,3'-thiodipropionate	1,537	1,400	1,368	.98
Ethyl acetate, 85%	121,596	114,909	11,218	.10
Ethyl acrylate	129,995	58,656	12,159	.21
Ethylene carbonate	...	1,064	407	.38
Iso-octyl mercaptoacetate	2,369	2,150	1,493	.69
Isopropyl acetate	47,636	41,964	4,577	.11
Methyl acetate	8,785	...	...	...
Phosphorus acid esters, not elsewhere specified	48,461	30,778	12,790	.42
Vinyl acetate, monomer	605,544	254,239	27,204	.11
All other esters of monohydric alcohols	810,577	299,997	71,744	.24
Halogenated Hydrocarbons				
Total	11,564,094	4,527,697	509,409	.11
Carbon tetrachloride	647,959	615,360	42,201	.07
Chlorinated paraffins	60,051	60,734	7,936	.13
Chlorodifluoromethane	...	56,472	35,640	.63
Chloroethane (Ethyl chloride)	676,953	274,740	18,315	.07
Chloroform	178,953	143,558	10,815	.08
Chloromethane (Methyl chloride)	236,889	104,224	7,473	.07
Dichlorodifluoromethane	286,326	266,894	75,275	.28
1,2-Dichloroethane (Ethylene dichloride)	3,616,599	291,029	12,261	.04
Dichloromethane (Methylene chloride)	267,213	225,833	22,494	.10
1,2-Dichloropropane (Propylene dichloride)	76,283	...	...	...
Dichlorotetrafluoroethane	...	17,211	9,928	.58
Tetrachloroethylene (Perchloroethylene)	462,678	424,797	34,491	.08
1,1,1-Trichloroethane (Methylchloroform)	242,943	249,683	27,853	.11
Trichloroethylene	480,219	462,853	39,095	.08
Trichlorofluoromethane	170,350	155,004	31,147	.20
Vinyl chloride, monomer (Chloroethylene)	2,499,549	836,172	49,552	.06
All other halogenated hydrocarbons	1,661,129	343,133	84,933	.25

See footnotes at end of table.

TABLE 21A.--*Miscellaneous chemicals: U.S. production and sales, 1966*--Continued

Chemical	Production	Sales		
		Quantity	Value	Unit value[1]
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued				
All Other Miscellaneous Acyclic Chemicals	*1,000 pounds*	*1,000 pounds*	*1,000 dollars*	*Per pound*
Total	5,480,678	1,947,276	585,070	$0.30
2-Butanone peroxide	1,896	1,828	2,782	1.52
tert-Butyl hydroperoxide	176	179	311	1.74
tert-Butyl peroxide (Di-tert-butyl peroxide)	1,367	1,367	1,943	1.42
Carbon disulfide	752,296	544,818	22,362	.04
2-Chloroethanol (Ethylene chlorohydrin)	28,446	...	...	...
Decanoyl peroxide	1,028	925	1,259	1.36
Epoxides, ethers, and acetals, total	3,417,762	...	...	...
Ethylene oxide	2,326,901	304,162	29,598	.10
Ethyl ether, all grades	107,222	93,911	6,032	.06
Isopropyl ether	...	4,881	396	.08
Methyl ether (Dimethyl ether)	11,125	...	...	...
Propylene oxide	710,471	83,257	8,648	.10
All other epoxides, ethers, and acetals	262,043	...	...	...
Lauroyl peroxide	1,891	1,791	1,748	.98
Phosgene (Carbonyl chloride)	329,751	...	...	...
Sodium formaldehydesulfoxylate	5,224	5,070	1,137	.22
Sodium methoxide (Sodium methylate)	5,134	3,741	1,199	.32
Tetraethyllead	543,406	557,740	299,276	.54
Tetramethyllead	109,328	95,648	49,865	.52
Zinc formaldehydesulfoxylate	1,248	1,246	577	.46
All other	281,725	246,712	157,937	.64

[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, tallate, or linoleate content.
[4] Statistics exclude production and sales of copper napthenate. Statistics on copper naphthenate are given in the section "Pesticides and Related Products."
[5] Statistics exclude production and sales of fatty amines. Statistics on fatty amines are given in the section "Surface-Active Agents."
[6] Production of urea in primary solution totaled 3,543,436 thousand pounds.
[7] Includes estimated values for sales of urea in nitrogen compounds.
[8] In addition, sales of recovered acetic acid totaled 75,812 thousand pounds, valued at 4,359 thousand dollars.
[9] Statistics exclude production and sales of potassium and sodium oleate. Statistics on these oleates are included in the section "Surface-Active Agents."
[10] Statistics exclude production and sales of potassium and sodium stearates. Statistics on these stearates are included in the section "Surface-Active Agents."
[11] Statistics on production of ethyl alcohol from natural sources by fermentation are issued by the Alcohol Tax Unit, U.S. Internal Revenue Service.

PART III. 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 and 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 the individual items in each group for which data on production or sales were reported for 1966. The tables include data on only those chemicals for which the volume of production or sales in 1966 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 22). 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, 1966*

[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 22. Table 22 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 22)[1]
*Crude light oil	CBT.[2]
Light-oil distillates:	
*Benzene, specification and industrial grades	ACY, KPP.
*Toluene, specification and other grades	ACY, KPP.
*Xylene, all grades	ACY, KPP.
Solvent naphtha	ACY, NEV, PAI.
*All other light-oil distillates	ACP, PAI.
Pyridine crude bases	ACP, KPT.
*Naphthalene, crude, solidifying at--	
*Less than 74° C	COP.
*74° C. to less than 76° C	KPT.
*76° C. to less than 79° C	ACP, KPT, PRD, RIL.
Crude tar-acid oils having a tar-acid content of--	
5% to less than 24%	ACP, COP, KPT, RIL.
24% to 51%	ACP, RIL.
Cresylic acid, crude	ACP, KPT, PRD.
*Creosote oil (Dead oil):	
*Distillate as such	ACP, CBT, COP, HUS, KPT, RIL, WTC.
*Creosote in coal-tar solution	ACP, JEN, KPT, RIL.
All other distillate products	ACP, KPT, PAI.
*Tar, road	ACP, KPT, RIL, WTC.
*Tar for other uses:	
Crude	ACP, KPT, RIL.
Refined	KPT, RIL.
Pitch of tar:	
Soft and medium (water softening points less than 110° F., and 110° F. to 160° F.).	ACP, CBT, COP, KPT, RIL.
*Hard (water softening point above 160° F.)	ACP, COP, HUS, JEN, KPT, RIL.
Pitch-of-tar coke and pitch emulsion	JEN, RIL.

[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, August 29, 1967, entitled "Coke Producers in the U.S. in 1966."

[2] Crude light oil production and sales of this company are not included with the U.S. Bureau of Mines figures given in table 4A.

Crude Products From Petroleum and Natural Gas for Chemical Conversion

TABLE 5B.--*Crude products from petroleum and natural gas for chemical conversion for which U.S. production or sales were reported, identified by manufacturer, 1966*

[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 22. 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 22)
AROMATICS AND NAPHTHENES	
*Benzene (except motor grade):	
*Benzene, 1°	ACU, APR, ASH, ATR, CCP, COR, CSD, DLH, DXS, ENJ, GOC, GRS, MOC, MON, PLC, RIC, SHO, SKO, SM, SNT, SOG, SUN, TOC, TX, UOC, VEL, VPT.
*Benzene, 2°	ACC, CO, DOW, SHO, SOC.
Cresylic acid, crude	ATR, PRD, RIC, SHO.
*Naphthalene, all grades	ASH, COL, MON, SUN, TID.
*Naphthenic acids:	
Acid number lower than 150	RIC, SUN, TX.
*Acid number 150-199	PRD, RIC, SM, SOC, SUN.
Acid number 200-224	PRD, RIC, SM, SOC.
Acid number 225-249	SOC.
*Sodium carbolate and phenate, crude	ATR, GOC, SIN.
*Toluene:	
*Nitration grade, 1°	ASH, ATR, COR, CSD, DLH, ENJ, GOC, LEN, MOC, MON, PLC, SHC, SHO, SIN, SNT, SOG, SUN, TOC, TX, UCC, UOC, VEL, VPT.
*Pure commercial grade, 2°	DOW, MON, RIC.
*Solvent grade	CO, FG, SKO.
*All other	ACC, COR, CSD, CSO, DXS, ELP, GRS, PLC, RIC, SHO, SM, SOC, TOC, TX, VPT.
*Xylenes, mixed:	
Aviation grade	CSD, CSO, SOG.
*3°	ATR, COR, DLH, MOC, MON, SNT, UOC.
5°	ASH, SIN, SUN, TX.
All other	CCP, COR, CSD, CSO, GRS, LEN, RIC, SHO, SM, SOC, SOG, SUN, TOC.
*All other aromatics, naphthenes, distillates and solvents	ACC, DUP, ELP, ENJ, FG, GOC, JCC, LEN, MOC, MON, OMC, PLC, SHC, SM, SOC, SOG, SOI, USI, VPT.
ALIPHATIC HYDROCARBONS	
C_1 hydrocarbon: Methane	CCP, MON.
*C_2 hydrocarbons:	
*Acetylene	ACY, DOW, DUP, MNO, MON, UCC, x.
*Ethane	ACU, CCP, CSO, ENJ, MON, PAN, SHC, SHO, SM, SOI, UCC, USI.
*Ethylene	BFG, CBN, CCP, CSO, DOW, DUP, EKX, ELP, ENJ, GOC, JCC, KPP, MON, OMC, PLC, RIC, SHC, SM, SNO, UCC, USI.
C_2 and C_3 hydrocarbons, mixed	COR, GYR, MON, PLC.
*C_3 hydrocarbons:	
*Propane	AMO, APR, ASH, CCP, CSD, CSO, DXS, ENJ, GOC, GRS, OMC, PAN, PLC, SHM, SHO, SIN, SM, SNT, SOG, SOI, SPI, UCC, UOC, USI.
*Propylene	AMO, ASH, BFG, CBN, CCP, CSO, DOW, EKX, ELP, ENJ, GOC, JCC, MOC, MON, PLC, RIC, SHC, SHO, SIN, SIO, SM, SNT, SOG, SOI, SPI, SUN, UCC, UOC.
*C_4 hydrocarbons:	
*1,3-Butadiene, grade for rubbers (elastomers)	CBN, CPY, DOW, ELP, ENJ, FRS, GGC, ILC, MON, PLC, PTT, SHC, SHO, SM, SOC, SPI, TID, TUS, UCC.
*Butadiene and butylene fractions	DOW, GOC, GYR, MOC, PLC, PTT, SHC, SHO. SIN, SM, SOC, SPI.
*n-Butane	COR, CSD, DXS, GRS, OMC, PAN, SHO, SM, SNT, SOC, SOG, SOI, UCC, USI.
1-Butene	GOC, PLC, PTT.
2-Butene	MON, PLC, PTT.
*1-Butene and 2-butene mixture	CSO, ENJ, GOC, PLC, PTT, SHO, SOC, SPI, TX, UOC.
*Isobutane	CCP, ELP, ENJ, GRS, OMC, PAN, PLC, SHO, SM, SOI, UCC, USI.
*Isobutylene	DXS, ENJ, PTT, SIN, UOC.
All other	APR, BFG, ENJ, JCC, MON, PLC, SM, SOI, UCC, USI.
*C_5 hydrocarbons:	
Isopentane (2-Methylbutane)	PLC, SM, SOI, UCC.
*Isoprene (2-Methyl-1,3-butadiene)	ENJ, GYR, SHC.
n-Pentane	APR, MON, PLC.

TABLE 5B.--*Crude products from petroleum and natural gas for chemical conversion for which U.S. production or sales were reported, identified by manufacturer, 1966--Continued*

Chemical	Manufacturers' identification codes (according to list in table 22)
ALIPHATIC HYDROCARBONS--Continued	
*C_5 hydrocarbons--Continued	
All other	APR, ENJ, GYR, MON, PLC, SHC, USI.
C_6 hydrocarbons:	
*Hexane	ENJ, PLC, SOG, UOC.
Neohexane (2,2-Dimethylbutane)	PLC.
All other	APR, PLC.
C_7 hydrocarbons:	
n-Heptane	EKX, ENJ, PLC, UOC.
*Heptenes, mixed	CSD, ENJ, GOC, HOU, SIN, SOG, SOI, TID.
All other	PLC.
C_8 hydrocarbons:	
*Diisobutylene (Diisobutene)	ATR, PTT, TX.
n-Octane	ENJ, PLC.
2,2,4-Trimethylpentane (Iso-octane)	GRS, PLC.
All other	PLC.
Hydrocarbons, C_9 and above:	
Eicosane	ATR.
*Nonene (Tripropylene)	AMO, ATR, ENJ, GOC, RIC, UOC.
*Polybutene	ACC, CSD, SOC, SOI.
*Tetrapropylene	CO, DXS, ENJ, GOC, MOC, RIC, SNT, SOC, SUN, TX, UOC.
Tridecene concentrate	ENJ.
Triisobutylene	ATR.
All other	CO, ENJ, GOC, HOU, KEN, PLC, SOC, SUN, TID, x.
*All other aliphatic hydrocarbons and derivatives:	
Hydrocarbons:	
*Alpha olefins--Molecular weight ranges:	
C_6-C_7	GOC, GYR, PLC, SOC.
C_8-C_{10}	GOC, SOC.
C_{11}-C_{15}	ENJ, GOC, SOC.
All other	EKX, GOC, SOC.
Ethane-ethylene	TX.
Propane-propylene mixture	GOC, TX.
*Hydrocarbon derivatives:	
1-Butanethiol	PAS.
tert-Butyl-mercaptan (2-Methyl-2-propanethiol)	PLC.
Di-tert-butyl disulfide	PLC.
Ethyl mercaptan (Ethanethiol)	PAS, PLC. SOC.
Isopropyl mercaptan	PAS, SOC.
Methyl mercaptan (Methanethiol)	ACC, PAS.
tert-Octyl mercaptan	PAS, PLC.
n-Propyl mercaptan (1-Propanethiol)	PAS, PLC.
All other	EKX, PAS, PLC, SOC, UCC.

Cyclic Intermediates

TABLE 7B.--*Cyclic intermediates for which U.S. production or sales were reported, identified by manufacturer, 1966*

[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 22. 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 22)
Aceanthryleno[2,1-a]aceanthrylene-5,13-dione	ICI.
8-Acetamido-1-(4-acetamido-2-hydroxy-5-nitrophenylazo)-2-naphthol.	TRC.
5-Acetamido-2-aminobenzenesulfonic acid	GAF.
3-[(2-Acetamido-4-aminophenyl)azo]-1,5-naphthalenedisulfonic acid.	TRC.
2-Acetamido-3-chloroanthraquinone	ICI.
α-Acetamido-p-toluenesulfonamide	SDW.
*Acetanilide, tech	CTN, EKT, MRK, SAL, SW.
p-Acetanisidide	GAF.
Acetic acid, phenyl ester	UCC.
Acetoacetanilide	FMP, UCC.
o-Acetoacetanisidide	FMP, SDH, UCC.
o-Acetoacetotoluidide	FMP, UCC.
2',4'-Acetoacetoxylidide	FMP.
1'-Acetonaphthone	GIV.
Acetone phenylhydrazone	DUP.
p-Acetophenetidide	AAP.
*Acetophenone, tech	ACP, SKO, UCC.
p-Acetotoluidide	ACY.
N-Acetylanthranilic acid	DUP.
p-Acetylbenzenesulfonamide	LIL.
p-Acetylbenzenesulfonic acid, sodium salt	LIL.
p-Acetylbenzenesulfonylurethane	LIL.
1-(N-Acetyl)methylamino-4-bromoanthraquinone	AAP.
N-Acetylsulfanilic acid, sodium salt	ALL.
N-Acetylsulfanilyl chloride	ACY, CTN, MRK, SAL.
Adenine	KF.
Adenine bisulfate	KF.
*Alkylbenzenes:	
Dodecylbenzene (including tridecylbenzene):	
Straight chain	ATR, CO, MON, NAC, PLC, UCC, WCC.
Other	CO, SOC.
Other alkylbenzenes: Straight chain	CO, SOC.
Alkylphenols, mixed	GAF, ORO.
Alkylpiperazines, mixed	HOU.
Alkylpyridine	UCC.
[o-(Allylcarbamoyl)phenoxy]acetic acid	LIL.
6-Allyl-o-cresol	ICO.
α-dl-5-Allyl-6-imino-1-methyl-5-(1-methyl-2-pentynyl)-barbituric acid.	LIL.
α-dl-5-Allyl-5-(1-methyl-2-pentynyl)-1-methylbarbituric acid.	LIL.
N-Allylsalicylamide	SDW.
Aminoaceanthryleno[2,1-a]aceanthrylene-5,13-dione	ICI.
3'-Aminoacetanilide	GAF, TRC.
*4'-Aminoacetanilide (Acetyl-p-phenylenediamine)	DUP, GAF, NAC, TRC.
3'-Aminoacetophenone	CTN, SDH.
*5-Amino-2-(p-aminoanilino)benzenesulfonic acid	CMG, GAF, TRC, YAW.
1-Amino-4-(3-amino-4-sulfoanilino)-9,10-dihydro-9,10-dioxo-2-anthracenesulfonic acid.	TRC.
1-Amino-4-(4-amino-3-sulfoanilino)-9,10-dihydro-9,10-dioxo-2-anthracenesulfonic acid.	TRC.
5-Amino-2-anilinobenzenesulfonic acid	NAC.
2-(p-Aminoanilino)-5-nitrobenzenesulfonic acid	CMG, TRC.
3-Amino-p-anisanilide	PCW.
5-Amino-2-o-anisidinobenzenesulfonic acid	TRC.
*1-Aminoanthraquinone and salt	AAP, ACY, DUP, GAF, ICI, MAY, NAC, TRC.
*2-Aminoanthraquinone and salt	ACY, DUP, GAF, NAC, TRC.
N-(4-Amino-1-anthraquinonyl)anthranilic acid	GAF.
N-(5-Amino-1-anthraquinonyl)anthranilic acid	DUP.
N-(8-Amino-1-anthraquinonyl)anthranilic acid	DUP.
*6-Amino-3,4'-azodibenzenesulfonic acid (C.I. Acid Yellow 9).	AAP, ACY, CMG, DUP, TRC.
8-Aminobenz[α]acridan-12-one	NAC.

TABLE 7B.--*Cyclic intermediates for which U.S. production or sales were reported, identified by manufacturer, 1966*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
p-Aminobenzamide	SDH.
*1-Amino-4-benzamidoanthraquinone	ACY, MAY, NAC, TRC.
*1-Amino-5-benzamidoanthraquinone	GAF, ICI, NAC, TRC.
7-[p-(p-Aminobenzamido)benzamido]-4-hydroxy-2-naphthalenesulfonic acid.	CMG, DUP.
*7-(p-Aminobenzamido)-4-hydroxy-2-naphthalenesulfonic acid	CMG, DUP, GAF, NAC.
7-(p-Aminobenzamido)-5-hydroxy-3-naphthalenesulfonic acid	VPC.
3'-Aminobenzanilide	DUP.
4'-Aminobenzanilide	GAF.
*2-Amino-p-benzenedisulfonic acid [SO_3H=1]	DUP, GAF, NAC.
o-Aminobenzenethiol	FMT, GAM.
2-Aminobenzimidazole	EK.
5-Amino-2-benzimidazolinone	DUP.
p-Aminobenzoic acid, tech	DUP, LEM.
p-Aminobenzoic acid, butyl ester	GAF.
p-Aminobenzoic acid, 2-(dimethylamino)ethyl ester	SDW.
4-Aminobenzophenone	DUP.
2-Amino-6-benzothiazolecarboxylic acid	DUP.
2-(m-Aminobenzoyl)-o-acetanisidide	GAF.
p-Amino-N-benzyl-N-ethylbenzenediazonium chlorostannate	ESA.
p-Amino-N-benzyl-N-ethylbenzenediazonium chlorozincate	ESA.
2-Amino-1-bromo-3-chloroanthraquinone	ICI.
*1-Amino-4-bromo-9,10-dihydro-9,10-dioxo-2-anthracenesulfonic acid and sodium salt.	AAP, DUP, GAF, ICI, NAC, TRC.
*1-Amino-2-bromo-4-hydroxyanthraquinone	AAP, DUP, GAF, ICC, TRC.
1-Amino-4-bromo-2-methylanthraquinone	ICI.
*1-Amino-2-bromo-4-p-toluidinoanthraquinone	GAF, ICI, TRC.
*1-Amino-5-chloroanthraquinone	ACY, DUP, ICI, MAY, NAC, TRC.
1-Amino-8-chloroanthraquinone	DUP.
2-Amino-1-chloroanthraquinone	DUP, GAF.
2-Amino-3-chloroanthraquinone	GAF, ICI, TRC.
4-Amino-6-chloro-m-benzenedisulfonamide	ABB.
4-Amino-6-chloro-m-benzenedisulfonamide hydrochloride	ABB.
5-Amino-2-chlorobenzoic acid	TRC.
2-Amino-5-chlorobenzophenone	COK, ICI.
2-Amino-6-chlorobenzothiazole hydrochloride	DUP.
*o-(3-Amino-4-chlorobenzoyl)benzoic acid	AAP, GAF, ICI.
2-Amino-5-chloro-p-cumenesulfonic acid	SW.
2-Amino-5-chloro-4-ethylbenzenesulfonic acid	ACY, SW.
*3-Amino-5-chloro-2-hydroxybenzenesulfonic acid	CMG, NAC, TRC.
2-Amino-4-chloro-6-nitrophenol	CMG.
2-Amino-4-chlorophenol	GAF, MEE, NAC.
2-Amino-6-chloropyrazine	ACY.
3-Amino-6-chloropyridazine	ACY.
2-Amino-5-chloro-p-toluenesulfonic acid [SO_3H=1]	ACY, HSC, SW.
*6-Amino-4-chloro-m-toluenesulfonic acid [SO_3H=1]	ACY, DUP, HSC, NAC, SW.
2-Amino-p-cresol	TRC, x.
*1-Amino-2,4-dibromoanthraquinone	AAP, DUP, GAF, ICC, ICI, NAC, TRC.
5(and 8)-Amino-6,8(and 5,7)-dibromo-9,10-dihydro-9,10-dioxo-1-anthracenesulfonic acid.	ICI.
2-Amino-4,5-dichlorobenzenesulfonic acid	SW.
6-Amino-2,4-dichloro-m-cresol	x.
4'-Amino-2',5'-diethoxybenzanilide	ALL.
1-Amino-9,10-dihydro-9,10-dioxo-2-anthracenesulfonic acid	GAF.
5(and 8)-Amino-9,10-dihydro-9,10-dioxo-1-anthracenesulfonic acid.	ICI, TRC.
1-Amino-9,10-dihydro-9,10-dioxo-2-anthroic acid	DUP.
*1-Amino-9,10-dihydro-9,10-dioxo-4-p-toluenesulfonamido-2-anthracenesulfonic acid, sodium salt.	AAP, DUP, GAF.
5-Amino-4,5'-dihydroxy-3,4'-[(2-methoxy-5-methyl-p-phenylene)bis(azo)]-di-2,7-naphthalenedisulfonic acid, 5'-benzenesulfonate.	TRC.
2-Amino-4-(α,α-dimethylbenzyl)phenol	TRC.
2-Amino-4,6-dinitrophenol and salt	x.
3-Amino-4-ethoxyacetanilide	AAP.
3-Amino-9-ethylcarbazole	ICO, SDC.
p-Amino-N-ethyl-N-hydroxyethyl benzenediazonium chlorozincate.	ESA.
3-Amino-α-ethylhydrocinnamic acid	SDW.
p-Amino-N-ethyl-N-1-naphthylbenzamide	GAF.
2-Amino-N-ethyl-5-nitrobenzenesulfonanilide	GAF.
Aminoethylpiperazine	UCC.

TABLE 7B.--*Cyclic intermediates for which U.S. production or sales were reported, identified by manufacturer, 1966*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
1-Amino-4-hydroxyanthraquinone	GAF.
2-Amino-3-hydroxyanthraquinone	GAF, NAC.
1-Amino-4-hydroxy-2-methoxyanthraquinone	TRC.
4-Amino-5-hydroxy-2,7-naphthalenedisulfonic acid, benzenesulfonate.	TRC.
3-Amino-5-hydroxy-2,7-naphthalenedisulfonic acid (2R acid), monosodium salt.	DUP, NAC.
4-Amino-5-hydroxy-1,3-naphthalenedisulfonic acid (Chicago acid), monosodium salt.	DUP, NAC.
*4-Amino-5-hydroxy-2,7-naphthalenedisulfonic acid (H acid), monosodium salt.	DUP, MON, NAC.
*4-Amino-3-hydroxy-1-naphthalenesulfonic acid (1,2,4 acid)	ACY, GAF, NAC, TRC, VPC.
4-Amino-5-hydroxy-1-naphthalenesulfonic acid (S acid), sodium salt.	NAC.
*6-Amino-4-hydroxy-2-naphthalenesulfonic acid (Gamma acid), sodium salt.	DUP, GAF, NAC, TRC.
*7-Amino-4-hydroxy-2-naphthalenesulfonic acid (J acid), sodium salt.	BKS, CMG, DUP, NAC, TRC.
3'-Amino-2'-hydroxy-5'-nitroacetanilide	TRC.
2-(2-Amino-5-hydroxy-7-sulfo-1-naphthylazo)-5-nitrobenzoic acid.	TRC.
1-(6-Amino-1-hydroxy-3-sulfo-2-naphthylazo)-6-nitro-2-naphthol-4-sulfonic acid.	TRC.
5-Aminoisophthalic acid	GAF.
4-Amino-3-(β-methanesulfanamidoethyl)-N,N-diethylaniline hydrochloride.	EKT.
*N-(4-Amino-3-methoxy-1-anthraquinonyl)-p-toluenesulfonamide.	AAP, DUP, GAF.
5-Amino-6-methoxy-2-naphthalenesulfonic acid	NAC, TRC.
m-[(4-Amino-3-methoxyphenyl)azo]benzenesulfonic acid	DUP, TRC.
8-Amino-6-methoxyquinoline	SDW.
4-[(4-Amino-5-methoxy-o-tolyl)azo]-4-hydroxy-2,7-naphthalenedisulfonic acid, benzenesulfonate.	TRC.
3-[(4-Amino-5-methoxy-o-tolyl)azo]-1,5-naphthalenedisulfonic acid.	TRC.
7-[(4-Amino-5-methoxy-o-tolyl)azo]-1,3-naphthalenedisulfonic acid.	TRC.
*4'-Amino-N-methylacetanilide	CMG, GAF, NAC.
1-Amino-2-methylanthraquinone	DUP, ICI.
4-Amino-4'-(3-methyl-5-oxo-2-pyrazolin-1-yl)-2,2'-stilbenedisulfonic acid.	TRC.
8-Amino-7-methyl-1-phenazinol (Tolazine base)	NAC.
2-Amino-3-methylpyridine	RIL.
2-Amino-5-methylpyridine	RIL.
2-Amino-6-methylpyridine	RIL.
2-Amino-4-methylpyrimidine (2-Amino-4-methyl-1,3-diazine)	ACY.
2-Amino-4-(methylsulfonyl)phenol	NAC, TRC.
2-Amino-5-methyl-1,3,4-thiadiazole	ACY.
1-Amino-2-methyl-4-p-toluidinoanthraquinone	ICI.
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-trione	GAF.
*2-Amino-1,5-naphthalenedisulfonic acid	ACY, SDH, SW.
3-Amino-1,5-naphthalenedisulfonic acid (C acid)	GAF, TRC.
3-Amino-2,7-naphthalenedisulfonic acid	NAC, TRC.
4-Amino-1,5-naphthalenedisulfonic acid	NAC.
4-Amino-1,6-naphthalenedisulfonic acid	DUP.
*6-Amino-1,3-naphthalenedisulfonic acid (Amino I acid)	ACY, DUP, NAC, TRC.
*7-Amino-1,3-naphthalenedisulfonic acid (Amino G acid)	ACY, DUP, GAF, NAC, TRC.
6-Amino-1-naphthalenesulfonamide	VPC.
1-Amino-2-naphthalenesulfonic acid (o-Naphthionic acid)	DUP.
2-Amino-1-naphthalenesulfonic acid (Tobias acid)	ACY, HSC, SW.
*4-Amino-1-naphthalenesulfonic acid (Naphthionic acid)	ACY, DUP, NAC.
4-Amino-1-naphthalenesulfonic acid, sodium salt	DUP, NAC.
4(and 5)-Amino-1-naphthalenesulfonic acid	ACY, TRC.
5-Amino-1-naphthalenesulfonic acid (Laurent's acid)	DUP, NAC.
*5-Amino-2-naphthalenesulfonic acid (1,6-Cleve's acid)	ALL, DUP, GAF, NAC, TRC.
*5(and 8)-Amino-2-naphthalenesulfonic acid (Cleve's acid, mixed).	ALL, DUP, NAC, TRC.
*6-Amino-2-naphthalenesulfonic acid (Broenner's acid)	NAC, SNA, TRC.
6(and 7)-Amino-1-naphthalenesulfonic acid	DUP, VPC.

TABLE 7B.--*Cyclic intermediates for which U.S. production or sales were reported, identified by manufacturer, 1966*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
*8-Amino-1-naphthalenesulfonic acid (Peri acid)	DUP, NAC, SDC, TRC.
*8-Amino-2-naphthalenesulfonic acid (1,7-Cleve's acid)	ALL, DUP, NAC, TRC.
7-Amino-1,3,6-naphthalenetrisulfonic acid	DUP.
8-Amino-1,3,6-naphthalenetrisulfonic acid (Koch's acid)	DUP, NAC.
3-Amino-2-naphthoic acid	RSA.
5(and 8)-Amino-2-naphthol	GAF.
*8-Amino-2-naphthol	CMG, GAF, TRC, VPC.
*2-Amino-5-nitrobenzenesulfonic acid [SO_3H=1]	DUP, GAF, NAC, TRC.
2-Amino-4-nitrophenol	DUP, GAF, NAC, TRC.
2-Amino-5-nitrophenol	NAC.
4-Amino-2-nitrophenol	ACY.
2-Amino-(p-nitrophenylazo)naphthalene	AAP.
2-Amino-1-(p-nitrophenyl)-1,3-propanediol	PD.
*4-Amino-4'-nitro-2,2'-stilbenedisulfonic acid	GAF, ICI, NAC, TRC.
2-Amino-5-nitrothiazole	ACY.
*3'-Aminooxanilic acid	CMG, DUP, TRC.
4'-Aminooxanilic acid	DUP.
3-Amino-2-oxazolidinone	NOR.
5-Amino-2-[(2-oxo-5-benzimidazolinyl)amino]benzenesulfonic acid.	DUP.
p-Aminophenethyl alcohol	EKT.
5-Amino-2-o-phenetidinobenzenesulfonic acid	NAC.
o-Aminophenol	SDC.
p-Aminophenol	ABB, DUP, SDC.
m-[(p-Aminophenyl)azo]benzenesulfonic acid	AAP, DUP, TRC.
*p-[(p-Aminophenyl)azo]benzenesulfonic acid	ACY, CMG, DUP, GAF, NAC, TRC.
7-[(4-Aminophenyl)azo]-1,3-naphthalenedisulfonic acid	TRC.
5-Amino-8-(phenylazo)-2-naphthol	ALL.
8-Amino-5-(phenylazo)-2-naphthol	ALL.
5-[(p-Aminophenyl)azo]salicylic acid	TRC, VPC.
2,2'-(m-Aminophenylimino)diethanol, diacetate ester	DUP.
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	TRC, VPC.
2-Aminopyridine	NEP, RIL.
3-Aminopyridine	RIL.
4-Aminopyridine	NEP.
2-Aminopyrimidine	ACY.
5-Aminosalicylic acid	AAP, TRC.
N-(4-Amino-3-sulfo-1-anthraquinonyl)anthranilic acid	GAF.
3'-(3-Amino-4-sulfophenylsulfamoyl)-3''-sulfamoyl-3-phthalocyaninesulfonic acid, copper derivative.	DUP.
2-Aminothiazole	ACY, MRK.
3-Amino-p-toluamide	SDH.
α-Amino-p-toluenesulfonamide	SDW.
5-Amino-o-toluenesulfonanilide	GAF.
*4-Amino-m-toluenesulfonic acid [SO_3H=1]	ACY, DUP, GAF.
*6-Amino-m-toluenesulfonic acid [SO_3H=1]	DUP, HSC, NAC, SNA, SW.
5-Amino-2-p-toluidinobenzenesulfonic acid	DUP, NAC, TRC.
m-(4-Amino-m-tolylazo)benzenesulfonic acid	TRC.
3-[(4-Amino-o-tolyl)azo]-1,5-naphthalenedisulfonic acid	TRC.
7-[(4-Amino-o-tolyl)azo]-1,3-naphthalenedisulfonic acid	TRC.
*16-Aminoviolanthrone	ACY, GAF, TRC.
5-Amino-2,4-xylenesulfonic acid	DUP.
*Aniline (Aniline oil)	ACY, DOW, DUP, MOB, NAC, RUC.
Aniline hydrochloride	ACY.
1-Anilino-9,10-dihydro-9,10-dioxo-2-anthroic acid	NAC.
1-Anilino-4-hydroxyanthraquinone	AAP.
6-Anilino-4-hydroxy-2-naphthalenesulfonic acid (Phenyl gamma acid).	DUP, NAC.
*7-Anilino-4-hydroxy-2-naphthalenesulfonic acid (Phenyl J acid).	ALT, CMG, DUP, NAC, TRC.
*Anilinomethanesulfonic acid and salt	AAP, ACY, DUP, NAC, TRC, VPC.
*8-Anilino-1-naphthalenesulfonic acid (Phenyl peri acid)	CMG, DUP, NAC, SDC.
o-Anisic acid	HN.
p-Anisic acid	ICO.
m-Anisidine	EK.
*o-Anisidine	AAP, DUP, MON.
p-Anisidine	DUP, MON.
1-p-Anisidino-4-hydroxyanthraquinone	AAP.
*o-Anisidinomethanesulfonic acid	AAP, DUP, GAF, NAC, TRC, VPC.

TABLE 7B.--*Cyclic intermediates for which U.S. production or sales were reported, identified by manufacturer, 1966*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
2-o-Anisidino-5-nitrobenzenesulfonic acid	TRC.
p-Anisoin	CTN.
Anisole, tech	DUP, LIL.
p-Anisoyl chloride	ICO.
Anthracene, refined	ACP.
Anthranilic acid (o-Aminobenzoic acid)[1]	DUP, LEM, MEE, NAC.
*Anthra[1,9-cd]pyrazol-6(2H)-one (Pyrazoleanthrone)	DUP, GAF, TRC.
Anthraquinone, 100%	ACY, DUP, GAF, TRC.
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	DUP, ICI.
N,N'-(1,5-Anthraquinonylene)dioxamic acid	GAF, MEE.
(1-Anthraquinonyl)-1,2-hydrazinedisulfonic acid, disodium salt.	DUP, GAF.
Anthrone	ICI.
Arsanilic acid and salt, tech	ABB, FLM.
Aryldiamines, mixed	DA.
4',4'''-Azobis[4-biphenylcarboxylic acid]	DUP, GAF.
4',4'''-Azobis[N-(1-chloro-2-anthraquinonyl)-4-biphenylcarboxamide].	GAF.
Barbituric acid	ABB, KF, LIL.
Barbituric acid, sodium derivative	ABB, KF.
*Benzaldehyde, tech	BPC, HN, VEL.
4-[(4-Benzamido-1-anthraquinonyl)amino]naphth[2,3-c] acridan-5,8,14-trione.	DUP.
N-(5-Benzamido-1-anthraquinonyl)-p-toluenesulfonamide	ICI, NAC.
1-Benzamido-4-bromoanthraquinone	AAP.
1-Benzamido-4-chloroanthraquinone	GAF.
*1-Benzamido-5-chloroanthraquinone	ACY, DUP, GAF, ICI, MAY, NAC, TRC.
1-(4-Benzamido-2,5-diethoxyphenyl)-3-[methyl-3-(2-sulfoethyl)triazene].	GAF.
4-Benzamido-5-hydroxy-2,7-naphthalenedisulfonic acid	TRC.
7-Benzamido-4-hydroxy-2-naphthalenesulfonic acid	TRC.
N-(4-Benzamido-6-methoxy-m-tolyl)-N-(methylazo)glycine	GAF.
Benzanilide	DUP, PCW.
*7H-Benz[de]anthracen-7-one (Benzanthrone)	AAP, ACY, ATL, CMG, DUP, ICI, MAY, NAC, SDC, TRC.
Benzeneboronic acid	EDC.
m-Benzenedisulfonic acid	KPT.
m-Benzenedisulfonyl chloride	NES.
Benzenesulfonamide	NES.
Benzenesulfonic acid	NES, UPF.
Benzenesulfonic acid, 2-propyn-1-ol ester	ABB.
Benzenesulfonyl chloride	NES.
1,2,4,5-Benzenetetracarboxylic acid	DUP, x.
1,2,4,5-Benzenetetracarboxylic-1,2:4,5-dianhydride	DUP, x.
1,3,5-Benzenetricarboxylic acid	ACC.
1,2,4-Benzenetricarboxylic acid, 1,2-anhydride	ACC.
1,2,4-Benzenetricarboxylic acid, 1,2-anhydride-4-acid chloride.	ICO.
Benzhydrol (Diphenylmethanol)	TBK.
*Benzidine hydrochloride and sulfate	CWN, LAK, NAC, x.
Benzil (Bibenzoyl)	LEM.
Benzilic acid	BPC, LEM.
2-Benzofuranacetonitrile	EK.
*Benzoic acid, tech[1]	HK, HN, MON, VEL.
Benzoin	BPC, LEM.
Benzonitrile	VEL.
Benzophenonetetracarboxylic dianhydride	GOC.
*2-Benzothiazolethiol (2-Mercaptobenzothiazole), sodium salt.	ACY, GYR, MON, USR.
Benzo[b]thiophen-3(2H)-one	GAF.
1H-Benzotriazole	MEE.
2H-3,1-Benzoxazine-2,4(1H)-dione	MEE.
Benzoylacetic acid, ethyl ester	FMP.
*o-Benzoylbenzoic acid	ACY, DUP, GAF.
Benzoyl chloride	HK, VEL.
2-Benzoyl-4-sulfobenzoic acid	DUP.
2-Benzoyl-4'-(p-toluenesulfonamido)acetanilide	EK.
N-Benzylacetamide	SDW.
Benzylamine	ICO, MLS.

See footnotes at end of table.

TABLE 7B.--*Cyclic intermediates for which U.S. production or sales were reported, identified by manufacturer, 1966*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
4-(Benzylamino)-6-chloro-m-benzenedisulfonic acid	ABB.
2-(Benzylamino)ethanol	MLS.
4-Benzyl-6-chloro-3-keto-2-methyl-7-sulfamyl-1,2,4-benzylthiadiazine-1,1-dioxide.	ABB.
4-Benzyl-6-chloro-3-keto-7-sulfamyl-1,2,4-benzylthiadiazine-1,1-dioxide.	ABB.
1-Benzyl-4,5-dimethyl-6-(p-methoxybenzyl)-1,2,3,6-tetrahydropyridine oxalate.	SDW.
Benzyl disulfide	CCW, FIN.
Benzyl ether (Dibenzyl ether)	BPC.
5-(Benzylethylamino)-o-toluenesulfonic acid	NAC.
N-Benzyl-N-ethyl-m-toluidine	DUP, NAC.
4,4'-Benzylidenedi-o-toluidine	ACY.
Benzyl p-nitrophenyl ether	GAF.
p-(Benzyloxy)phenol	EK.
1-Benzyl-4-phenylisonipecotic acid, benzyl ester	SDW.
1-Benzyl-4-phenylisonipecotonitrile	SDW.
4-Benzylpiperidine	RIL.
Benzyl polysulfide	HK.
Benzyl sulfide	BPC.
Benzyltrimethylammonium chloride	MLS.
Benzyltrimethylammonium hydroxide	MLS.
Benzyltrimethylammonium methoxide	MLS.
*[3,3'-Bianthra[1,9-cd]pyrazole]-6,6'(2H,2'H)dione (Pyrazoleanthrone yellow).	DUP, GAF, TRC.
[3,3'-Bi-7H-benz[de]anthracene]-7,7'-dione	DUP, NAC.
*[4,4'-Bi-7H-benz[de]anthracene]-7,7'-dione	ACY, DUP, GAF, ICI, MAY.
*[1,1'-Binaphthalene]-8,8'-dicarboxylic acid	DUP, GAF, NAC.
Biphenyl	DOW, MON.
3,3',4,4'-Biphenyltetramine	AAP.
2,2',4,4'-Biphenyltetrol	FMT, IDC.
2,2'-Biquinoline	EK.
*1,4-Bis[1-anthraquinonylamino]anthraquinone	ACY, DUP, GAF, ICI, 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, NAC.
Bis[1-anthraquinonylamino]violanthrene	GAF.
1,4-Bis[(5-benzamido-1-anthraquinonyl)amino]-anthraquinone.	ICI.
α^2,α^6-Bis[5-tert-butyl-6-hydroxy-m-tolyl]mesitol	ACY.
Bis(chlorosulfonyl)phthalocyaninedisulfonic acid, copper derivative.	TRC.
4,4'-Bis[diethylamino]benzhydrol	GAF.
4,4'-Bis[diethylamino]benzhydrol, 2,6-naphthalene-disulfonate.	GAF.
4,4'-Bis[diethylamino]benzhydrol salt, 2,7-naphthalene-disulfonic acid mixture.	TRC.
4,4'-Bis[diethylamino]benzophenone (Ethyl ketone base)	DSC, SDH.
4-Bis[(p-diethylaminophenyl)methyl]-2,7-naphthalene-disulfonic acid, leuco form.	TRC.
4,4'-Bis[dimethylamino]benzhydrol (Michler's hydrol)	SDH.
*4,4'-Bis[dimethylamino]benzophenone (Michler's ketone)	DSC, DUP, NAC, SDH.
Bis[p-(dimethylamino)phenyl]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)-dinitroanthraquinone.	DUP.
Bis(2,3-epoxycyclopentyl)ether (Epoxide 205)	UCC.
3'-[Bis(2-hydroxyethyl)amino]acetanilide	GAF.
3'-[Bis(2-hydroxyethyl)amino]benzanilide, diacetate ester	DUP.
3'-[Bis(2-hydroxyethyl)amino]methanesulfonanilide, diacetate ester.	DUP.
4,4'-Bis[(p-hydroxyphenyl)azo]-2,2'-stilbenedisulfonic acid (C.I. Direct Yellow 4).	TRC.
4,4-Bis[p-hydroxyphenyl]valeric acid	JNS.
4,4-Bis(p-methoxyphenyl)-3-hexanone	LIL.
Bis(2-methyl-1-aziridinyl)phenylphosphine oxide	ICO.
2,4-Bis(1-methylbutyl)phenol	PAS.
1,4-Bis[2-(4-methyl-5-phenyloxazolyl)] benzene (Dimethyl-POPOP).	ARA.
Bis(p-nitrophenyl)disulfide	SDW.
Bis(o-nitrophenyl)sulfide	x.

TABLE 7B.--*Cyclic intermediates for which U.S. production or sales were reported, identified by manufacturer, 1966*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
1,4-Bis[2-(5-phenyloxazolyl)]benzene (POPOP)	ARA.
2-Bromoacetophenone	EK.
o-Bromoaniline	EK.
p-Bromoaniline	EK.
p-Bromoanisole	EK, OPC.
*3-Bromo-7H-benz[de]anthracen-7-one (3-Bromobenzanthrone)	ACY, DUP, GAF, ICI, MAY, NAC.
Bromobenzene, mono-	DOW.
p-Bromobenzenesulfonyl chloride	EK.
o-Bromobenzoic acid	EK.
Bromochlorobenzene	DOW.
6-Bromo-5-chlorobenzoxazolone	MEE.
2-Bromo-6-chloro-4-nitroaniline	AAP.
2-Bromo-4,6-dinitroaniline	AAP, TRC.
Bromoethylbenzene	DOW.
3-(Bromoethyl)thiophene	SDW.
2-Bromo-3'-hydroxyacetophenone benzoate	SDH.
1-Bromo-4-(N-methylacetamido)anthraquinone	GAF.
*1-Bromo-4-(methylamino)anthraquinone	AAP, DUP, GAF, ICI.
6-Bromo-3-methyl-7H-dibenz[f,ij]isoquinoline-2,7-(3H)dione.	AAP, GAF.
1-Bromonaphthalene	EK, RSA.
2-Bromo-4'-nitroacetophenone	GAF.
1-[(9-Bromo-7-oxo-7H-benz[de]anthracen-3-yl)amino]-anthraquinone.	NAC.
N-(4-Bromopentyl)phthalimide	SDW.
o-Bromophenol	EK, RSA.
p-Bromophenol	EK.
(p-Bromophenyl)acetonitrile	BPC.
p-Bromophenylhydrazine hydrochloride	EK.
2-Bromopyridine	FMT, NEP.
3-Bromopyridine	RIL.
o-Bromotoluene	RSA.
p-Bromotoluene	BPC.
α-Bromotoluene	EK.
4'-Butoxy-3-piperidinopropiophenone	ICO.
N-Butylacetanilide	UCC.
p-Butylaniline	DUP.
2-tert-Butylanthraquinone	DUP.
p-tert-Butylbenzaldehyde	GIV.
n-Butylbenzene	PLC.
sec-Butylbenzene	PLC.
tert-Butylbenzene	PLC.
p-tert-Butylbenzoic acid	SHC.
o-(p-tert-Butylbenzoyl)benzoic acid	DUP.
6-tert-Butyl-m-cresol	KPT, PRD.
2-tert-Butyl-p-cresol	ACY.
2'-tert-Butyl-4',6'-dimethylacetophenone	GIV.
4-Butyl-α-(dimethylamino)-o-cresol	RH.
2-tert-Butyl-4-ethylphenol	ACY.
N^1-Butyl-4-methoxymetanilamide	PCW.
2-tert-Butyl-5-methylanisole	GIV.
o-sec-Butylphenol	DOW, TNA.
p-sec-Butylphenol	DOW.
o-tert-Butylphenol	TNA.
p-tert-Butylphenol	DOW, PRD, UCC.
Butylphenols, mixed	DOW.
p-tert-Butyltoluene	GIV, SHC.
5-tert-Butyl-1,2,3-trimethylbenzene	GIV.
5-tert-Butyl-m-xylene	GIV.
6-tert-Butyl-2,4-xylenol	KPT, PRD.
Camphoric acid	FIN, OTC.
Camphoric anhydride	FIN.
d-10-Camphorsulfonic acid	OTC.
Camphosulfonic acid	PYL.
Carbazole, refined	SDC.
N,N'-Carbonylbis[4-methoxymetanilic acid]	GAF.
N,N'-Carbonylbis[4-methoxy-6-nitrometanilic acid]	GAF.
5'-(o-Carboxybenzoyl)-2'-chlorooxanilic acid	GAF.
N-[(3-Carboxy-4-chlorophenyl)-sulfonyl]anthranilic acid	TRC.
3-Carboxy-2(and 4)-hydroxybenzenediazonium sulfate	GAF, NAC.

TABLE 7B.--*Cyclic intermediates for which U.S. production or sales were reported, identified by manufacturer, 1966*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
o-[(Carboxymethyl)thio]benzoic acid	GAF.
[(o-Carboxyphenyl)thio]ethylmercury	LIL.
Cedrene	GIV.
2'-Chloroacetoacetanilide	FMP, UCC.
2'-Chloroacetophenone	EK.
3'-Chloroacetophenone	EK.
4'-Chloroacetophenone	LIL.
4'-(Chloroacetyl)acetanilide	DUP.
m-Chloroaniline	DUP, GAF.
o-Chloroaniline	AAP, DUP, MON.
p-Chloroaniline	DUP, MON.
2-(o-Chloroanilino)ethanol	EKT.
3-(o-Chloroanilino)propionitrile	BUC, DUP.
5-Chloro-o-anisidine [NH_2=1] (4-Chloro-o-anisidine [OCH_3=1]).	ALL, BUC.
5-Chloro-o-anisidine hydrochloride	GAF.
4-Chloroanthranilic acid	DUP.
*1-Chloroanthraquinone	ACY, DUP, GAF, ICI, MAY, NAC, TRC.
*2-Chloroanthraquinone	ACY, GAF, NAC, TRC.
N-(5-Chloro-1-anthraquinonyl)-p-toluenesulfonamide	ICI.
o-Chlorobenzaldehyde	HN, NAC.
p-Chlorobenzaldehyde	HN.
4-(p-Chlorobenzamido)anthraquinone-1,2-acridone	GAF.
Chloro-7H-benz[de]anthracen-7-one (Chlorobenzanthrone)	ACY, TRC.
*Chlorobenzene, mono-	ACS, DOW, DVC, HK, HKD, MON, MTO, OMC, PPG, WOI.
p-Chlorobenzenesulfinic acid	TRC.
p-Chlorobenzenesulfonamide	ACY, NES.
p-Chlorobenzenesulfonic acid	GAF.
p-Chlorobenzenesulfonyl chloride	NES.
o-Chlorobenzoic acid	HN, SDH.
p-Chlorobenzoic acid	HN.
p-Chlorobenzonitrile	EK.
5-Chloro-2-benzoxazolinone	MEE.
*o-(p-Chlorobenzoyl)benzoic acid	ACY, DUP, GAF, HN, ICI, NAC.
p-Chlorobenzoyl chloride	HN.
4,4'-(o-Chlorobenzylidene)di-2,5-xylidine	GAF.
α-(p-Chlorobenzyl)-α-phenyl-1-pyrrolidine propanol	LIL.
Chloro(p-chloropenyl)phenylmethane	OPC.
Chlorocyclohexane	ACY.
1-Chloro-2,5-diethoxy-4-nitrobenzene	ALL, FMT, GAF.
3-Chloro-4-(diethylamino)benzenediazonium chlorozincate	ESA.
2-Chloro-N,N-diethyl-4-nitroaniline	DUP.
2-Chloro-3',4'-dihydroxyacetophenone	SDW.
2-Chloro-1,4-dihydroxyanthraquinone	HSH.
4'-Chloro-2',5'-dimethoxyacetoacetanilide	PCW.
5-Chloro-2,4-dimethoxyaniline	GAF, PCW.
5-Chloro-4,7-dimethylbenzo[b]thiophen-3(2H)-one	NAC.
4-Chloro-N,N-dimethyl-3-nitrobenzenesulfonamide	EKT.
*1-Chloro-2,4-dinitrobenzene (Dinitrochlorobenzene)	AAP, DUP, NAC, SDC.
1-Chloro-2,4-dinitrobenzene and 2-chloro-1,3-dinitrobenzene mixture.	DUP.
3-Chloro-4,6-dinitrobenzenesulfonic acid	TRC.
3-Chlorodiphenylamine	SK.
Chlorodiphenylmethane	OPC.
N-(2-Chloroethyl)-4-(2-chloro-4-nitrophenylazo)-N-ethylaniline.	GAF.
N-(2-Chloroethyl)-N-ethylaniline	GAF.
p-[(2-Chlorbethyl)methylamino]benzaldehyde	GAF.
2-Chloro-N-ethyl-5-nitrobenzenesulfonanilide	GAF.
Chloroformic acid, benzyl ester	RSA.
Chloroformic acid, phenyl ester	EK.
4-Chloro-3-hydrazinobenzenesulfonic acid	GAF.
1-Chloro-4-hydroxyanthraquinone	ICI.
5'-Chloro-3-hydroxy-2-naphth-o-anisidide	PCW.
3-Chloro-4-hydroxyquinoline-3,4-carbonic acid	SDH.
6-Chloroisatoic anhydride	MEE.
4-Chloro-N-isopropyl-3-nitrobenzenesulfonamide	TRC.
4-Chlorometanilic acid	DUP, GAF.
5-Chlorometanilic acid	NAC.
*6-Chlorometanilic acid	DUP, GAF, SW, TRC.
5-Chloro-2-methoxybenzenediazonium chloride	GAF.

TABLE 7B. --*Cyclic intermediates for which U.S. production or sales were reported, identified by manufacturer, 1966*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
N-[(5-Chloro-2-methoxyphenyl)azo]sarcosine	ATL.
p-(Chloromethyl)anisole	SDW.
*1-Chloro-2-methylanthraquinone	ACY, DUP, GAF, ICI, NAC, TRC.
6-Chloro-4-methyl-1,3,2-benzothiazathiolium chloride	DUP.
4-(Chloromethyl)-1,2-dimethylbenzene	BPC.
4-(Chloromethyl)-1,3-dimethylbenzene	BPC.
1-(Chloromethyl)naphthalene	BPC.
4-Chloro-N-methyl-3-nitrobenzenesulfonamide	TRC.
4-Chloro-3-(3-methyl-5-oxo-2-pyrazolin-1-yl)benzene-sulfonic acid.	DUP, GAF.
2-Chloro-5-(N-methylsulfamoyl)sulfanilamide	ABB.
5-Chloro-2-(N-methylsulfamyl)-4-sulfamyl-N-benzylaniline	ABB.
4-Chloro-3-(methylsulfonyl)nitrobenzene	TRC.
Chloronaphthalenes	KPS.
9-Chloronaphthol[1,2-b]thiophen-3(2H)-one	GAF.
*2-Chloro-4-nitroaniline (o-Chloro-p-nitroaniline)	DOW, DUP, HSC, SDC.
*4-Chloro-2-nitroaniline (p-Chloro-o-nitroaniline)	DOW, DUP, SDC, VPC.
4-Chloro-2-nitroanisole	ALL, BUC.
*1-Chloro-5-nitroanthraquinone	ACY, DUP, MAY, NAC, TRC.
1-Chloro-8-nitroanthraquinone	DUP, MAY.
*1-Chloro-2-nitrobenzene (Chloro-o-nitrobenzene)	AAP, DUP, MON, UPM.
1-Chloro-2(and 4)-nitrobenzene (Chloronitrobenzenes, o- and p-).	SDC.
*1-Chloro-3-nitrobenzene (Chloro-m-nitrobenzene)	DUP, GAF, MON, UPM.
*1-Chloro-4-nitrobenzene (Chloro-p-nitrobenzene)	AAP, DUP, MON, UPM.
2-Chloro-5-nitrobenzenesulfinic acid	TRC.
*4-Chloro-3-nitrobenzenesulfonamide	AAP, CMG, DUP, EKT, ICC, TRC.
4-Chloro-3-nitrobenzenesulfonanilide	TRC.
2-Chloro-5-nitrobenzenesulfonic acid	AAP, CMG, NAC, TRC.
2-Chloro-5-nitrobenzenesulfonic acid, sodium salt	DUP, GAF.
4-Chloro-3-nitrobenzenesulfonic acid	GAF, NAC, TRC.
2-Chloro-5-nitrobenzenesulfonyl chloride	TRC.
*4-Chloro-3-nitrobenzenesulfonyl chloride	AAP, DUP, EKT.
2-Chloro-4-nitrobenzoic acid	SAL.
2-Chloro-5-nitrobenzoic acid	TRC.
*o-(4-Chloro-3-nitrobenzoyl)benzoic acid	AAP, GAF, ICI.
4-Chloro-2-nitrophenol	DUP, MEE.
4-Chloro-3-nitrophenyl methyl sulfone	TRC.
2-Chloro-4-nitrotoluene	DUP.
2-Chloro-6-nitrotoluene	DUP.
4-Chloro-2-nitrotoluene	BUC, DUP.
*4-Chloro-3-nitrotoluene	AAP, BUC, DUP.
α-Chloro-m-nitrotoluene	EK.
Chloropentafluorobenzene	WHC.
m-Chlorophenol	EK.
o-Chlorophenol	DOW, GAF, MON.
p-Chlorophenol	DOW, MON.
2-Chlorophenothiazine	SK.
(p-Chlorophenyl)acetonitrile	ICO, OPC.
4-Chloro-α-phenyl-o-cresol	MON.
4-Chloro-o-phenylenediamine	FMT.
3-(o-Chlorophenyl)-5-methyl-4-isoxazolecarbonyl chloride	ICO, OTC.
3-(o-Chlorophenyl)-5-methyl-4-isoxazolecarboxylic acid	ICO.
1-(p-Chlorophenyl)-3-methyl-2-pyrazolin-5-one	DUP, TRC.
p-Chlorophenyl methyl sulfone	TRC.
2-Chloro-4-phenylphenol	DOW.
2-(4-Chlorophenylthio)benzoic acid	MEE.
4-Chlorophthalic acid	DUP, SW.
Chlorophthalic anhydride	HK.
(3-Chloropropenyl)benzene (Cinnamyl chloride)	SDW.
1-(3-Chloropropyl)-4-methylpiperazine	SK.
N^1-(6-Chloro-3-pyridazinyl)sulfanilamide	ACY.
2-Chloropyridine	FMT.
dl-2-[p-Chloro-2-(2-pyridyl)benzyl]oxy-N,N-dimethylethyl-amine maleate.	x.
7-Chloro-4-quinolinol	SDW.
4-Chlororesorcinol	AAP, GAF.
2-Chloro-5-sulfamoylbenzoic acid	TRC.
2-Chlorothiaxanthen-9-one	MEE.

TABLE 7B.--*Cyclic intermediates for which U.S. production or sales were reported, identified by manufacturer, 1966*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
2-Chlorothiophene	GAM.
m-Chlorotoluene	HK.
p-Chlorotoluene	HN.
*α-Chlorotoluene (Benzyl chloride)	BPC, GRH, HK, HN, MON, TBK, VEL.
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, PCW.
*5-Chloro-o-toluidine [NH_2=1] (4-Chloro-o-toluidine [CH_3=1]).	ATL, BUC, DUP.
5-Chloro-o-toluidine hydrochloride [NH_2=1]	BUC, SDH.
*N-[(5-Chloro-o-tolyl)azo]sarcosine	ALL, ATL, GAF.
1-(6-Chloro-o-tolyl)-3-methyl-2-pyrazolin-5-one	TRC.
*[(4-Chloro-o-tolyl)thio]acetic acid	ACY, ALL, GAF, NAC.
4-Chloro-α,α,α-trifluoro-3-nitrotoluene	AAP.
5-Chloro-α,α,α-trifluoro-2-nitrotoluene	MEE.
p-Chloro-α,α,α-trifluorotoluene	HK.
6-Chloro-α,α,α-trifluoro-m-toluidine	AAP, MEE.
4-Chloro-α,α,α-trifluoro-o-toluidine	MEE.
2-Chloro-1,3,5-trinitrobenzene	EK.
Chlorotriphenylmethane	ARA, EK.
2-Chloro-p-xylene	DUP.
4-Chloro-2,5-xylenesulfonyl chloride	NAC.
4-Chloro-3,5-xylenol	OTA.
[(4-Chloro-2,5-xylyl)thio]acetic acid	NAC.
5α-Cholestan-3β-ol	SDW.
Cholic acid	WIL.
Cinnamoyl chloride	ICO, TBK, x.
*Cresols:[2]	
m-Cresol	KPT, PRD.
*o-Cresol:	
From coal tar	KPT, PRD.
From petroleum	ACY, MER, NPC, PRD, SW.
p-Cresol	HPC, SW.
Cresols, mixed:[2]	
*(m,p)-Cresol:	
From coal tar	ACP, KPT, PRD.
From petroleum	MER, NPC, PIT, PRD.
(o,m,p)-Cresol: From coal tar	ACP, KPT.
2,3-Cresotic acid	DOW.
*Cresylic acid, refined:[2]	
*From coal tar	ACP, KPT.
*From petroleum	ATR, MER, NPC, PIT, SHO.
*Cumene	ACC, ACP, CLK, DOW, GOC, HPC, MON, SHC, SKO, SNT, SOC, TX.
α-Cyano-d[1],α-cyclohexaneacetic acid, ethyl ester	SDW.
α-Cyano-1-cyclohexene-1-acetic acid, ethyl ester	SDW.
4-[(2-Cyanoethyl)ethylamino]-o-tolualdehyde	DUP, GAF.
p-[(2-Cyanoethyl)methylamino]benzaldehyde	DUP, GAF.
8-Cyano-1-naphthalenesulfonic acid	DUP.
*Cyclohexane	ASH, CO, CSD, DUP, EKX, ENJ, GOC, GRS, PLC, RIC, SOG, TX, UOC.
1,2-Cyclohexanedicarboxylic anhydride	NAC.
Cyclohexanol	DUP, MON, NAC.
*Cyclohexanone	DBC, DUP, MON, NAC.
Cyclohexanone oxime	NAC, x.
Cyclohexene	EK, PLC.
4-Cyclohexene-1,2-dicarboximide	CHO.
4-Cyclohexene-1,2-dicarboxylic anhydride	NAC, PTT.
*Cyclohexylamine	ABB, JCC, MON, PAS, VGC, x.
Cyclohexyl-2-propanone	GIV.
N-Cyclohexyltaurine, sodium salt	GAF.
Cyclopentanepropionic acid	ARA.
Cyclopentanol	ARA, LIL.
Cyclopentene	PLC.
(2-Cyclopenten-1-yl)-2-propanone	LIL.
1-Cyclopentyl-2-(methylamino)propane	LIL.
p-Cymene	HNW, HPC, NAC.
Deoxycholic acid	WIL.
1,5(and 1,8)-Diacetamidoanthraquinone	AAP.
3,5-Diacetamido-2,4,6-triiodobenzoic acid	SDW.

See footnotes at end of table.

TABLE 7B.--*Cyclic intermediates for which U.S. production or sales were reported, identified by manufacturer, 1966*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
3'-[Di(2-acetoxyethyl)amino]-p-acetophenetidide	TRC.
3-(Diallylcarbamoyl)-1,2,2-trimethylcyclopentanecarboxylic acid.	WYT.
N^2,N^2-Diallylmelamine	ACY.
*1,4-Diaminoanthraquinone	CMG, DUP, GAF, NAC, TRC.
1,5-Diaminoanthraquinone	GAF, TRC.
1,5(and 1,8)-Diaminoanthraquinone	AAP, ICI, TRC.
*2,6-Diaminoanthraquinone	AAP, GAF, ICI, NAC, TRC, VPC.
3,4-Diaminobenzanilide	DUP.
3',4-Diaminobenzanilide	VPC.
2,4-Diaminobenzenesulfonic acid [SO_3H=1]	DUP, NAC, TRC.
2,5-Diaminobenzenesulfonic acid [SO_3H=1]	TRC.
4,4'-Diamino-2,2'-biphenyldisulfonic acid	AAP, ACY, NAC.
1,5-Diamino-2,6-dibromo-4,8-di-p-toluidinoanthraquinone	ICI.
1,4-Diamino-2,3-dichloroanthraquinone	CMG, DUP.
*1,4-Diamino-2,3-dihydroanthraquinone	ACY, ATL, DUP, GAF, HSH, ICC, ICI, MAY, TRC.
4,8-Diamino-9,10-dihydro-1,5-dihydroxy-9,10-dioxo-2,6-anthracenedisulfonic acid.	TRC.
1,4-Diamino-9,10-dihydro-9,10-dioxo-2,3-anthracenedicarbonitrile.	DUP.
1,4-Diamino-9,10-dihydro-9,10-dioxo-2,3-anthracenedicarboximide.	DUP.
1,5-Diamino-4,8-dihydroxyanthraquinone	DUP, GAF, ICC, VPC.
1,5(and 1,8)-Diamino-4,8(and 4,5)-dihydroxyanthraquinone	DUP.
4,5-Diamino-1,8-dihydroxyanthraquinone	ICI.
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	AAP.
2,4-Diamino-6-phenyl-s-triazine	RH, VEL.
2,6-Diaminopyridine	RIL.
6,7-Diamino-2,3-quinolinediol	BJL.
*4,4'-Diamino-2,2'-stilbenedisulfonic acid	ACY, DUP, GAF, GGY, NAC, SDH, TRC, VPC.
1,5-Diamino-2,4,6,8-tetrabromoanthraquinone	ICI.
4,6-Diamino-m-toluenesulfonic acid [SO_3H=1]	NAC.
3,5-Diamino-p-toluenesulfonic acid [SO_3H=1]	GAF.
3,5-Diamino-2,4,6-triiodobenzoic acid	SDW.
1,4:3,6-Dianhydroglucitol	APD.
1,5-Dianilino-9,10-dihydro-9,10-dioxo-2,6-anthracenedicarboxylic acid.	GAF, NAC.
2,4-Dianilino-1-hydroxyanthraquinone	GAF.
6,8-Dianilino-1-naphthalenesulfonic acid	NAC.
2,5-Dianilinoterephthalic acid	MEE.
Diarylguanidine	DUP.
p-Diazo-N,N-dimethylaniline-1-amino-8-naphthol-3-sulfonate-6-sulfonic acid, sodium salt.	IDC.
5(and 3)-Diazo-6-oxo-1,3(and 1,4)-cyclohexadiene-1-carboxylic acid.	DUP.
1,5-Dibenzamidoanthraquinone	GAF, TRC.
6,11-Dibenzamido-16H-dinaphtho[2,3-a,2',3'-i]-carbazole-5,10,15,17-tetrone.	ICI.
*4,5'-Dibenzamido-1,1'-iminodianthraquinone	ACY, DUP, GAF, ICI, MAY, NAC, TRC.
Dibenzo[b,def]chrysene-7,14-dione	ATL, ICI.
*1,5-Dibenzoylnaphthalene	ACY, DUP, GAF, HST, ICI, TRC, VPC.
N,N'-Dibenzylethylenediamine	WYT.
N,N'-Dibenzylethylenediamine diacetate	WYT.
N,N'-Dibenzylidenetoluene-α,α-diamine	SDH.
N,N-Dibenzylsulfanilic acid	ICI.
2,4'-Dibromoacetophenone	EK.
*3,9-Dibromo-7H-benz[de]anthracen-7-one	DUP, EK, GAF, MAY, NAC, TRC.
p-Dibromobenzene	DOW, EK.
ar-Dibromoethylbenzene	DOW.
2,6-Dibromo-4-nitrophenol	MEE.
5,13-Dibromo-8,16-pyranthrenedione	DUP, ICI.
Dibromoviolanthrone	GAF.
p-Dibutoxybenzene	ALL.
1,4-Dibutoxy-2-chloro-5-nitrobenzene	ALL.
2,5-Dibutoxy-4-morpholinobenzene sulfate	ALL.
4-(2,5-Dibutoxy-4-nitrophenyl)morpholine	ALL.
2,6-Di-tert-butyl-4-nonylphenol	GAF.
2,4-Di-tert-butylphenol	DOW.

TABLE 7B.--*Cyclic intermediates for which U.S. production or sales were reported, identified by manufacturer, 1966*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
Dibutyltin bis(cyclohexyl maleate)	x.
2,4-Dichloroaniline	EK.
3,4-Dichloroaniline	DUP, MON.
*2,5-Dichloroaniline and hydrochloride [NH_2=1]	AAP, BUC, DUP, NAC, SDH.
3-(2,4-Dichloroanilino)-1-(2,4,6-trichlorophenol)	EK.
*1,5-Dichloroanthraquinone	DUP, GAF, ICI, NAC, TRC.
1,5(and 1,8)-Dichloroanthraquinone	DUP, NAC.
*1,8-Dichloroanthraquinone	DUP, GAF, ICI, TRC.
2,6-Dichlorobenzaldehyde	DUP.
3-(3,4-Dichlorobenzamido)-1-phenyl-2-pyrazolin-5-one	EK.
Dichlorobenzanthrone	ACY.
m-Dichlorobenzene	EK, GAF.
*o-Dichlorobenzene	ACS, CPD, DOW, DUP, DVC, MON, OMC, PPG, SCC, SVT, WOI.
o(and p)-Dichlorobenzene	HKD, MTO.
*p-Dichlorobenzene	ACS, CPD, DOW, DVC, HK, MON, PPG, SCC, SVT, WOI.
4,6-Dichloro-m-benzenedisulfonamide	ABB.
4,6-Dichloro-m-benzenedisulfonyl chloride	ABB.
*3,3'-Dichlorobenzidine base and salts	ALL, CWN, LAK, NAC.
2,4-Dichlorobenzoic acid	HN.
2,6-Dichlorobenzonitrile	x.
2,4-Dichlorobenzoyl chloride	HN.
2,5-Dichlorobenzoyl chloride	GAF.
2,4-Dichloro-m-cresol	EKT.
7,16-Dichloro-6,15-dihydro-5,9,14,18-anthrazinetetrone	ICI.
4,8(and 4,5)-Dichloro-9,10-dihydro-9,10-dioxo-1,5(and 1,8)-anthracenedisulfonic acid.	GAF.
4,5-Dichloro-3,6-dioxo-1,4-cyclohexadiene-1,2-dicarbonitrile.	ARA.
Dichlorodiphenylsilane	DCC, UCC.
2',7'-Dichlorofluorescein	EK.
5,14-Dichloroisoviolanthrone	ICI.
*2,5-Dichloro-4-(3-methyl-5-oxo-2-pyrazolin-1-yl) benzenesulfonic acid.	ACY, CMG, DUP, SDH, TRC, VPC.
*2,6-Dichloro-4-nitroaniline	AAP, CWN, DUP, GAF, HSH, MEE, PCW, SW, TRC.
1,2-Dichloro-4-nitrobenzene	DUP, MON.
*1,4-Dichloro-2-nitrobenzene (Nitro-p-dichlorobenzene)	AAP, DUP, NAC, PCW, SDC, VPC.
2,5-Dichloro-3-nitrobenzoic acid	GAF.
2,5-Dichloro-3-nitrobenzoic acid, ammonium salt	GAF.
2,4-Dichlorophenol	DOW, MON.
2-(2,4-Dichlorophenoxy)ethanol	GAF.
N-[(2,5-Dichlorophenyl)azo]-N-ethyl-5-sulfoanthranilic acid.	GAF.
3-(2',6'-Dichlorophenyl)-5-methyl-4-isoxazolecarbonyl chloride.	ICO, OTC.
3-(2',6'-Dichlorophenyl)-5-methyl-4-isoxazolecarboxylic acid.	ICO.
2,6-Dichloropyrazine	ACY.
3,6-Dichloropyridazine	ACY.
4,7-Dichloroquinoline	PD, SDW.
3,5-Dichlorosalicylic acid	ICO.
2,5-Dichlorosulfanilic acid [SO_3H=1]	CMG, DUP, VPC.
2,5-Dichloro-4-sulfobenzenediazonium sulfate	TRC.
p,α-Dichlorotoluene	HN.
α,α-Dichlorotoluene (Benzal chloride)	HK, NAC.
2,6-Dichlorotoluene	DUP, GAF.
2,4-Dichloro-3,5-xylenol	OTA.
Dicyclohexylamine	ABB, MON, VGC.
*Dicyclopentadiene (includes cyclopentadiene)	ENJ, GOC, UCC, VEL.
Dicyclopentadiene dioxide	VEL.
2,5-Diethoxyaniline	GAF.
2',5'-Diethoxybenzanilide	GAF.
p-Diethoxybenzene	GAF.
3,4-Diethoxybenzoic acid	ICO.
2,5-Diethoxy-morpholinobenzenediazonium chloride, zinc chloride.	ALL.
4-(2,5-Diethoxy-4-nitrophenyl)morpholine	ALL.
*p-(Diethylamino)benzaldehyde	DUP, GAF, NAC.
2-Diethylaminoethyl-4-acetylaminophenol	PD.
p-(Diethylamino)benzenediazonium chlorozincate	ESA.
α-[(2-Diethylamino)ethyl]-α-phenylcyclohexanemethanol, hydrochloride.	ACY.

TABLE 7B.--*Cyclic intermediates for which U.S. production or sales were reported, identified by manufacturer, 1966*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
m-(Diethylamino)phenol (N,N-Diethyl-3-aminophenol)	ACY, DUP.
3-[(p-Diethylamino)phenylazo]-1H-1,2,4-triazole	TRC.
3-(Diethylamino)propiophenone	ACY.
4-(Diethylamino)-o-tolualdehyde	DUP.
*N,N-Diethylaniline	ACY, DSC, DUP, NAC, SDH.
N,N-Diethyl-m-anisidine	DUP.
Diethylbenzene	CSD, DOW, KPP.
Diethyl-[3,3'-bianthra[1,9-cd]pyrazole]-6,6'-dione	GAF.
1,1'-Diethyl-4,4'-carbocyanine iodide (Cryptocyanine)	EK.
N,N-Diethylcyclohexylamine	DUP.
α,α'-Diethyl-4,4'-dimethoxystilbene	LIL.
N,N-Diethylmetanilic acid	DUP.
N^1,N^1-Diethyl-4-methoxymetanilamide	PCW.
N,N-Diethyl-1-naphthylamine	DUP.
N,N-Diethyl-p-nitrosoaniline	ESA, GAF.
N,N-Diethyl-4-nitroso-m-anisidine hydrochloride	DUP.
N,N-Diethyl-4-nitroso-m-phenetidine	GAF.
N,N-Diethyl-m-phenetidine	GAF.
N,N-Diethyl-m-toluidine	DUP.
6,15-Dihydro-5,9,14,18-anthrazinetetrone	TRC.
10,11-Dihydro-5H-dibenzo[a,d]cyclohepten-5-one	LIL.
*9,10-Dihydro-1,4-dihydroxy-9,10-dioxo-2-anthracenesulfonic acid (2-Quinizarinsulfonic acid).	AAP, HSH, PAT.
N-(5,13-Dihydro-5,13-dioxoaceanthryleno[2,1-α]-aceanthrylen-7-yl)-9,10-dihydro-1-nitro-9,10-dioxo-2-anthramide.	ICI, NAC.
*9,10-Dihydro-9,10-dioxo-1,5-anthracenedisulfonic acid	ACY, DUP, TRC.
*9,10-Dihydro-9,10-dioxo-1,5-anthracenedisulfonic acid, disodium salt.	DUP, GAF, ICI, TRC.
9,10-Dihydro-9,10-dioxo-1,5(and 1,8)-anthracenedisulfonic acid and salt.	DUP, TRC.
9,10-Dihydro-9,10-dioxo-1,8-anthracenedisulfonic acid	DUP.
*9,10-Dihydro-9,10-dioxo-1,8-anthracenedisulfonic acid, potassium salt.	GAF, ICI, TRC.
*9,10-Dihydro-9,10-dioxo-2,6-anthracenedisulfonic acid and salt.	AAP, ACY, GAF, ICI, NAC, TRC, VPC.
*9,10-Dihydro-9,10-dioxo-1-anthracenesulfonic acid and salt (Gold salt).	AAP, ACY, DUP, GAF, ICI, MAY, NAC, TRC.
9,10-Dihydro-9,10-dioxo-2-anthracenesulfonic acid and salt (Silver salt).	DUP, NAC.
9,10-Dihydro-9,10-dioxo-2-anthroic acid	NAC.
3,4-Dihydro-3,4-dioxo-1-naphthalenesulfonic acid, sodium salt.	EK.
[Dihydrogen 3,3''-phthalocyaninedisulfonato-(2-)]copper	ICI.
10,11-Dihydro-5-[3-(methylaminopropyl)]-5H-dibenzo-[a,d]cycloheptene-5-ol.	LIL.
*9,10-Dihydro-5-nitro-9,10-dioxo-1-anthracenesulfonic acid	DUP, MAY, NAC, TRC.
9,10-Dihydro-5(and 8)-nitro-9,10-dioxo-1-anthracene-sulfonic acid.	ICI, TRC.
9,10-Dihydro-8-nitro-9,10-dioxo-1-anthracenesulfonic acid	MAY, NAC.
9,10-Dihydro-8-nitro-9,10-dioxo-1-anthracenesulfonic acid, sodium salt.	DUP.
9,10-Dihydro-1-nitro-9,10-dioxo-2-anthroic acid	DUP, GAF, NAC, TRC.
1,4-Dihydro-4-oxo-2,6-pyridinedicarboxylic acid	SDW.
*1,4-Dihydroxyanthraquinone (Quinizarin)	AAP, ACY, CMG, DUP, EKT, GAF, HSH, ICC, ICI, JTC, MAY, NAC, TRC.
*1,5-Dihydroxyanthraquinone (Anthrarufin)	ACY, DUP, GAF, NAC.
1,5(and 1,8)-Dihydroxyanthraquinone	CMG, TRC.
*1,8-Dihydroxyanthraquinone (Chrysazin)	DUP, GAF, ICI.
2,6-Dihydroxyanthraquinone (Anthraflavic acid)	GAF, TRC.
4,5-Dihydroxy-m-benzenedisulfonic acid, disodium salt	SDW.
2,4-Dihydroxybenzophenone	DUP, GAF.
*1,5-Dihydroxy-4,8-dinitroanthraquinone	ICC, ICI, VPC.
1,5(and 1,8)-Dihydroxy-4,8(and 4,5)-dinitroanthraquinone	TRC.
*1,8-Dihydroxy-4,5-dinitroanthraquinone (4,5-Di-nitrochrysazin).	DUP, GAF, ICC, ICI.
1,5-Dihydroxy-4,8-dinitro-2,6-anthraquinonedisulfonic acid.	DUP.
17α,21-Dihydroxy-9β,11β-epoxy-16β-methylpregna-1,4-diene-3,20-dione.	SCH.

TABLE 7B.--*Cyclic intermediates for which U.S. production or sales were reported, identified by manufacturer, 1966*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
10,10'-(Dihydroxyethanediylidene)dianthrone	ICI.
4,5-Dihydroxy-2,7-naphthalenedisulfonic acid (Chromotropic acid).	HSH, NAC.
6,7-Dihydroxy-2-naphthalenesulfonic acid	FMT, GAF, IDC.
3,5-Dihydroxy-2-naphthoic acid	GAF.
11β,21-Dihydroxypregna-4,17(20)-cis-dien-3-one	UPJ.
11β,21-Dihydroxypregna-1,4,17(20)-cis-trien-3-one	UPJ.
4,5-Dihydroxy-3-(p-sulfophenylazo)-2,7-naphthalene-disulfonic acid, trisodium salt.	EK.
*16,17-Dihydroxyviolanthrone (Dihydroxydibenzanthrone)	ACY, DUP, GAF, ICI, MAY, NAC.
m-Diiodobenzene	EK.
2,5-Diiodobenzoic acid, 2-(2-methoxyethoxy)ethyl ester	SDW.
3,5-Diiodo-4-oxo-1(4H)pyridineacetic acid	SDW.
3,5-Diiodo-L-tyrosine	EK.
Diisopropylbenzene	DOW.
N,N'-Diisopropyl-p-phenylenediamine	DUP, USR.
2,5-Dimethoxyaniline	ALL, EKT.
1,5(and 1,8)-Dimethoxyanthraquinone	TRC.
2,5-Dimethoxybenzaldehyde	CWN.
m-Dimethoxybenzene	ACY, ICO.
*3,3'-Dimethoxybenzidine (o-Dianisidine)	ALL, CWN, DUP, LAK, SDH.
3,3'-Dimethoxybenzidine hydrochloride	CWN.
2,4-Dimethoxybenzoic acid	ACY.
3,4-Dimethoxybenzoic acid	ICO.
N,N'-[(3,3'-Dimethoxy-4,4'-biphenylylene)bis-(azo)]bis-(N-methyltaurine).	ALL, GAF.
2,5-Dimethoxy-β-methyl-β-nitrostyrene	x.
N-(3,4-Dimethoxy-α-methylphenethyl)-2-(4-ethoxy-3 methoxyphenyl)acetamide.	LIL.
2,5-Dimethoxy-4'-nitrostilbene	x.
3,4-Dimethoxyphenethylamine (Homoveratrylamine)	LIL.
4-(2',5'-Dimethoxyphenethyl)aniline hydrochloride	x.
N-(3,4-Dimethoxyphenethyl)-2-(3,4-dimethoxyphenyl) acetamide.	LIL.
(3,4-Dimethoxyphenyl)acetic acid	LIL.
(3,4-Dimethoxyphenyl)acetonitrile	LIL.
1-(3,4-Dimethoxyphenyl)-2-aminopropane	LIL.
1-(3,4-Dimethoxyphenyl)-2-nitro-1-propene	LIL.
2,5-Dimethoxytetrahydrofuran	HEX.
16,17-Dimethoxyviolanthrone	DUP, GAF, ICI, MAY.
3'-Dimethylaminobenzanilide	DUP.
p-(Dimethylamino)benzenediazonium chlorozincate	ESA.
m-(Dimethylamino)benzoic acid	SDH.
α-(Dimethylamino)-p-cresol	TKL.
6-Dimethylamino-2-[2-(2,5-dimethyl-1-phenyl-3-pyrryl)vinyl]-1-methyl-1-quinolinium methyl sulfate.	x.
2-[(2-Dimethylamino)ethyl]aminopyridine	SDW.
2-[[2-(Dimethylamino)ethyl]-2-thenylamino]pyridine (nonmedicinal grade).	ABB.
2-[[2-(Dimethylamino)ethyl]-3-thenylamino]pyridine	SDW.
m-(Dimethylamino)phenol	ACY.
N-(p-Dimethylaminophenyl)-1,4-naphthoquinoneimine	NAC.
*N,N-Dimethylaniline	ACY, DSC, DUP, NAC, SDH.
7,12-Dimethylbenz[a]anthracene	EK.
3,3'-Dimethylbenzidine (o-Tolidine)	CWN, DUP.
3,3'-Dimethylbenzidine hydrochloride	AAP, DUP, EK.
*N,N-Dimethylbenzylamine	ICO, MLS, RH.
4-(α,α-Dimethylbenzyl)-2-phenylazophenol	TRC.
*2,2'-Dimethyl-1,1'-bianthraquinone	AAP, ACY, CMG, DUP, GAF, ICI, NAC, TRC.
Dimethyl-6,12-ceroxenol acetate	WIM.
5,5-Dimethyl-1,3-cyclohexanedione	EKT.
N,N-Dimethylcyclohexylamine	DUP, EKT.
2',7'-Dimethylfluoran	WIM.
5,5-Dimethylhydantoin	GLY.
2,3-Dimethylindole	DUP.
2,5-Dimethyl-4(2)-morpholinylmethylphenol hydrochloride	IDC.
N,N-Dimethyl-m-nitroaniline	DUP.
*N,N-Dimethyl-p-nitrosoaniline	ACY, DUP, ESA, NAC.
N,N-Dimethyl-p-phenylazoaniline	EK.
N,N-Dimethyl-p-phenylenediamine	EK, NAC.
N,N-Dimethyl-p-phenylenediamine hydrochloride	EK.
1,4-Dimethylpiperazine	COK, JCC, SEL.

TABLE 7B.--*Cyclic intermediates for which U.S. production or sales were reported, identified by manufacturer, 1966*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
N,N-Dimethylsulfanilic acid	GAF.
N,N-Dimethyl-p-toluidine	EK, SEL.
*2,4-Dinitroaniline	AAP, ACY, SDC.
p-(2,4-Dinitroanilino)phenol	GAF, NAC, SDC.
*1,5(and 1,8)-Dinitroanthraquinone	AAP, ICC, ICI, TRC.
N,N′-(2,4-Dinitro-1,5-anthraquinonylene)dioxamic acid	TRC.
3′,4-Dinitrobenzanilide	DUP.
m-Dinitrobenzene	DUP, NAC.
2,4-Dinitrobenzenesulfonic acid	EK, TRC.
3,5-Dinitrobenzoic acid	GAM, SAL, SDH.
3,5-Dinitrobenzoyl chloride	EK.
10,10′-Dinitro[3,3′-bi-7H-benz[de]anthracene]-7,7′-dione	DUP, MAY.
3,3′-Dinitro-4,4′-biacetanilide	AAP.
Dinitrocaprylphenol	RH.
2,6-Dinitro-p-cresol	DUP.
2,4-Dinitrocumene	DUP.
3′,5′-Dinitro-2′-hydroxyacetanilide	TRC.
1-(3,5-Dinitro-2-hydroxyphenylazo)-2-naphthol	TRC.
*2,4-Dinitrophenol, tech	AAP, NAC, SDC, x.
(2,4-Dinitrophenyl)hydrazine	EK.
3,5-Dinitrosalicylic acid	EK.
*4,4′-Dinitrostilbene-2,2′-disulfonic acid	ACY, DUP, GAF, GGY, NAC, SDH, TRC.
*2,4-Dinitrotoluene	DUP, NAC, RUC.
2,4(and 2,6)-Dinitrotoluene	DUP, MOB.
3,5-Dinitro-p-toluenesulfonic acid	GAF.
Dinonylphenol	GAF.
2,4-Di-tert-pentylphenol	PAS.
2,4-Di-tert-pentylphenoxyacetyl chloride	x.
*1,5-Diphenoxyanthraquinone	DUP, GAF, ICI, VPC.
1,5(and 1,8)-Diphenoxyanthraquinone	AAP, DUP, ICC.
1,8-Diphenoxyanthraquinone	EKT.
Diphenylacetic acid	ARA, BPC.
*Diphenylamine	ACY, DOW, DUP, ORO, RUC.
2,8-Diphenylanthra[1,2-d:6,5-d′]bisthiazole-6,12-dione	ICI.
α-d-1,2-Diphenyl-4-dimethylamino-2-hydroxy-3-methylbutane, camphor sulfonate.	LIL.
N,N′-Diphenylethylenediamine	DOW, RPC.
Diphenylmethane	ARA.
2,5-Diphenyloxazole	ARA.
1,3-Diphenyl-1,3-propanedione	EK.
1,3-Diphenyltriazene	NAC.
1,3-Di-4-piperidylpropane	RIL.
2,2′-Dithiodibenzoic acid	LIL, MEE.
*1,4-Di-p-toluidinoanthraquinone	ATL, GAF, ICI, NAC, TRC, VPC.
1,5-Di-p-toluidinoanthraquinone	ICI.
1,8-Di-p-toluidinoanthraquinone	ICI.
1,4-Di(p-toluidino)-5,8-dihydroxyanthraquinone	ICI.
*Divinylbenzene	DOW, FG, KPP.
Dixylylguanidines, mixed	ACY.
Dodecylbenzene. (See Alkylbenzenes.)	
Dodecylbenzyl chloride	CO.
Dodecylmethylbenzyl chloride	x.
*p-Dodecylphenol	GAF, MON, UCC, x.
Eosin (2′,4′,5′,7′-Tetrabromofluorescein)	ICC.
Epoxycyclohexyladipate (Epoxide 289)	UCC.
3-(Epoxyethyl)-7-oxabicyclo[4.1.0]heptane (Epoxide 206)	UCC.
o-Ethoxybenzoic acid	ACY.
6-Ethoxy-2-benzothiazolethiol	ARA, DUP.
4-Ethoxy-3-methoxybenzaldehyde	LIL.
1-(4-Ethoxy-3-methoxybenzyl)-6,7-dimethoxy-3-methylisoquinoline.	LIL.
(4-Ethoxy-3-methoxyphenyl)acetic acid	LIL.
2-Ethoxy-1-naphthaldehyde	ICO.
2-Ethoxynaphthalene	ICO.
2-Ethoxy-1-naphthoic acid	ICO.
2-Ethoxy-1-naphthoyl chloride	ICO, OPC, TBK.
4-Ethoxy-o-phenylenediamine	TRC.
(p-Ethoxyphenyl)urea (Dulcin)	RSA.
3-(Ethylamino)-p-cresol	DUP.
3-(Ethylamino)-p-toluenesulfonic acid [SO_3H=1]	DUP.
*N-Ethylaniline, refined	ACY, DUP, NAC, SDH.

TABLE 7B.--*Cyclic intermediates for which U.S. production or sales were reported, identified by manufacturer, 1966*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
2-(N-Ethylanilino)ethanol	DUP, EKT.
[2-(N-Ethylanilino)ethyl]trimethylammonium chloride	DUP.
3-(N-Ethylanilino)propionitrile	EKT.
α-(N-Ethylanilino)-m-toluenesulfonic acid	GAF, SDH.
α-(N-Ethylanilino)-p-toluenesulfonic acid	NAC, TRC, WJ.
N-Ethyl-p-anisidine	EKT.
N-Ethylanthranilic acid	SDH.
2-Ethylanthraquinone	NAC.
*Ethylbenzene	CSD, DOW, ENJ, FG, KPP, KPT, MON, SHC, SIN, SKC, SNT, TOC, UCC.
o-(p-Ethylbenzoyl)benzoic acid	NAC.
Ethylbenzyl chloride	BPC.
9-Ethylcarbazole	ICC.
N-Ethyl-1-cyclohexen-1-ylamine	UCC, x.
N-Ethylcyclohexylamine	ABB.
3,3′-Ethylenedioxydiphenol	IDC.
Ethylenimine	DOW.
3-Ethyl-2-[3-(3-ethyl-2-benzothiazolinylidene)-pentadienyl] benzothiazolium iodide.	GAF.
1,1′-Ethylidine-di-2-pyrrolidinone	GAF.
2-[N-Ethyl-p-[(6-methoxy-2-benzo-thiazolyl)azo]-anilino]ethanol.	TRC.
N-Ethyl-1-naphthylamine	DUP.
9-Ethyl-3-nitrocarbazole	ICC.
α-Ethyl-3-nitrocinnamic acid	SDW.
p-Ethylphenol	ACY.
*N-Ethyl-N-phenylbenzylamine	DUP, NAC, SDH.
Ethylphenylmalonic 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.
1-Ethylpiperidine	RIL.
2-Ethylpyridine	RIL.
N-Ethyl-5-sulfoanthranilic acid	SDH.
6-Ethyl-1,2,3,4-tetrahydro-1,1,4,4-tetramethylnaphthalene	GIV.
N-Ethyl-m-toluidine	DUP, NAC.
N-Ethyl-o-toluidine	DUP.
3-(N-Ethyl-m-toluidino)propionitrile	DUP, GAF.
1-Ethynyl-1-cyclohexanol	CUC, NAC.
Fluoren-9-one	EK.
Fluorescein (3′,6′-Dihydroxyfluoran)	ICC.
1-Fluoro-2,4-dinitrobenzene	EK, PIC.
o-Fluorotoluene	EK.
4-Formyl-m-benzenedisulfonic acid	GAF, SDH.
o-Formylbenzenesulfonic acid (o-Sulfobenzaldehyde)	GAF, SDH, VPC.
Furan	DUP, OKO.
Furfuryl alcohol	QKO.
Furfurylamine	MLS.
N-Glycoloylarsanilic acid, sodium salt	SDW.
Hexachlorobenzene	DVC.
Hexachlorocyclopentadiene	HK, VEL.
1,4,5,6,7,7-Hexachloro-5-norbornene-2,3-dicarboxylic acid	HK, VEL.
Hexadecachlorophthalocyanine	ICC.
Hexafluorobenzene	WHC.
Hexa(2-methyl-1-aziridinyl)-1,3,5-phosphotriazine	ICO.
Hippuric acid	BPC.
p-Hydrazinobenzenesulfonic acid	GAF, WJ.
3-Hydrazino-5-nitro-p-toluenesulfonic acid [SO_3H=1]	STG.
Hydrindantin	HEX.
*Hydroquinone, tech	CRS, EKT, MAN.
4′-Hydroxyacetanilide	TRC.
3′-Hydroxyacetophenone	SDH.
3′-Hydroxyacetophenone benzoate	SDH.
p-Hydroxybenzaldehyde	DOW.
*p-Hydroxybenzenesulfonic acid	DOW, MON, UPF.
2-Hydroxy-11H-benzo[a]carbazole-3-carboxylic acid	GAF.
p-Hydroxybenzoic acid	HN, WSN.
p-Hydroxybenzoic acid, butyl ester[1]	HN, WSN.
p-Hydroxybenzoic acid, ethyl ester[1]	HN, WSN.
p-Hydroxybenzoic acid, n-heptyl ester	WSN.

See footnotes at end of table.

TABLE 7B.--*Cyclic intermediates for which U.S. production or sales were reported, identified by manufacturer, 1966*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
*p-Hydroxybenzoic acid, methyl ester[1]	HN, ICO, LEM, SEL, WSN.
*p-Hydroxybenzoic acid, propyl ester[1]	HN, ICO, LEM, WSN.
6′-Hydroxy-m-benzotoluidide	TRC.
3′-Hydroxy-2(N-benzyl-N-methylamino)acetophenone	SDW.
4-Hydroxycoumarin	ABB.
13b-Hydroxy-2,8-dimethylnaphtho[3.2.1-kl]xanthen-9(13bH)one.	WIM.
4′-(2-Hydroxyethoxy)acetanilide	TRC.
m-Hydroxyethoxyphenol	BJL.
3-[N-(2-Hydroxyethyl)anilino]propionitrile	DUP, ICC.
3-[N-(2-Hydroxyethyl)anilino]propionitrile, benzoate ester.	DUP.
N-β-Hydroxyethyl-2,4-dihydroxybenzamide	IDC.
3-Hydroxy-N-(2-hydroxyethyl)-2-naphthamide	IDC.
N-[7-Hydroxy-8-[2-hydroxy-5-(methylsulfamoylphenyl)azo]-1-naphthyl]acetamide.	TRC.
6′-Hydroxy-5′-[(2-hydroxy-5-nitrophenyl)azo]-m-acetotoluidide.	TRC.
N-[7-Hydroxy-8-[(2-hydroxy-5-nitrophenyl)azo]-1-naphthyl]acetamide.	TRC.
7-Hydroxy-8-[[4′-[(p-hydroxyphenyl)azo]-4-biphenylyl]azo]-1,3-naphthalenedisulfonic acid.	TRC.
7-Hydroxy-8-[[4′-[(p-hydroxyphenyl)azo]-3,3-dimethyl-4-biphenylyl]azo]-1,3-naphthalenedisulfonic acid.	TRC.
4-Hydroxy-N[1]-isopropylmetanilamide	TRC.
2-Hydroxy-α^1,α^3-mesitylenediol	ACY.
*4-Hydroxymetanilamide	CMG, DUP, NAC, TRC, VPC.
4-Hydroxymetanilanilide	TRC.
*4-Hydroxymetanilic acid	CWN, DUP, NAC, TRC.
N-(4-Hydroxymetanilyl)anthranilic acid	TRC.
4-Hydroxy-1-methylcarbostyril	ICC.
3-Hydroxy-2-methylcinchoninic acid	DUP.
4-Hydroxy-N[1]-methylmetanilamide	TRC.
N-(Hydroxymethyl)phthalamide	ACY.
3-Hydroxy-N-(3-N-morpholinopropyl)-2-naphthamide	IDC.
2-Hydroxy-1-naphthaldehyde	ICO.
*3-Hydroxy-2,7-naphthalenedisulfonic acid, disodium salt	ACY, GAF, NAC, TRC, WJ.
7-Hydroxy-1,3-naphthalenedisulfonic acid	DUP, TRC.
7-Hydroxy-1,3-naphthalenedisulfonic acid, dipotassium salt.	GAF.
7-Hydroxy-1,3-naphthalenedisulfonic acid, disodium salt	ACY, NAC.
4-Hydroxy-2-naphthalenesulfonamide	GAF.
1-Hydroxy-2-naphthalenesulfonic acid, potassium salt	EK.
4-Hydroxy-1-naphthalenesulfonic acid	DUP, NAC.
5-Hydroxy-1-naphthalenesulfonic acid	NAC, TRC.
*6-Hydroxy-2-naphthalenesulfonic acid	NAC, SNA, TMS.
*6-Hydroxy-2-naphthalenesulfonic acid, sodium salt	ACY, TRC, WJ.
7-Hydroxy-2-naphthalenesulfonic acid (Cassella's acid)	DUP.
8-Hydroxy-1-naphthalenesulfonic acid	GAF, VPC.
8-Hydroxy-1-naphthalenesulfonic acid,γ-sultone	ACY, TRC.
3-Hydroxy-2-naphthanilide (Naphthol AS)	ATL, BUC, PCW.
1-Hydroxy-2-naphthoic acid	NAC.
3-Hydroxy-2-naphthoic acid (B.O.N.)	AUG, DUP, HN, PCW.
3-Hydroxy-2-naphthoic acid, methyl ester	PCW.
*3-Hydroxy-2-naphtho-o-toluidide	ATL, BUC, PCW.
N-(2-Hydroxy-1-naphthyl)acetamide	ACY.
*N-(7-Hydroxy-1-naphthyl)acetamide	CMG, GAF, TRC.
1-(2-Hydroxy-1-naphthylazo)-6-nitro-2-naphthol-4-sulfonic acid.	TRC.
N-(7-Hydroxy-1-naphthyl)benzamide	TRC.
3′-[(7-Hydroxy-1-naphthyl)carbamoyl]acetanilide	TRC.
4-Hydroxy-7-[p-(p-nitrobenzamido)benzamido]-2-naphthalenesulfonic acid.	DUP.
4-Hydroxy-7-(p-nitrobenzamido)-2-naphthalenesulfonic acid	DUP, GAF.
2-Hydroxy-5-nitrometanilic acid	TRC.
3-Hydroxy-4-(phenylazo)-2-naphthoic acid	ICC.
11α-Hydroxyprogesterone	UPJ.
4-Hydroxypropiophenone	MLS.
α,α′-[(α-Hydroxy-p-sulfobenzylidene)bis[(3-methyl-p-phenylene)(ethylimino)]]di-m-toluenesulfonic acid.	TRC.

See footnotes at end of table.

TABLE 7B.--*Cyclic intermediates for which U.S. production or sales were reported, identified by manufacturer, 1966*-- Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
2-Hydroxy-4-sulfo-1-naphthalenediazonium hydroxide, inner salt.	ACY.
5-Hydroxy-m-toluenesulfonic acid	LIL.
1-Hydroxy-4-p-toluidinoanthraquinone	ICI.
2-Imidazolidinone modifications	RH.
*1,1'-Iminobis[4-aminoanthraquinone]	ACY, CMG, DUP, GAF, ICI, MAY, NAC, TRC.
1,1'-Iminobis[4-benzamidoanthraquinone]	ACY, MAY.
1,1'-Iminobis[5-benzamidoanthraquinone]	GAF, ICI, TRC.
*7,7'-Iminobis[4-hydroxy-2-naphthalenesulfonic acid]	CMG, DUP, NAC, TRC.
*1,1'-Iminobis[4-nitroanthraquinone]	ACY, DUP, ICI, MAY, TRC.
*1,1'-Iminodianthraquinone (1,1'-Dianthrimide)	ACY, DUP, GAF, ICI, MAY, NAC, TRC.
1,3-Indandione	PIC.
1,2,3-Indantrione monohydrate (Ninhydrin)	HEX.
Indole-3-acetic acid	SDW.
Indole-2,3-dione	NAC.
5-Iodoanthranilic acid	SDW.
1-Iodonaphthalene	EK.
Isobutylbenzene	PLC.
*Isocyanic acid derivatives:	
Bitolylene diisocyanate (TODI)	UPJ.
Cyclohexyl isocyanate	CWN, OTC.
Dianisidine diisocyanate (DADI)	CWN, UPJ.
3,4-Dichlorophenyl ester	DUP.
*Diphenylmethane 4,4'-diisocyanate (MDI)	DUP, MOB, NAC, UPJ.
p-Nitrophenyl ester	EK.
Phenylisocyanate	MOB.
Polyisocyanates (complex)	MOB.
Polymethylene polyphenylisocyanate	KAI, MOB, UPJ.
Toluene 2,4-diisocyanate	DUP, MOB.
Toluene 2,4- and 2,6-diisocyanate (65/35 mixture)	DUP, MOB.
*Toluene 2,4- and 2,6-diisocyanate (80/20 mixture)	DUP, MOB, NAC, OMC, RUC, UCC.
p-Tolyl ester	EK.
Isonicotinic acid, methyl ester	RIL.
Isonicotinonitrile	RIL.
Isooctylphenol	PRD.
Isophthalic acid (Benzene-1,3-dicarboxylic acid)	ACC, SOC.
Isophthalic acid, diallyl ester	FMP.
Isophthalic acid, dimethyl ester	MTR.
Isophthalic acid, diphenyl ester	BJL.
N-Isopropylaniline	ACY, EKT.
Isopropylbenzyl chloride	BPC.
4,4'-Isopropylidenebis[2,6-dibromophenol] (Tetrabromobisphenol A).	DOW.
4,4'-Isopropylidenebis[2,6-dichlorophenol] (Tetrachlorobisphenol A).	DVC.
5,5'-Isopropylidenebis(2-hydroxy-m-xylene-α,α'-diol)	ARK.
*4,4'-Isopropylidenediphenol (Bisphenol A)	DOW, MON, SHC, UCP.
4,4'-Isopropylidenediphenol, ethoxylated	APD.
4,4'-Isopropylidenediphenol, propoxylated	APD.
o-Isopropylphenol	TNA.
4-Isopropyl-m-phenylenediamine	DUP.
Isothiocyanic acid, phenyl ester	TNC.
*Isoviolanthrone (Isodibenzanthrone)	ACY, DUP, GAF, ICI, MAY.
*Leuco quinizarin (1,4,9,10-Anthratetrol)	ACY, BL, EKT, HSH, ICC, NAC, TRC.
*2,4-Lutidine	ACP, CFC, KPT, RIL.
3,4-Lutidine	RIL.
D-Lysergic acid	LIL.
Malondianilide	KF.
Mandelonitrile	KF.
*Melamine	ACP, ACY, FIS, RCI.
*dl-p-Mentha-1,8-diene (Limonene)	ARZ, GIV, HNW, HPC.
p-Mentha-1,4(8)-diene	GIV.
*o-Mercaptobenzoic acid (Thiosalicylic acid)	EVN, LIL, MED.
Metanilamide	CMC, VPC.
Metanilanilide	GAF.
Metanilic acid (m-Aminobenzenesulfonic acid)	DUP, TRC.
1-Methoxyanthraquinone	AAP, GAF.
4-Methoxymetanilic acid	CMG, GAF.
4'-Methoxy-2-(p-methoxyphenyl)acetophenone	CTN.
4-Methoxy-N-methylnaphthalimide	TRC.
N-(2-Methoxy-1-naphthyl)acetamide	TRC.
6-Methoxy-8-nitroquinoline	SDW.

TABLE 7B.--*Cyclic intermediates for which U.S. production or sales were reported, identified by manufacturer, 1966*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
(p-Methoxyphenyl)acetic acid	CTN, TBK.
4'-Methoxypropiophenone	LIL.
6-Methoxytetralone	GAM.
*1-(Methylamino)anthraquinone	AAP, ACY, DUP, GAF, ICI, NAC, UCC.
1-(Methylamino)-4-p-toluidinoanthraquinone	GAF, ICI.
N-Methylaniline	ACY, DUP.
3-(N-Methylanilino)propionitrile	DUP.
5-Methyl-o-anisidine [NH_2=1]	DUP, SDC.
m-Methylanisole	GIV.
N-Methylanthranilic acid	GIV, ICC.
2-Methylanthraquinone	ACY, NAC.
3-Methylbenzo[f]quinoline	ACY, DUP, GAF.
2-Methylbenzothiazole	FMT.
N-Methylbenzylamine	ICO, MLS, SDW.
Methyl benzyl ether	UCC.
5-(1-Methylbutyl)barbituric acid	LIL.
3-Methylcholanthrene	EK.
Methylcyclohexane	DOW, PLC.
Methylcyclohexenecarboxaldehyde	UCC.
4-Methyl-α,α-diphenyl-1-piperazineethanol, dihydrochloride.	ABB.
N-Methyleneaniline	DUP.
4,4'-Methylenebis[2-chloroaniline]	DUP.
4,4'-Methylenebis[N,N-diethylaniline]	ACY, GAF, SDH.
*4,4'-Methylenebis[N,N-dimethylaniline] (Methane base)	ACY, DSC, DUP, GAF, NAC, SDH, x.
4,4'-Methylenebis[N,N-dimethyl-3-nitroaniline]	GAF.
2,2'-Methylenebis(6-nonyl-p-cresol)	ACY.
5,5'-Methylenebis[toluene-2,4-diamine]	DUP.
*4,4'-Methylenedianiline	DOW, DUP, NAC.
5,5'-Methylenedisalicylic acid	HN.
5-Methylene-2-norbornene	DOW.
N-Methylformanilide	MLS.
2-Methylfuran	QKO.
Methylhydroquinone	EKT.
2-Methylindole-3-carboxaldehyde	GAF.
6-Methyl-2-(2-methyl-6-quinolyl)-7-benzothiazolesulfonic acid.	DUP.
Methylnaphthalene, crude	KPT.
1-Methylnaphthalene	HMY.
N-Methyl-4'-nitroacetanilide	GAF, NAC.
N-Methyl-p-nitroaniline	GAF.
4-Methyl-2-nitroanisole	DUP.
2-Methyl-1-nitroanthraquinone	DUP, GAF, ICI, NAC.
2-Methyl-5-nitroimidazole	RDA.
N-Methyl-N-nitroso-p-toluenesulfonamide	ALD, EK.
2-Methyl-5-norbornene-2,3-dicarboxylic anhydride	VEL.
Methylnorbornene-2,3-dicarboxylic anhydride, isomers	NAC.
4-Methyl-7-oxabicyclo[4.1.0]heptane-3-carboxylic acid, (4-methyl-7-oxabicyclo[4.1.0]hept-3-yl)-methyl ester (Epoxide 201).	UCC.
3'-Methyl-5-[(7-oxo-7H-benz[de]anthracen-3-yl)-amino]-1,2'-iminodianthraquinone.	DUP.
*m-(3-Methyl-5-oxo-2-pyrazolin-1-yl)benzenesulfonamide	CMG, TRC, VPC.
m-(3-Methyl-5-oxo-2-pyrazolin-1-yl)benzenesulfonic acid	GAF, TRC, VPC.
*p-(3-Methyl-5-oxo-2-pyrazolin-1-yl)benzenesulfonic acid	AAP, ACY, CMG, DUP, GAF, TRC, VPC.
3-(3-Methyl-5-oxo-2-pyrazolin-1-yl)-1,5-naphthalenedisulfonic acid.	TRC.
6-(3-Methyl-5-oxo-2-pyrazolin-1-yl)-1,3-naphthalenedisulfonic acid.	TRC.
*4-(3-Methyl-5-oxo-2-pyrazolin-1-yl)-m-toluenesulfonic acid [SO_3H=1].	CMG, TRC, VPC.
2-Methyl-5-phenylbenzoxazole	EK.
1-Methyl-2-phenylindole	GAF.
1-Methyl-2-phenylindole-3-carboxaldehyde	GAF.
1-Methyl-4-phenylisonipecotic acid	SDW.
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)	ACY, DOW, DUP, NAC, SDC, SDH, SDW, VPC.
Methyl phenyl sulfide (Thioanisole)	PIT.
1-Methylpiperazine	UCC.
4-Methyl-1-piperazineacetic acid, methyl ester	ABB.

TABLE 7B.--*Cyclic intermediates for which U.S. production or sales were reported, identified by manufacturer, 1966*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
2-Methyl-1-piperidinepropanol	LIL.
3-Methyl-2-pyrazolin-5-one	DUP.
1-Methylpyrrole	DUP.
*α-Methylstyrene	ACP, CLK, DOW, HPC, SKO.
2-(Methylsulfonyl)-4-nitroaniline	EKT, TRC.
Methyl 2-thienyl ketone	SDW.
4-(Methylthio)-m-cresol	CRZ.
3-Methylthiophene	SDW.
p-(Methylthio)phenol	CRZ.
6'-Methyl-4'-p-toluenesulfonamido-m-benzanisidide	GAF, NAC.
3-Methyl-6-p-toluidino-7H-dibenz[f,ij]isoquinoline-2,7(3H)-dione.	GAF, ICI.
3-Methyl-1-m-tolyl-2-pyrazolin-5-one	DUP.
3-Methyl-1-p-tolyl-2-pyrazolin-5-one	VPC.
1-Naphthaldehyde	COK.
*Naphthalene, solidifying at 79° C. or above (refined flake) (from domestic crude).	KPT, NAC, RIL.
1,5-Naphthalenediol (1,5-Dihydroxynaphthalene)	NAC.
1,5-Naphthalenedisulfonic acid	GAF, NAC.
*2,7-Naphthalenedisulfonic acid	DUP, NAC, SDH.
1-Naphthalenesulfonic acid	TRC.
1-Naphthalenesulfonic acid, sodium salt	TRC.
2-Naphthalenesulfonic acid	ACY, NAC.
2-Naphthalenesulfonic acid, sodium salt	ACY.
2-Naphthalenesulfonyl chloride	DUP, GAF.
*1,4,5,8-Naphthalenetetracarboxylic acid	GAF, HST, TRC.
1,3,6-Naphthalenetrisulfonic acid	GAF.
Naphthalic anhydride	DUP.
Naphthalimide	DUP, GAF, NAC.
2H-Naphth[1,8-cd]isothiazole-3,5-disulfonic acid, 1,1-dioxide, trisodium salt.	DUP.
1-Naphthoic acid	COK.
*1-Naphthol (α-Naphthol)	DUP, NAC, UCC.
2-Naphthol, tech. (β-Naphthol)[1]	ACY, NAC, SW, x.
p-Naphtholbenzein	EK.
1,4-Naphthoquinone	EKT.
*Naphthostyril	DUP, GAF, NAC.
*Napth[1,2-d][1,2,3]oxadiazole-5-sulfonic acid	CMG, GAF, NAC, TRC, VPC.
1-Naphthylamine (α-Naphthylamine)	DUP, NAC.
2-Naphthylamine (β-Naphthylamine)	x.
p-(2-Naphthylamino)phenol (N-(p-Hydroxyphenol)-2-naphthylamine).	NAC.
2-(Naphthylthio)acetic acid	ACY, GAF, VPC.
Nicotinonitrile (3-Cyanopyridine)	NEP, RIL.
Nitro-aceanthra[2,1-a]aceanthrylene-5,13-dione	ICI.
3'-Nitroacetanilide	GAF, TRC.
4'-Nitroacetanilide	GAF, TRC.
2'-Nitro-p-acetanisidide	DUP, SDH.
3'-Nitro-p-acetanisidide	GAF.
4'-Nitro-o-acetanisidide	DUP.
2'-Nitro-p-acetophenetidide	AAP.
3'-Nitroacetophenone	SDH.
5'-Nitro-o-acetotoluidide	DUP.
m-Nitroaniline	ACY, x.
o-Nitroaniline	AAP, MON.
*p-Nitroaniline	AAP, MON, SDC, UPM.
2-(o-Nitroanilino)ethanol	AAP, MED.
2-Nitro-p-anisidine [NH_2=1]	DUP, SDH.
4-Nitro-o-anisidine [NH_2=1]	AAP, DUP, SDH.
*5-Nitro-o-anisidine [NH_2=1]	ACY, ALL, BUC, DUP.
o-Nitroanisole	DUP, MON.
p-Nitroanisole	DUP.
4-Nitroanthranilic acid	DUP.
5-Nitroanthranilic acid	TRC.
1-Nitroanthraquinone	ACY, MAY.
2-(4-Nitro-2-anthraquinonyl)anthra[2,3-d]-oxazole-5,10-dione.	GAF, NAC.
m-Nitrobenzaldehyde	NAC, SDH.
3'-Nitrobenzanilide	DUP.
4'-Nitrobenzanilide	GAF.

See footnotes at end of table.

TABLE 7B.--*Cyclic intermediates for which U.S. production or sales were reported, identified by manufacturer, 1966*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
*Nitrobenzene	ACY, DUP, GAF, MON, NAC, RUC.
3'-Nitrobenzenesulfonanilide	GAF.
*m-Nitrobenzenesulfonic acid	ACY, DUP, NAC.
*m-Nitrobenzenesulfonic acid, sodium salt	GAF, MON, MRA, RBC.
m-Nitrobenzenesulfonyl chloride	GAF.
p-Nitrobenzenesulfonyl chloride	EK, SDW.
5-Nitro-2-benzimidazolinone	DUP.
m-Nitrobenzoic acid	HK, SDH, WAY.
m-Nitrobenzoic acid, sodium salt	WAY.
p-Nitrobenzoic acid	DUP.
6-Nitro-2-benzoxazolinone	GAF.
2-(m-Nitrobenzoyl)-o-acetanisidide	GAF.
m-Nitrobenzoyl chloride	HK, ICO.
p-Nitrobenzoyl chloride	HK.
p-Nitrobenzyl alcohol	EK.
4'-Nitro-4-biphenylcarboxylic acid	DUP.
2-Nitro-p-cresol	SW.
Nitrocyclohexane	x.
Nitrodiphenylamine	ACY, MON.
5-Nitro-2-furaldehydesemioxamazone	NOR.
5-Nitro-2-furanmethanediol, diacetate	NOR.
5-Nitroisophthalic acid	GAF, GAM.
1-Nitronaphthalene	DUP, NAC.
3-Nitro-1,5-naphthalenedisulfonic acid	GAF, NAC, TRC.
4-Nitronaphthalic anhydride	GAF, NAC.
*7(and 8)-Nitronaphth[1,2-d] [1,2,3]oxadiazole-5-sulfonic acid.	GAF, NAC, TRC, VPC.
4'-Nitrooxanilic acid	DUP.
o-Nitrophenol	DUP.
*p-Nitrophenol	DUP, MON, SDC, UPM.
*p-Nitrophenol, sodium salt	MON, UPM.
4'-(p-Nitrophenyl)acetophenone	DUP, GAF.
4-[(p-Nitrophenyl)azo]-o-anisidine	AAP.
2-Nitro-p-phenylenediamine	WAY.
4-Nitro-o-phenylenediamine	DUP, FMT.
(p-Nitrophenyl)hydrazine	EK.
2,2'-(m-Nitrophenylimino)diethanol	DUP.
2,2'-(m-Nitrophenylimino)diethanol, diacetate ester	DUP.
2-(p-Nitrophenyl)-2H-naphtho[1,2-d]triazole-6,8-disulfonic acid.	TRC.
2-(p-Nitrophenyl)-1-octadecyl-5-benzimidazolesulfonic acid.	GAF.
1-(m-Nitrophenyl)-5-oxo-2-pyrazoline-3-carboxylic acid	DUP, VPC.
3-Nitrophthalic acid	EK.
3-Nitrophthalic anhydride	EK.
4-Nitrophthalimide	DUP.
5-Nitrosalicylaldehyde	EK.
3(and 5)-Nitrosalicylic acid	EK.
p-Nitrosophenol	ACY, DUP, NAC.
β-Nitrostyrene	CWN.
4-Nitro-4'-(5-sulfo-2H-naphthol[1,2-d]triazol-2-yl)-2,2'-stilbenedisulfonic acid.	TRC.
m-Nitrotoluene	DUP, NAC.
o-Nitrotoluene	DUP, NAC.
p-Nitrotoluene	DUP, NAC.
Nitrotoluene mixtures	DUP, NAC.
5-Nitro-o-toluenesulfonanilide	GAF.
p-Nitrotoluenesulfonic acid	GGY.
*3-Nitro-p-toluenesulfonic acid [SO_3H=1]	AAP, CMG, TRC.
*5-Nitro-o-toluenesulfonic acid [SO_3H=1]	ACY, DUP, GAF, NAC, SDH, TRC.
5-Nitro-o-toluenesulfonyl chloride	GAF.
3-Nitro-p-toluic acid, methyl ester	SDH.
*2-Nitro-p-toluidine [NH_2=1]	ACY, DUP, SW.
4-Nitro-o-toluidine [NH_2=1]	GAF.
*5-Nitro-o-toluidine [NH_2=1]	BUC, DUP, PCW, SDH.
5-Nitro-2-p-toluidinobenzenesulfonic acid	TRC.
3-Nitrotoluoyl chloride	x.
*16-Nitroviolanthrone	ACY, ATL, GAF, ICI, MAY, TRC.
4-Nitro-m-xylene	DUP.
Nitroxylenes, mixed	NAC.
Nonyl-dinonylphenol, mixture	JCC.
*Nonylphenol	GAF, JCC, MON, PRD, RH, STP, USR.

TABLE 7B.--*Cyclic intermediates for which U.S. production or sales were reported, identified by manufacturer, 1966*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
5-Norbornene-2,3-dicarboxylic anhydride	VEL.
Octylphenol	RH.
7-Oxabicyclo[4.1.0]heptane (Cyclohexene oxide)	ARA.
Oxalacetic acid, diethyl ester, (p-sulfophenyl)hydrazone	TRC.
Oxanilide	WSN.
*1-[(7-Oxo-7H-benz[de]anthracen-3-yl)amino]anthraquinone	ACY, DUP, GAF, ICI, MAY, TRC.
*1,1'-[(7-Oxo-7H-benz[de] anthracen-3,9-ylene)-diimino]dianthraquinone.	ACY, DUP, GAF, ICI, MAY, TRC.
2-Oxocyclohexanecarboxylic acid, ethyl ester	ARA.
*5-Oxo-1-phenyl-2-pyrazoline-3-carboxylic acid, ethyl ester.	GAF, SDW, VPC.
5-Oxo-1-(p-sulfophenyl)-2-pyrazoline-3-carboxylic acid (Pyrazolone T).	AAP, GAF, ICI, VPC.
5-Oxo-1-(p-sulfotolyl)-2-pyrazoline-3-carboxylic acid	VPC.
4,4'-Oxydianiline	x, x.
Penicillin, N-ethylpiperidine salt	MRK.
Pentachloronitrobenzene	OTC.
Pentylnaphthalenes (Amylnaphthalenes)	PAS.
o-Pentylphenol (o-Amylphenol)	PAS.
p-tert-Pentylphenol	PAS.
3,4,9,10-Perylenetetracarboxylic acid	GAF, NAC.
3,4,9,10-Perylenetetracarboxylic 3,4:9,10-diimide	DUP, GAF, NAC.
Phenethylamine	MLS.
Phenethylamine sulfate	MLS.
o-Phenethylbenzoic acid	LIL.
o-Phenetidine	MON.
p-Phenetidine	DOW, MON.
Phenetole	RSA.
*Phenol:	
*Natural:	
*From coal tar:[2]	
39° C., m.p	KPT, PRD.
82%-84%	ACP, KPT.
All other	ACP, KPT.
*From petroleum	MER, NPC, PIT, PRD, SW.
*Synthetic:	
By caustic fusion: U.S.P	MAL, MON, RCI.
From chlorobenzene by liquid-phase hydrolysis: U.S.P	DOW.
From chlorobenzene by vapor-phase hydrolysis: U.S.P	HKD, UCC.
*From cumene by oxidation: U.S.P	ACP, CLK, HPC, MON, SHC, SKO, SOC.
Phenolsulfonaphthalein	EK.
Phenolsulfonaphthalein, sodium salt	EK.
Phenothiazin-2-yl-1-propanone	WYT.
Phenoxyacetic acid, sodium salt	BPC.
2-Phenoxypropanol	ICO.
2-Phenoxypropionic acid	ICO.
2-Phenoxypropionyl chloride	ICO, OPC.
*Phenylacetic acid (α-Toluic acid)	BPC, GIV, MAL, TBK.
Phenylacetic acid, ethyl ester, tech	BPC.
Phenylacetic acid, methyl ester	BPC.
*Phenylacetic acid, potassium salt	BPC, OPC, TBK.
*Phenylacetic acid, sodium salt	BPC, OPC.
*Phenylacetonitrile (α-Tolunitrile)	BPC, OPC, SDW, TBK.
4'-Phenylacetophenone	DUP, GAF.
Phenylacetyl chloride	ICO.
2-Phenylanthra[2,3-d]oxazole-5,10-dione	GAF.
*p-Phenylazoaniline (C.I. Solvent Yellow 1) and hydrochloride.	ACY, GAF, NAC.
4-(Phenylazo)diphenylamine	EK.
4-(Phenylazo)-1-naphthylamine	DUP.
4-(Phenylazo)-m-phenylenediamine (C.I. Basic Orange 2)	DUP.
5-(Phenylazo)salicylic acid	TRC.
1-Phenyl-1,3-butanedione	EK.
2-Phenylbutyric acid	BPC.
α-Phenyl-o-cresol	RBC.
1-Phenylcyclopentanecarboxylic acid	SK.
1-Phenyldecane (Decylbenzene)	NAC.
N,N'-p-Phenylenebis[acetamide]	ACY, GAF.
m-Phenylenediamine	ACY, DUP, NAC.
o-Phenylenediamine	DUP, FMI, MEE, TRC.

See footnotes at end of table.

TABLE 7B.--*Cyclic intermediates for which U.S. production or sales were reported, identified by manufacturer, 1966*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
*p-Phenylenediamine	ACY, BFG, SDC.
d-Phenylephrine base	SDW.
dl-Phenylephrine base	SDW.
2-Phenylethenesulfonic acid, sodium salt (β-Styrenesulfonic acid, sodium salt).	SHL.
Phenyl ether (Diphenyl oxide)	DOW.
d-(-)-2-Phenylglycine and derivatives	KF.
d-(-)Phenylglycine, N-carboxy anhydride	OTC.
dl-2-Phenylglycine (racemic)	KF.
Phenylglycine, sodium salt	NAC, OTC.
d-(-)Phenylglycyl hydrochloride	OTC.
5-Phenylhydantoin	ABB, x.
Phenylhydrazine	DOW.
Phenylhydrazine hydrochloride	EK, VPC.
2,2'-[(Phenyl)imino]diethanol (N-Phenyldiethanolamine)	EKT, GAF.
3,3'-[(Phenyl)imino]dipropionitrile	DUP.
Phenylmagnesium bromide	ARA.
Phenylmalonic acid, diethyl ester	BPC.
o-Phenylphenol	DOW, RCI.
o-Phenylphenol, chlorinated	DOW.
o-Phenylphenol, sodium salt	DOW.
p-Phenylphenol	DOW.
N-Phenyl-p-phenylenediamine	DUP, USR.
Phenylphosphinic acid	SF.
Phenylphosphonic dichloride	SF.
Phenylphosphonothioic dichloride	SF.
Phenylphosphonous acid	SF.
Phenylphosphonous acid, sodium salt	SF.
Phenylphosphorous dichloride	SF.
*1-Phenyl-1,2-propanedione, 2-oxime	NEP, ORT, x.
Phenyl-2-propanone	ORT, SK.
N-3-Phenylpropyl-p-toluidine	EK.
Phenyl sulfone	NES.
Phenylundecanoic acid	EK.
Phloroglucinol	MRT.
1(2H)-Phthalazinone	KPT, NAC, x.
Phthalic acid	EK, KF, MEE.
Phthalic acid, diallyl ester	FMP.
Phthalic acid, disodium salt	TNC.
*Phthalic anhydride	ACP, GRH, HN, KPS, MON, PCC, PTO, RCI, SOC, STP, SW, THC, UCC, WTC.
Phthalide	FMT, NAC.
Phthalimide	DUP, MEE, NAC.
Phthalimide, potassium salt	EK, SDW.
[Phthalocyaninato(2-)] copper	ICC, ICI.
[Phthalocyaninato(2-)] iron	DUP.
Phthalocyaninetetrasulfonyl chloride, copper derivative	DUP, TRC.
Phthaloyl chloride (Phthalyl chloride)	MON.
*Picolines:[2]	
*2-Picoline (α-Picoline)	ACP, KPT, RIL, UCC.
3-Picoline (β-Picoline)	NEP, RIL.
4-Picoline (γ-Picoline)	RIL, UCC.
Picoline (3,4-mixture)	ACP, KPT.
Picolinic acid	NEP.
Picolinonitrile (2-Cyanopyridine)	NEP.
3-Picolylamine	RIL.
Picric acid (Trinitrophenol)	NAC, SDC, x.
2-Pipecoline	LIL.
4-Pipecoline	RIL.
Piperazine mixture, crude[1]	JCC, x.
*Piperidine	ABB, DUP, HK, MRK, RIL.
3-Piperidinopropiophenone hydrochloride	ACY.
Polychlorobiphenyl	MON.
Poly (Methylenephenylene) polyamine	KAI.
Primuline base	DUP, NAC.
Primulinesulfonic acid	ATL.
10-Propionylphenothiazine	ABB.
*Propiophenone	LIL, OPC, ORT, TBK.
n-Propylbenzene	EK.
2-Propylpyridine	RIL.

See footnotes at end of table.

TABLE 7B.--*Cyclic intermediates for which U.S. production or sales were reported, identified by manufacturer, 1966*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
*8,16-Pyranthrenedione	CMG, ICI, TRC.
Pyridine, refined:[2]	
*2° Pyridine	ACP, KPT, NEP, RIL.
Other grades	KPT.
2-Pyridineethanol	RIL.
3-Pyridinemethanol	EK, RIL.
Pyridine-n-oxide	RIL.
Pyridinium bromide perbromide	ARA.
3-Pyridinol	NEP.
2(1H)-Pyridone	FMT.
2-Pyrimidinol	GGY.
2-Pyrrolidinone	GAF.
3-(1-Pyrrolidinyl)propiophenone hydrochloride	LIL.
1H-Pyrrolo[2,3-6]pyridine	SDW.
*Quinaldine	ACY, DUP, NAC.
Quinoline:	
1° and 2° Quinoline	ACP, KPT.
Other grades	EK, FMT.
2,4-Quinolinediol	DUP.
8-Quinolinol (8-Hydroxyquinoline, tech.)	GAM.
Quinophthalone (Quinoline yellow, base)	NAC.
Resorcinol, monoacetate (nonmedicinal grade)[1]	AAP.
Resorcinol, tech[1]	KPT, UPF.
β-Resorcylaldehyde	GAF.
β-Resorcylic acid	ACY, KPT.
β-Resorcylic acid, lead salt	ACY.
*Salicylaldehyde	DOW, HN, MTR, RDA.
*Salicylic acid, tech	CFC, DOW, HN, MON, SDH.
Salicylic acid, ammonium chromium complex	TRC.
Salicylic acid, sodium chromium complex	TRC.
Salicylic acid, sodium salt (crude)	DOW.
Salicylic acid, strontium salt, tech	TNC.
Salicylideneaminoguanidine oleate	DUP.
Sodium phenoxide	DUP.
*Styrene, all grades	ACC, CSD, DOW, ELP, FG, KPP, MCB, MON, SHC, SKC, SNT, UCC.
5-Sulfamoylanthranilic acid	TRC.
Sulfanilic acid (p-Aminobenzenesulfonic acid) and salt	ACY, CTN, DUP.
4-Sulfoanthranilic acid	GAF, TRC.
o-Sulfobenzoic acid, cyclic anhydride	EK.
α,α-[(p-Sulfobenzylidene)bis[(3-methyl-p-phenylene)(ethylimino)]] di-m-toluenesulfonic acid.	TRC.
5-Sulfoisophthalic acid, 1,3-dimethyl ester	x.
N,5'-Sulfonyldianthranilic acid	TRC.
4,4'-Sulfonyldiphenol (4,4'-Dihydroxydiphenylsulfone)	GAF, MON, UPF.
*Terephthalic acid	ACC, DUP, EKT.
Terephthalic acid, dihydrazide	DUP.
*Terephthalic acid, dimethyl ester	ACC, DUP, EKT, HPC.
Terphenyl (Phenylbiphenyl)	MON.
1,2,4,5-Tetraaminobenzene tetrahydrochloride	BJL.
[4,4',4'',4'''-Tetraaminophthalocyaninato(2-)]copper	DUP.
3',3'',5',5''-Tetrabromophenolphthalein, ethyl ester	EK.
Tetrabromophthalic anhydride	MCH.
Tetrabromo-8,16-pyranthrenedione	GAF, NAC, TRC.
1,3,6,8-Tetrabromopyrene	GAF.
*1,4,5,8-Tetrachloroanthraquinone	DUP, GAF, ICI, NAC.
1,2,4,5-Tetrachlorobenzene	DOW, DVC, HK.
1,2,4,5-Tetrachloro-3-nitrobenzene	SDH.
α,α,2,6-Tetrachlorotoluene	DUP.
Tetrachloroviolanthrone	GAF, ICI.
Tetrahydrofuran	DUP, QKO.
Tetrahydro-2-methylfuran	DUP, QKO.
*1,4,5,8-Tetrahydroxyanthraquinone, leuco derivative	GAF, ICC, NAC, TRC.
*1,4,5,8-Tetrakis(1-anthraquinonylamino)anthraquinone (Pentanthrimide),	GAF, ICI, NAC.
2-(1,1,3,3-Tetramethylbutyl)-p-cresol	ACY.
p-(1,1,3,3-Tetramethylbutyl)phenol	GAF.
N,N,N',N'-Tetramethyl-p-phenylenediamine	EK.
[4,4',4'',4'''-Tetranitrophthalocyaninato(2-)]copper	DUP.
2-(2-Thenylamino)pyridine	ABB.

See footnotes at end of table.

TABLE 7B.--*Cyclic intermediates for which U.S. production or sales were reported, identified by manufacturer, 1966*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
3,3'-Thiobis[7H-benz[de]anthracen-7-one]	ACY, DUP, GAF, ICI.
1,1'-Thiobis(2-naphthol)	ACY.
*4,4'-Thiodianiline	ACY, DUP, NAC.
6,6'-Thiodimetanilic acid	NAC.
Thiopheneacetic acid	BPC.
2-Thiopheneacetyl chloride	LIL.
2-Thiophenecarboxaldehyde	ABB.
sym-Thymol	GIV.
*Toluene-2,4-diamine (4-m-Tolylenediamine)	ACY, DUP, GAF, NAC, OMC, RUC, TRC, UCC.
Toluene-2,5-diamine	WAY.
Toluene-2,5-diamine sulfate	EK.
Toluene-2,4-disulfonic acid	GAF, SDH.
o-Toluenesulfonamide	MON.
p-Toluenesulfonamide	MON.
*o(and p)-Toluenesulfonic acid	MON, NAC, NES, SW, UPF.
p-Toluenesulfonic acid	ACY, TEN, UPF.
Toluenesulfonic acid, aniline salt	NES.
p-Toluenesulfonic acid, 2-chloroethyl ester	GAF.
p-Toluenesulfonic acid, ethyl ester	NAC.
p-Toluenesulfonic acid, methyl ester	ICI.
p-Toluenesulfonic acid monohydrate	NES.
p-Toluenesulfonyl chloride	MON.
m-Toluic acid	CWL.
o-Toluic acid	CWL.
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	VPC.
o-Toluidinomethanesulfonic acid	TRC, VPC.
8-p-Toluidino-1-naphthalenesulfonic acid	NAC.
*o-(p-Toluoyl)benzoic acid	ACY, DUP, NAC.
N-(p-Tolylazo)sarcosine	BUC, GAF.
*4-(o-Tolylazo)-o-toluidine (C.I. Solvent Yellow 3)	ACY, BUC, DUP, GAF, NAC, SDH.
4-(o-Tolylazo)-o-toluidine hydrochloride	GAF.
1-p-Tolyldodecane	x.
2,2'-(m-Tolylimino)diethanol	EKT.
p-Tolylmercuric chloride	EK.
N,N,N-Tribenzylamine	ICO, MLS.
1,2,3(and 1,2,4)-Trichlorobenzene	DVC, PPG.
1,2,4-Trichlorobenzene	DOW, DVC, HK.
N,2,6-Trichloro-p-benzoquinoneimine	EK.
1,2,4-Trichloro-5-nitrobenzene	PCW.
Trichlorophenylsilane	DCC, UCC.
α,α,α-Trichlorotoluene (Benzotrichloride)	HK, VEL.
α,2,4-Trichlorotoluene	HN.
α,2,4(and α,2,6)-Trichlorotoluene	BPC.
α,3,4-Trichlorotoluene	HN.
2,4,6-Trichloro-s-triazine (Cyanuric chloride)	ACY, GGY, NIL.
1,3,5-Triethylbenzene	DUP.
2-(Trifluoromethyl)phenothiazine	SK.
α,α,α-Trifluoro-4-nitro-m-cresol	MEE.
α,α,α-Trifluoro-m-nitrotoluene	MEE.
α,α,α-Trifluoro-N-phenyl-m-toluidine (3-(Trifluoromethyl)diphenylamine).	SK.
α,α,α-Trifluorotoluene	HK.
α,α,α-Trifluoro-m-toluidine	MEE.
α,α,α-Trifluoro-o-toluidine	MEE.
1,2,4-Trihydroxyanthraquinone	GAF.
3,4,5-Trimethoxybenzoic acid	ICO.
2,4,5-Trimethylaniline (Pseudocumidine)	NAC.
1,2,4-Trimethylbenzene (Pseudocumene)	PLC.
2,3,3-Trimethyl-3H-indole	GAF.
*1,3,3-Trimethyl-Δ^2,α-indolineacetaldehyde	DUP, GAF, VPC.
*1,3,3-Trimethyl-2-methyleneindoline (Trimethyl base)	DUP, GAF, NAC, VPC.
Trimethylphenylammonium iodide	EK.
α,α',2-Trimethyl-1,4-piperazinediethanol	WYN.

TABLE 7B.--*Cyclic intermediates for which U.S. production or sales were reported, identified by manufacturer, 1966*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
2,4,6-Trimethylpyridine	KPT, RIL.
1,3,5-Trinitrobenzene	EK.
2,4,7-Trinitrofluoren-9-one	EK.
Triphenylmethanol	EK.
Triphenylsulfonium chloride	GAM.
α,α′,α′′-Tris(dimethylamino)mesitol	RH, TKL.
Tris(2-methyl-1-aziridinyl)phosphine oxide	ICO.
m-Ureidoaniline	ICI.
*7,7′-Ureylenebis[4-hydroxy-2-naphthalenesulfonic acid] (J acid urea).	ACY, ATL, BKS, BL, CMG, GAF, NAC, TRC, VPC.
Veratraldehyde (3,4-Dimethoxybenzaldehyde)	GIV, LIL, SLV.
Veratryl alcohol (3,4-Dimethoxybenzyl alcohol)	LIL.
p-Vinylbenzenesulfonic acid, sodium salt	DUP.
4-Vinylcyclohexene	PLC.
2,2′-Vinylenebis[benzimidazole]	TRC.
5-Vinyl-2-picoline (MVP)	PLC.
2-Vinylpyridine	NEP, RIL.
4-Vinylpyridine	RIL.
*Violanthrone (Dibenzanthrone)	ACY, ATL, DUP, GAF, ICI, MAY, SDC, TRC.
Xanthene-9-carboxylic acid	MAL.
Xanthic acid, 4-chloro-o-tolyl ester	GAF.
m-Xylene	SNT, SOC.
*o-Xylene	ASH, CCP, COR, CSD, CSO, DLH, SIN, SNT, SOC, TOC.
*p-Xylene	CSD, ENJ, HCR, SIN, SNT, SOC, SOG.
2,5-Xylenesulfonic acid	EK.
2,4-Xylenol	EK.
2,6-Xylenol	x.
Xylenol crystals	ACP, KPT.
Xylenols:	
Low b.p	NPC, PIT.
Medium b.p	KPT, NPC, PIT.
Not classified as to b.p	KPT, NPC, PRD.
Xylidines:	
2,4-Xylidine (m-4-Xylidine)	DUP, NAC.
2,5-Xylidine (p-Xylidine)	DUP.
2,6-Xylidine	DUP.
Original mixture	DUP, NAC.
4-(2,4-Xylylazo)-o-toluidine	NAC.
4-(2,5-Xylylazo)-o-toluidine	ACY.
4-(Xylylazo)xylidine, mixed	GAF.
4-(2,4-Xylylazo)-2,5-xylidine	NAC.
All other cyclic intermediates	FG, GAF, GAM, ICC, ICO, LIL, MON, x, x, x.

[1] See table 13B for data on medicinal grade of this item.

[2] Does not include manufacturers' identification codes for producers that report to the Division of Bituminous Coal, U.S. Bureau of Mines. These producers are listed in the U.S. Bureau of Mines Mineral Industry Survey *Coke Producers in the United States in 1966*, Aug. 29, 1967.

Dyes

TABLE 8B. --*Benzenoid dyes for which U.S. production or sales were reported, identified by manufacturer, 1966*

[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 22. 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 22)
ACID DYES	
*Acid yellow dyes:	
Acid Yellow 1	ACY.
Acid Yellow 2	DUP.
*Acid Yellow 3	ACY, DUP, GAF, NAC.
Acid Yellow 4	SDH.
Acid Yellow 7	NAC.
Acid Yellow 9	ACY.
*Acid Yellow 11	CMG, DUP, VPC.
Acid Yellow 14	BDO, TMC.
*Acid Yellow 17	ACY, ATL, BDO, BKS, CMG, DUP, GAF, NAC, PDC, SDH, TRC, VPC.
*Acid Yellow 23	AAP, ACY, GAF, MRX, NAC, SDH, TRC, VPC.
Acid Yellow 25	GAF.
Acid Yellow 29	GAF, TRC.
Acid Yellow 34	NAC.
Acid Yellow 35	VPC.
*Acid Yellow 36	DUP, GAF, NAC, TRC.
Acid Yellow 38	NAC.
*Acid Yellow 40	DUP, GAF, NAC, TRC, VPC.
*Acid Yellow 42	AAP, ACY, GAF, VPC.
*Acid Yellow 44	AAP, GAF, NAC, VPC.
Acid Yellow 49	VPC.
*Acid Yellow 54	ACY, BKS, CMG, GAF, NAC, TRC, VPC.
Acid Yellow 59	VPC.
Acid Yellow 60	NAC.
Acid Yellow 63	AAP, NAC.
Acid Yellow 65	TRC.
*Acid Yellow 73	GAF, NAC, NYC, SDH.
Acid Yellow 76	TRC.
Acid Yellow 79	VPC.
Acid Yellow 90	NAC.
Acid Yellow 95	CMG.
*Acid Yellow 99	CMG, GAF, NAC, TRC, VPC.
Acid Yellow 114	CMG, TRC.
Acid Yellow 121	GAF.
*Acid Yellow 124	BKS, DUP, NAC.
Acid Yellow 127	TRC.
Acid Yellow 128	TRC.
Acid Yellow 129	TRC.
*Acid Yellow 151	ACY, BKS, TRC, VPC.
Acid Yellow 152	ACY.
Acid Yellow 159	TRC.
Other acid yellow dyes	ACY, ALT, CMG, DUP, GAF, TRC, VPC.
*Acid orange dyes:	
*Acid Orange 1	ALT, BKS, GAF, NAC.
Acid Orange 2	NAC, TRC.
Acid Orange 5	ACY.
Acid Orange 6	NAC.
*Acid Orange 7	AAP, ACY, ATL, BKS, CPC, GAF, NAC, PDC, TRC, YAW.
*Acid Orange 8	ACY, ATL, BKS, DUP, GAF, NAC, TRC.
*Acid Orange 10	ACY, BKS, DUP, GAF, NAC, TRC, VPC, YAW.
Acid Orange 12	NAC.
Acid Orange 19	GAF.
*Acid Orange 24	ACY, DUP, GAF, NAC, TRC, YAW.
Acid Orange 28	NAC.
Acid Orange 31	AAP.
Acid Orange 34	ACY.
Acid Orange 45	NAC, TRC.
Acid Orange 50	AAP.
Acid Orange 51	CMG, NAC, TRC.
Acid Orange 52	NAC.
Acid Orange 56	GAF.

TABLE 8B. -- *Benzenoid dyes for which U.S. production or sales were reported, identified by manufacturer, 1966*--Continued

Dye	Manufacturers' identification codes (according to list in table 22)
ACID DYES--Continued	
*Acid orange dyes--Continued	
*Acid Orange 60	BKS, CMG, DUP, GAF.
Acid Orange 62	TRC.
Acid Orange 63	GAF, TRC.
*Acid Orange 64	ACY, DUP, NAC.
Acid Orange 69	ACY.
Acid Orange 72	GAF.
Acid Orange 74	CMG, GAF, NAC, TRC.
Acid Orange 76	NAC, TRC.
Acid Orange 85	NAC.
Acid Orange 86	NAC, TRC.
Acid Orange 114	ACY.
Acid Orange 116	ATL, BKS, GAF, TRC.
Acid Orange 119	TRC.
Other acid orange dyes	ALT, DUP, VPC.
*Acid red dyes:	
*Acid Red 1	AAP, ACY, BDO, BKS, BL, DUP, GAF, NAC, SDH, TRC, VPC, YAW.
*Acid Red 4	ATL, BDO, CMG, DUP, GAF, TRC, VPC, YAW.
*Acid Red 14	DUP, GAF, NAC, PDC.
Acid Red 17	NAC, TRC, YAW.
*Acid Red 18	ACY, DUP, GAF, NAC, TRC.
*Acid Red 26	ACY, ATL, CPC, GAF, NAC.
Acid Red 27	NAC.
Acid Red 32	GAF, NAC.
Acid Red 33	NAC, YAW.
Acid Red 34	NAC.
Acid Red 35	AAP, GAF.
*Acid Red 37	BKS, CMG, DUP, GAF, NAC, TRC.
Acid Red 42	GAF.
Acid Red 52	GAF.
Acid Red 57	TRC.
Acid Red 66	AAP.
*Acid Red 73	ACY, DUP, GAF, NAC, PSC, TRC.
Acid Red 76	NAC.
Acid Red 80	GAF, ICI.
*Acid Red 85	ACY, ALT, ATL, BKS, CMG, DUP, GAF, NAC, PDC, TRC, VPC, YAW.
*Acid Red 87	AMS, NYC, SDH.
*Acid Red 88	ACY, ATL, DUP, GAF, NAC, SDH, TRC, YAW.
*Acid Red 89	AAP, GAF, TRC, VPC.
Acid Red 94	NYC.
Acid Red 97	GAF.
Acid Red 99	BKS, CMG, TRC, VPC, YAW.
Acid Red 100	VPC.
Acid Red 106	YAW.
Acid Red 113	DUP.
*Acid Red 114	ATL, DUP, GAF, NAC.
Acid Red 115	GAF, NAC.
Acid Red 119	NAC.
Acid Red 133	GAF.
Acid Red 134	TRC.
*Acid Red 137	ATL, DUP, GAF, NAC, TRC.
*Acid Red 151	AAP, ACY, BKS, TRC, YAW.
Acid Red 167	NAC, TRC.
Acid Red 175	DUP.
Acid Red 178	DUP.
Acid Red 179	CMG, TRC.
*Acid Red 182	ACY, BKS, CMG, DUP, GAF, NAC.
Acid Red 183	CMG, TRC.
*Acid Red 186	BKS, CMG, GAF, TRC, VPC.
Acid Red 190	ACY.
Acid Red 191	TRC.
Acid Red 194	TRC.
Acid Red 201	TRC.
Acid Red 207	NAC.
Acid Red 212	TRC.
Acid Red 213	TRC.
Acid Red 273	GAF.
Acid Red 292	ACY.

TABLE 8B. -- *Benzenoid dyes for which U.S. production or sales were reported, identified by manufacturer, 1966*--Continued

Dye	Manufacturers' identification codes (according to list in table 22)
ACID DYES--Continued	
*Acid red dyes--Continued	
Acid Red 299	ALT, TRC.
Acid Red 309	TRC.
Other acid red dyes	ACY, ATL, DUP, GAF, VPC.
*Acid violet dyes:	
*Acid Violet 1	BDO, CMG, GAF, NAC.
*Acid Violet 3	ACY, DUP, NAC, TRC, YAW.
Acid Violet 6	NAC.
*Acid Violet 7	AAP, BDO, CMG, DUP, GAF, NAC, TRC, VPC.
Acid Violet 9	GAF.
Acid Violet 11	GAF.
*Acid Violet 12	BDO, CMG, DUP, GAF.
Acid Violet 13	DUP.
Acid Violet 17	GAF, SDH.
Acid Violet 29	HSH.
Acid Violet 34	ICI.
Acid Violet 41	CMG.
Acid Violet 43	HSH, ICI, NAC.
*Acid Violet 49	ACY, NAC, TRC.
Acid Violet 56	CMG, GAF.
Acid Violet 58	GAF.
Acid Violet 76	NAC.
Other acid violet dyes	ALT, DUP.
*Acid blue dyes:	
Acid Blue 1	GAF, NAC, SDH.
*Acid Blue 7	ACY, GAF, NAC, SDH.
*Acid Blue 9	GAF, NAC, SDH, VPC.
Acid Blue 10	NAC.
Acid Blue 15	GAF.
Acid Blue 20	NAC.
Acid Blue 22	ACY, NYC.
Acid Blue 23	NAC, TRC.
*Acid Blue 25	ATL, BDO, CMG, DUP, GAF, NAC, TRC.
Acid Blue 26	NAC.
Acid Blue 27	CMG, GAF.
Acid Blue 29	PDC.
Acid Blue 34	NAC.
*Acid Blue 40	ATL, GAF, ICI, NAC, TRC.
*Acid Blue 41	BDO, CMG, GAF, NAC.
*Acid Blue 43	ACY, GAF, NAC, TRC.
*Acid Blue 45	ACY, CMG, DUP, GAF, NAC, TRC, VPC.
Acid Blue 47	ICI.
Acid Blue 48	HSC.
Acid Blue 55	NAC.
Acid Blue 58	DUP.
Acid Blue 59	NAC.
*Acid Blue 62	BDO, GAF, NAC, VPC.
Acid Blue 63	CMG, NAC.
Acid Blue 67	CMG.
Acid Blue 69	DUP, GAF.
Acid Blue 74	DUP, NAC.
*Acid Blue 78	DUP, GAF, ICI, NAC, TRC.
Acid Blue 80	NAC, TRC.
Acid Blue 81	ICI.
Acid Blue 83	GAF.
Acid Blue 89	NAC.
*Acid Blue 90	GAF, NAC, TRC.
Acid Blue 92	NAC, YAW.
Acid Blue 93	HSC.
Acid Blue 102	NAC, TRC.
Acid Blue 104	GAF, NAC.
*Acid Blue 113	ATL, BDO, BKS, CMG, DUP, GAF, NAC.
Acid Blue 118	BKS, GAF, NAC.
Acid Blue 120	GAF, NAC.
Acid Blue 122	DUP.
Acid Blue 145	DUP, NAC.
*Acid Blue 158 and 158A	ACY, BKS, GAF, NAC, TRC, VPC.
Acid Blue 165	DUP.
Acid Blue 179	GAF.
Acid Blue 198	VPC.

TABLE 8B.--*Benzenoid dyes for which U.S. production or sales were reported, identified by manufacturer, 1966*--Continued

Dye	Manufacturers' identification codes (according to list in table 22)
ACID DYES--Continued	
*Acid blue dyes--Continued	
Acid Blue 203	VPC.
Acid Blue 230	DUP, TRC.
Acid Blue 231	TRC.
Other acid blue dyes	ACY, ALT, CMG, DUP, TRC, VPC.
*Acid green dyes:	
Acid Green 1	ACY, NAC.
*Acid Green 3	ACY, GAF, NAC, TRC.
Acid Green 5	GAF.
*Acid Green 9	ACY, GAF, NAC.
*Acid Green 12	GAF, NAC, TRC.
*Acid Green 16	DUP, GAF, NAC, SDH, TRC.
*Acid Green 20	ATL, CMG, DUP, GAF, NAC, PDC, TRC.
Acid Green 22	GAF, NAC.
*Acid Green 25	ATL, GAF, HSH, ICI, NAC, TRC, VPC.
Acid Green 35	TRC.
Acid Green 41	ICI, VPC.
Acid Green 44	VPC.
Acid Green 50	ACY, GAF.
Acid Green 58	TRC.
Acid Green 70	TRC.
Other acid green dyes	ALT, GAF, VPC.
*Acid brown dyes:	
Acid Brown 1	GAF.
Acid Brown 6	GAF.
*Acid Brown 14	AAP, ACY, DUP, GAF, NAC, TRC, YAW.
Acid Brown 19	TRC.
Acid Brown 22	DUP.
Acid Brown 28	TRC.
Acid Brown 29	DUP.
Acid Brown 31	GAF.
Acid Brown 45	TRC.
Acid Brown 96	ACY.
Acid Brown 97	ACY.
Acid Brown 98	ACY, TRC.
Acid Brown 152	GAF.
Acid Brown 158	GAF.
Acid Brown 223	GAF.
Acid Brown 243	GAF.
Other acid brown dyes	ALT, DUP, GAF.
*Acid black dyes:	
*Acid Black 1	AAP, ACY, ATL, BDO, BKS, DUP, FAB, GAF, HSH, NAC, PDC, TRC, YAW.
Acid Black 2	ACY, NAC.
Acid Black 12	NAC.
Acid Black 16	NAC.
Acid Black 18	NAC.
*Acid Black 24	CMG, DUP, GAF, NAC.
Acid Black 26, 26A, and 26B	DUP, NAC, TRC.
Acid Black 29	GAF, NAC, YAW.
Acid Black 41	NAC.
*Acid Black 48	ACY, CMG, DUP, GAF, ICI, NAC, TRC.
Acid Black 52	BKS, GAF, NAC, TRC.
Acid Black 53	NAC.
Acid Black 58	NAC, TRC.
Acid Black 60	CMG, TRC.
Acid Black 92	ACY.
*Acid Black 107	GAF, NAC, TRC.
Acid Black 108	GAF.
Acid Black 138	VPC.
Other acid black dyes	ALT, DUP, PDC.
AZOIC DYES AND COMPONENTS	
Azoic Compositions	
Azoic yellow dyes:	
*Azoic Yellow 1	ALL, ATL, BUC.
Azoic Yellow 2	BUC, x.
Azoic Yellow 3	GAF.

TABLE 8B. *--Benzenoid dyes for which U.S. production or sales were reported, identified by manufacturer, 1966*--Continued

Dye	Manufacturers' identification codes (according to list in table 22)
AZOIC DYES AND COMPONENTS--Continued	
Azoic Compositions--Continued	
Azoic orange dyes:	
*Azoic Orange 3	ALL, ATL, BUC, GAF, x.
Azoic Orange 4	GAF.
Other azoic orange dyes	VPC.
*Azoic red dyes:	
*Azoic Red 1	ALL, ATL, BUC, GAF, HST, x.
Azoic Red 2	ATL, BUC, GAF, x.
*Azoic Red 6	ALL, ATL, BUC, GAF, HST, VPC, x.
Azoic Red 13	GAF.
Azoic Red 15	GAF.
Azoic Red 16	ATL, GAF.
Azoic Red 73	GAF.
Azoic Red 74	GAF.
Other azoic red dyes	VPC.
*Azoic violet dyes: Azoic Violet 1	ALL, ATL, BUC, GAF, x.
Azoic blue dyes:	
*Azoic Blue 2	ATL, BUC, GAF.
*Azoic Blue 3	ALL, ATL, BUC, GAF, HST, x.
Azoic Blue 4	GAF.
Azoic Blue 6	ATL, GAF.
Azoic Blue 7	GAF.
Other azoic blue dyes	ALL.
Azoic green dyes:	
Azoic Green 1	ATL, GAF.
Other azoic green dyes	VPC.
Azoic brown dyes:	
*Azoic Brown 9	BUC, GAF, HST, VPC, x.
Azoic Brown 10	GAF.
Azoic Brown 26	GAF.
Other azoic brown dyes	ATL, GAF, VPC.
*Azoic black dyes:	
Azoic Black 1	HST.
Azoic Black 4	ATL, BUC, GAF.
Azoic Black 15	GAF.
Other azoic black dyes	ALL, ATL, GAF, VPC.
Other azoic compositions	x.
Azoic Diazo Components, Bases (Fast Color Bases)	
Azoic Diazo Component 2, base	ATL, BUC.
Azoic Diazo Component 3, base	BUC.
*Azoic Diazo Component 4, base	ALL, BUC, GAF, SDH.
Azoic Diazo Component 5, base	GAF, SDH.
Azoic Diazo Component 8, base	DUP, SDH.
*Azoic Diazo Component 9, base	AAP, DUP, VPC.
*Azoic Diazo Component 10, base	ALL, AUG, BUC, GAF.
*Azoic Diazo Component 12, base	AUG, BUC, SDH.
*Azoic Diazo Component 13, base	ALL, ATL, AUG, BUC, VPC.
Azoic Diazo Component 14, base	AAP.
Azoic Diazo Component 20, base	ALL, GAF.
Azoic Diazo Component 27, base	BUC.
Azoic Diazo Component 28, base	ALL, BUC, VPC.
*Azoic Diazo Component 32, base	AAP, ALL, ATL, BUC, DUP, SDH.
Azoic Diazo Component 34, base	GAF.
Azoic Diazo Component 41, base	ALL, GAF.
Azoic Diazo Component 42, base	ALL.
Azoic Diazo Component 44, base	AAP, BUC.
*Azoic Diazo Component 48, base	ALL, CWN, DUP, GAF.
Other azoic diazo components, bases	GAF.
Azoic Diazo Components, Salts (Fast Color Salts)	
*Azoic Diazo Component 1, salt	AAP, ALL, GAF, SDH.
*Azoic Diazo Component 2, salt	ALL, AUG, BUC, GAF.
*Azoic Diazo Component 3, salt	AAP, ALL, AUG, BUC, GAF, NAC, SDH.
Azoic Diazo Component 4, salt	ALL, AUG, DUP.

TABLE 8B. --*Benzenoid dyes for which U.S. production or sales were reported, identified by manufacturer, 1966*--Continued

Dye	Manufacturers' identification codes (according to list in table 22)
AZOIC DYES AND COMPONENTS--Continued	
Azoic Diazo Components, Salts (Fast Color Salts)--Continued	
*Azoic Diazo Component 5, salt	AAP, ALL, AUG, BUC, GAF, SDH.
*Azoic Diazo Component 6, salt	AAP, BUC, GAF, SDH.
*Azoic Diazo Component 8, salt	AAP, ALL, AUG, BUC, GAF.
*Azoic Diazo Component 9, salt	AAP, ALL, AUG, BUC, GAF, SDH, VPC.
*Azoic Diazo Component 10, salt	AAP, ALL, AUG, BUC, GAF, SDH.
Azoic Diazo Component 11, salt	AAP, ALL, GAF.
*Azoic Diazo Component 12, salt	AAP, ALL, AUG, BUC, GAF, SDH.
*Azoic Diazo Component 13, salt	AAP, ALL, AUG, BUC, GAF, NAC, SDH, VPC.
Azoic Diazo Component 14, salt	AAP.
Azoic Diazo Component 20, salt	ALL, GAF.
*Azoic Diazo Component 28, salt	ALL, AUG, BUC, GAF, NAC, SDH, VPC.
Azoic Diazo Component 32, salt	ALL, SDH.
Azoic Diazo Component 34, salt	GAF.
Azoic Diazo Component 35, salt	GAF.
*Azoic Diazo Component 36, salt	AAP, ALL, GAF, NAC.
Azoic Diazo Component 37, salt	ALL, GAF.
Azoic Diazo Component 40, salt	BUC.
Azoic Diazo Component 41, salt	BUC, GAF.
Azoic Diazo Component 42, salt	ALL, GAF.
*Azoic Diazo Component 44, salt	ALL, BUC, GAF, SDH.
*Azoic Diazo Component 48, salt	AAP, GAF, SDH.
*Azoic Diazo Component 49, salt	AAP, ALL, BUC, GAF, SDH.
Azoic Diazo Component 121, salt	GAF.
Azoic Coupling Components (Naphthol AS and Derivatives)	
*Azoic Coupling Component 2	ACY, ATL, AUG, BUC, GAF, NAC, PCW.
*Azoic Coupling Component 3	AUG, BUC, GAF, PCW.
*Azoic Coupling Component 4	AUG, BUC, GAF.
*Azoic Coupling Component 5	AAP, GAF, SDH.
*Azoic Coupling Component 7	AAP, AUG, BUC, GAF, PCW.
Azoic Coupling Component 8	BUC, GAF, PCW.
Azoic Coupling Component 10	PCW.
*Azoic Coupling Component 11	BUC, GAF, PCW.
Azoic Coupling Component 12	BUC, GAF, PCW.
Azoic Coupling Component 13	GAF, PCW.
*Azoic Coupling Component 14	ATL, BUC, GAF, NAC, PCW.
Azoic Coupling Component 15	BUC, GAF.
Azoic Coupling Component 16	GAF.
*Azoic Coupling Component 17	ACY, ATL, BUC, PCW.
*Azoic Coupling Component 18	ACY, ATL, BUC, GAF, NAC, PCW.
*Azoic Coupling Component 19	BUC, GAF, PCW.
*Azoic Coupling Component 20	ATL, BUC, DUP, GAF, PCW.
*Azoic Coupling Component 21	ATL, AUG, BUC, GAF, PCW.
Azoic Coupling Component 23	GAF, PCW.
*Azoic Coupling Component 24	BUC, GAF, PCW.
*Azoic Coupling Component 29	ATL, AUG, BUC, GAF, PCW.
Azoic Coupling Component 34	BUC, GAF, PCW.
Azoic Coupling Component 35	GAF, PCW.
Azoic Coupling Component 36	GAF.
*Azoic Coupling Component 43	ATL, BUC, GAF.
Other azoic coupling components	ATL, GAF, VPC.
BASIC DYES	
*Basic yellow dyes:	
Basic Yellow 1	DUP.
*Basic Yellow 2	ACY, DUP, NAC.
Basic Yellow 5	NAC.
*Basic Yellow 11	DUP, GAF, NAC, VPC.
*Basic Yellow 13	DUP, GAF, NAC, VPC.
Basic Yellow 15	DUP.
Basic Yellow 16	DUP.
Basic Yellow 26	ACY.
Basic Yellow 27	ACY.
Basic Yellow 28	VPC.

TABLE 8B.--*Benzenoid dyes for which U.S. production or sales were reported, identified by manufacturer, 1966*--Continued

Dye	Manufacturers' identification codes (according to list in table 22)
BASIC DYES--Continued	
*Basic yellow dyes--Continued	
Basic Yellow 37	ACY.
Other basic yellow dyes	DUP, GAF.
*Basic orange dyes:	
*Basic Orange 1	ACY, DUP, GAF, NAC, TRC.
*Basic Orange 2	ACY, DSC, DUP, GAF, NAC, PDC, PSC, TRC, VPC.
Basic Orange 14	GAF.
Basic Orange 17	NAC.
*Basic Orange 21	DUP, GAF, NAC, VPC.
Basic Orange 22	GAF, NAC.
Basic Orange 24	DUP.
Basic Orange 25	DUP.
Basic Orange 26	DUP.
Basic Orange 27	VPC.
Basic Orange 31	ACY.
*Basic red dyes:	
Basic Red 1	DUP, GAF.
Basic Red 2	DUP, NAC.
Basic Red 9	ACY, DSC, HSC.
Basic Red 12	DUP.
Basic Red 13	GAF, NAC.
*Basic Red 14	ACY, DUP, GAF, NAC, VPC.
Basic Red 15	DUP, GAF.
Basic Red 16	DUP.
Basic Red 17	DUP.
Basic Red 18	DUP, VPC.
Basic Red 19	DUP.
Basic Red 20	DUP.
Basic Red 22	ACY, TRC.
Basic Red 30	ACY.
Other basic red dyes	DUP, GAF, VPC.
*Basic violet dyes:	
*Basic Violet 1	ACY, DSC, GAF, HSC, NAC.
Basic Violet 2	DSC, NYC.
Basic Violet 3	DSC, DUP, NAC, SDH.
*Basic Violet 4	DSC, DUP, GAF, NAC.
Basic Violet 7	GAF, NAC.
Basic Violet 10	ACY, DUP, GAF.
Basic Violet 13	DSC.
Basic Violet 14	ACY, DSC.
Basic Violet 15	DUP.
*Basic Violet 16	DUP, GAF, VPC.
Basic Violet 18	ACY.
Other basic violet dyes	DUP.
*Basic blue dyes:	
*Basic Blue 1	DSC, GAF, NAC, SDH, VPC.
Basic Blue 2	DSC.
Basic Blue 3	GAF.
Basic Blue 4	DUP.
*Basic Blue 5	DSC, SDH, VPC.
Basic Blue 6	ACY, NAC.
*Basic Blue 7	DSC, DUP, NAC, SDH.
*Basic Blue 9	ACY, GAF, NAC, SDH.
Basic Blue 11	DSC, SDH.
Basic Blue 21	DUP.
Basic Blue 22	DUP, NAC.
*Basic Blue 26	DSC, DUP, NAC, SDH.
Basic Blue 27	GAF.
Basic Blue 35	DUP.
Basic Blue 38	ACY, DUP.
Basic Blue 39	DUP.
Basic Blue 41	TRC.
Basic Blue 47	VPC.
Basic Blue 54	ACY.
Other basic blue dyes	ACY, DUP, GAF.
Basic green dyes:	
*Basic Green 1	ACY, DSC, DUP, NAC, SDH.
Basic Green 3	DUP.
*Basic Green 4	ACY, DSC, DUP, NAC, SDH.

TABLE 8B. -- *Benzenoid dyes for which U.S. production or sales were reported, identified by manufacturer, 1966*--Continued

Dye	Manufacturers' identification codes (according to list in table 22)
BASIC DYES--Continued	
Basic brown dyes:	
*Basic Brown 1	ACY, DUP, GAF, NAC, TRC.
Basic Brown 2	GAF.
*Basic Brown 4	ACY, DSC, DUP, GAF, NAC, TRC.
Basic black dyes:	
Basic Black 3	GAF.
Other basic black dyes	DSC, DUP.
DIRECT DYES	
*Direct yellow dyes:	
*Direct Yellow 4	ACY, DUP, GAF, NAC, TRC.
*Direct Yellow 5	ACY, GAF, NAC.
*Direct Yellow 6	ACY, ATL, DUP, GAF, NAC, TRC.
Direct Yellow 7	ATL.
Direct Yellow 8	GAF, NAC.
Direct Yellow 9	DUP.
*Direct Yellow 11	ACY, BKS, DUP, GAF, NAC, TRC.
*Direct Yellow 12	BKS, DUP, FAB, GAF, NAC, TRC.
Direct Yellow 20	TRC.
Direct Yellow 23	DUP.
*Direct Yellow 26	ALT, BKS, BL, DUP.
Direct Yellow 27	GAF.
*Direct Yellow 28	ATL, DUP, GAF, NAC, TRC.
*Direct Yellow 29	ATL, DUP, GAF.
Direct Yellow 39	TRC.
*Direct Yellow 44	ALT, ATL, BKS, BL, DUP, FAB, GAF, NAC, TRC, VPC.
*Direct Yellow 50	ATL, BKS, BL, DUP, FAB, GAF, NAC, TRC, VPC.
Direct Yellow 59	ATL, DUP, NAC.
Direct Yellow 63	DUP.
*Direct Yellow 84	BKS, GAF, NAC, TRC.
Direct Yellow 103	NAC.
*Direct Yellow 105	ALT, BKS, GAF, TRC.
*Direct Yellow 106	ALT, BKS, FAB, GAF, TRC.
Direct Yellow 107	GAF.
Direct Yellow 114	ACY.
Direct Yellow 117	TRC.
Direct Yellow 118	TRC.
Direct Yellow 120	BKS.
Direct Yellow 121	TRC.
Direct Yellow 125	ACY.
Other direct yellow dyes	AAP, ALT, ATL, BL, DUP, TRC, VPC.
*Direct orange dyes:	
*Direct Orange 1	AAP, ATL, BDO, CMG, NAC, VPC.
Direct Orange 6	NAC.
*Direct Orange 8	ATL, DUP, GAF, NAC, TRC.
Direct Orange 10	AAP, NAC.
Direct Orange 11	GAF.
*Direct Orange 15	ACY, DUP, GAF, NAC, TRC.
*Direct Orange 26	ATL, DUP, GAF, NAC, TRC.
*Direct Orange 29	ATL, BKS, FAB, TRC.
*Direct Orange 34	ACY, ATL, CMG, DUP, GAF, NAC.
*Direct Orange 37	ACY, CMG, DUP, GAF, TRC.
*Direct Orange 39	BKS, CMG, DUP, GAF.
Direct Orange 40	DUP.
Direct Orange 48	DUP.
Direct Orange 55	DUP, NAC.
Direct Orange 59	DUP, GAF.
Direct Orange 61	TRC.
Direct Orange 67	NAC, VPC.
Direct Orange 70	TRC.
*Direct Orange 72	ATL, BKS, FAB, NAC, TRC, VPC.
*Direct Orange 73	DUP, GAF, TRC, VPC.
Direct Orange 74	BL, DUP.
Direct Orange 76	DUP.
Direct Orange 78	DUP, VPC.
Direct Orange 79	DUP.
Direct Orange 80	DUP, VPC.
*Direct Orange 81	DUP, GAF, NAC, VPC.
Direct Orange 83	GAF, NAC.

TABLE 8B.--*Benzenoid dyes for which U.S. production or sales were reported, identified by manufacturer, 1966*--Continued

Dye	Manufacturers' identification codes (according to list in table 22)
DIRECT DYES--Continued	
*Direct orange dyes--Continued	
Direct Orange 88	DUP.
*Direct Orange 102	ACY, DUP, GAF, NAC.
Direct Orange 110	TRC.
Other direct orange dyes	ALT, ATL, BL, DUP, VPC.
*Direct red dyes:	
*Direct Red 1	AAP, ATL, DUP, GAF, NAC, TRC, YAW.
*Direct Red 2	ATL, BKS, DUP, NAC, TRC.
*Direct Red 4	ATL, NAC, TRC, VPC.
Direct Red 5	NAC.
Direct Red 7	ATL, YAW.
*Direct Red 10	AAP, ACY, NAC.
*Direct Red 13	AAP, ATL, DUP, NAC, TRC, YAW.
*Direct Red 16	ATL, GAF, NAC, TRC.
Direct Red 20	GAF, NAC.
*Direct Red 23	ATL, BKS, CMG, DUP, FAB, GAF, NAC, TRC.
*Direct Red 24	AAP, ATL, BKS, BL, FAB, TRC, VPC.
*Direct Red 26	AAP, ATL, DUP, FAB, GAF, NAC, TRC, VPC.
*Direct Red 28	ATL, BKS, DUP, NAC, TRC.
*Direct Red 31	ATL, DUP, GAF, NAC.
Direct Red 32	DUP, NAC.
*Direct Red 37	ATL, GAF, NAC, TRC, YAW.
*Direct Red 39	ATL, GAF, NAC, TRC, YAW.
Direct Red 40	VPC.
Direct Red 53	NAC.
Direct Red 62	TRC.
*Direct Red 72	GAF, NAC, TRC.
Direct Red 73	DUP, NAC.
*Direct Red 75	ACY, CMG, DUP, GAF.
Direct Red 76	GAF, NAC.
*Direct Red 79	ATL, BKS, CMG, TRC, VPC.
*Direct Red 80	AAP, ATL, BDO, BKS, BL, CMG, DUP, FAB, NAC, SDH, TRC, VPC.
*Direct Red 81	AAP, ACY, ALT, ATL, BKS, BL, CMG, DUP, GAF, NAC, TRC, VPC, YAW.
*Direct Red 83	ALT, ATL, BKS, BL, CMG, DUP, FAB, GAF, NAC, TRC.
*Direct Red 84	BKS, GAF, NAC.
Direct Red 94	NAC.
Direct Red 95	VPC.
Direct Red 100	NAC.
Direct Red 111	GAF.
Direct Red 117	BL, DUP.
Direct Red 120	VPC.
*Direct Red 122	CMG, TRC, VPC.
Direct Red 123	GAF.
Direct Red 139	VPC.
*Direct Red 149	ATL, CMG, DUP, GAF.
Direct Red 152	CMG, DUP.
*Direct Red 153	AAP, ATL, CMG, NAC.
Direct Red 155	GAF.
Direct Red 209	TRC.
Other direct red dyes	ALT, BL, TRC, VPC.
*Direct violet dyes:	
*Direct Violet 1	AAP, ATL, DUP, NAC.
Direct Violet 7	GAF, NAC.
*Direct Violet 9	ATL, BKS, DUP, GAF, NAC, TRC.
Direct Violet 14	NAC.
Direct Violet 22	DUP.
Direct Violet 30	AAP.
Direct Violet 47	DUP, GAF.
Direct Violet 48	DUP, NAC.
Direct Violet 49	NAC.
Direct Violet 51	DUP, NAC.
Direct Violet 62	ACY.
Direct Violet 66	ATL, TRC.
Direct Violet 67	DUP, NAC.
Direct Violet 68	DUP.
Other direct violet dyes	ALT.
*Direct blue dyes:	
*Direct Blue 1	AAP, ACY, ATL, BKS, BL, DUP, FAB, GAF, NAC, TRC, VPC, YAW.

TABLE 8B. --*Benzenoid dyes for which U.S. production or sales were reported, identified by manufacturer, 1966*--Continued

Dye	Manufacturers' identification codes (according to list in table 22)
DIRECT DYES--Continued	
*Direct blue dyes--Continued	
*Direct Blue 2	AAP, ATL, BKS, BL, DUP, FAB, GAF, NAC, TRC, VPC, YAW.
Direct Blue 3	NAC.
*Direct Blue 6	AAP, ACY, ATL, BKS, BL, DUP, GAF, NAC, TRC, YAW.
Direct Blue 8	ATL, DUP, GAF, NAC, YAW.
*Direct Blue 14	ATL, BKS, NAC, TRC.
*Direct Blue 15	ATL, DUP, GAF, NAC, YAW.
Direct Blue 21	TRC.
*Direct Blue 22	ATL, CMG, DUP, NAC.
*Direct Blue 24	ATL, BKS, NAC, TRC, YAW.
*Direct Blue 25	ATL, DUP, GAF, NAC, TRC, YAW.
Direct Blue 26	ATL, NAC.
Direct Blue 27	DUP.
Direct Blue 55	NAC.
Direct Blue 61	YAW.
*Direct Blue 67	DUP, NAC, TRC.
Direct Blue 71	DUP, GAF, NAC, TRC.
Direct Blue 74	DUP.
Direct Blue 75	TRC.
*Direct Blue 76	ALT, ATL, BKS, BL, DUP, FAB, GAF, NAC, TRC, VPC.
*Direct Blue 78	ATL, CMG, DUP, GAF, NAC, TRC.
*Direct Blue 80	ALT, ATL, BKS, BL, DUP, FAB, GAF, NAC, TRC.
*Direct Blue 86	AAP, ACY, ALT, ATL, BKS, DUP, FAB, GAF, ICC, ICI, NAC, SDH, TMS, TRC, VPC.
Direct Blue 87	ICI.
Direct Blue 91	TRC.
*Direct Blue 98	ALT, ATL, GAF, NAC, TRC, VPC.
Direct Blue 100	ALT, BKS.
Direct Blue 104	DUP.
*Direct Blue 120 and 120A	BKS, CMG, DUP, GAF, TRC.
*Direct Blue 126	BL, DUP, GAF, NAC, TRC, VPC.
Direct Blue 130	NAC.
Direct Blue 133	GAF.
Direct Blue 136	GAF.
Direct Blue 143	DUP.
Direct Blue 151	ATL, NAC, TRC.
Direct Blue 160	TRC.
Direct Blue 189	BKS, TRC.
Direct Blue 191	AAP, GAF.
Direct Blue 199	GAF.
Direct Blue 218	BKS, GAF, NAC.
Direct Blue 224	ATL.
Direct Blue 238	ACY.
Other direct blue dyes	ALT, BL, DUP, FAB, GAF.
*Direct green dyes:	
*Direct Green 1	AAP, ACY, ATL, BKS, DUP, GAF, NAC, TRC, YAW.
*Direct Green 6	AAP, BKS, DUP, FAB, GAF, NAC, TRC, YAW.
*Direct Green 8	ATL, NAC, TRC, YAW.
*Direct Green 12	DUP, NAC, TRC.
Direct Green 15	DUP.
Direct Green 26	TRC.
Direct Green 27	NAC, TRC.
Direct Green 28	TRC.
Direct Green 38	DUP, GAF.
Direct Green 39	GAF.
Direct Green 41	DUP.
Direct Green 45	VPC.
Direct Green 47	DUP, GAF.
Direct Green 51	TRC.
Direct Green 69	TRC.
Other direct green dyes	ACY, ALT, ATL, BL, DUP.
*Direct brown dyes:	
*Direct Brown 1	ACY, ATL, BKS, BL, DUP, FAB, NAC.
*Direct Brown 1A	GAF, TRC, YAW.
*Direct Brown 2	AAP, ACY, ATL, BKS, BL, DUP, GAF, NAC, TRC, YAW.
*Direct Brown 6	DUP, NAC, TRC.
Direct Brown 11	NAC.
Direct Brown 25	DUP, NAC.
Direct Brown 27	GAF.
*Direct Brown 31	AAP, ATL, DUP, GAF, NAC, TRC, YAW.

TABLE 8B.--*Benzenoid dyes for which U.S. production or sales were reported, identified by manufacturer, 1966*--Continued

Dye	Manufacturers' identification codes (according to list in table 22)
DIRECT DYES--Continued	
*Direct brown dyes--Continued	
Direct Brown 32	GAF.
Direct Brown 33	DUP, NAC.
Direct Brown 35	NAC.
Direct Brown 40	AAP.
Direct Brown 44	GAF, YAW.
Direct Brown 45	VPC.
Direct Brown 48	AAP.
Direct Brown 59	ACY.
*Direct Brown 74	AAP, DUP, NAC.
*Direct Brown 95	AAP, ALT, ATL, BKS, BL, DUP, FAB, GAF, NAC, TRC, YAW.
Direct Brown 101	GAF.
Direct Brown 105	DUP.
Direct Brown 106	GAF, NAC.
*Direct Brown 111	DUP, GAF, TRC, VPC.
Direct Brown 112	NAC.
Direct Brown 125	GAF.
*Direct Brown 154	DUP, GAF, NAC, TRC, YAW.
Other direct brown dyes	ALT, BL, DUP, NAC, VPC.
*Direct black dyes:	
*Direct Black 4	ATL, BKS, DUP, GAF, NAC, TRC, YAW.
Direct Black 8	TRC, YAW.
*Direct Black 9	BKS, DUP, GAF, NAC, TRC.
Direct Black 17	GAF, TRC.
*Direct Black 19	BKS, GAF, NAC, TRC, VPC.
*Direct Black 22	AAP, ALT, ATL, BKS, CMG, DUP, GAF, NAC, TRC, VPC, YAW.
Direct Black 36	AAP.
Direct Black 37	AAP, DUP.
*Direct Black 38	AAP, ACY, ATL, BKS, BL, DUP, FAB, GAF, NAC, TRC, YAW.
Direct Black 44	TRC.
Direct Black 45	TRC.
*Direct Black 51	AAP, DUP, GAF, NAC, TRC.
Direct Black 55	DUP.
Direct Black 56	NAC, TRC.
Direct Black 61	TRC.
Direct Black 67	DUP, NAC.
Direct Black 71	VPC.
Direct Black 74	NAC.
Direct Black 75	GAF.
Direct Black 78	BKS, NAC.
*Direct Black 80	AAP, ATL, BKS, BL, FAB, NAC, TRC, VPC, YAW.
Direct Black 109	GAF.
Direct Black 123	NAC.
Direct Black 130	ACY.
Direct Black 190	BKS.
Other direct black dyes	ACY, ALT, ATL, BL, DUP, VPC, YAW.
DISPERSE DYES	
*Disperse yellow dyes:	
Disperse Yellow 1	DUP, GAF.
Disperse Yellow 2	DUP.
*Disperse Yellow 3	AAP, BKS, BL, DUP, EKT, GAF, HSH, ICC, NAC, SDH, TRC.
*Disperse Yellow 5	BKS, EKT, ICC.
Disperse Yellow 8	DUP, TRC.
Disperse Yellow 17	AAP.
*Disperse Yellow 23	DUP, EKT, ICC.
Disperse Yellow 31	GAF.
Disperse Yellow 32	DUP.
*Disperse Yellow 33	AAP, EKT, ICC, TRC.
*Disperse Yellow 34	AAP, EKT, GAF, ICC.
Disperse Yellow 37	EKT, ICC.
*Disperse Yellow 42	AAP, DUP, GAF, TRC.
Disperse Yellow 50	TRC.
Disperse Yellow 54	AAP, DUP, ICC, TRC.
Disperse Yellow 67	DUP.
Other disperse yellow dyes	DUP, EKT, GAF, ICC, VPC.
*Disperse orange dyes:	
*Disperse Orange 3	AAP, BKS, DUP, EKT, GAF, HSH, ICC, NAC, TRC.
*Disperse Orange 5	AAP, EKT, GAF.

TABLE 8B. --*Benzenoid dyes for which U.S. production or sales were reported, identified by manufacturer, 1966*--Continued

Dye	Manufacturers' identification codes (according to list in table 22)
DISPERSE DYES--Continued	
*Disperse orange dyes--Continued	
Disperse Orange 16	AAP.
*Disperse Orange 17	AAP, BKS, EKT, HSH, ICC, NAC.
Disperse Orange 21	TRC.
Disperse Orange 25	DUP, TRC.
Disperse Orange 26	DUP.
Disperse Orange 28	AAP.
Disperse Orange 29	AAP.
Disperse Orange 30	TRC.
Disperse Orange 38	TRC.
Disperse Orange 44	DUP.
Other disperse orange dyes	EKT, GAF, ICC.
*Disperse red dyes:	
*Disperse Red 1	AAP, BKS, DUP, EKT, GAF, HSH, ICC, NAC, TRC, YAW.
Disperse Red 4	GAF, TRC.
*Disperse Red 5	AAP, BKS, EKT, GAF, HSH, ICC.
Disperse Red 7	AAP.
Disperse Red 9	DUP.
*Disperse Red 11	AAP, DUP, GAF, TRC.
*Disperse Red 13	AAP, BKS, DUP, GAF, ICC.
*Disperse Red 15	AAP, GAF, HSH, ICC, NAC.
*Disperse Red 17	AAP, BKS, DUP, EKT, GAF, HSH, ICC, TRC.
Disperse Red 20	NAC.
Disperse Red 21	EKT.
Disperse Red 30	EKT, TRC.
Disperse Red 31	ICC.
Disperse Red 32	GAF.
Disperse Red 53	TRC.
Disperse Red 55	TRC.
Disperse Red 56	DUP.
Disperse Red 59	DUP.
*Disperse Red 60	AAP, DUP, VPC.
Disperse Red 61	DUP.
Disperse Red 65	DUP, TRC.
Disperse Red 66	AAP.
Disperse Red 73	TRC.
Disperse Red 78	TRC.
Disperse Red 96	ACY.
Other disperse red dyes	AAP, BKS, DUP, EKT, GAF, ICC, TRC, VPC.
*Disperse violet dyes:	
*Disperse Violet 1	AAP, GAF, HSH, ICC, TRC.
*Disperse Violet 4	AAP, GAF, ICC.
Disperse Violet 8	GAF.
Disperse Violet 11	EKT, NAC.
Disperse Violet 14	DUP.
Disperse Violet 18	DUP, TRC.
Disperse Violet 22	GAF.
Disperse Violet 26	DUP.
*Disperse Violet 27	AAP, ACY, BL, DUP, GAF.
Other disperse violet dyes	EKT, GAF, ICC.
*Disperse blue dyes:	
*Disperse Blue 1	AAP, GAF, TRC.
*Disperse Blue 3	AAP, BKS, EKT, GAF, HSH, ICC, NAC, TRC.
*Disperse Blue 7	AAP, BKS, EKT, GAF, HSH, ICC, TRC.
Disperse Blue 8	BKS.
Disperse Blue 9	GAF, ICC.
Disperse Blue 27	EKT.
Disperse Blue 35	ICI.
Disperse Blue 55	TRC.
Disperse Blue 59	DUP.
Disperse Blue 60	DUP.
Disperse Blue 61	DUP.
Disperse Blue 62	DUP.
Disperse Blue 63	DUP.
*Disperse Blue 64	DUP, GAF, TRC.
Disperse Blue 70	AAP.
Disperse Blue 71	VPC.
Disperse Blue 73	TRC.
Disperse Blue 79	TRC.
Disperse Blue 116	ACY.
Other disperse blue dyes	AAP, DUP, EKT, GAF, HSH, ICC, VPC.

TABLE 8B. --*Benzenoid dyes for which U.S. production or sales were reported, identified by manufacturer, 1966*-- Continued

Dye	Manufacturers' identification codes (according to list in table 22)
DISPERSE DYES--Continued	
Disperse green dyes	GAF, ICC.
Disperse brown dyes:	
Disperse Brown 1	TRC.
Disperse Brown 2	DUP, GAF.
Other disperse brown dyes	EKT, ICC.
*Disperse black dyes:	
*Disperse Black 1	AAP, DUP, GAF, TRC.
Disperse Black 2	DUP, TRC.
Disperse Black 6	AAP.
Disperse Black 7	YAW.
*Disperse Black 9	AAP, BL, DUP, EKT, GAF.
Other disperse black dyes	DUP, EKT, GAF, ICC, VPC, YAW.
FIBER-REACTIVE DYES	
Reactive yellow dyes:	
Reactive Yellow 1	ICI.
Reactive Yellow 2	TRC.
Reactive Yellow 3	TRC.
Reactive Yellow 4	ICI.
Reactive Yellow 6	TRC.
Reactive Yellow 7	ICI.
Reactive Yellow 11	TRC.
Reactive Yellow 13	HST.
Reactive Yellow 14	HST.
Reactive Yellow 15	DUP, HST.
Reactive Yellow 16	HST.
Reactive Yellow 17	HST.
Reactive Yellow 18	ICI.
Reactive Yellow 22	ICI.
Reactive Yellow 24	HST.
Other reactive yellow dyes	HST.
Reactive orange dyes:	
Reactive Orange 1	ICI.
Reactive Orange 4	ICI.
Reactive Orange 5	TRC.
Reactive Orange 7	DUP.
Reactive Orange 12	ICI.
Reactive Orange 13	ICI.
Reactive Orange 14	ICI.
Reactive Orange 16	HST.
Other reactive orange dyes	HST.
Reactive red dyes:	
Reactive Red 1	ICI.
Reactive Red 2	ICI.
Reactive Red 3	ICI.
Reactive Red 4	TRC.
Reactive Red 5	ICI.
Reactive Red 8	ICI.
Reactive Red 11	ICI.
Reactive Red 13	ICI.
Reactive Red 16	TRC.
Reactive Red 21	HST.
Reactive Red 29	ICI.
Reactive Red 31	HST, ICI.
Reactive Red 33	ICI.
Other reactive red dyes	DUP, GAF.
Reactive violet dyes:	
Reactive Violet 1	ICI.
Reactive Violet 2	TRC.
Reactive Violet 4	HST.
Reactive Violet 5	HST.
Other reactive violet dyes	HST.
*Reactive blue dyes:	
Reactive Blue 1	ICI.
Reactive Blue 2	TRC.
Reactive Blue 3	ICI.
Reactive Blue 4	ICI.
Reactive Blue 5	TRC.
Reactive Blue 7	TRC.

TABLE 8B. -- *Benzenoid dyes for which U.S. production or sales were reported, identified by manufacturer, 1966*--Continued

Dye	Manufacturers' identification codes (according to list in table 22)
FIBER-REACTIVE DYES--Continued	
*Reactive blue dyes--Continued	
Reactive Blue 9	ICI.
Reactive Blue 18	TRC.
Reactive Blue 19	DUP, HST.
Reactive Blue 21	DUP, HST.
Reactive Blue 25	ICI.
Reactive Blue 27	HST.
Other reactive blue dyes	DUP, GAF, HST.
Reactive green dyes	HST, ICI.
Reactive brown dyes:	
Reactive Brown 1	TRC.
Reactive Brown 10	ICI.
Reactive black dyes:	
Reactive Black 1	TRC.
Reactive Black 5	HST.
Reactive Black 9	ICI.
FLUORESCENT BRIGHTENING AGENTS	
Fluorescent Brightening Agent 1	GGY.
Fluorescent Brightening Agent 6	ACY.
Fluorescent Brightening Agent 8	ACY.
Fluorescent Brightening Agent 9	ACY, GAF, SDH.
Fluorescent Brightening Agent 22	GGY.
Fluorescent Brightening Agent 24	GGY.
Fluorescent Brightening Agent 25	GAF.
*Fluorescent Brightening Agent 28	ACY, CCW, DUP.
Fluorescent Brightening Agent 30	GAF.
Fluorescent Brightening Agent 33	GAF.
Fluorescent Brightening Agent 34	DUP.
Fluorescent Brightening Agent 37	CIB.
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 59	GGY.
Fluorescent Brightening Agent 61	ACY.
Fluorescent Brightening Agent 68	CCW, GAF.
Fluorescent Brightening Agent 71	ACY, GAF.
Fluorescent Brightening Agent 75	GAF.
Fluorescent Brightening Agent 102	DUP.
Fluorescent Brightening Agent 108	GAF.
Fluorescent Brightening Agent 113	VPC.
Fluorescent Brightening Agent 114	VPC.
Fluorescent Brightening Agent 125	ACY.
Fluorescent Brightening Agent 126	SDH.
Fluorescent Brightening Agent 128	SDH.
Fluorescent Brightening Agent 130	SDH.
Fluorescent Brightening Agent 134	CIB.
Fluorescent Brightening Agent 135	CIB.
Fluorescent Brightening Agent 136	CIB.
Fluorescent Brightening Agent 139	CIB.
Fluorescent Brightening Agent 155	WLM.
Fluorescent Brightening Agent 158	ACY.
Fluorescent Brightening Agent 159	ACY.
Fluorescent Brightening Agent 161	ACY.
Other fluorescent brightening agents	ACY, CCW, CIB, DUP, GGY, S. VPC.
FOOD, DRUG, AND COSMETIC COLORS	
Food, Drug, and Cosmetic Dyes	
*FD&C Blue No. 1	KON, NAC, SDH, WJ.
*FD&C Blue No. 2	KON, NAC, SDH.
FD&C Green No. 3	WJ.
*FD&C Red No. 2	ALT, KON, NAC, SDH, STG, WJ.
*FD&C Red No. 3	ALT, KON, NAC, SDH, STG.
*FD&C Red No. 4	KON, NAC, SDH, WJ.
FD&C Violet No. 1	NAC.

TABLE 8B.--*Benzenoid dyes for which U.S. production or sales were reported, identified by manufacturer, 1966*--Continued

Dye	Manufacturers' identification codes (according to list in table 22)
FOOD, DRUG, AND COSMETIC COLORS--Continued	
Food, Drug, and Comestic Dyes--Continued	
*FD&C Yellow No. 5	ALT, KON, NAC, SDH, STG, WJ.
*FD&C Yellow No. 6	ALT, KON, NAC, SDH, STG, WJ.
Other food, drug, and cosmetic dyes	STG, WJ.
Drug and Cosmetic Dyes	
D&C Blue No. 6	KON, NAC.
D&C Blue No. 9	NAC.
D&C Brown No. 1	NAC.
D&C Green No. 5	KON, NAC.
D&C Green No. 6	NAC.
D&C Green No. 8	KON, SDH.
*D&C Orange No. 4	KON, NAC, SNA.
D&C Orange No. 5	SNA, TMS.
D&C Orange No. 10	TMS.
D&C Orange No. 17	KON, SNA.
D&C Red No. 3	KON.
D&C Red No. 6	KON, SNA, TMS.
*D&C Red No. 7	KON, SNA, TMS.
D&C Red No. 8	KON, TMS.
D&C Red No. 9	KON, SNA, TMS.
D&C Red No. 10	KON, SNA.
D&C Red No. 11	KON, SNA.
D&C Red No. 12	SNA, TMS.
D&C Red No. 13	SNA, TMS.
D&C Red No. 17	KON, NAC.
*D&C Red No. 19	KON, NAC, SNA, TMS.
*D&C Red No. 21	KON, SNA, TMS.
D&C Red No. 22	KON.
D&C Red No. 27	TMS.
D&C Red No. 28	NAC.
D&C Red No. 30	KON.
D&C Red No. 31	KON.
D&C Red No. 33	NAC.
D&C Red No. 34	KON.
*D&C Red No. 36	KON, SNA, TMS.
D&C Red No. 37	NAC.
D&C Red No. 39	SDH.
D&C Violet No. 2	NAC.
D&C Yellow No. 5	KON, TMS.
D&C Yellow No. 6	KON.
D&C Yellow No. 7	KON.
D&C Yellow No. 8	KON, NAC, TMS.
D&C Yellow No. 10	KON, NAC.
D&C Yellow No. 11	NAC.
Drug and Cosmetic Dyes, External	
Ext. D&C Green No. 1	KON, NAC.
Ext. D&C Orange No. 3	KON, NAC.
Ext. D&C Red No. 8	SNA.
Ext. D&C Violet No. 2	KON.
Ext. D&C Yellow No. 1	KON, NAC.
Ext. D&C Yellow No. 5	SNA.
Ext. D&C Yellow No. 7	KON.
INGRAIN DYES	
Ingrain blue dyes:	
Ingrain Blue 1	ICI.
Ingrain Blue 2	VPC.
Ingrain Blue 3	ICI.
Ingrain Blue 6	VPC.
MORDANT DYES	
*Mordant yellow dyes:	
Mordant Yellow 1	GAF, PDC, TRC.

TABLE 8B.--*Benzenoid dyes for which U.S. production or sales were reported, identified by manufacturer, 1966*--Continued

Dye	Manufacturers' identification codes (according to list in table 22)
MORDANT DYES--Continued	
*Mordant yellow dyes--Continued	
Mordant Yellow 3	ATL, NAC.
Mordant Yellow 5	TRC.
*Mordant Yellow 8	DUP, NAC, VPC.
Mordant Yellow 10	DUP, NAC.
Mordant Yellow 14	NAC, TRC.
*Mordant Yellow 16	ACY, DUP, NAC.
Mordant Yellow 20	NAC.
Mordant Yellow 26	VPC.
Mordant Yellow 29	GAF.
Mordant Yellow 30	TRC, VPC.
Mordant Yellow 36	PDC.
*Mordant orange dyes:	
*Mordant Orange 1	ACY, GAF, PDC, TRC.
Mordant Orange 4	GAF.
Mordant Orange 6	ATL, GAF, TRC.
Mordant Orange 8	TRC.
Mordant Orange 30	NAC.
*Mordant red dyes:	
Mordant Red 3	ACY, NAC.
Mordant Red 5	PDC.
Mordant Red 6	GAF.
*Mordant Red 7	ACY, BDO, CMG, GAF, NAC, PDC, TRC, VPC.
*Mordant Red 9	GAF, MRX, NAC.
Mordant Red 11	ACY, NAC.
Mordant Red 19	PDC.
Mordant Red 64	PDC.
Mordant violet dyes:	
Mordant Violet 11	GAF.
Mordant Violet 20	GAF.
*Mordant blue dyes:	
*Mordant Blue 1	DUP, GAF, NAC, TRC.
Mordant Blue 3	GAF.
Mordant Blue 7	TRC.
Mordant Blue 9	GAF, NAC.
Mordant Blue 13	HSH, NAC.
Mordant Blue 19	CMG.
Mordant green dyes:	
Mordant Green 11	ACY.
Mordant Green 36	PDC.
Mordant Green 47	NAC.
*Mordant brown dyes:	
*Mordant Brown 1	CMG, DUP, GAF, NAC, TRC, YAW.
Mordant Brown 12	PDC.
Mordant Brown 13	NAC.
Mordant Brown 15	GAF.
Mordant Brown 17	CMG.
Mordant Brown 18	DUP, NAC.
Mordant Brown 19	GAF.
Mordant Brown 21	GAF, VPC.
*Mordant Brown 33	DUP, GAF, NAC, TRC.
*Mordant Brown 40	CMG, DUP, GAF, NAC, VPC, YAW.
Mordant Brown 50	TRC.
Mordant Brown 63	TRC.
Mordant Brown 70	DUP, PDC.
*Mordant black dyes:	
Mordant Black 1	GAF, NAC.
*Mordant Black 3	GAF, NAC, TRC.
*Mordant Black 5	NAC, TRC.
Mordant Black 7	GAF.
Mordant Black 8	VPC.
Mordant Black 9	NAC, VPC.
*Mordant Black 11	GAF, NAC, TRC, VPC.
*Mordant Black 13	GAF, HSH, NAC, TRC.
Mordant Black 16	NAC, PDC.
*Mordant Black 17	ACY, DUP, GAF, NAC, TRC.
Mordant Black 19	PDC.
Mordant Black 26	TRC.
*Mordant Black 38	CMG, GAF, NAC.

TABLE 8B. --*Benzenoid dyes for which U.S. production or sales were reported, identified by manufacturer, 1966*--Continued

Dye	Manufacturers' identification codes (according to list in table 22)
OXIDATION BASES	
Oxidation Base 8 and 8A	ACY.
Oxidation Base 21	PDC.
Oxidation Base 22	ACY.
Oxidation Base 25	ACY.
Other oxidation bases	ACY.
SOLVENT DYES	
*Solvent yellow dyes:	
Solvent Yellow 1	ACY.
*Solvent Yellow 2	AAP, DUP, FH, GAF, PAT, PSC.
*Solvent Yellow 3	DUP, FH, GAF, NAC, PSC.
Solvent Yellow 13	ACY, GAF, TRC.
*Solvent Yellow 14	AAP, ACY, DUP, FH, GAF, NAC, PAT, PSC, SDH.
Solvent Yellow 16	PAT.
Solvent Yellow 19	GAF.
Solvent Yellow 29	GAF.
Solvent Yellow 30	NAC, PSC.
Solvent Yellow 33	ACY, NAC.
Solvent Yellow 34	DUP.
Solvent Yellow 40	NAC.
Solvent Yellow 42	NAC.
Solvent Yellow 43	GAF.
Solvent Yellow 44	GAF, NAC.
Solvent Yellow 45	DUP, NAC.
Solvent Yellow 47	ACY, DUP, GAF, NAC.
Solvent Yellow 56	ACY, FH, NAC.
Solvent Yellow 71	ACY.
Solvent Yellow 72	ACY.
Other solvent yellow dyes	AAP, ACY, DSC, PAT.
*Solvent orange dyes:	
Solvent Orange 1	PAT.
Solvent Orange 2	AAP.
*Solvent Orange 3	ACY, GAF, NAC, PSC.
Solvent Orange 5	GAF, TRC.
*Solvent Orange 7	ACY, GAF, NAC.
Solvent Orange 20	ACY, GAF.
Solvent Orange 23	NAC.
Solvent Orange 24	DUP.
Solvent Orange 25	ACY, DUP.
Solvent Orange 31	NAC.
Solvent Orange 47	FH.
Solvent Orange 48	ACY.
Solvent Orange 51	ACY.
Other solvent orange dyes	AAP, ACY, DSC, DUP, PAT.
*Solvent red dyes:	
Solvent Red 8	GAF.
Solvent Red 22	GAF.
*Solvent Red 24	ACY, DUP, GAF, PAT, SDH.
*Solvent Red 26	AAP, ACY, FH, NAC, PSC.
Solvent Red 27	NAC.
Solvent Red 33	DUP, GAF.
Solvent Red 34	DUP.
Solvent Red 35	GAF.
Solvent Red 36	NAC.
Solvent Red 40	GAF.
Solvent Red 41	DSC.
*Solvent Red 49	ACY, DSC, DUP, GAF.
Solvent Red 52	GAF, ICI.
Solvent Red 65	NAC.
Solvent Red 68	NAC.
Solvent Red 69	DUP.
Solvent Red 74	NAC.
Solvent Red 75	NAC.
Solvent Red 76	NAC.
Solvent Red 80	ACY, NAC.
Solvent Red 105	ACY.
Solvent Red 108	ACY.
Solvent Red 111	ACY.
Solvent Red 115	ACY.
Other solvent red dyes	AAP, ACY, DSC, DUP, GAF, ICI, PAT.

TABLE 8B. -- *Benzenoid dyes for which U.S. production or sales were reported, identified by manufacturer, 1966*-- Continued

Dye	Manufacturers' identification codes (according to list in table 22)
SOLVENT DYES--Continued	
*Solvent violet dyes:	
*Solvent Violet 8	ACY, DSC, NAC.
Solvent Violet 9	DSC.
Solvent Violet 13	AAP, HSH, ICI.
Solvent Violet 14	ICI.
Solvent Violet 17	NAC.
Other solvent violet dyes	DSC, PAT.
Solvent blue dyes:	
Solvent Blue 3	ACY, SW.
Solvent Blue 4	DSC, DUP, SDH.
Solvent Blue 5	DSC.
Solvent Blue 6	DSC.
Solvent Blue 7	ACY, NAC.
Solvent Blue 9	GAF.
Solvent Blue 11	GAF, ICI.
Solvent Blue 12	DUP, NAC.
Solvent Blue 16	NAC.
Solvent Blue 32	AAP.
Solvent Blue 36	DUP, NAC.
Solvent Blue 37	DUP.
Solvent Blue 38	ACY, DUP, NAC.
Solvent Blue 39	NAC.
Solvent Blue 43	NAC.
Solvent Blue 58	ACY.
Solvent Blue 59	ACY.
Solvent Blue 60	ACY.
Solvent Blue 74	NAC.
Other solvent blue dyes	AAP, ACY, DSC, GAF, ICI, PAT, SDH.
*Solvent green dyes:	
Solvent Green 1	ACY, DSC, SDH.
Solvent Green 2	GAF.
*Solvent Green 3	AAP, ACY, ATL, GAF, HSH, NAC.
Solvent Green 10	DUP.
Solvent Green 11	DUP.
Other solvent green dyes	DSC.
*Solvent brown dyes:	
Solvent Brown 11	GAF.
*Solvent Brown 12	ACY, DSC, GAF.
Solvent Brown 17	DUP.
Solvent Brown 19	DUP.
Solvent Brown 20	ACY, DUP.
Solvent Brown 22	FH.
Solvent Brown 38	ACY.
Other solvent brown dyes	DSC.
Solvent black dyes:	
Solvent Black 3	NAC.
Solvent Black 5	ACY, DSC, NAC.
Solvent Black 7	ACY, DSC, FH, NAC.
Solvent Black 12	NAC.
Solvent Black 13	NAC.
Solvent Black 17	DUP.
Solvent Black 26	ACY.
Other solvent black dyes	ACY, DSC.
SULFUR DYES	
Sulfur yellow dyes:	
Sulfur Yellow 2	SDC.
Leuco Sulfur Yellow 2	ACY, SDC.
Sulfur Yellow 4	AUG, DUP, SDC.
Leuco Sulfur Yellow 4	SDC.
Leuco Sulfur Yellow 15	ACY.
Other sulfur yellow dyes	ACY, SDC.
Sulfur orange dyes:	
Sulfur Orange 1	SDC.
Leuco Sulfur Orange 1	SDC.
Sulfur red dyes:	
Sulfur Red 1	ACY, NAC.
Leuco Sulfur Red 5	SDC.
*Sulfur Red 6	ACY, DUP, NAC. SDC.

TABLE 8B.--*Benzenoid dyes for which U.S. production or sales were reported, identified by manufacturer, 1966*--Continued

Dye	Manufacturers' identification codes (according to list in table 22)
SULFUR DYES--Continued	
Sulfur red dyes--Continued	
Leuco Sulfur Red 6	SDC.
Sulfur Red 8	DUP.
Sulfur blue dyes:	
*Sulfur Blue 7	ACY, DUP, NAC, SDC.
Leuco Sulfur Blue 7	ACY, NAC, SDC.
Leuco Sulfur Blue 8	SDC.
Sulfur Blue 9	ACY, NAC.
Leuco Sulfur Blue 9	SDC.
*Sulfur Blue 11	DUP, NAC, SDC.
Leuco Sulfur Blue 13	ACY.
Sulfur Blue 15	ACY, DUP.
Other sulfur blue dyes	ACY, SDC.
Sulfur green dyes:	
Sulfur Green 1	NAC.
Leuco Sulfur Green 1	NAC.
Sulfur Green 2	NAC, SDC.
Leuco Sulfur Green 2	SDC.
Sulfur Green 3	NAC.
Sulfur Green 14	DUP.
Sulfur Green 16	SDC.
Leuco Sulfur Green 16	SDC.
Sulfur Green 28	ACY.
Other sulfur green dyes	AUG, SDC.
Sulfur brown dyes:	
Sulfur Brown 3	SDC.
Leuco Sulfur Brown 3	SDC, SDH.
Sulfur Brown 10	DUP, NAC.
Leuco Sulfur Brown 10	SDC.
Solubilized Sulfur Brown 10	AUG.
Leuco Sulfur Brown 12	SDC.
Sulfur Brown 14	ACY.
Leuco Sulfur Brown 14	ACY, SDC.
Sulfur Brown 20	DUP.
Sulfur Brown 21	DUP.
Sulfur Brown 26	ACY, NAC.
Sulfur Brown 30	ACY.
Sulfur Brown 33	ACY.
Sulfur Brown 37	SDC.
Leuco Sulfur Brown 37	SDC.
Sulfur Brown 39	SDC.
Sulfur Brown 43	NAC.
Sulfur Brown 44	NAC
Leuco Sulfur Brown 44	NAC.
Sulfur Brown 45	NAC.
Sulfur Brown 50	NAC.
Sulfur Brown 76	ACY.
Leuco Sulfur Brown 82	ACY.
Other sulfur brown dyes	ACY, AUG, SDC.
Sulfur black dyes:	
*Sulfur Black 1	ACY, DUP, NAC, SDC.
Leuco Sulfur Black 1	ACY, AUG, NAC, SDC.
Sulfur Black 2	ACY, DUP, NAC, SDC.
Leuco Sulfur Black 2	ACY, NAC, SDC.
Sulfur Black 6	GAF.
Leuco Sulfur Black 6	NAC.
Sulfur Black 10	ACY.
Leuco Sulfur Black 10	ACY, NAC.
Sulfur Black 11	SDC.
Leuco Sulfur Black 11	SDC.
Other sulfur black dyes	SDC.
VAT DYES	
*Vat yellow dyes:	
Vat Yellow 1, 12-1/2%	NAC.
*Vat Yellow 2, 8-1/2%	AAP, DUP, GAF, ICI, NAC, TRC, VPC.
Solubilized Vat Yellow 2, 25%	GAF, ICI.
Vat Yellow 3, 12-1/2%	DUP.
*Vat Yellow 4, 12-1/2%	ACY, ATL, CMG, GAF, HST, ICI, NAC, VPC.

TABLE 8B. --*Benzenoid dyes for which U.S. production or sales were reported, identified by manufacturer, 1966*--Continued

Dye	Manufacturers' identification codes (according to list in table 22)
VAT DYES--Continued	
*Vat yellow dyes--Continued	
*Solubilized Vat Yellow 4, 37-1/2%	GAF, HST, ICI.
Vat Yellow 10, 10%	GAF.
Vat Yellow 13, 6-1/2%	ICI.
Vat Yellow 14, 12-1/2%	TRC.
Vat Yellow 15, 11-1/2%	ACY.
Vat Yellow 22, 10%	DUP, GAF.
Vat Yellow 27	VPC.
Vat Yellow 33, 15%	TRC.
Vat Yellow 41, 9%	ACY.
Other vat yellow dyes	MAY, NAC, VPC.
*Vat orange dyes:	
*Vat Orange 1, 20%	CMG, GAF, HST, ICI, NAC, TRC, VPC.
*Solubilized Vat Orange 1, 26%	GAF, HST, ICI.
*Vat Orange 2, 12%	ACY, CMG, DUP, GAF, ICI, NAC, TRC.
*Vat Orange 3, 13-1/2%	CMG, DUP, GAF, HST, NAC.
Vat Orange 4, 6%	ACY, CMG, DUP.
*Vat Orange 5, 10%	AAP, ACY, HST.
*Solubilized Vat Orange 5, 30%	GAF, HST, ICI.
*Vat Orange 7, 11%	GAF, HST, TRC.
*Vat Orange 9, 12%	ACY, CMG, DUP, GAF, ICI, NAC, TRC.
Vat Orange 11, 6%	DUP, NAC.
*Vat Orange 15, 10%	AAP, GAF, ICI, MAY, NAC, TRC, VPC.
Vat Orange 23, 17-1/2%	ACY, DUP, GAF.
Vat Orange 24	DUP.
Other vat orange dyes	SDC.
*Vat red dyes:	
*Vat Red 1, 13%	AAP, ACY, HST, ICI.
Solubilized Vat Red 1, 37%	GAF, HST, ICI.
*Vat Red 10, 18%	GAF, NAC, TRC.
Solubilized Vat Red 10, 31%	GAF.
Vat Red 12, 8-1/2%	DUP.
*Vat Red 13, 11%	DUP, GAF, TRC.
Vat Red 14, 10%	GAF, HST.
*Vat Red 15, 10%	GAF, HST, TRC.
Vat Red 16, 11%	DUP.
Vat Red 17, 10%	GAF.
Vat Red 23	DUP.
Vat Red 29, 18%	GAF, NAC.
*Vat Red 32, 20%	DUP, GAF, NAC.
Vat Red 35, 12-1/2%	NAC, TRC.
Vat Red 41, 20%	HST.
Vat Red 44, 17%	TRC.
Vat Red 52, 10%	DUP.
Vat Red 53, 12%	DUP.
Vat Red 62	DUP.
Other vat red dyes	DUP, GAF, TRC, VPC.
*Vat violet dyes:	
*Vat Violet 1, 11%	ACY, DUP, GAF, ICI, MAY, NAC, TRC.
Solubilized Vat Violet 1, 26%	GAF.
*Vat Violet 2, 20%	ACY, GAF, HST, NAC, VPC.
Vat Violet 3, 15%	GAF, HST, NAC.
*Vat Violet 9, 12%	DUP, GAF, ICI, MAY, NAC, TRC.
*Vat Violet 13, 6-1/4%	DUP, GAF, ICI, NAC, TRC.
Vat Violet 14, 12-1/2%	NAC.
*Vat Violet 17, 12-1/2%	DUP, GAF, NAC.
Other vat violet dyes	MAY.
*Vat blue dyes:	
Vat Blue 1, 20%	NAC.
Solubilized Vat Blue 1, 25%	GAF.
Vat Blue 4, 10%	AAP, ACY, DUP, GAF.
Vat Blue 5, 16%	ATL, DUP, HST, NAC, VPC.
Solubilized Vat Blue 5, 38%	GAF, HST.
*Vat Blue 6, 8-1/3%	ACY, DUP, GAF, ICI, MAY, NAC, TRC.
Solubilized Vat Blue 6, 17-1/2%	GAF, HST, ICI.
Vat Blue 7, 12-1/2%	NAC.
Solubilized Vat Blue 9, 35%	GAF.
Vat Blue 12, 6-1/2%	DUP.
Vat Blue 14, 8-1/3%	DUP, GAF, NAC, TRC.
*Vat Blue 16, 16-1/2%	ACY, DUP, ICI, NAC.

TABLE 8B.--*Benzenoid dyes for which U.S. production or sales were reported, identified by manufacturer, 1966*--Continued

Dye	Manufacturers' identification codes (according to list in table 22)
VAT DYES--Continued	
*Vat blue dyes--Continued	
*Vat Blue 18, 13%	AAP, ACY, DUP, GAF, MAY, NAC, TRC.
*Vat Blue 20, 14%	AAP, ACY, ATL, DUP, GAF, ICI, MAY, NAC, SDC, TRC.
Vat Blue 26, 24%	GAF.
Vat Blue 29	GAF.
Vat Blue 35, 20%	HST.
Vat Blue 39, 12%	GAF.
Vat Blue 42	SDC.
Vat Blue 43	SDC.
Vat Blue 53, 20-1/2%	GAF.
Vat Blue 60	DUP.
Other vat blue dyes	MAY, SDC, VPC, x.
*Vat green dyes:	
*Vat Green 1, 6%	AAP, ACY, DUP, GAF, ICI, MAY.
Solubilized Vat Green 1, 12-1/2%	GAF, HST, ICI.
*Vat Green 3, 10%	AAP, ACY, ATL, DUP, GAF, ICI, MAY, NAC, TRC.
*Solubilized Vat Green 3, 26%	GAF, HST, ICI.
*Vat Green 8, 8-1/2%	ATL, DUP, GAF, ICI, NAC.
*Vat Green 9, 12-1/2%	ACY, ATL, DUP, GAF, MAY, NAC, SDC, TRC.
Vat Green 15, 17%	NAC.
Vat Green 18, 8%	DUP.
Vat Green 20, 6%	DUP.
Other vat green dyes	MAY, SDC.
*Vat brown dyes:	
*Vat Brown 1, 11%	ACY, DUP, GAF, ICI, MAY, NAC, TRC.
Solubilized Vat Brown 1, 17%	GAF, ICI.
*Vat Brown 3, 11%	AAP, ACY, DUP, GAF, ICI, MAY, NAC, TRC, VPC.
*Vat Brown 5, 13%	AAP, ACY, GAF, HST, VPC.
Vat Brown 11, 12%	MAY, TRC.
Vat Brown 12, 12-1/2%	DUP, NAC.
Vat Brown 13, 17%	MAY.
Vat Brown 20, 10-1/2%	DUP, GAF, NAC.
Vat Brown 25, 11-1/2%	GAF.
Vat Brown 28, 22%	ICI.
Vat Brown 29, 13%	ACY.
Vat Brown 31, 28%	AAP.
Vat Brown 38, 20%	ICI.
Vat Brown 40, 14%	DUP.
Vat Brown 53	GAF.
Vat Brown 57, 15%	GAF, HST, TRC.
Other vat brown dyes	DUP, NAC, SDC, VPC.
*Vat black dyes:	
Vat Black 1	GAF.
Solubilized Vat Black 1, 27-1/2%	GAF, HST, ICI.
*Vat Black 9, 16%	ATL, GAF, MAY, NAC, TRC.
Vat Black 11, 17-1/2%	ACY.
Vat Black 13, 14%	DUP, NAC.
Vat Black 14, 11-1/2%	DUP.
Vat Black 15	AAP.
Vat Black 18, 15-1/2%	GAF, NAC.
Vat Black 21, 18-1/2%	ACY.
Vat Black 22, 19%	ACY, TRC.
*Vat Black 25, 12-1/2%	AAP, ACY, DUP, GAF, ICI, MAY, NAC, TRC.
*Vat Black 27, 12-1/2%	AAP, ACY, DUP, GAF, ICI, MAY, NAC, TRC, VPC.
Vat Black 34, 16%	ICI.
Vat Black 37	GAF.
Vat Black 38, 20%	GAF.
Vat Black 52, 18-1/2%	ACY.
Other vat black dyes	DUP, GAF, SDC, TRC.
All other dyes	ACY, PAT, SDC.

Pigments

TABLE 11B.--*Benzenoid pigments for which U.S. production or sales were reported, identified by manufacturer, 1966*

[Benzenoid pigments for which separate statistics are given in table 11A are marked below with an asterisk (*); products not so marked do not appear in table 11A because the reported data are accepted in confidence and may not be published. Manufacturers' identification codes shown below are taken from table 22. An x signifies that the manufacturer did not consent to his identification with the designated product]

Pigment	Manufacturers' identification codes (according to list in table 22)
TONERS	
*Yellow toners:	
*Hansa yellows:	
*Pigment Yellow 1, C.I. 11 680	ACY, AMS, DUP, FCL, GAF, HSC, HSH, ICI, IMP, KON, NAC, PPG, S, SDH, SNA, SW.
*Pigment Yellow 3, C.I. 11 710	HSC, HSH, HST, IMP, KCW, KON, NAC, PPG, S, SW.
Pigment Yellow 4, C.I. 11 665	NAC, SNA.
Pigment Yellow 5, C.I. 11 660	IMP.
Pigment Yellow 6, C.I. 11 670	IMP.
Pigment Yellow 9, C.I. 11 720	SNA.
Pigment Yellow 49, C.I. 11 765	ICI.
Pigment Yellow 65, C.I. 11 740	SW.
*Pigment Yellow 73	NAC, SNA, SW, x.
*Pigment Yellow 74, C.I. 11 741	DUP, SDH, SW.
All other Hansa yellows	DUP, HSC, KCW.
*Benzidine yellow:	
*Pigment Yellow 12, C.I. 21 090	ACY, AMS, CIK, DUP, FCL, GAF, HSC, HSH, ICC, IMP, KON, LVY, MRX, NAC, S, SDH, SNA, SW.
*Pigment Yellow 13, C.I. 21 100	BUC, FCL, GAF, HSC, HSH, HST, ICC, IMP, ROM, SDH, SNA, SW.
*Pigment Yellow 14, C.I. 21 095	ACY, AMS, BUC, CIK, CPC, DUP, FCL, GAF, HSC, HSH, HST, ICC, IMP, KON, MRX, NAC, ROM, S, SDH, SNA, SW, x.
*Pigment Yellow 17, C.I. 21 105	ACY, BUC, DUP, FCL, HSH, HSC, HST, ICC, IMP, SDH, SNA, SW.
Pigment Yellow 83	HST, NAC.
All other benzidine yellows	AMS, HSH, ICC, IMP, ROM, S, SW.
Pigment Yellow 10, C.I. 12 710	SW.
Pigment Yellow 18, C.I. 49 005	IMP.
Pigment Yellow 60, C.I. 12 705	SW.
(Basic Yellow 2), C.I. 41,000 fugitive	MRX.
(Vat Yellow 1), C.I. 70 600	NAC, TRC.
(Vat Yellow 20), C.I. 68 420	NAC.
All other	ACY, GAF, ICC, IMP, S, SW.
*Orange toners:	
Pigment Orange 1, C.I. 11 725	KCW, NAC.
*Pigment Orange 2, C.I. 12 060	FCL, IMP, SDH, SW.
*Pigment Orange 5, C.I. 12 075	ACY, HSC, IMP, SNA, SW.
*Pigment Orange 13, C.I. 21 110	ACY, AMS, HSC, IMP, KON, NAC, SNA, SW.
Pigment Orange 15, C.I. 21 130	GAF, NAC.
*Pigment Orange 16, C.I. 21 160	BUC, DUP, FCL, GAF, HSH, HST, ICC, IMP, NAC, ROM, SDH, SNA, SW.
Pigment Orange 30	SNA.
(Vat Orange 1), C.I. 59 105	HST.
(Vat Orange 2), C.I. 59 705	GAF.
(Vat Orange 3), C.I. 59 300	NAC, TRC.
(Vat Orange 4), C.I. 59 710	NAC.
*(Vat Orange 7), C.I. 71 105	GAF, HST, NAC.
All other	BUC, HSH, ICC, KON, ROM, SDH.
*Red toners:	
*Naphthol reds:	
*Pigment Red 2, C.I. 12 310	GAF, HSC, IMP, KCW, KON, MRX, NAC, SDH, SW.
*Pigment Red 5, C.I. 12 490	DUP, GAF, HSH, HST, ICC, ICI, IMP, NAC, ROM, S, SDH, SW.
Pigment Red 7, C.I. 12 420	ICI, S.
Pigment Red 9, C.I. 12 460	IMP.
Pigment Red 10, C.I. 12 440	KCW.
*Pigment Red 13, C.I. 12 395	IMP, KCW, NAC, SW.
Pigment Red 14, C.I. 12 380	DUP.
Pigment Red 15, C.I. 12 465	DUP.
*Pigment Red 17, C.I. 12 390	ACY, BLN, FCL, ICC, IMP, S, SNA, UHL.
*Pigment Red 18, C.I. 12 350	IMP, NAC, SW.

See note at end of table for definition of abbreviations.

TABLE 11B.--*Benzenoid pigments for which U.S. production or sales were reported, identified by manufacturer, 1966*--Continued

Pigment	Manufacturers' identification codes (according to list in table 22)
TONERS--Continued	
*Red toners--Continued	
*Naphthol reds--Continued	
Pigment Red 19, C.I. 12 400	NAC.
*Pigment Red 22, C.I. 12 315	ACY, DUP, FCL, IMP, MRX, NAC, SNA, SW.
*Pigment Red 23, C.I. 12 355	ACY, BUC, DUP, FCL, ICC, IMP, NAC, ROM, SDH, SNA, SW.
Pigment Red 31, C.I. 12 360	SNA, SW.
All other naphthol reds	ICC, KCW, ROM, SDH, SW, x.
*Pigment Red 1, C.I. 12 070, dark	ACY, AMS, FCL, HSC, HSH, IMP, KON, LVY, NAC, SDH, SW.
*Pigment Red 1, C.I. 12 070, light	ACY, HSC, HSH, IMP, KON, PPG, SDH, SW.
*Pigment Red 3, C.I. 12 120	ACY, BLN, CIK, DUP, FCL, HSC, HSH, IMP, KCW, KON, NAC, PPG, SDH, SNA, SW, UHL.
*Pigment Red 4, C.I. 12 085	ACY, AMS, FCL, HSC, HSH, IMP, KON, MRX, SDH, SNA, SW, UHL.
*Pigment Red 6, C.I. 12 090	DUP, HSC, HSH, KCW, SW.
*Pigment Red 38, C.I. 21 120	DUP, GAF, ICC, NAC, SNA, SW.
Pigment Red 41, C.I. 21 200	GAF, NAC.
*Pigment Red 48, C.I. 15 865	ACY, AMS, BLN, DUP, FCL, GAF, HSC, HSH, IMP, KON, LVY, MRX, NAC, S, SNA, SW.
Pigment Red 49, C.I. 15 630:	
*Barium toner	ACY, AMS, CIK, FCL, HSC, IMP, KON, LVY, SDH, SNA, SW, UHL.
*Calcium toner	ACY, AMS, FCL, HSC, IMP, LVY, PPG, SDH, SNA, SW.
*Sodium toner	ACY, AMS, FCL, HSC, KON, SDH, SW.
*Pigment Red 52, C.I. 15 860	AMS, FCL, HSC, HSH, IMP, SNA, SW.
*Pigment Red 53, C.I. 15 585, barium toner	ACY, AMS, CIK, FCL, HSC, IMP, KON, LVY, MGR, MRX, SDH, SNA, SW.
Pigment Red 53, C.I. 15 585, sodium toner	KON.
*Pigment Red 54, C.I. 14 830, calcium toner	HSH, IMP, MRX, SDH.
Pigment Red 55, C.I. 15 820	DUP, NAC.
*Pigment Red 57, C.I. 15 850, calcium toner	AMS, BLN, CIK, DUP, FCL, HSC, HSH, IMP, KON, LVY, MGR, NAC, S, SDH, SNA, SW.
Pigment Red 58, C.I. 15 825	DUP, GAF, IMP.
*Pigment Red 63, C.I. 15 880	FCL, HSH, IMP, KON, NAC, SNA, SW.
Pigment Red 64, C.I. 15 800	NAC.
Pigment Red 77, C.I. 15 826	SW.
Pigment Red 79, PMA	GAF.
Pigment Red 81, C.I. 45 160, fugitive	BLN, KCW.
*Pigment Red 81, C.I. 45 160, PMA	BLN, CPC, DUP, FCL, GAF, IMP, KON, LVR, LVY, MGR, MRX, NYC, S, SNA.
*Pigment Red 81, C.I. 45 160, PTA	ACY, AMS, BLN, DUP, FCL, GAF, HSC, IMP, KCW, KON, MGR, MRX, S, SDH, SNA.
Pigment Red 87, C.I. 73 310	NAC.
Pigment Red 88	NAC, SDH.
*Pigment Red 90, C.I. 45 380	AMS, FCL, ICC, IMP, LVR, LVY, NYC, SDH, SNA.
Pigment Red 117, C.I. 15 603	SW.
Pigment Red 122	NAC.
Pigment Red 123	NAC.
(Vat Red 1), C.I. 73 360	HST.
(Vat Red 10), C.I. 67 000	GAF, NAC.
(Vat Red 23), C.I. 71 130	NAC.
(Vat Red 29), C.I. 71 140	GAF, HSC, NAC.
All other	ACY, DUP, GAF, HAM, HSC, SW, TRC.
*Violet toners:	
Pigment Violet 1, C.I. 45 170, fugitive	BLN, UHL.
*Pigment Violet 1, C.I. 45 170, PMA	GAF, IMP, LVR, MGR, MRX.
*Pigment Violet 1, C.I. 45 170, PTA	ACY, AMS, DUP, FCL, GAF, HSC, IMP, KON, MGR, MRX, S, SNA.
*Pigment Violet 3, C.I. 42 535, fugitive	ACY, AMS, BLN, HAM, HSC, IMP, KON, LVR, LVY, MGR, UHL.
*Pigment Violet 3, C.I. 42 535, PMA	AMS, BLN, CIK, DUP, EAK, GAF, HSC, IMP, KON, LVY, MGR, MRX, NYC, PPG, SDH, SNA, SW, UHL.
*Pigment Violet 3, C.I. 42 535, PTA	ACY, AMS, BLN, GAF, HSC, IMP, KON, MRX, SNA, SW.
Pigment Violet 19, C.I. 46 500	DUP, NAC.
*Pigment Violet 23	ACY, GAF, HST, NAC, TRC.
(Vat Violet 1), C.I. 60 010	DUP.
(Vat Violet 2), C.I. 73 385	NAC.
(Vat Violet 3), C.I. 73 395	NAC.
All other	BUC, ICC, IMP, ROM.

See note at end of table for definition of abbreviations.

TABLE 11B.--*Benzenoid pigments for which U.S. production or sales were reported, identified by manufacturer, 1966*--Continued

Pigment	Manufacturers' identification codes (according to list in table 22)
TONERS--Continued	
*Blue toners:	
*Pigment Blue 1, C.I. 42 595, PMA	BLN, DUP, EAK, GAF, HSC, IMP, KON, LVR, LVY, MGR, MRX, NYC, SDH, SNA, SW, UHL.
*Pigment Blue 1, C.I. 42 595, PTA	AMS, GAF, HAM, IMP, KON, MGR, NAC, SNA, SW.
*Pigment Blue 2, C.I. 44 045, fugitive	BLN.
*Pigment Blue 2, C.I. 44 045, PMA	GAF, IMP, 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	MGR.
Pigment Blue 5, C.I. 42 600	GAF.
Pigment Blue 9, C.I. 42 025, PMA	LVR, MRX, NYC.
*Pigment Blue 9, C.I. 42 025, PTA	BLN, GAF, IMP, MRX, SDH.
Pigment Blue 10, C.I. 44 040, PMA	IMP, SDH.
Pigment Blue 10, C.I. 44 040, PTA	IMP.
*Pigment Blue 14, C.I. 42 600, PMA	DUP, GAF, IMP, NYC.
Pigment Blue 14, C.I. 42 600, PTA	DUP, NYC.
*Pigment Blue 15, C.I. 74 160, alpha form	ACY, DUP, FCL, GAF, HSC, ICC, ICI, IMP, NAC, SNA, SW, TMS, TRC.
*Pigment Blue 15, C.I. 74 160, beta form	ACY, AMS, DUP, FCL, HSC, ICC, IMP, LVY, NAC, SNA, SW, TMS.
*Pigment Blue 19, C.I. 42 750A	ACY, AMS, HSC, NYC, SW.
*Pigment Blue 22, C.I. 69 810	DUP, IMP, NAC, TRC.
*Pigment Blue 25, C.I. 21 180	DUP, GAF, ICC, NAC, S.
Pigment Blue 27, C.I. 77 510	GAF.
(Basic Blue 7), C.I. 42 595, PTA	DUP.
(Vat Blue 4), C.I. 69 800	GAF.
(Vat Blue 6), C.I. 69 825	ICI, TRC.
All other	GAF, IMP, SDH.
*Green toners:	
*Pigment Green 1, C.I. 42 040, PMA	BLN, GAF, IMP, MRX, NYC, UHL.
*Pigment Green 1, C.I. 42 040, PTA	BLN, IMP, MGR, S, SDH.
*Pigment Green 2, C.I. 42 040 and 49 005, PMA	GAF, IMP, KON, LVY, MGR, MRX, SDH, UHL.
*Pigment Green 2, C.I. 42 040 and 49 005, PTA	ACY, AMS, DUP, GAF, IMP, KON, LVY, MRX, S, SDH, UHL.
Pigment Green 4, C.I. 42 000, fugitive	BLN, GAF.
*Pigment Green 4, C.I. 42 000, PMA	BLN, GAF, MGR.
*Pigment Green 4, C.I. 42 000, PTA	ACY, AMS, HAM, IMP, KON, MGR.
*Pigment Green 7, C.I. 74 260	ACY, CIK, DUP, FCL, GAF, HSC, ICC, IMP, NAC, SNA, SW, TMS, TRC.
*Pigment Green 8, C.I. 10 006	DUP, HSH, IMP, KCW, SW.
Pigment Green 10, C.I. 12 775	DUP, HSC, IMP, SW.
*Pigment Green 36, C.I. 74 265	ACY, GAF, NAC, SNA.
Pigment Green 38	NAC.
*Brown toners:	
Pigment Brown 1, C.I. 12 480	ICI.
Pigment Brown 2, C.I. 12 071	HSH, SDH.
*Pigment Brown 3, C.I. 21 010 PMA	BLN, KCW, KON.
*Pigment Brown 5, C.I. 15 800	BUC, HSH, ICC, NAC, ROM, SNA.
(Vat Brown 3), C.I. 69 015	GAF, NAC, TRC.
All other	GAF, ICC, SDH, SW.
*Black toners:	
Pigment Black 1, C.I. 50 440	SNA.
Pigment Black 7, C.I. 77 266	GAF.
All other	BLN, DUP, GAF, UHL.
LAKES	
*Yellow lakes:	
(Acid yellow 1), C.I. 10 316	IMP.
(Acid Yellow 3), C.I. 47 005	IMP.
(Acid Yellow 23), C.I. 19 140	KON, MGR, MRX.
Orange lakes:	
Pigment Orange 17, C.I. 15 510	CIK, CPC, IMP, KCW, MGR.
All other	HAM.
Red lakes:	
*Pigment Red 60, C.I. 16 105	BLN, HSC, HSH, KON, MRX, SNA, SW.
*Pigment Red 83, C.I. 58 000	HSH, IMP, KON, MRX, PPG, SW, UHL.
(Acid Red 17), C.I. 16 180	IMP, KCW.

See note at end of table for definition of abbreviations.

TABLE 11B.--*Benzenoid pigments for which U.S. production or sales were reported, identified by manufacturer, 1966*--Continued

Pigment	Manufacturers' identification codes (according to list in table 22)
LAKES--Continued	
Red lakes--Continued	
(Acid Red 25), C.I. 16 050	KON.
*(Acid Red 26), C.I. 16 150	CPC, HAM, IMP, KCW.
(Natural Red 4), C.I. 75 470	KON.
(Natural Red 24), C.I. 75 280	IMP.
All other	HAM, IMP.
*Violet lakes:	
*Pigment Violet 5, C.I. 58 055	BLN, DUP, HSH, IMP, KON, NAC.
Pigment Violet 20, C.I. 58 225	SW.
(Acid Violet 17), C.I. 42 650	BLN.
All other	HAM, HSC.
Blue lakes:	
Pigment Blue 17, C.I. 74 180	BLN, CPC, KCW.
*Pigment Blue 24, C.I. 42 090	AMS, BLN, KON, LVY, SDH.
(Acid Blue 93), C.I. 42 780	LVR.
(Acid Blue 104), C.I. 42 735	CPC, KCW.
Green lakes: (Acid Green 3), C.I. 42 085	BLN, CPC.
Brown lakes	HAM, KON.
Black lakes:	
*(Natural Black 3), C.I. 75 291	CPC, KON, NYC.
All other	HAM.

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

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

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

Medicinal Chemicals

TABLE 13B.--*Medicinal chemicals for which U.S. production or sales were reported, identified by manufacturer, 1966*

[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 22. 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 22)
*Antibiotics:	
*For medicinal use:	
*Antifungal and antitubercular antibiotics:	
Antifungal antibiotics:	
Amphotericin B	OMS.
Candicidin	PEN.
Nystatin	OMS.
Antitubercular antibiotics:	
Cycloserine	COM.
Dihydrostreptomycin	MRK, PFZ.
Streptomycin	LIL, MRK, OMS, PFZ.
Viomycin	PFZ.
*Bacitracin	COM, PEN, PFZ, PMP.
*Penicillins:	
Ampicillin	BRS, WYT.
Cloxacillin, sodium	BRS.
Dicloxacillin, sodium	BRS.
Hetacillin	BRS.
Methicillin, sodium	BRS.
Nafcillin, sodium	WYT.
Oxacillin, sodium	BRS.
Penicillin G, benzathine	PFZ, WYT.
*Penicillin G, potassium	LIL, MRK, OMS, PFZ, WYT.
*Penicillin G, procaine	LIL, MRK, OMS, PFZ, WYT.
Penicillin G, sodium	OMS.
Penicillin O, sodium	UPJ.
Phenethicillin, potassium	BRS, WYT.
Phenoxymethylpenicillin (Penicillin V)	LIL.
Phenoxymethylpenicillin, benzathine	WYT.
Phenoxymethylpenicillin, hydrabamine	ABB.
Phenoxymethylpenicillin, potassium	ABB, LIL.
*Other antibiotics for medicinal use:	
Cephaloridine	LIL.
Cephalothin	LIL.
Chloramphenicol	PD.
Erythromycin	ABB, LIL.
Fumagillin	ABB.
Gentamycin	SCH.
Gramicidin	BAX, PEN.
Kanamycin	BRS.
Lincomycin	x.
Neomycin	OMS, PEN, PFZ, UPJ.
Novobiocin	MRK, UPJ.
Oleandomycin	PFZ.
Paromomycin	MRK.
Polymyxin B	PFZ.
Tetracyclines:	
Chlortetracycline	ACY.
Demethylchlortetracycline	ACY.
Methacycline	PFZ.
Oxytetracycline	PFZ.
Tetracycline	ACY, BRS, PFZ, RLS.
Thiostrepton	OMS.
Triacetyloleandomycin	PFZ.
Tyrothricin	BAX, PEN.
Vancomycin	LIL.
*For other uses:	
*Bacitracin	COM, DLI, GPR, PEN, PMP.
Chlortetracycline	ACY.
Cycloheximide	UPJ.
Hygromycin B	LIL.
Neomycin	PEN, PFZ.
Novobiocin	UPJ.
Oxytetracycline	PFZ.

TABLE 13B.--*Medicinal chemicals for which U.S. production or sales were reported, identified by manufacturer, 1966*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
*Antibiotics--Continued	
*For other uses--Continued	
*Penicillin G salts:	
Penicillin G, benzathine	WYT.
Penicillin G, procaine	LIL, MRK, OMS, PFZ, WYT.
Streptomycin	LIL, MRK, PFZ.
Tylosin	LIL.
*Anticoagulants:	
Ammonium heparin	WIL.
Anisindione	SCH.
Bishydroxycoumarin	ABB, FIN.
Phenindione	CTN, GAN.
Potassium heparin	WIL.
*Sodium heparin	ABB, RIK, WIL.
Sodium warfarin	EN.
*Antihistamines:	
*Antinauseants:	
Cyclizine hydrochloride	BUR.
Dimenhydrinate	SRL.
Meclizine hydrochloride	PFZ.
Trimethobenzamide hydrochloride	HOF.
Bromodiphenhydramine hydrochloride	PD.
Brompheniramine maleate	SCH.
Carbinoxamine	SCH.
Chlorcyclizine hydrochloride	ABB, BUR.
Chlorothen citrate	ACY.
*Chlorpheniramine maleate	HEX, LEM, SCH, SK, x.
Cyproheptadine hydrochloride	MRK.
Dexbrompheniramine maleate	SCH.
Dexchlorpheniramine maleate	SCH.
Dimethindene maleate	CBP.
Diphenhydramine hydrochloride	ARA, GAN, PD.
Doxylamine succinate	BKC.
Methapyrilene fumarate	ABB.
Methapyrilene hydrochloride	ABB.
Methapyrilene hydroxybenzoylbenzoate	LIL.
Phenindamine tartrate	HOF.
*Pheniramine maleate	HEX, LEM, SCH, x.
Phenyltoloxamine citrate	BRS.
Pyrilamine maleate	HEX, MRK, RSA.
Pyrrobutamine phosphate	LIL.
Thenyldiamine hydrochloride	SDW.
Thonzylamine hydrochloride	NEP.
Tripelennamine	CBP.
Tripelennamine citrate	CBP.
Tripelennamine hydrochloride	CBP.
Triprolidine hydrochloride	BUR.
*Anti-infective agents (except antibiotics):	
*Arsenic, bismuth, and mercury compounds:	
Arsenic and bismuth compounds:	
Arsanilic acid[1]	SAL, WHL.
Bismuth dipropylacetate	x.
Bismuth sodium triglycollamate	BPC.
Bismuth subsalicylate	MAL, NOR, PEN.
Carbarsone	LIL, PYL, WHL.
Glycobiarsol	PYL, SDW.
Nitarsone	SAL.
Roxarsone	SAL.
Sodium arsanilate[1]	PYL, SAL, WHL.
Mercury compounds:	
o-Hydroxyphenylmercuric chloride	MRK.
Merbromin	HYN.
Mercuric salicylate	MAL.
Nitromersol	ABB.
Phenylmercuric acetate	WRC.
Phenylmercuric benzoate	MRK, WRC.
Phenylmercuric borate	MRK, WRC.
Phenylmercuric nitrate	MRK, WRC.
Thimerosal	LIL, PYL, SEL.

See footnotes at end of table.

TABLE 13B.--*Medicinal chemicals for which U.S. production or sales were reported, identified by manufacturer, 1966*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
*Anti-infective agents (except antibiotics)--Continued	
*Caprylates and undecylenates:	
Calcium undecylenate	WTL.
Sodium caprylate	LEM, TNC.
Sodium undecylenate	BAC.
Undecylenic acid	BAC.
Zinc undecylenate	BAC, LEM, TNC, WTL.
*p-Hydroxybenzoic acid esters:	
Benzylparaben	LEM.
Butylparaben[1]	HN, ICO.
Ethylparaben[1]	HN.
*Methylparaben[1]	HN, ICO, LEM, PYL, WSN.
Propylparaben[1]	HN, ICO, LEM, WSN.
*5-Nitrofurane, -imidazole, and -thiazole derivatives:	
Acinitrazole	ACY.
2-Amino-5-nitrothiazole	ACY.
Furazolidone	NOR.
Metronidazole	RDA.
Nihydrazone	NOR.
Nithiazide	MRK.
Nitrofurantoin	NOR.
Nitrofurazone	NOR.
*Phenolic antiseptics and disinfectants:	
Betanaphthol[1]	ACY, FIN.
Bithionol	SDH.
Chlorothymol	OPC.
Resorcinol[1]	LEM.
Resorcinol monoacetate[1]	FIN, KPT.
Thymol	GIV.
Thymol iodide	MAL.
*Piperazine base and salts:	
*Piperazine[1]	DOW, FLM, JCC, UCC.
Piperazine adipate	JCC, PYL.
Piperazine calcium edetate	EN.
Piperazine citrate	BUR, JCC.
Piperazine dihydrochloride	DOW, FLM, JCC, WHL.
Piperazine hexahydrate	JCC, RDA, SEL.
Piperazine hydrochloride	DOW, JCC.
Piperazine phosphate	BUR, JCC, PYL.
Piperazine sulfate	JCC.
Piperazine tartrate	PYL.
*Quinoline derivatives:	
Amodiaquin	PD.
Amodiaquin hydrochloride	PD.
Chloroquine phosphate	SDW.
*Diiodohydroxyquin	CBP, LEM, PYL, RSA, SRL.
Hydroxychloroquine sulfate	SDW.
8-Hydroxy-5-quinolinesulfonic acid	MRK.
Iodochlorhydroxyquin	CBP, PYL.
Oxyquinoline	GAM, LEM, MRK.
*Oxyquinoline benzoate	GAM, LEM, MRK.
Oxyquinoline citrate	GAM.
Oxyquinoline potassium sulfate	LEM.
*Oxyquinoline sulfate	GAM, LEM, MRK, PYL.
Primaquine phosphate	PD, SDW.
*Sulfonamides:	
Acetyl sulfamethoxypyridazine	ACY.
Acetyl sulfisoxazole	HOF.
Azosulfamide	SDW.
Dinsed	SAL.
Mafenide acetate	SDW.
Mafenide hydrochloride	SDW.
Para-nitrosulfathiazole	SDW.
Phthalylsulfacetamide	LEM.
Phthalylsulfathiazole	LEM, MRK, PYL.
Succinylsulfathiazole	LEM, MRK, PYL
Sulfabenzamide	ACY.
Sulfabenzamide, sodium	ACY.
Sulfabromomethazine, sodium	MRK.
Sulfacetamide	LEM.

See footnotes at end of table.

TABLE 13B.--*Medicinal chemicals for which U.S. production or sales were reported, identified by manufacturer, 1966*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
*Anti-infective agents (except antibiotics)--Continued	
*Sulfonamides--Continued	
Sulfacetamide, sodium	LEM.
Sulfachloropyrazine, sodium	ACY.
Sulfadiazine	ACY, LEM.
Sulfadiazine, sodium	ACY.
Sulfadimethoxine	HOF.
Sulfaethidole	ACY.
Sulfaguanidine	ACY, LEM.
Sulfamerazine	ACY, LEM.
Sulfamerazine, sodium	ACY.
Sulfamethazine	ACY, LEM.
Sulfamethizole	ACY.
Sulfamethoxazole	HOF.
Sulfamethoxypyridazine	ACY.
Sulfanilamide	LEM, MRK.
Sulfanitran	SAL.
Sulfapyridine	ACY, MRK.
Sulfapyridine, sodium	ACY.
Sulfaquinoxaline	MRK.
Sulfathiazole	ACY, LEM, MRK.
Sulfathiazole, sodium	ACY, MRK.
Sulfisoxazole	HOF.
*Other anti-infective agents:	
*Anthelmintic, antifungal, antiprotozoan, and antiviral agents:	
Anthelmintic agents:	
Cadium anthranilate	MAL.
Diethylcarbamazine citrate	ACY.
Gentian violet	NAC, SDH.
Hexylresorcinol	HEX, MRK.
Phenothiazine	CLV.
Pyrvinium pamoate	x.
Thiabendazole	MRK.
Antifungal agents:	
Benzoic acid[1]	MON, PFZ.
Diamthazole hydrochloride	HOF.
Fuchsin, basic	NAC.
Salicylanilide[2]	LEM.
Antiprotozoan agents:	
Aklomide	SAL.
Amprolium	MRK.
Chlorbetamide	SDW.
Nitrophenide	ACY.
Pyrimethamine	BUR.
Antiviral agent: Amantadine hydrochloride	x.
*Urinary antiseptics:	
Ammonium benzoate	PEN.
Ammonium mandelate	RSA.
Calcium mandelate	MAL.
Ethoxazene hydrochloride	KON.
Mandelic acid	MAL.
Methenamine	HN.
Methenamine hippurate	RIK.
Methenamine mandelate	ARN, LEM, NEP, PYL, TNC.
Methylene blue	ACY, NAC.
Phenazopyridine hydrochloride	HOF, KON, NEP.
*All other:	
Acriflavine	NAC.
Aminacrine	SDW.
Aminacrine hydrochloride	SDW.
Antileprotic and antitubercular agents:	
Aminosalicylic acid	MLS.
Calcium aminosalicylate	MLS.
Dapsone	SDW.
Isoniazid	RIL.
Potassium aminosalicylate	MLS.
Pyrazinamide	MRK.
Sodium aminosalicylate	MLS.
Sodium sulfoxone	ABB.

See footnotes at end of table.

TABLE 13B.--*Medicinal chemicals for which U.S. production or sales were reported, identified by manufacturer, 1966*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
*Anti-infective agents (except antibiotics)--Continued	
*Other anti-infective agents--Continued	
*All other--Continued	
Benzalkonium chloride	SDH.
Bromoform	DOW.
Camphor, monobromated	MAL, PEN.
Cetalkonium chloride	FIN, SDW.
Cetylpyridinium chloride	FIN, HEX, NEP.
Chloramine T	MON.
Chlorobutanol	BPC, PD.
Iodoform[2]	MAL, PEN.
Magnesium salicylate	MAL.
Nalidixic acid	SDH.
Nitromide	SAL.
Providone - iodine complex	GAF.
*Antineoplastic agents and local anesthetics:	
Antineoplastic agents:	
Mercaptopurine	BUR.
Urethane	FMP.
Vinblastine sulfate	LIL.
Vincristine sulfate	LIL.
Local anesthetics:	
Butacaine sulfate	ABB.
Butamben picrate	ABB.
Butyl aminobenzoate (Butamben)	ABB.
Dibucaine	CBP.
Dibucaine hydrochloride	CBP.
Ethyl aminobenzoate (Benzocaine)	ABB, LEM.
Isobutyl aminobenzoate	ICO.
*Lidocaine	AST, LEM, SDW.
Oxethazaine	WYT.
Phenacaine hydrochloride	GAN, SDW.
Piperocaine hydrochloride	LIL.
Pramoxine hydrochloride	ABB.
Procaine	ABB.
Procaine hydrochloride	ABB, LEM, PFZ.
Proparacaine hydrochloride	OMS.
Propyl aminobenzoate	ICO.
Pyrrocaine hydrochloride	EN.
Tetracaine	SDW.
Tetracaine hydrochloride	ICO, RSA, SDW.
*Autonomic drugs:	
Ganglionic blocking agent: Hexemethonium chloride	RSA.
Parasympatholytic (anticholinergic) agents:	
*Quaternary ammonium compounds (except tropane derivatives):	
Ambutonium bromide	ICO.
Diphemanil methylsulfate	SCH.
Hexocyclium methylsulfate	ABB.
Isopropamide iodide	SK.
Mepenzolate bromide	LKL.
Methantheline bromide	SRL.
Pipenzolate bromide	LKL.
Pralidoxime chloride	CBP, NEP.
Propantheline bromide	SRL.
Thihexinol methylbromide	SCH.
Tridihexethyl iodide	ACY.
Tertiary amines (except tropane derivatives):	
Adiphenine hydrochloride	CBP.
Aminopentamide sulfate	ICO.
Caramiphen edisylate	SK.
Dicyclomine hydrochloride	BKC.
Ethopropazine	NEP.
Orphenadrine citrate	RIK.
Orphenadrine hydrochloride	RIK.
Oxyphencyclimine hydrochloride	PFZ.
Piperidolate hydrochloride	LKL.
Thiphenamil hydrochloride	BJL, x.
Trihexyphenidyl hydrochloride	ACY, SDW.

See footnotes at end of table.

TABLE 13B.--*Medicinal chemicals for which U.S. production or sales were reported, identified by manufacturer, 1966*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
*Autonomic drugs--Continued	
Parasympatholytic (anticholinergic) agents--Continued	
Tropane derivatives:	
Anisotropine methylbromide	x.
Benztropine mesylate	x.
Homatropine	CTN, HEX.
Homatropine hydrobromide	CTN.
*Homatropine methylbromide	CTN, EN, HEX.
Parasympathomimetic (cholinergic) agents:	
Acetylcholine chloride	MRK, RSA.
Methacholine chloride	MRK, RSA.
Neostigmine bromide	HEX.
Physostigmine salicylate	PEN.
Pyridostigmine bromide	HOF.
Sympatholytic (antiadrenergic) agent: Ergonovine maleate	LIL.
*Sympathomimetic (adrenergic) agents:	
Adrenalone	SDW.
Cinnamedrine (Cinnamylephedrine)	SDW.
Cyclopentamine hydrochloride	LIL.
Epinephrine bitartrate (levo)	SDW.
Epinephrine hydrochloride (racemic)	VB.
*Isoproterenol salts:	
Isoproterenol hydrochloride	GAN, SDW.
Isoproterenol sulfate	ABB, GAN.
Levarterenol bitartrate	SDW.
dl-Metanephrine hydrochloride	SDW.
Metaraminol bitartrate	SDW.
Methoxyphenamine hydrochloride	x.
Naphazoline hydrochloride	CBP.
Nordefrin hydrochloride	SDW.
Nylidrin hydrochloride	x.
*Phenylephrine	CTN, GAN, SDW.
Phenylephrine bitartrate	GAN.
Phenylephrine hydrochloride	CTN, GAN, HEX, SDW.
*Phenylpropanolamine hydrochloride	BKL, GAN, ICO, NEP, ORT.
Propylhexedrine	HEX, SK.
Protokylol hydrochloride	LKL.
Pseudoephedrine hydrochloride	BUR, GAN.
Pseudoephedrine sulfate	GAN.
Tetrahydrozoline hydrochloride	PFZ.
*Cardiovascular agents:	
*Cardiac drugs:	
Calcium camphorsulfonate	FIN, PYL.
Digitoxin	BUR.
Procainamide hydrochloride	LEM, OMS.
Quinidine gluconate	HEX.
Quinidine sulfate	HEX.
*Rauwolfia and veratrum alkaloids:	
Alkavervir	PEN, RIK.
Alseroxylon	RIK.
Deserpidine	PEN.
Reserpine	PEN.
Syrosingopine	CBP.
*Other cardiovascular agents:	
Antihypertensive agents (except rauwolfia and veratrum alkaloids):	
Hydralazine hydrochloride	CBP.
Methyldopa	MRK.
Pargyline hydrochloride	ABB.
Bioflavonoids:	
Hesperidin	SKG.
Hesperidin methyl chalcone	SKG.
Lemon bioflavonoid	SKG.
Naringin	SKG.
Rutin	PEN.
Vasodilators:	
Dioxyline phosphate	LIL.
Ethyl nitrite	MAL.
Glyceryl trinitrate	APD.
Isosorbide dinitrate	APD.
Mannitol hexanitrate	APD.

TABLE 13B.--*Medicinal chemicals for which U.S. production or sales were reported, identified by manufacturer, 1966*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
*Cardiovascular agents--Continued	
*Other cardiovascular agents--Continued	
Vasodilators--Continued	
Nicotinyl alcohol tartrate	HOF.
Pentaerythritol tetranitrate	APD.
*Central depressants and stimulants:	
*Amphetamines:	
Amphetamine (racemic)	HEX, ORT.
Amphetamine hydrochloride (racemic)	ARN, HEX.
Amphetamine sulfate (racemic)	ARN, HEX.
Dextroamphetamine	HEX.
Dextroamphetamine carboxymethylcellulose	ARN.
Dextroamphetamine hydrochloride	ARN, HEX.
Dextroamphetamine phosphate	ARN, HEX.
*Dextroamphetamine sulfate	ARN, HEX, SK.
Dextroamphetamine tannate	ARN.
Levamphetamine succinate	ARN.
*Methamphetamine base and hydrochloride:	
Methamphetamine (dextro)	HEX.
Methamphetamine (levo)	ABB.
Methamphetamine (racemic)	HEX.
Methamphetamine hydrochloride (dextro)	ABB, ARN, GAN, HEX.
Methamphetamine hydrochloride (racemic)	ARN, GAN, HEX.
*Anticonvulsants, hypnotics, and sedatives (except barbiturates):	
Anticonvulsants:	
Aminoglutethimide	CBP.
Diphenylhydantoin	PD.
Diphenylhydantoin, sodium	PD.
Ethosuximide	PD.
Ethotoin	ABB.
Methsuximide	PD.
Paramethadione	ABB.
Phenacemide	ABB.
Phensuximide	PD.
Trimethadione	ABB.
Hypnotics and sedatives:	
Carbromal	PD.
Ethchlorvynol	ABB.
Ethinamate	LIL.
Glutethimide	CBP.
Methyprylon	HOF.
*Antidepressants:	
Amitriptyline	MRK.
Desipramine hydrochloride	GGY, LKL.
Imipramine hydrochloride	GGY.
Isocarboxazid	HOF.
Nialamide	PFZ.
Nortriptyline	LIL.
Phenelzine sulfate	NEP.
*Barbiturates:	
5-Allyl-5-(2-cyclopenten-1-yl)barbituric acid	GAN.
Amobarbital	LIL.
Amobarbital, sodium	GAN, LIL.
Barbital	GAN.
Barbital, sodium	GAN.
Butabarbital	ABB, GAN.
*Butabarbital, sodium	ABB, BPC, GAN.
Butalbital	GAN.
Butalbital, sodium	GAN.
Butethal	GAN.
Cyclobarbital	SDW.
Cyclobarbital, calcium	SDW.
5-Ethyl-5-pentylbarbituric acid	BPC.
Hexobarbital	GAN, SDW.
Hexobarbital, sodium	SDW.
Mephobarbital	SDW.
Metharbital	ABB.
Methohexital, sodium	LIL.
Pentobarbital	ABB, GAN.
Pentobarbital, sodium	ABB, BPC, GAN.
Phenobarbital	BPC, GAN, MAL.

TABLE 13B.--*Medicinal chemicals for which U.S. production or sales were reported, identified by manufacturer, 1966*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
*Central depressants and stimulants--Continued	
*Barbiturates--Continued	
*Phenobarbital, sodium	GAN, MAL, SDW.
Secobarbital	GAN.
Secobarbital, sodium	GAN, LIL.
Talbutal	SDW.
Thiamylal, sodium	PD.
Thiopental, sodium	ABB.
Vinbarbital	x.
*Hydrocodone bitartrate	EN, MAL, MRK.
*Salicylates:	
Aluminum aspirin	ABB, PYL, SCH.
*Aspirin	CFC, DOW, MLS, MON, NOR, SDG.
Ethyl salicylate carbonate	PD.
Phenyl salicylate	DOW, MAL.
Potassium salicylate	HN, PEN.
Salicylamide	CFC, x.
Salicylsalicylic acid	TNC.
Sodium salicylate	DOW, HN.
Strontium salicylate	TNC.
*Skeletal muscle relaxants:	
Carisoprodol	x.
Chlorphenesin carbamate	x.
Chlorzoxazone	OTC.
Mephenesin	HEX, OMS.
Phenaglycodol	LIL.
Styramate	ARP.
Succinylcholine chloride	ABB, BUR, SDW.
Tubocurarine	ABB, OMS.
*Tranquilizers:	
*Meprobamate	ABB, BKL, PEN.
*Phenothiazine derivatives:	
Carphenazine maleate	WYT.
Chlorpromazine hydrochloride	SK.
Fluphenazine hydrochloride	OMS, SCH.
Mepazine hydrochloride	NEP.
Perphenazine	SCH.
Prochlorperazine maleate	SK.
Promazine hydrochloride	WYT.
Promethazine hydrochloride	WYT.
Trifluoperazine hydrochloride	SK.
Triflupromazine hydrochloride	OMS.
*Other tranquilizers:	
Azacyclonol hydrochloride	BKC.
Buclizine hydrochloride	PFZ.
Chlordiazepoxide hydrochloride	HOF.
Chlormezanone	SDW.
Chlorprothixene	HOF.
Diazepam	HOF.
Ethomoxane hydrochloride	LIL.
Hydroxyphenamate	ARA, ARP.
Hydroxyzine hydrochloride	PFZ.
Hydroxyzine pamoate	PFZ.
Mebutamate	x.
Methaqualone	HEX, x.
Methaqualone hydrochloride	BPC.
Oxazepam	WYT.
Tybamate	PEN, x.
*Other central depressants and stimulants:	
Analgesics and antipyretics (except salicylates):	
Acetaminophen	ATP, MLS, NEP, x.
Acetanilide	CTN.
p-Aminobenzoic acid and salts:	
Aminobenzoic acid	LEM.
Calcium aminobenzoate	GAN, LEM.
Magnesium aminobenzoate	LEM.
Potassium aminobenzoate	GAN, LEM.
Sodium aminobenzoate	GAN, LEM.
Anileridine hydrochloride	MRK.
Aurothioglucose	SCH.
Calcium succinate	LEM.
Colchicine	PEN.

TABLE 13B.--*Medicinal chemicals for which U.S. production or sales were reported, identified by manufacturer, 1966*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
*Central depressants and stimulants--Continued	
*Other central depressants and stimulants--Continued	
Analgesics and antipyretics (except salicylates)--Continued	
Ethoheptazine citrate	WYT.
Indomethacin	MRK.
Meperidine hydrochloride	SDW, WYT.
Oxycodone hydrochloride	EN.
Oxymorphone hydrochloride	EN.
Oxyphenbutazone	GGY.
Pentazocine	SDW.
Phenacetin	MON.
Phenylbutazone	GGY.
Phenyramidol hydrochloride	OTC.
Propoxyphene hydrochloride	LIL.
Propoxyphene napsylate	LIL.
Anesthetics:	
Tribromoethanol	SDW.
Vinyl ether	MRK.
Antitussives:	
Benzonatate	CBP.
Carbetapentane citrate	PFZ.
Dextromethorphan hydrobromide	HOF.
Dimethoxanate hydrochloride	x.
Ethylmorphine hydrochloride	MAL, MRK, PEN.
Stimulants:	
Benzphetamine hydrochloride	x.
Caffeine:	
Natural	GNF, MYW.
Synthetic	PFZ.
Caffeine, citrated	MAL, MRK.
Caffeine sodium benzoate	MAL.
Chlorphentermine hydrochloride	NEP.
Diethylpropion hydrochloride	BKC, x.
Nikethamide	CBP, PYL.
Phendimetrazine	x.
Phenmetrazine hydrochloride	GGY.
Phentermine	HEX.
*Dermatological agents:	
*Allantoin	CTN, FIN, HFT.
Aluminum phenolsulfonate	MAL.
Ammonium phenolsulfonate	SAL.
*Bismuth subgallate	BKC, MAL, PEN.
Dipropylene glycol salicylate	SBC.
Glycol salicylate	RDA.
Homomenthyl salicylate	ICO.
Menthyl salicylate	CFC.
p-Methoxycinnamic acid, 2-ethoxyethyl ester	GIV.
Podophyllum resin	ABB, PEN.
*Salicylic acid[1]	DOW, HN, MON, SDH.
Scarlet red	NAC.
Sodium phenolsulfonate	MAL, SAL.
Zinc phenolsulfonate	MAL.
*Expectorants and mucolytic agents:	
Ethylenediamine dihydriodide	CLV, PYL, WHL.
*Guaiacol and its derivatives:	
Glyceryl guaiacolate	BKL, GAN, ICO, x.
Guaiacol	MON.
Potassium guaiacolsulfonate	HN.
Iodinated glycerol	x, x.
Iodobrassid	CBP.
Lobeline sulfate	ABB.
Terpin hydrate	LEM, PEN.
Thonzonium bromide	NEP.
*Gastrointestinal agents:	
*Choleretics and hydrocholeretics:	
Bile acids, oxidized	SRL, WIL.
Dehydrocholic acid	WIL.
Florantyrone	SRL.
Iron bile salts	LIL.

See footnotes at end of table.

TABLE 13B.--*Medicinal chemicals for which U.S. production or sales were reported, identified by manufacturer, 1966*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
*Gastrointestinal agents--Continued	
*Choleretics and hydrocholeretics--Continued	
Ox bile extract	ABB.
Sodium dehydrocholate	WIL.
Tocamphyl	x.
*Choline salts:	
Choline bicarbonate	COM.
Choline bitartrate	ACY, HFT.
*Choline chloride (all grades):	
Feed grade	COM, DLI, HFT, TMH.
Medicinal grade	HFT.
Technical grade	GAF, RH.
Choline citrate (Tricholine citrate)	ACY, HFT.
Choline dihydrogen citrate	ACY, HFT.
*Methionine and its hydroxy analogue:	
Methionine (feed grade)	DOW.
Methionine (medicinal grade)	DOW, LEM.
Methionine, hydroxy analogue, calcium salt	DUP, MON.
*Other gastrointestinal agents:	
Betaine base	HFT, MAL.
Betaine hydrate	HFT.
Betaine hydrochloride	HFT, TNC.
Calcium polycarbophil	WLI.
Dihydroxy aluminum aminoacetate	CHT.
Magnesium citrate	MAL.
Pectin	SKG.
Phenolphthalein	MON.
Phenolphthalein, yellow	WLI.
Polycarbophil	WLI.
Sitosterols	UPJ.
Sodium tartrate	MAL.
*Hormones and synthetic substitutes:	
*Antithyroid agents:	
Methimazol	LIL.
Propylthiouracil	PYL.
Thiouracil	ACY.
*Estrogens:	
Chlorotrianisene	BKC.
Dienestrol diacetate	SCH.
Diethylstilbestrol	CTN, LIL.
Diethylstilbestrol dipropionate	CTN.
Natural estrogenic substances	ORG.
Piperazine estrone sulfate	ABB.
*Prednisone	MRK, SCH, UPJ.
*Synthetic hypoglycemic agents:	
Acetohexamide	LIL.
Chlorpropamide	PFZ.
Phenformin hydrochloride	x.
Tolazamide	x.
Tolbutamide	HST, x.
*Other hormones and synthetic substitutes:	
Androgen: Fluoxymesterone	UPJ.
Corticosteroids:	
Betamethasone	SCH.
Betamethasone acetate	SCH.
Betamethasone phosphate	SCH.
Cortisone acetate	MRK, SCH, UPJ.
Dexamethasone	MRK, SCH.
Dexamethasone acetate	SCH.
Dexamethasone phosphate	MRK.
Dichlorisone acetate	SCH.
Fludrocortisone acetate	UPJ.
Fluorometholone	UPJ.
Fluprednisolone	UPJ.
Hydrocortisone	MRK, UPJ.
Hydrocortisone acetate	MRK, UPJ.
Hydrocortisone phosphate	MRK.
Methylprednisolone	UPJ.
Prednisolone	MRK, UPJ.
Prednisolone acetate	SCH, UPJ.
Triamcinolone	ACY, OMS.

TABLE 13B.--*Medicinal chemicals for which U.S. production or sales were reported, identified by manufacturer, 1966*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
*Hormones and synthetic substitutes--Continued	
*Other hormones and synthetic substitutes--Continued	
Progestogens:	
Medroxyprogesterone acetate	x.
Progesterone	x.
All other:	
Corticotropin (ACTH) (pituitary)	ARP, ORG, WIL.
Insulin (pancreas)	ARP, LIL.
*Renal-acting and edema-reducing agents:	
*Mercurial diuretics:	
Meralluride	LKL.
Mersalyl acid	SDW.
Sodium mercaptomerin	WYT.
Sodium mercurophylline	FIN.
*Theobromine and theophylline derivatives:	
Ambuphylline	GAN.
*Aminophylline	GAN, LEM, SRL.
Aminophylline sodium biphosphate	GAN.
Oxtriphylline	NEP.
Theobromine sodium acetate	MAL.
Theobromine sodium salicylate	CLC.
Theophylline magnesium	MAL.
Theophylline monoethanolamine	LIL.
Theophylline piperazine ethanoate	SEL.
Theophylline sodium glycinate	CHT.
*Other renal-acting and edema-reducing agents:	
Acetazolamide	ACY.
Benzothiadiazine derivatives:	
Benzthiazide	PFZ.
Chlorothiazide	MRK.
Flumethiazide	OMS.
Hydrochlorothiazide	ABB, CBP, MRK.
Hydroflumethiazide	OMS.
Methyclothiazide	ABB.
Polythiazide	PFZ.
Trichlormethiazide	SCH.
Chlorthalidone	GGY.
Dichlorphenamide	MRK.
Probenecid	MRK.
Spironolactone	SRL.
Triamterene	SK.
*Therapeutic nutrients:	
*Amino acids and salts:	
Acetyltryptophane	SDW.
Aminoacetic acid (glycine)[2]	BPC, DOW.
Amino acid mixtures	ABB, CUT, STA.
Arginine glutamate	ABB.
Aspartic acid and salts:	
Aspartic acid	HEX, NAC.
Magnesium aspartate	WYT.
Potassium aspartate	WYT.
Beta-alanine	BFG, NOP.
Glutamic acid and salts:	
Ammonium glutamate	IMC.
Calcium glutamate	LEM.
*Glutamic acid	IMC, LEM, PFZ.
Glutamic acid hydrochloride	IMC, LEM.
*Potassium glutamate	IMC, LEM, PFZ.
Lysine (feed grade)	MRK.
Lysine hydrochloride	MRK.
Phenylalanine	SDW.
d-Threonine	SDW.
Tryptophane	SDW.
*Calcium gluconate	MAL, PFZ, WHL.
*Other therapeutic nutrients:	
Calcium glucoheptonate	PFN.
Calcium lactophosphate	MAL.
Calcium levulinate	PYL, SEL.
Calcium phytate	STA.
Copper gluconate	PFZ.

See footnotes at end of table.

TABLE 13B.--*Medicinal chemicals for which U.S. production or sales were reported, identified by manufacturer, 1966*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
*Therapeutic nutrients--Continued	
*Other therapeutic nutrients--Continued	
Ferrous gluconate	PFZ, SDW.
Fructose	DLI, PFN.
Lecithin	ARP.
Liver concentrate	WIL.
Liver, desiccated	WIL.
Magnesium gluconate	PFZ.
Manganese gluconate	PFZ.
Potassium gluconate	PFZ.
Sodium glycerophosphate	SEL.
*Vitamins:	
*Vitamin A alcohol and esters:	
Vitamin A acetate (feed grade)	HOF.
Vitamin A acetate (medicinal grade)	HOF, PFZ.
Vitamin A alcohol	CW, HOF.
Vitamin A natural esters	CW.
*Vitamin A palmitate (feed grade)	EK, HOF, PFZ.
Vitamin A palmitate (medicinal grade)	EK, HOF, PFZ.
*Vitamin B-complex:	
*Cyanocobalamin (except U.S.P. crystalline):	
Feed grade	GPR, MRK, PMP.
Medicinal grade	IMC, MRK.
*Niacin:	
Feed grade	ABB, CKL, MRK, NEP, RIL.
Medicinal grade	MRK, NOP, RIL, SCR.
*Niacinamide	MRK, NEP, PD, RIL, SCR.
*Pantothenic acid and derivatives:	
Calcium pantothenate (dextro)	MRK, x.
*Calcium pantothenate (racemic) (feed grade)	CKL, DLI, HFT, NOP.
Calcium pantothenate (racemic) (medicinal grade)	NOP.
Calcium pantothenate (racemic) - calcium chloride complex.	CKL, HFT, NOP.
Dexpanthenol	HOF.
Panthenol (racemic)	HOF.
Sodium pantothenate	PD.
*Riboflavin:	
Feed grade	COM, GPR, HOF, MRK, PMP.
Medicinal grade	HOF, MRK.
*Other B-complex vitamins:	
Biotin	HOF.
Cyanocobalamin (U.S.P. crystalline)	MRK.
Cyanocobalamin with intrinsic factor concentrate	WIL.
Folic acid	ACY.
Inositol	STA.
Magnesium nicotinate	NEP.
Niacinamide hydrochloride	NEP.
Pyridoxine	HOF, MRK.
Riboflavin-5-phosphate, sodium	HOF.
Sodium nicotinate	NEP.
Thiamine hydrochloride	HOF, MRK.
Thiamine mononitrate	HOF, MRK.
*Vitamin C:	
*Ascorbic acid	HOF, MRK, PFZ.
Ascorbyl palmitate	PFZ.
Calcium ascorbate	PFZ.
Sodium ascorbate	HOF, MRK, PFZ.
*Vitamin E:	
d-Alpha tocopherol	CW, EK.
dl-Alpha tocopherol	HOF.
d-Alpha tocopheryl acetate	CW, EK.
dl-Alpha tocopheryl acetate (feed grade)	HOF.
dl-Alpha tocopheryl acetate (medicinal grade)	HOF.
d-Alpha tocopheryl acid succinate	CW, EK.
dl-Alpha tocopheryl acid succinate	HOF.
*Vitamin K:	
Menadione	ABB, HET, HFT, WHL.
Menadione sodium bisulfite	ABB, HET, HFT, WHL.
Phytonadione	MRK.

TABLE 13B.--*Medicinal chemicals for which U.S. production or sales were reported, identified by manufacturer, 1966*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
*Vitamins--Continued	
*Other vitamins:	
Beta-carotene (Provitamin A)	EK, HOF.
Cholecalciferol (Vitamin D_3)	DLI, NOP.
Ergocalciferol (Vitamin D_2)	DLI, SCR.
*Miscellaneous medicinal chemicals:	
Diagnostic agents:	
Roentgenographic contrast media:	
Acetrizoate, sodium	MAL.
Diatrizoate, meglumine	SDW.
Diatrizoate, sodium	SDW.
Diprotrizoate, sodium	MAL.
Iodihippurate, sodium	MAL.
Iodopyracet	SDW.
Iopanoic acid	SDW.
Iophendylate	x.
Iothalamate, meglumine	MAL.
Iothalamate, sodium	MAL.
Methiodal, sodium	SDW.
Other diagnostic agents:	
Galactose (liver function test)	PFN.
Indocyanine green (cardiac output test)	x.
Metyrapone (pituitary function test)	CBP.
Hematological agents (except anticoagulants):	
Aminocaproic acid	ACY.
Cellulose, oxidized	EKT.
Dextran (plasma expander)	PHR.
Smooth muscle relaxants:	
Alverine	CTN.
Alverine citrate	CTN.
Alverine hydrochloride	CTN.
Papaverine hydrochloride	LIL.
Sodium benzyl succinate	LEM.
Unclassified medicinal chemicals:	
Berberine hydrochloride	ABB, PEN.
Hydrastine	PEN.
Hydrastine hydrochloride	PEN.
Penicillamine (copper chelating agent)	MRK.

[1] See table 7B for producers of the technical grade.
[2] See table 21B for producers of the technical grade.

Flavor and Perfume Materials

TABLE 14B. -- *Flavor and perfume materials for which U.S. production or sales were reported, identified by manufacturer, 1966*

[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 22. 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 22)
FLAVOR AND PERFUME MATERIALS, CYCLIC	
Benzenoid and Naphthalenoid	
2′-Acetonaphthone (Methyl β-naphthyl ketone)	GIV, TBK.
Acetophenone	GIV, TBK.
7-Acetyl-6-ethyl-1,1,4,4-tetramethyl-1,2,3,4-tetrahydronaphthalene.	GIV, TBK.
p-Allylanisole	GIV.
*4-Allyl-2-methoxyphenol (Eugenol)	FB, GIV, ICO, IFF, LUE, NEO, PEN, RT, TBK, UNG, VLY.
Allyl phenoxyacetate	GIV.
4-Allylveratrole (Eugenyl methyl ether)	GIV, TBK.
*Anethole (p-Propenylanisole)	ARZ, FB, GLD, HNW, HPC.
*p-Anisaldehyde (p-Methoxybenzaldehyde)	GIV, OPC, SHL, TBK, UNG.
Anisole (Methyl phenyl ether)	GIV.
Anisyl acetate	GIV, TBK.
Anisyl alcohol	GIV, TBK.
*Benzophenone	GAF, GIV, ICO, NEO, TBK.
*Benzyl acetate	GIV, IFF, OPC, SHL, TBK.
*Benzyl alcohol	BPC, OPC, SHL, TBK, VEL.
Benzyl benzoate	MON, OPC, TBK, VEL.
*Benzyl butyrate	FB, GIV, TBK.
*Benzyl cinnamate	FB, GIV, ICO, TBK.
*Benzyl ether	OPC, SHL, VEL.
Benzyl formate	GIV, TBK.
Benzyl glyceryl acetal	GIV.
Benzyl isobutyrate	TBK.
Benzyl isopentyl ether	GIV.
1-(Benzyloxy)-2-methoxy-4-propenylbenzene (Benzyl isoeugenyl ether).	GIV, TBK.
*Benzyl phenylacetate (Benzyl α-toluate)	GIV, MYW, TBK.
*Benzyl propionate	FB, GIV, TBK.
*Benzyl salicylate	GIV, OPC, TBK, UNG.
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, OPC, TBK.
Cinnamic acid	BPC.
*Cinnamyl acetate	FB, GIV, TBK.
*Cinnamyl alcohol	FB, GIV, NEO, TBK.
Cinnamyl anthranilate	FEL, RT.
Cinnamyl cinnamate	TBK.
Cinnamyl formate	TBK.
Cinnamyl isovalerate	TBK.
Cinnamyl propionate	GIV, TBK.
trans-Decahydro-2-naphthol	IFF.
Dihydronordicyclopentadienyl acetate	GIV.
p,α-Dimethylbenzyl alcohol (p-Methylphenylmethylcarbinol).	GIV.
Dimethylhydroquinone	ICO.
α,α-Dimethylphenethyl acetate (DMBCA)	GIV, IFF, RDA.
α,α-Dimethylphenethyl alcohol (DMBC)	GIV, IFF.
4,6-Dinitro-1,1,3,3,5-pentamethylindane	GIV.
Diphenylmethane	ARA, TBK.
1,3-Diphenyl-2-propanone (Dibenzyl ketone)	GIV.
1-Ethoxy-2-hydroxy-4-propenylbenzene (Propenyl-guaethol; 6-ethoxy-m-anol).	SHL.

TABLE 14B. --*Flavor and perfume materials for which U.S. production or sales were reported, identified by manufacturer, 1966*--Continued

Material	Manufacturers' identification codes (according to list in table 22)
FLAVOR AND PERFUME MATERIALS, CYCLIC--Continued	
Benzenoid and Naphthalenoid--Continued	
*2-Ethoxynaphthalene (Ethyl β-naphthyl ether)	GIV, ICO, TBK.
Ethyl anthranilate	FB.
Ethyl benzoate	TBK.
Ethyl cinnamate	GIV, TBK.
Ethyl α,β-epoxy-β-methylhydrocinnamate (Ethyl methylphenylglycidate).	GIV, TBK.
Ethyl eugenol	ICO.
2-Ethylhexyl salicylate	ICO.
Ethyl phenylacetate	GIV.
Ethyl 3-phenylglycidate	GIV, TBK.
Ethyl salicylate	FB, TBK.
Ethylvanillin	MON, RDA.
Eugenol acetate	GIV.
α-Hexylcinnamaldehyde	GIV, IFF, TBK.
Hydratropaldehyde (α-Phenylpropionaldehyde)	GIV, IFF.
Hydratropaldehyde, dimethyl acetal	GIV, IFF.
Hydroxycitronellal methyl anthranilate	GIV.
2-Hydroxypropyl p-N,N-bis(2-hydroxypropyl)amino-benzoate.	SHL.
Isobutyl cinnamate	TBK.
*Isobutyl phenylacetate (Isobutyl α-toluate)	FB, GIV, OPC, TBK.
*Isobutyl salicylate	FB, GIV, TBK.
Isoeugenyl acetate	TBK.
*Isopentyl salicylate (Isoamyl salicylate)	FB, GIV, OPC, TBK.
p-Isopropylbenzaldehyde (Cumaldehyde)	GIV.
p-Isopropylcyclohexanol	GIV.
p-Isopropyl-α-methylhydrocinnamaldehyde (Cyclamen aldehyde).	GIV, RDA.
p-Isopropyl-α-methylhydrocinnamyl alcohol	GIV.
*4'-Methoxyacetophenone	GIV, ICO, OPC, TBK.
2-Methoxynaphthalene (Methyl β-naphthyl ether)	GIV, TBK.
Methoxyphenyl butanone	TBK.
1-(p-Methoxyphenyl)-1-pentene-3-one	GIV.
*2-Methoxy-4-propenylphenol (Isoeugenol)	GIV, SHL, TBK, VLY.
4'-Methylacetophenone (Methyl p-tolyl ketone)	OPC, TBK.
Methyl anisate	ICO.
*p-Methylanisole (p-Cresyl methyl ether)	GIV, TBK, VLY.
*Methyl anthranilate	DOW, FB, GIV, MEE, OPC, SHL, UNG.
Methylanthanilydene p-isopropyl methylhydrocinnamal-dehyde.	RDA.
Methyl benzoate	HN.
α-Methylbenzyl acetate (Styralyl acetate)	GIV, TBK, VLY.
p-Methylbenzyl acetate	IFF.
α-Methylbenzyl alcohol	UCC.
*α-Methylcinnamaldehyde	FB, GIV, TBK, VLY.
*Methyl cinnamate	FB, ICO, TBK.
Methyl eugenol	ICO.
p-Methyl hydratropic aldehyde	GIV.
Methyl N-methylanthranilate (Dimethyl anthranilate)	GIV, OPC.
Methyl phenylacetate (Methyl α-toluate)	GIV, TBK.
2-Methyl-4-phenyl-2-butanol(α,α-Dimethyl-3-phenyl-1-propanol).	IFF.
*Methyl salicylate (Synthetic wintergreen oil)	CFC, DOW, HN, MON, PEN.
*α-Pentylcinnamaldehyde (α-Amylcinnamaldehyde)	FB, GIV, IFF, NEO, RDA, TBK, VLY.
Phenethyl acetate	GIV, IFF.
Phenethyl alcohol	GIV, IFF, OPC.
Phenethyl formate	IFF, TBK.
*Phenethyl isobutyrate	GIV, IFF, TBK.
Phenethyl isovalerate	FB, GIV.
*Phenethyl phenylacetate (Phenethyl α-toluate)	FB, GIV, IFF, TBK.
*Phenethyl propionate	GIV, IFF, TBK.
Phenethyl salicylate	GIV, TBK.
2-Phenoxyethyl isobutyrate	GIV, IFF, TBK.
Phenylacetaldehyde (α-Tolualdehyde)	GIV, TBK.
Phenylacetaldehyde, dimethyl acetal	GIV, TBK.
o-Phenylanisole (2-Methoxybiphenyl)	GIV.
4-Phenyl-3-buten-2-one (Benzylidene acetone)	FB, TBK.
Phenylethyl acetal	GIV.

TABLE 14B. --*Flavor and perfume materials for which U.S. production or sales were reported, identified by manufacturer, 1966*--Continued

Material	Manufacturers' identification codes (according to list in table 22)
FLAVOR AND PERFUME MATERIALS, CYCLIC--Continued	
Benzenoid and Naphthalenoid--Continued	
Phenylethyl tiglate	FB.
*3-Phenyl-1-propanol (Hydrocinnamic alcohol)	FB, GIV, TBK.
3-Phenyl-1-propyl acetate (Hydrocinnamyl acetate)	FB, GIV, TBK.
Phenyl propyl cinnamate	FB.
*4-Propenylveratrole (Isoeugenyl methyl ether)	GIV, ICO, TBK.
p-Propylanisole	GIV.
p-Tolualdehyde (p-Methylbenzaldehyde)	GIV, HN.
p-Tolylacetaldehyde	GIV.
*p-Tolyl acetate (p-Cresyl acetate)	GIV, ICO, IFF, TBK.
p-Tolyl isobutyrate (p-Cresyl isobutyrate)	IFF.
p-Tolyl phenylacetate (p-Cresyl α-toluate)	GIV.
*α-(Trichloromethyl)benzyl acetate (Rosetone)	ICO, NEO, TBK.
p-α, α-Trimethylphenethyl alcohol	IFF.
Trimethyltetrahydrobenzylidene acetone	TBK.
Vanillin	MON, SLV.
All other	FB, GIV, IFF, PFW, SHL.
Terpenoid, Heterocyclic, and Alicyclic	
Allyl cyclohexyl propionate	GIV.
Allyl ionone	GIV, IFF.
p-tert-Amylcyclohexanone	IFF.
Amyris acetate	GIV.
Bornyl acetate	FEL.
4-tert-Butylcyclohexanol	IFF.
4-tert-Butylcyclohexanone	DOW.
4-tert-Butylcyclohexyl acetate	DOW, IFF.
Cadinene	FB.
Carvone (Carvol)	FB, FRM, OPC.
β-Caryophyllene	FB, GIV.
Cedarwood acetate	FB.
Cedranone	TBK.
Cedrenol	GIV.
Cedrol	GIV, IFF, OPC, TBK.
*Cedryl acetate	GIV, IFF, NEO, TBK, UNG.
*Citral a (Geranial)	FB, FEL, GIV, HOF, LUE, NEO, RT, TBK.
Citral dimethyl acetal	GIV.
Citronellal	FB, GIV, IFF, TBK.
*Citronellol	FB, GIV, GLD, IFF, NEO, TBK, VLY.
*Citronellyl acetate	GIV, IFF, TBK, VLY.
Citronellyl butyrate	GIV, TBK.
*Citronellyl formate	GIV, IFF, TBK, VLY.
Citronellyl isobutyrate	GIV, TBK.
Citronellyl oxyacetaldehyde	IFF.
Citronellyl propionate	IFF.
*Coumarin	DOW, MON, NEO, RDA, TBK.
Cyclohexylcyclohexanone	GIV.
Cyclopentanone	ARA.
Dihydroterpinyl acetate	GIV.
*Essential oils, chemically modified:	
Acetyl cedrene	GIV, IFF.
Citronella oil, acetylated	CP, RT.
Clove leaf oil terpenes	SHL.
Ethyl oxyhydrate	FEL, FLO, LUE, VND.
Guaiacwood acetate	FB, GIV, TBK.
Lavandin, acetylated	FEL, GIV, UNG.
Oil clove stem, acetylated	FB.
Santalol	GIV, IFF, VLY.
Sassafras oil, hydrogenated	GIV.
α-Furfural mercaptan	RT.
*Geraniol	FB, FEL, GIV, GLD, IFF, NEO, TBK, UNG, VLY.
Geranoxy acetaldehyde	IFF.
*Geranyl acetate	FEL, GIV, IFF, NEO, TBK, VLY.
Geranyl benzoate	GIV.
Geranyl butyrate	GIV, TBK.
*Geranyl formate	GIV, IFF, TBK, VLY.
Geranyl isobutyrate	IFF.

TABLE 14B. --*Flavor and perfume materials for which U.S. production or sales were reported, identified by manufacturer, 1966*--Continued

Material	Manufacturers' identification codes (according to list in table 22)
FLAVOR AND PERFUME MATERIALS, CYCLIC--Continued	
Terpenoid, Heterocyclic, and Alicyclic--Continued	
Geranyl isovalerate	FB.
Geranyl phenylacetate (Geranyl α-toluate)	GIV, TBK.
Geranyl tiglate	FB.
Hexadecanolide	IFF.
2-Hexyl-2-cyclopenten-1-one	IFF.
Hydrocoumarin (3,4-Dihydrocoumarin)	GIV, TBK.
*Hydroxycitronellal	GIV, GLD, IFF, OPC, TBK, VLY.
*Hydroxycitronellal, dimethyl acetal	FB, GIV, IFF, TBK.
2-Hydroxy-3-methyl-2-cyclopenten-1-one (Methyl cyclopentenolone).	DOW.
4-(4-Hydroxy-4-methylpentyl)-3-cyclohexene-1-carboxaldehyde.	IFF.
3-Hydroxy-2-methyl-4-pyrone (Maltol)	DOW, PFZ.
Indole	GIV, LUE.
*Ionones:	
α-Ionone	GIV, IFF, MYW, NEO, TBK.
β-Ionone	HOF, MYW, TBK.
Ionone (α- and β-)	GIV, LUE, MYW, TBK, UNG.
Isoborneol (Isobornyl alcohol)	RDA.
*Isobornyl acetate	FB, GIV, OPC, RDA, TBK, UNG.
Isobornyl methoxycyclohexanol	IFF.
2-Isobutylquinoline (α-Isobutylquinoline)	IFF.
Isomenthone	GIV, TBK.
6-Isopropylquinoline (p-Isopropylquinoline)	FMT.
Isopulegol	GIV.
Isosafrole	GIV.
Laevo carveol	FB.
d-Limonene	RT, SKG.
Linalool (Linalyl alcohol)	FB, FEL, GIV, GLD, HOF, LUE, SHL, TBK, UNG, VLY.
Linalyl acetate	FB, GIV, GLD, HOF, LUE, NEO, SHL, UNG.
Linalyl anthranilate	FMT.
Linalyl isobutyrate	HOF, TBK.
Linalyl propionate	FB, GIV, HOF.
Menthadiene-7-carbinol	RT.
1,1-p-Menthen-6-yl-1-propanone	GIV.
*Menthol, synthetic:	
Tech	GIV, ICO, NEO.
U.S.P	GIV, GLD, HNW, NEO.
*Menthone	GIV, HNW, NEO, OPC.
Menthyl acetate	FB, GIV.
6-Methylcoumarin	GIV.
*Methylionones:	
6-Methyl-α-ionone	GIV, IFF, MYW.
6-Methyl-β-ionone	NEO, TBK.
Methylionone (α- and β-)	GIV, LUE, MYW, TBK.
Methyl ionone standard	TBK.
4-Methyl-2-(2′-methyl-1-propan-1-yl)-tetrahydropyran	GIV.
*Nerol	FB, GLD, IFF, TBK, VLY.
Neryl acetate prime	GIV.
Nopyl acetate	SHL, VLY.
Omega decenol (Rosalva)	IFF.
α-Phellandrene	ICO.
*Piperonal (Heliotropin)	GIV, SHL, TBK.
Piperonal, sodium bisulfite complex	SHL.
Piperonal terpenes	SHL.
Pseudolinalyl acetate (Myrcenyl acetate, principally)	IFF.
*Rhodinol	FB, FEL, GIV, IFF, LUE, NEO, SHL.
Rhodinyl acetate	FB, GIV, IFF.
Safrole	GIV, OPC.
*Sweeteners, synthetic:	
Cyclohexanesulfamic acid	ABB.
Cyclohexanesulfamic acid, calcium salt	ABB, CYC, DRW, MON, NRS, PBY, PFZ, UNS.
Cyclohexanesulfamic acid, sodium salt	ABB, DRW, MON, NRS, PBY, PFZ, UNS.
Saccharin	MEE, MON, NRS.
Saccharin, calcium salt	MEE, MON, NRS, PBY.
Saccharin, sodium salt	MEE, MON, NRS.
All other	GIV.

TABLE 14B. --*Flavor and perfume materials for which U.S. production or sales were reported, identified by manufacturer, 1966*--Continued

Material	Manufacturers' identification codes (according to list in table 22)
FLAVOR AND PERFUME MATERIALS, CYCLIC--Continued	
Terpenoid, Heterocyclic, and Alicyclic--Continued	
*Terpineols:	
α-Terpineol	GLD, HPC.
β-Terpineol	HNW.
Terpineol (α- and β-)	GIV, NEO.
Terpinol hydrate (Terpin hydrate), tech	HPC.
*α-Terpinyl acetate	GIV, NEO, RDA, TBK, UNG.
α-Terpinyl propionate	GIV, TBK.
Tetrahydro alloocimenol	IFF.
Tetramethylethylacetyltetralin	TBK.
3,5,5-Trimethylcyclohexanol	ICO.
Vetivenol	GIV, TBK.
*Vetivenyl acetate	FB, GIV, IFF, NEO, TBK.
All other	FB, IFF.
FLAVOR AND PERFUME MATERIALS, ACYCLIC	
Acetyl propionyl	FB.
Allyl heptanoate (Allyl enanthate)	TBK.
*Allyl hexanoate (Allyl caproate)	FB, GIV, UNG.
Allyl isothiocyanate (Synthetic mustard oil)	MRT.
Allyl mercaptan	RT.
Allyl sulfide (Diallyl sulfide)	RT.
Amyl propionate	GIV.
Brazinol	RDA.
Butyl butyrate	TBK.
Butyl butyryl lactate	ICO.
Butyl isovalerate	TBK.
Butyl undecylenate	GIV.
Decanal (Capraldehyde) (C_{10})	GIV, IFF, OPC, TBK.
Diethyl sebacate (Ethyl sebacate)	FEL, TBK.
Diethyl succinate	TBK, UCC.
2,6-Dimethyl-5-hepten-1-al	GIV.
3,6-Dimethyl-3-octanol	CUC.
3,7-Dimethyl-1-octanol	GIV, VLY.
3,7-Dimethyl-3-octanol	GIV.
Dimethyl succinate	ICO.
Dodecyl acetate (Lauryl acetate)	TBK.
Ethylamyl ketone	GIV.
*Ethyl butyrate	FB, NW, RT, TBK.
Ethyl caprate	FB.
Ethyl decanoate	TBK.
Ethylene brassylate	VLY.
Ethylene glycol tridecandiote	RDA.
Ethyl formate	FB.
*Ethyl heptanoate (Ethyl enanthate)	FB, FEL, RT, TBK.
Ethyl hexanoate (Ethyl caproate)	FB, NW, TBK.
Ethyl isovalerate	FB.
Ethyl laurate	FB, TBK.
Ethyl myristate	GIV, RT.
Ethyl nonanoate (Ethyl pelargonate)	GIV, TBK.
Ethyl octanoate (Ethyl caprylate)	FB, TBK.
Ethyl propionate	FB.
*Glutamic acid, monosodium salt (Monosodium glutamate)	COM, GRW, IMC, MRK.
Heptanal (Enanthaldehyde) (C_7)	BAC.
4-Heptanone (Butyrone) (Di-n-propyl ketone)	TBK.
Heptyl alcohol (1-Heptanol)	BAC, UCC.
Heptyl ether (Enanthic ether)	TBK.
2-Hexenal	GIV.
cis-3-Hexen-1-ol	x.
Hexyl octanoate (Hexyl caprylate)	TBK.
cis-3-Hexyn-1-ol	x.
3-Hydroxy-2-butanone (Acetoin)	FMT.
4-Hydroxynonanoic acid, γ-lactone (γ-Nonalactone)	GIV, TBK.
4-Hydroxyoctanoic acid, γ-lactone (γ-Octalactone)	GIV, TBK.
*4-Hydroxyundecanoic acid, γ-lactone (γ-Undecalactone)	FB, GIV, TBK.
Isoamyl propionate	FB.
Isobutyl acetate	FB, TBK.

TABLE 14B. --*Flavor and perfume materials for which U.S. production or sales were reported, identified by manufacturer, 1966* --Continued

Material	Manufacturers' identification codes (according to list in table 22)
FLAVOR AND PERFUME MATERIALS, ACYCLIC--Continued	
*Isopentyl butyrate (Isoamyl butyrate)	FB, GIV, NW, RT, TBK.
Isopentyl formate (Isoamyl formate)	FEL, RT, TBK.
Isopentyl heptanoate	FEL.
Isopentyl isovalerate (Amyl isovalerate)	FB, TBK.
Lauraldehyde (Dodecyl aldehyde) (C_{12})	GIV, IFF, TBK.
Linalyl butyrate	GIV.
Methyl furoate	FB.
6-Methyl-5-hepten-2-one	GIV.
Methyl-β-methylthiopropionate	RT.
Methyl-2-nonenoate	GIV.
Methylolmethylhexyl ketone	GIV.
3-Methylthiopropionaldehyde	RT.
2-Methylundecanal (2-Methylnonylacetaldehyde)	GIV, TBK.
Myristic aldehyde (C_{14})	GIV, IFF.
Nonanal (Pelargonaldehyde) (C_9)	GIV, TBK.
Nonanediol monoacetate	GIV.
Nonanol	TBK.
Nonyl acetate	GIV.
Octanal (Caprylaldehyde) (C_8)	GIV, IFF.
n-Octyl formate	FB.
n-Octyl isobutyrate	FB, TBK.
Tepyl acetate	IFF, TBK.
Trimethyl hexanal, sodium bisulfite complex	SHL.
2,6,10-Trimethyl-9-undecen-1-al	GIV.
Undecanal (Hendecanaldehyde) (C_{11})	GIV, IFF, TBK.
2-Undecanone (Methyl nonyl ketone)	GIV.
9-Undecenal (9-Hendecenaldehyde)	GIV, TBK.
9-Undecen-1-ol (9-Hendecenol)	TBK.
10-Undecen-1-ol	GIV.
Valerolactone	GIV.

Plastics and Resins Materials

TABLE 15B.--*Plastics and resin materials for which U.S. production or sales were reported, identified by manufacturer, 1966*

[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 22. 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 22)
THERMOSETTING RESINS	
*Alkyd resins, domestic:	
*Phthalic anhydride type	AAI, ACP, ACY, ADM, AMR, APV, BAL, BEN, BOY, BRU, CEL, CIK, CM, COM, CPV, DAV, DEG, DSO, DUN, DUP, EW, FAR, FBR, FCD, FLW, FOC, FRE, FSH, GEI, GIL, GLD, GRG, GRV, HAN, HPC, HRS, ICF, JOB, JSC, JWL, KEL, KMC, KMP, KPS, KYN, MCC, MID, MMM, MNP, MR, NPV, NCI, NTL, ORO, OSB, OXR, PER, PFP, PPG, PRT, QCP, RCI, RED, REL, RH, SCF, SCN, SED, SIP, SM, SRR, SVC, SW, SYV, TV, VTV, WAS.
*Polybasic acid type	ACP, ACY, ADM, APT, APV, BEN, BRU, CGL, CM, COM, CPV, DSO, DUN, DUP, EW, FAR, FBR, FCD, FOC, GEI, GIL, GLD, GRV, HAN, HPC, HRS, HYC, ICF, KYN, MCC, MID, MMM, NCI, NON, NPV, ORO, OSB, PFP, PPG, PRT, RCI, RED, RH, SCN, SHA, SM, SRR, SW, TV, VTV.
*Coumarone-indene and petroleum polymer resins:	
*Floor tile	ACC, ACP, NEV, NSP, PAI, RCI, VEL.
*Rubber compounding	ACC, ACP, KPI, NEV, NSP, PAI, RCI, VEL, WTC.
*All other uses (including export)	ACC, ACP, CM, DSO, DUP, ENJ, MCA, MID, NEV, NSP, PAI, PPG, RCI, VEL, VSV.
Epoxy resins:	
*Unmodified:	
*Bonding and adhesives	CBA, CEL, DOW, SHC, UPC.
*Protective coatings	CBA, CEL, DOW, RCI, SHC, UCP.
*Reinforced plastics	CBA, CEL, DOW, RCI, SHC, UCP.
*All other uses (including export)	CBA, DOW, RCI, SHC, UCP.
*Modified	ACP, ADM, BEN, CM, FMP, FOM, GLD, HAP, IOC, LEF, MID, MMM, MNP, MRB, NON, OSB, PLS, PPG, PYR, REZ, SCN, SRR, VTV, WAS.
*Polyester resins:	
Reinforced plastics:	
*Sheets, flat and corrugated	ACY, APD, DA, EW, GLD, HKD, ICF, LAS, MFG, ORO, PPG, RCI, RH, SIC, SW, USR.
*All other	ACP, ACY, ADM, CPV, DA, DSO, FRE, GLD, GNT, GRV, HKD, ICF, IPC, KPS, LAS, MFG, MRO, PLU, PPG, RCI, SW, USR, UTR, VAL.
*Surface coatings	ACP, ACY, APD, COM, CPV, DA, GLD, GYR, ICF, MCC, ORO, PPG, SM, SW.
*All other uses (including export)	ACP, ACR, ACY, AMR, APD, DA, DAV, DSO, EKT, EPC, EW, FMP, FRE, GEI, GLD, GNT, GRG, GYR, HKD, LAS, MMM, OCF, PLU, PPG, RCI, RH, SCN, SW, TXT, USR, VAL.
*Phenolic and other tar acid resins:	
*Molding materials	FRL, GE, HER, HKD, HVG, MON, MRB, NPI, PLS, RCI, RGC, SYR, UCP, VAR, VSV.
Bonding and adhesive resins for:	
*Laminating	ACP, AMR, BOR, CAT, CBR, CD, EW, FOM, GE, HKD, IRI, MCA, MON, NPI, NPP, NTC, NVF, PGU, PPL, PYZ, RCD, RCI, SCN, SPL, SYR, TKL, UCP, VAR.
*Coated and bonded abrasives	AMR, BME, BOR, CAT, CBM, CBR, HKD, MMM, MON, MRB, PPG, PYZ, SCN, SYR, UCP, VAR.
*Friction materials	ABS, BME, BOR, FRL, GE, HKD, MMM, MON, PYZ, RAB, SCN, SYR, SYV, UCP, VAR, VSV.
*Thermal insulation	ACP, AMR, CAT, HKD, MON, OCF, PYZ, RCI, SCN, UCP.
*Foundry or shell molding	ACP, ACR, AMR, BOR, GE, HKD, MON, NPI, PYZ, RCI, SCN, SYR, TXT, UCP, UNO, VAR.
*Plywood	BOR, CAT, CBC, CBD, HPC, MON, PGU, PYZ, RCI, RH, SIM, WCA, WRD.
*Fibrous and granulated wood	AMR, BOR, CBC, CBD, HKD, MCA, MON, NPI, PYZ, RCI, SIM, UCP, UPL.

TABLE 15B.--*Plastics and resin materials for which U.S. production or sales were reported, identified by manufacturer, 1966*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
THERMOSETTING RESINS--Continued	
*Phenolic and other tar acid resins--Continued	
*Protective coatings, unmodified and modified	ADM, BOR, CIK, CPV, DSO, EW, FCD, FRE, GE, GEI, GRV, HAN, HER, HKD, ICF, INL, KMC, KRM, KYN, MID, MMM, MON, MRB, NCI, NPI, ORO, OXR, PYR, PYZ, RCI, RH, SM, SNC, SW, SYR, TV, UCP, VAR, VTV, WAS.
*All other uses (including export)	ACP, AMR, BME, BOR, CAT, CBM, CBR, DSO, EW, GE, GEI, GRG, HER, HKD, IOC, IRC, IRI, KND, KPT, MMM, MON, MRB, NPI, PLS, PYR, PYZ, RAB, RCI, REZ, RGC, RH, RPC, SCN, SHA, SNC, SYR, UCP, USR, VAR, VSV.
*Polyurethane and diisocyanate resins	ACB, ADM, AFP, ARK, BFG, CBM, DUP, GPM, HAP, IPI, JWI, KMC, MCC, NOP, NPV, PEL, PFP, QUN, SCN, UPJ.
*Rosin modifications:	
*Rosin and rosin esters, unmodified (ester gums)	ADM, CBY, DPP, ECC, FAR, FRP, HPC, KRM, MCC, NCI, OSB, SRR.
*All other	ADM, CBY, DPP, FAR, FLW, FRP, HPC, JNS, KRM, MCC, NCI, OSB, PPG, RH, SCF, SHA.
*Silicone resins	ACP, BOR, DCC, GLD, SPD, UCC.
Styrene-alkyd polyesters	ADM, DEG, PFP.
*Urea and melamine resins:	
*Textile treating and coating resins	ACY, APX, BRY, CAT, CBR, CIB, CRC, DAN, DEP, DUP, ECC, GAF, GGY, HNC, HRT, JSC, MON, MRA, ONX, OXR, PC, QCP, RCI, RH, ROC, RPC, S, SBC, SEY, SNW, STC, SYN, USO, VAL, WIC.
*Paper treating and coating resins	ACY, AMR, BME, BOR, CBC, CBD, CBR, DEP, DUP, HPC, MMM, MON, RCI, RH, SIM, TXT, x.
Molding materials	ACP, ACY, FMB, GDN, PMC, SFA.
Bonding and adhesive resins for:	
*Laminating	ACY, BOR, CAT, CBR, FOM, GE, MON, NPP, NTC, OCF, PGU, PMC, PPL, STC.
*Plywood	ACP, ACY, BOR, CAT, CBC, CBD, HPC, MON, NPI, NTC, PGU, RCI, REN, RH, SAC, SIM, SOR, WRD.
*Fibrous and granulated wood	ACY, AMR, BOR, CBD, IPR, MON, PGU, RCI, SAC, SOR, SYV, UPL.
*Protective coatings	ACP, ACY, CEL, CPV, DSO, DUP, GLD, GRV, HAN, KPS, MID, MON, NON, OXR, PPG, RCI, REL, RH, SCN, SW, TV.
*All other uses (including export)	ACP, ACY, AMR, BOR, CAT, CMP, DUP, EFH, FMB, HPC, MON, RCI, RH, STC, UNO, VAL, VAR.
*All other thermosetting resins	ACP, ACY, CIB, GGY, HPC, HVG, JNS, MOB, MON, NOP, NPV, NTC, OCF, PPG, RPC, UBS, UNO, WTC.
THERMOPLASTIC RESINS	
Acrylic resins	ACY, CEL, CIB, CMG, DUP, FLH, GLC, GLX, HCO, JNS, JSC, PPG, QUN, RH, RPC, SAR, SEY, VPC, x.
*Cellulose plastics materials:	
Sheets, continuous:	
*Under 0.003 gage	CEL, DUP, EKT, NIX.
*0.003 gage and over	CEL, DOW, EKT, MON, MPP, NIX, PDJ, SPY.
*All other sheets, rods, and tubes	CEL, MPP, NIX, PDJ, RSB, SPY.
*Molding and extrusion materials	CBN, CEL, DOW, EKT, MON, RSB.
*Polyamide resins:	
*Nylon type	ALF, DUP, FG, POL, SPN.
*Non-nylon type	BCM, EMR, GNM, JNS, KRM, SNW.
Polyolefin plastics materials:	
Ethylene polymers and copolymers:	
Production:	
*High pressure polyethylene	ACP, DOW, DUP, EKX, KPP, MON, RCC, SPN, UCP, USI.
*Low pressure polyethylene	ACP, CEL, DOW, DUP, HPC, KPP, MON, PLC, UCP, USI.
*Ethylene copolymers	DUP, UCP, USI.
*Polyethylene, density 0.940 and below:	
*Sales and use:	
*Injection molding	ACP, CEL, DOW, DUP, EKX, KPP, MON, PLC, RCC, SHC, SPN, UCP, USI.
*Blow molding	ACP, DOW, DUP, EKX, KPP, MON, PLC, RCC, SHC, SPN, UCP, USI.
*Film and sheet	ACP, AIO, CEL, DOW, DUP, EKX, KPP, MON, PLC, RCC, SHC, SPN, UCP, USI.
*Extrusion coating on paper and other substrates	CEL, DOW, DUP, EKX, KPP, MON, PLC, SPN, UCP, USI.
*Wire and cable	CEL, DOW, DUP, EKX, KPP, MON, PLC, SHC, UCP, USI.

TABLE 15B.--*Plastics and resin materials for which U.S. production or sales were reported, identified by manufacturer, 1966*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
THERMOPLASTIC RESINS--Continued	
Polyolefin plastics materials--Continued	
*Polyethylene, density 0.940 and below--Continued	
*Sales and use--Continued	
*Pipe and conduit	DOW, EKX, KPP, PLC, UCP, USI.
*Other extruded products	ACP, DOW, DUP, EKX, KPP, PLC, UCP, USI.
*All other uses (including export)	ACP, CEL, DOW, DUP, EKX, KPP, MON, PLC, RCC, SPN, UCP, USI.
*Polyethylene, density over 0.940:	
*Sales and use:	
*Injection molding	ACP, CEL, DOW, DUP, EKX, HPC, KPP, PLC, RCC, SHC, UCP, USI.
*Blow molding	ACP, CEL, DOW, DUP, EKX, HPC, KPP, MON, PLC, RCC, SHC, UCP, USI.
*Film and sheet	ACP, CEL, DOW, DUP, EKX, HPC, KPP, PLC, SHC, UCP, USI.
*Extrusion coating on paper and other substrates	DUP, EKX, PLC, UCP, USI.
*Wire and cable	ACP, CEL, DUP, EKX, HPC, MON, PLC, SHC, UCP, USI.
*Pipe and conduit	ACP, CEL, DUP, EKX, HPC, KPP, PLC, SHC, UCP, USI.
*Other extruded products	ACP, CEL, DOW, DUP, EKX, HPC, KPP, PLC, UCP, USI.
*All other uses (including export)	ACP, CEL, DOW, DUP, EKX, HPC, KPP, MON, PLC, UCP, USI.
Polypropylene:	
*Production	ALO, AVS, DOW, EKX, ENJ, HPC, NVT, RCC, SHC.
*Sales and use:	
*Molding	ACP, AVS, DOW, EKX, ENJ, HPC, NVT, ORO, PLC, RCC, SHC, UCP, USI.
*Extrusion	ACP, ALO, AVS, EKX, ENJ, HPC, NVT, ORO, PLC, RCC, SHC, UCP, USI, VEL.
*All other uses (including export)	ACP, ALO, AVS, DOW, EKX, ENJ, HPC, NVT, ORO, PLC, RCC, SHC, UCP, USI, VEL.
*Styrene type plastics materials:	
ABS and SAN resins:	
*Production	BFG, DOW, FBF, FIR, GRD, MCB, MON, RCC, SW, UCP, USR, WIC.
*Sales and use:	
*Molding	BFG, DOW, FBF, MCB, MON, UCP, USR.
*Extrusion	BFG, DOW, MCB, MON, MPP, RCC, UCP, USR.
*All other uses (including export)	BFG, DOW, FIR, GRD, MCB, MON, MPP, RCC, SW, UCP, USR, WIC.
Styrene and styrene copolymer resins:	
*Production:	
Straight polystyrene	BPL, CBN, CSD, DOW, FBF, FG, KPP, MON, ONX, PLA, POL, RCC, SEK, SOL, TIC, UBS, UCP, WAS.
Rubber-modified polystyrene	BPL, CSD, DOW, FG, GOR, KPP, MON, PLA, RCC, SHC, UCP.
Styrene-butadiene copolymer	BFG, BOR, DOW, FIR, GGC, GNT, GRD, GYR, ILC, KPP, SEP, USR, WIC.
All other	ACC, BCN, BKC, BOR, DOW, DSO, DUP, FLH, GAF, GLD, GRD, IOC, JNS, JSC, MON, MRT, PAI, PVI, RCC, RH, SM, SPI, UNC, WAS.
*Sales and use:	
*Molding	BFG, BKC, BPL, CSD, DOW, FBF, FG, FIR, GOR, GYR, KPP, MON, PLA, RCC, SHC, SOL, TIC, UCP, USR.
*Textile and paper treating and coating	BOR, DOW, FIR, FLH, GNT, GRD, GYR, ILC, JSC, KPP, MON, ONX, SEP, USR, WAS, WIC.
*Emulsion paint	BOR, DOW, DSO, FIR, GNT, GRD, GYR, KPP, MON, RCC, USR.
*Extrusion	CBN, CSD, DOW, DSO, KPP, MON, MPP, RCC, SHC, UCP, x.
Foam and foamable materials	CSD, DOW, GYR, KPP, MON, RCC, SEK, SHC, UNC, USR, x.
*All other uses (including export)	ACC, BCN, BFG, BOR, CSD, DOW, DSO, DUP, FG, GAF, GGC, GLD, GNT, GRD, GYR, IOC, JNS, JSC, KPP, MON, MPP, MRT, PAI, POL, PVI, RCC, RH, SEK, SEP, SHC, SM, SPI, UBS, UCP, UNC, USR, WAS.
Vinyl resins:	
Polyvinyl chloride and copolymers:	
*Production:	
Suspension homopolymers	AME, ATU, BFG, BOR, CRY, CUC, DA, DOW, ESC, FIR, GNT, GRA, GYR, MON, PLA, SFA, UCP, USR.
Suspension copolymers	AME, BFG, BOR, CRY, CUC, DA, FIR, GNT, KYS, MON, NSC, ONX, PNT, SFA, THC, UCP.
Dispersions (paste)	BFG, BOR, CRY, DA, FIR, GYR, MON, UCP, USR.

TABLE 15B. --*Plastics and resin materials for which U.S. production or sales were reported, identified by manufacturer, 1966*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
THERMOPLASTIC RESINS--Continued	
Vinyl resins--Continued	
Polyvinyl chloride and copolymers--Continued	
*Sales and use:	
*Calendering, except flooring	AME, ATU, BFG, BOR, CRY, CUC, DA, DOW, ESC, FIR, GNT, GYR, MON, PNT, SFA, THC, UCP, USR.
Flooring:	
*Calendered	AME, ATU, BFG, BOR, CRY, CUC, DA, ESC, FIR, MON, THC, UCP.
*Coated	BFG, BOR, CRY, DA, FIR, GNT, GYR, MON, THC, UCP, USR.
Paper and textile uses:	
*Coating	ATU, BFG, BOR, CRY, DA, ESC, FIR, MON, ONX, THC, UCP, USR.
*Other	BFG, BOR, ESC, FIR, ONX, THC, UCP.
*Protective coatings and adhesives	BFG, BOR, DA, ESC, FIR, MON, NSC, UCP.
*Wire and cable	AME, BFG, BOR, CRY, CUC, DA, DOW, FIR, MON, PNT, THC, UCP, USR.
*Extruded film and sheet	AME, BFG, BOR, CUC, DA, DOW, FIR, GYR, MON, PNT, SFA, THC, UCP, USR.
*Other extruded products	ACP, ATU, BFG, BOR, CRY, CUC, DA, DOW, ESC, FIR, GNT, GYR, MON, PNT, SFA, THC, UCP, USR.
*Sound records	BFG, BOR, CRY, CUC, DA, KYS, MON, PLA, PNT, SFA, THC, UCP, USR.
*Injection and blow molding	ATU, BFG, BOR, CRY, DA, DOW, ESC, FIR, GYR, MON, THC, UCP, USR.
*Plastisol formulating and molding	BFG, BOR, CRY, CUC, DA, ESC, FIR, MON, PYR, THC, UCP, USR.
*All other uses (including export)	BFG, BOR, CRY, CUC, DA, DOW, ESC, FIR, GNT, GRA, GYR, MON, PYR, SFA, THC, UCP, USR.
Polyvinyl acetate:	
*Production:	
*Latexes	AML, APV, BOR, BOY, CEL, CUC, DSO, DUP, FC, FLH, GLC, GLD, GRD, HAN, HNC, HRT, JSC, KMC, KMP, MCC, MMM, MR, MRN, NCI, NPV, NSC, NTC, PII, PPG, PVI, QCP, REL, RPC, SED, SEY, SPC, UCP, WAS, WIC.
*Resins	AFP, BEN, BLS, BOR, CAT, CST, CUC, DAN, DAV, DUP, FAR, HNC, JOB, MON, NSC, OCF, PPG, RCI, SCO, SED, SH, UCP.
*Sales and use:	
*Emulsion paints	AML, APV, BEN, BOR, CAT, CEL, CUC, DAV, DSO, DUP, FLH, GLC, GLD, GRD, HAN, JOB, KMC, KMP, MCC, MON, MR, NCI, NPV, NSC, PPG, RCI, SED, SPC, UCP, WAS, WIC.
*Adhesives	AML, BOR, CEL, CUC, DUP, FC, FLH, GLC, GRD, HNC, JSC, MMM, MON, MRN, NSC, NTC, PII, PPG, RCI, SH, UCP.
*Paper treating	AML, BOR, CEL, CUC, DUP, FLH, GLC, MMM, MON, NSC, PII, SEY, UCP, WIC.
*Textile treating	AML, BOR, CEL, CST, CUC, DAN, DUP, GLC, GRD, HRT, JSC, NSC, PII, RPC, SCO, SEY.
*All other uses (including export)	AFP, AML, BLS, BOR, CEL, CUC, DUP, FAR, FLH, GLC, GLD, GRD, HRT, MON, NSC, OCF, PII, PVI, QCP, REL, RCI, UCP, WAS.
*Polyvinyl alcohol	BOR, CUC, DUP, FC, MCC, MON.
*Other vinyl resins	BOR, DOW, DUP, GLD, GRD, IOC, MON, SW, UCP.
*All other thermoplastic resins	ACG, ACP, CBY, CIB, DEP, DUP, ECC, GE, GLC, HPC, JSC, KRM, MID, MMM, MOB, RH, RPC, SBC, SCN, SNW, UCP.

Rubber-Processing Chemicals

TABLE 16B. -- *Rubber-processing chemicals for which U.S. production or sales were reported, identified by manufacturer, 1966*

[Rubber-processing chemicals for which separate statistics are given in table 16A are marked below with an asterisk (*); chemicals not so marked do not appear in table 16A because the reported data are accepted in confidence and may not be published. Manufacturers' identification codes shown below are taken from table 22. 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 22)
RUBBER-PROCESSING CHEMICALS, CYCLIC	
*Accelerators, activators, and vulcanizing agents:	
*Aldehyde-amine reaction products:	
Acetaldehyde-aniline condensate	USR.
n-Butyraldehyde-aniline condensate	DUP, MON, RCD, USR.
Butyraldehyde-butylideneaniline condensate	MON.
α-Ethyl-β-propylacrylanilide	CCO.
Formaldehyde-p-toluidine condensate	MON.
Heptaldehyde-aniline condensate	USR.
Triethyltrimethylenetriamine	USR.
*Dithiocarbamic acid derivatives:	
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, mixed.	DUP.
Guanidines:	
Dicatechol borate, di-o-tolylguanidine salt	DUP.
1,3-Diphenylguanidine	ACY.
Diphenylguanidine phthalate	MON.
1,3-Di-o-tolylguanidine	ACY.
1,2,3-Triphenylguanidine	NAC.
*Thiazole derivatives:	
2-Benzothiazyl N,N-diethylthiocarbamoyl sulfide	PAS.
1,3-Bis(2-benzothiazolylmercaptomethyl)urea	MON.
N-tert-Butyl-2-benzothiazolesulfenamide	MON.
*N-Cyclohexyl-2-benzothiazolesulfenamide	ACY, BFG, MON, USR.
N,N-Diisopropyl-2-benzothiazolesulfenamide	ACY.
N-(2,6-Dimethylmorpholino)-2-benzothiazolesulfenamide	MON.
*2,2'-Dithiobis(benzothiazole)	ACY, BFG, GYR, MON, USR.
*2-Mercaptobenzothiazole	ACY, BFG, GYR, MON, USR.
2-Mercaptobenzothiazole, zinc chloride	DUP.
2-Mercaptobenzothiazole, zinc salt	ACY, GYR, USR.
4-Morpholinyl-2-benzothiazyl disulfide	GYR.
N-Oxydiethylene-2-benzothiazolesulfenamide	ACY, MON.
Thiazoline-2-thiol	ACY.
All other cyclic accelerators, activators, and vulcanizing agents:	
p-Benzoquinonedioxime	CTA, DUP.
Bis(p-aminocyclohexyl)methane carbamate	DUP.
Bis(2,6-dimethylmorpholinothiocarbonyl)sulfide	DUP.
Dibenzoyl-p-quinonedioxime	CTA, USR.
Dibenzylamine	MLS, USR.
N,N'-Dicinnamylidene-1,6-hexanediamine	DUP.
Di-N,N'-pentamethylenethiuram tetrasulfide	DUP, VNC.
4,4'-Dithiodimorpholine	MON.
2-Imidazoline-2-thiol	DUP, RBC.
Poly-p-dinitrosobenzene	DUP.
Styrene polysulfide	TKL.
Tetrahydro-4,4,6-trimethyl-2(1H)-pyrimidinethione	VNC.
*Antioxidants, antiozonants, and stabilizers:	
*Amino antioxidants, antiozonants, and stabilizers:	
Aldehyde- and acetone-amine reaction products:	
Acetaldehyde-aniline hydrochloride condensate	USR.
Aldol-α-naphthylamine condensate	BFG.
Butyraldehyde-aniline condensate	DUP.
Diphenylamine-acetone condensate	ACY, BFG, DUP, USR.
Phenyl-2-naphthylamine-acetone condensate	USR.
*Substituted p-phenylenediamines:	
N,N'-Bis(1,4-dimethylpentyl)-p-phenylenediamine	EKT, USR, x.
N,N'-Bis(1-ethyl-3-methylpentyl)-p-phenylenediamine	EKT, MON, UPM.

TABLE 16B.--*Rubber-processing chemicals for which U.S. production or sales were reported, identified by manufacturer, 1966*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
RUBBER-PROCESSING CHEMICALS, CYCLIC--Continued	
*Antioxidants, antiozonants, and stabilizers--Continued	
*Amino antioxidants, antiozonants, and stabilizers--Continued	
*Substituted p-phenylenediamines--Continued	
N,N'-Bis(1-methylheptyl)-p-phenylenediamine	BFG, EKT, MON, UPM.
N-sec-Butyl-N'-phenyl-p-phenylenediamine	USR.
N-Cyclohexyl-N'-phenyl-p-phenylenediamine	USR.
Diarylarylenediamines, mixed	GYR.
N,N'-Di-sec-butyl-p-phenylenediamine	USR.
N,N'-Di-2-naphthyl-p-phenylenediamine	BFG.
*N,N'-Diphenyl-p-phenylenediamine	BFG, DUP, USR.
N-Isopropyl-N'-phenyl-p-phenylenediamine	MON, USR.
All other p-phenylenediamines	MON.
Other amino antioxidants, antiozonants, and stabilizers:	
p-Anilinophenol	BFG.
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.
4,4'-Dimethoxydiphenylamine	DUP.
4,4'-Dioctyldiphenylamine	BFG.
N,N'-Diphenylethylenediamine	CCO, NOP, x.
N,N'-Diphenyl-1,3-propanediamine	CCO.
N,N'-Di-o-tolylethylenediamine	CCO.
p-Isopropoxydiphenylamine	BFG.
4,4'-Methylenedianiline	USR.
*Octyldiphenylamine	ACY, NPI, PAS, USR.
Octyldiphenylamine mixture (mono-, nonyl-, and di-)-	BFG.
N-Phenyl-1-naphthylamine	DUP, USR.
*N-Phenyl-2-naphthylamine	BFG, DUP, USR.
p-(p-Toluenesulfonamido)diphenylamine	USR.
All other	DUP.
*Phenolic and phosphite antioxidants and stabilizers:	
Phosphites:	
Nonyl phenyl phosphites, mixed	USR.
Polyphenolic phosphite, polyalkylated	BFG.
*Polyphenolics (including bisphenols):	
Bisphenol, hindered	GYR.
4,4'-Butylidenebis(6-tert-butyl-m-cresol)	MON.
2,5-Di-(1,1-dimethylpropyl)hydroquinone	MON.
2,2'-Methylenebis(6-tert-butyl-p-cresol)	ACY, CAT.
2,2'-Methylenebis(6-tert-butyl-4-ethylphenol)	ACY.
2,2'-Methylenebis(6-tert-octyl-p-cresol)	ACY.
2,2'-Thiobis(4,6-di-sec-amylphenol)	MON.
4,4'-Thiobis(6-tert-butyl-m-cresol)	MON.
1,1,3-Tri(2-methyl-4-hydroxy-5-tert-butylphenyl) butane.	ICI.
Other phenolic antioxidants and stabilizers:	
p-Benzyloxyphenol	BFG.
N-Butyroyl-p-aminophenol	MLS.
o-Cresol, alkylated	PIT.
N-Lauroyl-p-aminophenol	MLS.
*Phenol, alkylated	ACY, BFG, CCO, GYR, PAS, PIT, USR.
Phenol, hindered	DUP, GYR, PIT.
Phenol, styrenated	BFG, GYR, USR.
N-Stearoyl-p-aminophenol	MLS.
Xylenol, alkylated	PIT.
*Blowing agents:	
N,N'-Dimethyl-N,N'-dinitrosoterephthalamide	DUP.
Dinitrosopentamethylenetetramine	DUP, NPI.
p,p'-Oxybis(benzenesulfonhydrazide)	USR.
*Peptizers:	
Alkylated o-thiocresol	PIT.
Alkylated thiophenol, zinc salt	PIT.
Aryl mercaptans	PIT.
2-Benzamidothiophene, zinc salt	ACY.
2',2'''-Dithiobis(benzanilide)	ACY.
Dixylyl disulfides, mixed	PIT.
2-Naphthalenethiol	DUP.
Pentachlorobenzenethiol	DUP.

TABLE 16B.--*Rubber-processing chemicals for which U.S. production or sales were reported, identified by manufacturer, 1966*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
RUBBER-PROCESSING CHEMICALS, CYCLIC--Continued	
*Peptizers--Continued	
Pentachlorobenzenethiol, zinc salt	DUP.
Thiocresol	PIT.
Thiophenol (Benzenethiol)	PIT.
Xylenethiol	DUP.
Other cyclic rubber-processing chemicals:	
p-tert-Amylphenol sulfide (tackifier)	PAS.
Dicresyl disulfide	USR.
N,4-Dinitroso-N-methylaniline (physical-property improver).	CTA, MON.
Hindered aromatic polyamine	USR.
*N-Nitrosodiphenylamine (retarder)	ACY, BFG, CTA, GYR, USR.
RUBBER-PROCESSING CHEMICALS, ACYCLIC	
*Accelerators, activators, and vulcanizing agents:	
*Dithiocarbamic acid derivatives:	
Dibutyldithiocarbamic acid, potassium salt	VNC.
Dibutyldithiocarbamic acid, sodium salt	DUP, PAS, USR, VNC.
*Dibutyldithiocarbamic acid, zinc salt	ALC, DUP, PAS, USR, VNC.
Diethyldithiocarbamic acid, selenium salt	VNC.
Diethyldithiocarbamic acid, sodium salt	ALC, PAS.
Diethyldithiocarbamic acid, tellurium salt	VNC.
*Diethyldithiocarbamic acid, zinc salt	ALC, GYR, PAS, USR, VNC.
Dimethyldithiocarbamic acid, bismuth salt	VNC.
Dimethyldithiocarbamic acid, copper salt	VNC.
Dimethyldithiocarbamic acid, lead salt	VNC.
Dimethyldithiocarbamic acid, selenium salt	VNC.
Dimethyldithiocarbamic acid, sodium salt and sodium polysulfide.	BFG, GNT.
*Dimethyldithiocarbamic acid, zinc salt	ALC, DUP, FMN, GYR, PAS, RBC, USR, WRC.
All other	PAS, VNC.
*Thiurams:	
Bis(dibutylthiocarbamoyl) sulfide	USR.
*Bis(diethylthiocarbamoyl) disulfide	DUP, GYR, PAS.
*Bis(dimethylthiocarbamoyl) disulfide	BFG, DUP, GNT, GYR, PAS, USR, VNC.
Bis(dimethylthiocarbamoyl) disulfide and 2-mercapto-benzothiazole, mixed.	DUP, VNC.
*Bis(dimethylthiocarbamoyl) sulfide	DUP, GYR, USR.
Bis(ethylmethylthiocarbamoyl) sulfide	VNC.
Thiuram blend	DUP.
Xanthates and sulfides:	
Di-n-butylxantho disulfide	USR.
Diisopropylxantho disulfide	BFG.
Zinc dibutyl xanthate	USR.
Zinc isopropyl xanthate	VNC.
All other acyclic accelerators, activators, and vulcanizing agents:	
n-Butyraldehyde-butylamine condensate	DUP.
Di-n-butylammonium oleate	DUP.
3-Ethyl-1,1-dimethyl-2-thiourea	VNC.
Ethylenediamine carbamate	DUP.
Polyoxyalkalenetetrasulfide	TKL.
1,1,3-Trimethyl-2-thiourea	VNC.
Blowing agents:	
Modified urea	DUP.
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.

TABLE 16B.--*Rubber-processing chemicals for which U.S. production or sales were reported, identified by manufacturer, 1966*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
RUBBER-PROCESSING CHEMICALS, ACYCLIC--Continued	
Polymerization regulators:	
Alkyl mercaptans, mixed	PAS, PLC.
*Dodecyl mercaptans	HK, PAS, PLC.
Tetradecyl mercaptan	PAS.
Shortstops:	
Dimethyldithiocarbamic acid, potassium salt	GYR, PAS, USR.
*Dimethyldithiocarbamic acid, sodium salt	ALC, BFG, DUP, GYR, PAS, USR.
Other acyclic rubber-processing chemicals:	
Zinc laurate (activator, physical-property improver)	USR.
All other	USR.

Elastomers (Synthetic Rubbers)

TABLE 17B.--*Elastomers (synthetic rubbers) for which U.S. production or sales were reported, identified by manufacturer, 1966*

[Elastomers (synthetic rubbers) for which separate statistics are given in table 17A are marked below with an asterisk (*); products 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 22. 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 22)
ELASTOMERS, CYCLIC	
*Polybutadiene-styrene type (S-type)	ASY, BFG, CPY, FIR, FRS, GGC, GNT, GYR, ILC, MCB, PLC, RUB, SHC, TUS, URC, USR, WIC.
*Polybutadiene-styrene-vinylpyridine type	BFG, FIR, FRS, GNT, GYR, PLC, USR.
*Polyurethane type	ACY, DUP, GNT, MOB, PRC, RUB, TKL, USR.
ELASTOMERS, ACYCLIC	
Polyacrylate ester type	ACY, BFG, TKL.
Polyalkalene sulfide type	TKL.
Polybutadiene type	BFG, FRS, GYR, TKL, TUS.
*Polybutadiene-acrylonitrile type (N-type)	BFG, FRS, GYR, ILC, MCB, USR.
Polychloroprene type (Neoprene)	DUP.
*Polyisobutylene-isoprene type (Butyl)	CBN, ENJ.
Reaction products of natural rubber	GYR, HPC.
*Silicone elastomers	DCC, SPD, UCS.
*Stereo elastomers	ASY, BAR, DUP, ENJ, FRS, GGC, GNT, GYR, PLC, SHC, TUS.
All other	DUP, ENJ, x.

Plasticizers

TABLE 18B.--*Plasticizers for which U.S. production or sales were reported, identified by manufacturer, 1966*

[Plasticizers 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 22]

Chemical	Manufacturers' identification codes (according to list in table 22)
PLASTICIZERS, CYCLIC	
Coumarone-indene plasticizer	NEV.
N-Cyclohexyl-p-toluenesulfonamide	MON.
Dibenzyl sebacate	WTH.
Diethylene glycol dibenzoate	VEL.
Di-tert-octyldiphenyl oxide	DOW.
Dipropanediol dibenzoate	VEL.
N-Ethyl-p-toluenesulfonamide	MON.
Isopropylidenediphenoxypropanol	DOW.
Naphthalene, alkylated	ACC.
Phosphoric acid esters:	
*Cresyl diphenyl phosphate	FMP, MON, MTR, SFA, x.
Dibutyl phenyl phosphate	MON.
Diphenyl mono-o-xenyl phosphate	DOW.
Diphenyl octyl phosphate	MON.
Methyl diphenyl phosphate	FMP, MON.
*Tricresyl phosphate	FMP, MON, MTR, SFA.
*Triphenyl phosphate	EK, MON, SFA.
All other phosphoric acid esters	SFA.
*Phthalic anhydride esters:	
Alkyl benzyl phthalates	x.
Bis(4-methyl-2-pentyl) phthalate	GRH.
Butyl benzyl phthalate	GRH, MON.
Butyl cyclohexyl phthalate	ACP.
n-Butyl n-decyl phthalate	PCC.
*Butyl 2-ethylhexyl phthalate	ACP, MON, UCC.
n-Butyl isodecyl phthalate	GRH, UCC.
*Butyl octyl phthalate	GRH, PCC, RCI, RUB.
Di(2-butoxyethyl) phthalate	FMP, WM.
*Dibutyl phthalate	ACP, COM, DUP, EKT, GRH, MON, PCC, PFZ, RCI, RUB, SW, UCC, WTH.
*Dicyclohexyl phthalate	ACP, DUP, FMP, MON, PFZ.
*Diethyl phthalate	DUP, EKT, KF, MON, PFZ.
*Dihexyl phthalate	ACP, GRH, THC.
*Diisodecyl phthalate	ACP, BFG, EKT, ENJ, GRH, MON, PCC, RCI, RUB, THC, UCC, WTH.
*Di(2-methoxyethyl) phthalate	DUP, EKT, FMP, RCI, SFA.
Dimethyl isophthalate	PFZ.
*Dimethyl phthalate	EKT, KF, MON, PFZ, TCC.
Dinonyl phthalate	RCI.
*Dioctyl phthalates:	
Dicapryl phthalate	GRH, WTH.
Di(2-ethylhexyl) isophthalate	UCC.
*Di(2-ethylhexyl) phthalate	ACP, BFG, EKT, ENJ, GRH, MON, PCC, PFZ, RCI, RUB, THC, UCC, WTH.
*Diiso-octyl phthalate	ACP, ADM, BFG, EKT, ENJ, GRH, MON, PCC, PFZ, RCI, RUB, THC, UCC.
Di-n-octyl phthalate	ADM.
Mixed dioctyl phthalates	ACP.
Diphenyl phthalate	MON.
*Ditridecyl phthalate	ACP, ENJ, GRH, MON, PCC, PFZ, RCI, RUB, THC, UCC.
2-Ethylhexyl isodecyl phthalate	UCC.
*Glycolate phthalate esters:	
Butyl phthalyl butyl glycolate	MON, NOP.
Ethyl (and methyl) phthalyl ethyl glycolate	MON.
All other glycolate phthalate esters	ARG, HPC.
Hexyl n-decyl phthalate	ACP, UCC.
Hydrogenated castor oil phthalate	DUP.
Isodecyl tridecyl phthalate	THC.
Iso-octyl isodecyl phthalate	ACP, GRH, RUB.
*n-Octyl n-decyl phthalate	ACP, ENJ, GRH, MON, PCC, PFZ, RCI, RUB, THC.
All other phthalic anhydride esters	FMP, GRH, MON, THC, UCC.
Polyethylene glycol dibenzoate	VEL.

TABLE 18B. --*Plasticizers for which U.S. production or sales were reported, identified by manufacturer, 1966*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
PLASTICIZERS, CYCLIC--Continued	
Tetrahydrofurfuryl oleate	CCW, EMR.
Toluenesulfonamide, o-, p- mixtures	ACY, MON.
Triethylene glycol dibenzoate	VEL.
*Trimellitic acid esters:	
n-Octyl n-decyl trimellitate	THC.
Tri(2-ethylhexyl)trimellitate	PFZ.
Triisodecyl trimellitate	PFZ.
Triiso-octyl trimellitate	PFZ, RUB.
Tri-n-octyl trimellitate	RUB.
All other trimellitic acid esters	PFZ, RUB.
All other cyclic plasticizers	CCW, EKT, MON, NEV.
PLASTICIZERS, ACYCLIC	
*Adipic acid esters:	
*Di(2-(2-butoxyethoxy)ethyl) adipate	FMP, RCI, TKL, WTH.
*Di(2-ethylhexyl) adipate	EKT, GRH, MON, PCC, RCI, RH, THC, UCC.
Diisobutyl adipate	FMP, GRH, HAL.
*Diisodecyl adipate	ACP, EKT, GRH, MON, PCC, PFZ, RCI, RH, RUB, THC, UCC.
Diiso-octyl adipate	PCC, RCI, RH, RUB, WTH.
Diisopropyl adipate	SBC, VND.
Dinonyl adipate	THC.
Di-n-octyl adipate	ACP.
n-Hexyl n-decyl adipate	ACP, PCC.
Iso-octyl isodecyl adipate	GRH, NOP, RCI.
*n-Octyl n-decyl adipate	ACP, GRH, MON, PCC, RCI, RH, THC, TKL, UCC.
Polyethylene glycol adipate	PFZ.
All other adipic acid esters	GRH, PFZ.
*Azelaic acid esters:	
Dicyclohexyl azelate	PFZ.
Di(2-ethylbutyl) azelate	EMR.
Di(2-ethylhexyl) azelate	EKT, EMR, PFZ, RCI, RH, RUB, UCC.
Diisobutyl azelate	HAL.
Diiso-octyl azelate	EMR.
Di-n-octyl azelate	PFZ.
All other azelaic acid esters	ACP, EMR.
1,4-Butanediol dicaprylate	RUB.
Butoxyethyl pelargonate	HAL.
Citric and acetylcitric acid esters	PFZ.
*Complex linear polyesters and polymeric plasticizers	ADM, EKT, EMR, GLY, HAL, MON, RH, RUB, THC, WTH.
Di(butoxyethoxy-ethoxy)methane	TKL.
Di(2-(2-butoxyethoxy)ethyl)methane	GRD.
Dibutyl tartrate	ARC.
Diethylene glycol dinonanoate	EMR, RUB.
Diiso-octyl diglycolate	CCA, FMP.
*Epoxidized esters:	
Butyl epoxydioleate	ADM.
Butyl epoxystearate	BAC.
Butyl epoxytallate	ADM, THC.
Epoxidized linseed oils	ADM, SWT.
*Epoxidized soya oils	ADM, ARG, BAC, RCI, RH, SWT, THC, UCC.
Epoxidized tall oils	RCI.
*2-Ethylhexyl epoxytallates	ADM, BAC, UCC.
Octyl epoxystearates	ARG.
*Octyl epoxytallates	ARG, RH, THC, UCC.
All other epoxidized esters	EMR, RH.
Glycerol pelargonate	EMR.
Glyceryl tributyrate and tripropionate	EKT.
Glycol pelargonate	EMR.
Isodecyl nonanoate (Isodecyl pelargonate)	EMR.
Lauric acid esters	HAL, SBC.
Myristic acid esters:	
Butyl myristate	ARC.
*Isopropyl myristate	ARC, DRW, ICI, NOP.
Other myristic acid esters	ICI.
*Oleic acid esters:	
2-Butoxyethyl oleate	ARC.
*Butyl oleate	ARC, CHL, HAL, ICI, NOP, SWT, WM, WTH.
*Glycerol trioleate (Triolein)	DRW, EMR, SWT, WM.
*Isopropyl oleate	EMR, ICI, WM.

TABLE 18B.--*Plasticizers for which U.S. production or sales were reported, identified by manufacturer, 1966*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
PLASTICIZERS, ACYCLIC--Continued	
*Oleic acid esters--Continued	
*Methyl oleate	CHL, EMR, ICI, NOP, SWT.
*n-Propyl oleate	CHL, EMR, WM.
All other oleic acid esters	HAL, RH, VND.
Palmitic acid esters:	
Isobutyl palmitate	ARC, EKT.
Iso-octyl palmitate	RUB.
Isopropyl palmitate	ARC, ICI, WM.
2-Methoxyethyl palmitate	EKT.
*Phosphoric acid esters:	
Tri(2-butoxyethyl) phosphate	FMP, WES.
Tri(2-chloroethyl) phosphate	UCC.
Triethyl phosphate	EKT.
Trioctyl phosphate	FMP, UCC.
All other phosphoric acid esters	SF, x.
Ricinoleic and acetylricinoleic acid esters:	
n-Butyl acetylricinoleate	BAC, WTH.
Butyl ricinoleate	BAC, RCI.
*Glycerol monoricinoleate	BAC, GLY, HAL, NOP.
Glyceryl tri(acetylricinoleate)	BAC.
Methyl ricinoleate	BAC.
All other ricinoleic and acetylricinoleic acid esters	ARC, BAC, PFZ, RH.
Sebacic acid esters:	
*Dibutyl sebacate	EKT, GRH, HAL, PFZ, RCI, RH, WTH.
*Di(2-ethylhexyl) sebacate	GRD, GRH, HAL, PCC, RH, RUB, WTH.
Diiso-octyl sebecate	NOP.
Dimethyl sebacate	GRH.
Dipentyl sebacate	RCI.
All other sebacic acid esters	NOP.
*Stearic acid esters:	
Butoxyethyl stearate	ARC, WM.
*n-Butyl stearate	ARC, CHL, EMR, HAL, ICI, RUB, SCP, SWT, WTH.
Dimethylammonium stearate	RH.
2-Ethylhexyl stearate	FMP.
Glycerol triacetyl stearate	BAC.
Isopropyl stearate	ARC, WM.
Methoxyethyl stearate	ARC.
Methyl dichlorostearate	HK.
Methyl pentachlorostearate	HK.
Methyl stearate	CHL.
All other stearic acid esters	HPC, WM.
Sucrose acetate isobutyrate	EKT.
Tetraethylene glycol di(2-ethylhexanoate)	UCC.
Triethylene glycol dicaprylate	RUB.
*Triethylene glycol di(caprylate-caprate)	DRW, FOR, HAL, RUB.
Triethylene glycol di-2-ethylbutyrate	UCC.
Triethylene glycol di(2-ethylhexanoate)	EKT, NOP, UCC.
Triethylene glycol dipelargonate	RUB.
2,2,4-Trimethyl-1,3-pentanediol diisobutyrate	EKX.
All other acyclic plasticizers	EMR, HAL, HPC, PFZ, TKL, UCC, WM.

Surface-Active Agents

TABLE 19B. --*Surface-active agents for which U.S. production or sales were reported, identified by manufacturer, 1966*

[Surface-active agents 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 22. 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 22)
Amphoteric Surface-Active Agents	
Acyclic:	
(1-Carboxyheptadecyl)trimethylammonium hydroxide, inner salt (C-Hexadecylbetaine).	DUP.
(Carboxymethyl)(coconut oil alkyl)dimethylammonium hydroxide, inner salt [N-(Coconut oil alkyl)betaine].	CUL.
(Carboxymethyl)[3-(coconut oil amido)propyl]-dimethyl-ammonium chloride, sodium salt.	JRG.
(Carboxymethyl)dimethyl(9-octadecenyl)ammonium hydroxide, inner salt [N-(9-Octadecenyl)-betaine].	DUP.
(1-Carboxyundecyl)trimethylammonium hydroxide, inner salt (C-Decylbetaine).	DUP.
N-(Coconut oil alkyl)-β-alanine, sodium salt----------	GNM.
N-(2-Coconut oil amidoethyl)-N-(2-hydroxyethyl)-glycine, sodium salt.	TCC.
N-Dodecyl-3-iminodipropionic acid, disodium salt---------	GNM.
N-(2-Hydroxyethyl)-N-(2-lauramidoethyl)-β-alanine, sodium salt.	UVC.
N-(2-Hydroxyethyl)-N-(2-stearamidoethyl)glycine, sodium salt.	GAF.
Mixed acyclic primary amines, ethoxylated and sulfated, sodium salt.	RH.
(Mixed alkyl)sulfobetaine----------	DUP, TXT.
Mixed fatty betaines----------	TXT.
Oleic acid - ethylenediamine condensate, propoxylated and sulfated, sodium salt.	S.
Polypeptide, ammonium salt----------	MYW.
Polypeptide, sodium salt----------	MYW.
N-(Tallow alkyl)-3-iminodipropionic acid, disodium salt--	GNM.
Cyclic:	
1,1-Bis(carboxymethyl)-2-undecyl-2-imidazolinium hydroxide, disodium salt.	MIR.
1-Carboxymethyl-2-heptadecyl-1-(2-hydroxyethyl)-2-imidazolinium hydroxide, sodium derivative, sodium salt.	MIR.
1-Carboxymethyl-1-(2-hydroxyethyl)-2-nonyl-2-imidazolinium chloride, sodium salt.	PCS, UVC.
1-Carboxymethyl-1-(2-hydroxyethyl)-2-nonyl-2-imidazolinium hydroxide, sodium derivative, sodium salt.	MIR.
1-Carboxymethyl-1-(2-hydroxyethyl)-2-undecyl-2-imidazolinium chloride.	UVC.
1-Carboxymethyl-1-(2-hydroxyethyl)-2-undecyl-2-imidazolinium hydroxide, sodium derivative, sodium salt.	MIR.
Heptadecylmethylbenzimidazolinesulfonic acid, sodium salt.	CIB.
3-[2-(2-Undecyl-2-imidazolin-1-yl)ethoxy]propionic acid, sodium salt.	UVC.
Anionic Surface-Active Agents	
*Carboxylic acids (and salts thereof):	
*Amine salts of fatty, rosin, and tall oil acids:	
Coconut oil acids, triethanolamine salt----------	EMR.
Oleic acid, butylamine salt----------	DYS.
Oleic acid, diethylamine salt----------	WTC.
Oleic acid, triethanolamine salt----------	DOM, HAL, TCC.
Saturated C_{12}-C_{18} acids, ethanolamine salt----------	SBP.
Stearic acid, morpholine salt----------	CSB.
Stearic acid, N,N,N′,N′-tetrakis(2-hydroxyethyl)-ethylenediamine salt.	ICI.

TABLE 19B.--*Surface-active agents for which U.S. production or sales were reported, identified by manufacturer, 1966*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
Anionic Surface-Active Agents--Continued	
*Carboxylic acids (and salts thereof)--Continued	
*Amine salts of fatty, rosin, and tall oil acids--Continued	
Stearic acid, triethanolamine salt	AML, GLY, TCC.
Tallow acids, triethanolamine salt	SBP.
*Carboxylic acids having amide or ester linkages:	
N-(Coconut oil acyl)polypeptide, ammonium salt	MYW.
N-(Coconut oil acyl)polypeptide, potassium salt	MYW.
N-(Coconut oil acyl)polypeptide, sodium salt	MYW.
N-(Coconut oil acyl)sarcosine	GGY.
N-(Coconut oil acyl)sarcosine, sodium salt	HMP.
*N-Lauroylsarcosine, sodium salt	CP, GGY, HMP, ONX.
N-(Mixed alkylsulfonyl)glycine, sodium salt	GAF.
N-Oleoylpolypeptide, sodium salt	LMI, MYW.
N-Oleoylsarcosine, sodium salt	GAF, GGY.
Phthalic acid, octadecyl ester, potassium salt	CIB.
Stearolactolactic acid	GLY.
Stearolactolactic acid, calcium salt	GLY.
Stearolactolactic acid, sodium salt	GLY.
N-Stearoylsarcosine, sodium salt	GGY.
N-Undecenoylpolypeptide, potassium salt	MYW.
All other	HMP.
*Potassium and sodium salts of fatty, rosin, and tall oil acids:	
Castor oil acids, potassium salt	ARL, BAC, SEA.
Castor oil acids, sodium salt	HAL, MRV, WHI.
*Coconut oil acids, potassium and sodium salts:	
*Potassium salt	ACE, BSC, CSB, DSO, DYS, GRL, HNT, JRG, LUR, NMC, PCH, PG, SWT.
*Sodium salt	CON, CP, JRG, LEV, NPR, PG, PRX.
Coconut oil and tallow acids, sodium salt	GRC.
*Corn oil acids, potassium and sodium salts:	
Potassium salt	HNT, PCH.
Sodium salt	LUR, NMC.
Cottonseed oil acids, sodium salt	WHI.
Lauric acid, potassium salt	DRW, NOP, VAL.
Mixed vegetable fatty acids, potassium salt	AML, ARL, DYS, GRC, GRL, PCH, SWT.
*Oleic acid, potassium salt	AML, BSC, BSW, CCL, CIB, CPY, DAN, FRS, GYR, HNT, NMC, NOP, QCP, S, SHP, USR, WBG, WIC.
*Oleic acid, sodium salt	BSW, FRS, LEV, LUR, MRV, NOP, SEA, SNW, SWT, USR, WBG, WTC.
Olive oil acids, sodium salt	HNT, LUR.
Palm oil acids, sodium salt	LUR.
Peanut oil acids, potassium salt	KAL, SLC.
Rosin acids, potassium salt	ASY, FRS, GRC, x.
Rosin acids, sodium salt	ASY, CRT, MRA, PLC, PRX, QCP, x.
Soybean oil acids, potassium salt	CON, DRW, DYS.
*Stearic acid, potassium and sodium salts:	
Potassium salt	GYR, VAL, WTC.
Sodium salt	GYR, LEV, MAL, NOP, WTC.
*Tall oil acids, potassium and sodium salts:	
*Potassium salt	ACE, ASY, BSC, CON, CSB, DRW, DYS, EFH, FRS, GAF, GYR, HNT, LUR, NMC, PNX, QCP, USR, VAL, WHI, x.
*Sodium salt	CPY, GYR, MRV, PCS, PRX, QCP, TXT, UNP, x.
Tallow acids, potassium salt	ASY, CPY, NMC, PG, SWT.
*Tallow acids, sodium salt	ASY, CON, CP, DYS, FRS, GYR, JRG, LEV, LUR, NMC, NOP, NPR, PG, PLC, PRX, QCP, SWT.
All other	NMC.
*Phosphoric and polyphosphoric acid esters (and salts thereof):	
*Alcohols and phenols, ethoxylated and phosphated:	
Dinonylphenol, ethoxylated and phosphated	GAF.
Dodecyl alcohol, ethoxylated and phosphated	GAF.
Dodecyl alcohol, ethoxylated and phosphated, barium salt.	GAF.
Dodecylphenol, ethoxylated and phosphated	TCI.
2-Ethylhexanol, ethoxylated and phosphated	TCI, WAY.
Iso-octyl alcohol, ethoxylated and phosphated	GAF.
*Mixed linear alcohols, ethoxylated and phosphated	CRT, CST, GAF, SEY.
*Nonylphenol, ethoxylated and phosphated	GAF, NLC, RTF, SEY, TCC, TXT, VAC, WAY, WSN.

TABLE 19B.--*Surface-active agents for which U.S. production or sales were reported, identified by manufacturer, 1966*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
Anionic Surface-Active Agents--Continued	
*Phosphoric and polyphosphoric acid esters (and salts thereof)--Continued	
*Alcohols and phenols, ethoxylated and phosphated--Continued	
Nonylphenol, ethoxylated and phosphated, barium salt.	GAF.
9-Octadecenyl alcohol, ethoxylated and phosphated-----	GAF.
Octylphenol, ethoxylated and phosphated----------	RH.
Octylphenol, ethoxylated and phosphated, magnesium salt.	x.
Phenol, ethoxylated and phosphated----------	GAF.
Tridecyl alcohol, ethoxylated and phosphated----------	GAF, LUR, NLC, WAY.
All other----------	NLC.
*Alcohols, phosphated or polyphosphated:	
Decyl, dodecyl, and octyl phosphate, morpholine salt--	DUP.
Decyl polyphosphate, triethanolamine salt----------	MOA, RCD.
2-Ethylhexyl phosphate----------	WAY.
*2-Ethylhexyl phosphate, sodium salt----------	SEY, UCC, UVC.
2-Ethylhexyl polyphosphate----------	UVC.
Hexyl polyphosphate, potassium salt----------	CST, DEX.
Mixed alkyl phosphate----------	BCN, CST, DUP.
Mixed alkyl phosphate, diethanolamine salt----------	DUP.
Octadecyl phosphate, triethanolamine salt----------	RCD.
9-Octadecenyl phosphate----------	DUP.
Octyl phosphate----------	DUP, SFA.
Octyl phosphate, alkylamine salt----------	DUP.
Octyl phosphate, potassium salt----------	DUP.
Octyl polyphosphate----------	DEX, TXT.
Octyl polyphosphate, alkylamine salt----------	TXT.
Octyl polyphosphate, potassium salt----------	x.
Octyl polyphosphate, sodium salt----------	SFA.
*Sulfonic acids (and salts thereof):	
*Alkylbenzenesulfonates:	
*Dodecylbenzenesulfonates:	
*Dodecylbenzenesulfonic acid----------	ARD, CO, CRT, CTL, EMK, HLI, LEV, MON, NAC, PIL, RCD, RTF, STP, TCI, TDC, TEN, TXT, WTC.
Dodecylbenzenesulfonic acid, ammonium salt----------	ARL, CTL.
Dodecylbenzenesulfonic acid, butylamine salt--------	WTC.
*Dodecylbenzenesulfonic acid, calcium salt----------	APD, NLC, RCD, RH, RTF, STP, WTC, x.
Dodecylbenzenesulfonic acid, diethanolamine salt----	VAL.
Dodecylbenzenesulfonic acid, ethylenediamine salt---	APD, RTF.
*Dodecylbenzenesulfonic acid, isopropanolamine salt--	CTL, RCD, x.
*Dodecylbenzenesulfonic acid, isopropylamine salt----	APD, ARD, CTL, RCD, RTF, SNW, STP.
Dodecylbenzenesulfonic acid, (mixed alkyl)-amine salt.	PCS, STP, VAL, WTC.
Dodecylbenzenesulfonic acid, potassium salt---------	VAL.
Dodecylbenzenesulfonic acid, propoxylated ethylenediamine salt.	PCS.
*Dodecylbenzenesulfonic acid, sodium salt----------	AAC, APX, ARD, ARL, ATR, BLA, CO, CP, CRT, CTL, DEP, DSO, DYS, EFH, HLI, HRT, LEV, MON, NAC, NOP, PEK, PG, PIL, PRX, RCD, STP, SWT, TEN, UNP, WIC, WTC.
Dodecylbenzenesulfonic acid, strontium salt---------	RTF.
*Dodecylbenzenesulfonic acid, triethanolamine salt---	AAC, AML, ARD, ARL, ATR, CRT, CTL, DSO, DYS, HLI, NAC, PCS, PIL, RCD, RTF, SOS, STP, SWT, TXT, VAC.
*Other alkylbenzenesulfonates:	
Decylbenzenesulfonic acid, sodium salt----------	ADM, MON.
Didodecylbenzenesulfonic acid----------	CO.
Didodecylbenzenesulfonic acid, sodium salt----------	CO.
Pentadecylbenzenesulfonic acid, potassium salt------	STP.
Pentylbenzenesulfonic acid, sodium salt----------	MON.
*Tridecylbenzenesulfonic acid----------	KON, NPR, TXT.
*Tridecylbenzenesulfonic acid, sodium salt----------	BLA, CP, NPR, RCD, WTC.
Undecylbenzenesulfonic acid----------	TXT.
Undecylbenzenesulfonic acid, sodium salt----------	TXT.
*Benzene-, cumene-, toluene-, and xylenesulfonates:	
Benzenesulfonic acid, sodium salt----------	NES.
Cumenesulfonic acid, ammonium salt----------	STP.
2,4-Dinitrobenezenesulfonic acid, sodium salt---------	NES.
Toluenesulfonic acid----------	NES, RCD.
Toluenesulfonic acid, potassium salt----------	NES, RCD, STP, TXN.

TABLE 19B.--*Surface-active agents for which U.S. production or sales were reported, identified by manufacturer, 1966*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
Anionic Surface-Active Agents--Continued	
*Sulfonic acids (and salts thereof)--Continued	
*Benzene-, cumene-, toluene-, and xylenesulfonates--Continued	
Toluenesulfonic acid, sodium salt	CO, NES, PIL, RCD, STP, WTC.
*Xylenesulfonic acid, ammonium salt	ATR, CO, HLI, NES, RCD, STP, TXN, WTC.
Xylenesulfonic acid, potassium salt	NES, STP.
*Xylenesulfonic acid, sodium salt	ATR, CO, HLI, JRG, NES, PIL, RCD, STP, TXN, WTC.
*Ligninsulfonates:	
Ligninsulfonic acid, aluminum salt	MAR.
Ligninsulfonic acid, ammonium salt	CRZ.
*Ligninsulfonic acid, calcium salt	CRZ, CWP, GLY, LKY, LPC, MAR, PSP.
Ligninsulfonic acid, chromium salt	MAR.
Ligninsulfonic acid, iron salt	CRZ.
Ligninsulfonic acid, magnesium salt	LPC, MAR.
Ligninsulfonic acid, mixed salts	PSP.
*Ligninsulfonic acid, sodium salt	CRZ, CWP, MAR, WVA.
*Naphthalenesulfonates:	
Benzylnaphthalenesulfonic acid	GAF.
Butylnaphthalenesulfonic acid	SCP.
*Butylnaphthalenesulfonic acid, sodium salt	CLD, CMG, GGY, PFZ.
Dibutylnaphthalenesulfonic acid	GAF, MRA, S.
Didodecylnaphthalenesulfonic acid, sodium salt	PFZ.
Diisopropylnaphthalenesulfonic acid	DUP, GAF, GRD, NAC.
Diisopropylnaphthalenesulfonic acid, sodium salt	GAF, PFZ.
Dipentylnaphthalenesulfonic acid, ammonium salt	NLC.
Dipentylnaphthalenesulfonic acid, (mixed alkyl)amine salt.	NLC.
Dipentylnaphthalenesulfonic acid, sodium salt	GGY.
Isopropylnaphthalenesulfonic acid	DUP, NOP, ONX.
Methylenebis(2-naphthalenesulfonic acid)	DUP.
6,6'-Methylenebis(2-naphthalenesulfonic acid), calcium salt.	DUP.
Methylnaphthalenesulfonic acid, sodium salt	UDI.
Methylnonylnaphthalenesulfonic acid, sodium salt	UDI.
Tetrahydronaphthalenesulfonic acid	DUP.
*Other sulfonic acids:	
*N-Methyl-N-oleoyltaurine, sodium salt	CRC, CRT, DEP, GAF, HRT, MRA, NOP.
*Sulfosuccinamic acid derivatives:	
N-(1,2-Dicarboxyethyl)-N-octadecylsulfosuccinamic acid, tetrasodium salt.	ACY.
N-(2-Hydroxyethyl)-N-(tallow alkyl)sulfosuccinamic acid, disodium salt.	SCP.
N-Octadecylsulfosuccinamic acid, disodium salt	ACY.
N-(Oleoyloxyisopropyl)sulfosuccinamic acid, disodium salt.	WTC.
*Sulfosuccinic acid esters:	
Sulfosuccinic acid, bis(2,6-dimethyl-4-heptyl) ester, sodium salt.	GAF.
*Sulfosuccinic acid, bis(2-ethylhexyl) ester, sodium salt.	ACY, CRC, CRT, CST, DAN, EFH, EMK, GGY, HRT, ICI, MOA, PC, SBC, TCI.
Sulfosuccinic acid, bis(tallow monoglyceride) ester, sodium salt.	ACY.
Sulfosuccinic acid, dihexyl ester, sodium salt	ACY, MOA, SNW.
Sulfosuccinic acid, dioctyl ester, sodium salt	RH.
Sulfosuccinic acid, dipentyl ester, sodium salt	ACY.
Sulfosuccinic acid, ditridecyl ester, sodium salt	ACY, MOA.
*All other sulfonic acids:	
Butylhydroxybiphenylsulfonic acid	RBC.
Butylhydroxybiphenylsulfonic acid, sodium salt	ICO.
Coconut oil acids, 2-sulfoethyl ester, sodium salt (Coconut oil isethionate, sodium salt).	GAF, LEV.
Dodecyldiphenyloxidedisulfonic acid, disodium salt	DOW.
Dodecyl sulfoacetate	NAC.
Glycerol monostearate sulfoacetate, sodium salt	WTC.
Lauric acid, 2-sulfoacetamidoethyl ester, potassium salt.	WTC.
2-Lauroyloxy-1-propanesulfonic acid	SDH.
Mixed alkanesulfonic acid	RET, TXT.
Mixed alkanesulfonic acid, sodium salt	DUP, RET, VPC.

TABLE 19B.--*Surface-active agents for which U.S. production or sales were reported, identified by manufacturer, 1966*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
Anionic Surface-Active Agents--Continued	
*Sulfonic acids (and salts thereof)--Continued	
*Other sulfonic acids--Continued	
*All other sulfonic acids--Continued	
Octylphenol, ethoxylated and sulfonated, sodium salt-	CRT, RH.
Petroleumsulfonic acid, water soluble (acid layer), sodium salt.	SIN, SON.
Taurine derivatives:	
N-(Coconut oil acyl)-N-methyltaurine, sodium salt--	GAF, TNI.
N-Cyclohexyl-N-palmitoyltaurine, sodium salt-------	GAF.
N-Methyl-N-palmitoyltaurine, sodium salt----------	GAF.
N-Methyl-N-(tall oil acyl)taurine, sodium salt-----	GAF, TXT.
N-Methyl-N-(tallow acyl)taurine, sodium salt-------	GAF.
All other----------	STC.
Sulfuric acid esters (and salts thereof):	
*Acids, amides, and esters, sulfated:	
*Coconut oil acids - ethanolamine condensate, sulfated, potassium salt.	DEX, EMK, HRT, ONX.
*Esters of sulfated oleic acid:	
2-Butoxyethyl oleate, sulfated, sodium salt----------	S.
*Butyl oleate, sulfated, sodium salt----------	ICI, NOP, ONX, PC.
Ethyl oleate, sulfated, sodium salt----------	GAF, KAL.
Glycerol trioleate, sulfated, sodium salt----------	MRV, SCP.
*Isopropyl oleate, sulfated, sodium salt----------	BRY, CRT, DEX, HRT, ICI, LEA, LUR.
Methyl oleate, sulfated, sodium salt----------	ICI, NOP.
*Propyl oleate, sulfated, sodium salt----------	ACY, BSC, EFH, MRV.
*Oleic acid, sulfated, disodium salt----------	ACT, ACY, CRT, DRW, EMR, GAF, LEA, LUR, MRV, NOP, SCO, TEN, WHI, WHW.
*Tall oil, sulfated, sodium salt----------	ACY, APX, ICI, MRV, NOP, SEA, WHI.
*Other acids, amides, and esters, sulfated:	
Butyl ricinoleate, sulfated, disodium salt----------	NOP.
Coconut oil acids - isopropanolamine condensate, sulfated, sodium salt.	APX.
Glycerol monoester of coconut oil acids, sulfated, ammonium salt.	CP.
Glycerol monoester of coconut oil acids, sulfated, sodium salt.	AAC, CP.
9-Octadecenyl acetate, sulfated, sodium salt---------	DUP.
Oleic acid - ethanolamine condensate, sulfated, sodium salt.	SCP.
Oleostearin, sulfated, sodium salt----------	SEA.
Ricinoleic acid, sulfated, disodium salt----------	NOP.
All other----------	EMR, SEY.
*Alcohols and phenols, sulfated:	
*Dodecyl sulfate salts:	
2-Amino-2-methylpropanol salt----------	DUP.
Ammonium salt----------	AAC, CTL, DUP, ONX, STP.
Diethanolamine salt----------	AAC, CTL, CUL, DUP, HLI, JRG, ONX, STP.
N,N-Diethylcyclohexylamine salt----------	DUP.
Isopropanolamine salt----------	JRG.
*Magnesium salt----------	AAC, CTL, HLI, STP.
Potassium salt----------	CTL, HLI, PG.
*Sodium salt----------	AAC, CTL, CUL, DUP, HLI, JRG, ONX, PCI, PCS, PG, RCD, RET.
*Triethanolamine salt----------	AAC, CTL, CUL, DUP, HLI, ONX, PCS, PG, RCD, RET, STP, TXT.
*2-Ethylhexyl sulfate, sodium salt----------	AAC, UCC, WTC.
*Octadecyl sulfate, sodium salt----------	DUP, EMK, ONX, PG.
*Octyl sulfate, sodium salt----------	AAC, DUP, PCS, SEY.
*Other alcohols and phenols, sulfated:	
Linear alcohols, sulfated:	
Coconut oil alkyl sulfate, triethanolamine salt----	PCS.
Coconut and sperm oil alkyl sulfate, sodium salt---	DUP.
Decyl sulfate, sodium salt----------	CTL, DUP, ONX, PCS.
Decyl sulfate, triethanolamine salt----------	DUP.
Hexadecyl and 9-octadecenyl sulfate, sodium salt---	PCS.
Hexadecyl sulfate, sodium salt----------	AAC, DUP.
Hexyl sulfate, potassium salt----------	DEX.
Mixed linear alcohols, sulfated, ammonium salt-----	PCS, TXT.
Mixed linear alcohols, sulfated, polyamine salt----	NLC.
Mixed linear alcohols, sulfated, sodium salt-------	LAK, PCS, TXT.

TABLE 19B.--*Surface-active agents for which U.S. production or sales were reported, identified by manufacturer, 1966*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
Anionic Surface-Active Agents--Continued	
Sulfuric acid esters (and salts thereof)--Continued	
*Alcohols and phenols, sulfated--Continued	
*Other alcohols and phenols, sulfated--Continued	
Linear alcohols, sulfated--Continued	
Nonyl sulfate, sodium salt	TEN.
Octadecyl sulfate, triethanolamine salt	DUP.
Tetradecyl sulfate, sodium salt	ONX.
All other	PCS.
Phenols and nonlinear alcohols, sulfated:	
Branched hexadecyl sulfate, sodium salt	APX.
3,9-Diethyl-6-tridecyl sulfate, sodium salt	PCS, UCC.
7-Ethyl-2-methyl-4-undecyl sulfate, sodium salt	UCC.
Trichlorophenol sulfate, ethanolamine salt	GAF.
Tridecyl sulfate, sodium salt	AAC.
*Ethers, sulfated:	
*Alkylphenols, ethoxylated and sulfated:	
Dodecylphenol, ethoxylated and sulfated, ammonium salt.	GAF.
(Mixed alkyl)phenol, ethoxylated and sulfated, sodium salt.	GAF.
Nonylphenol, ethoxylated and sulfated, ammonium salt.	CIB, CTL, GAF, STP, TXT.
Nonylphenol, ethoxylated and sulfated, ethanolamine salt.	GAF.
Nonylphenol, ethoxylated and sulfated, sodium salt	CRT, CTL, GAF.
Nonylphenol, ethoxylated and sulfated, triethanolamine salt.	ARL.
Octylphenol, ethoxylated and sulfated, sodium salt	RH.
*Dodecyl alcohol, ethoxylated and sulfated, ammonium salt.	AAC, CTL, ONX, PG.
*Dodecyl alcohol, ethoxylated and sulfated, sodium salt	AAC, CTL, CUL, DUP, ONX, PCS, RCD, RET, RTF, STP.
*Mixed linear alcohols, ethoxylated and sulfated, sodium salt.	CO, CRT, GAF, SCP, TCI, TXT, UCC.
*Other sulfated ethers:	
Dodecyl and tetradecyl alcohols, ethoxylated and sulfated, ammonium salt.	LEV.
Dodecyl and tetradecyl alcohols, ethoxylated and sulfated, potassium salt.	STP.
Hexyloxypropyl sulfate, sodium salt	S.
Mixed linear alcohols, ethoxylated and sulfated, ammonium salt.	CO, LAK, NLC, PIL, RCD, SCP, SHC, STP, TXT, UCC.
Mixed linear alcohols, ethoxylated and sulfated, potassium salt.	CO, GAF, RCD, SHC, TXT.
Sperm oil alcohol, ethoxylated and sulfated, sodium salt.	DUP.
Tridecyl alcohol, ethoxylated and sulfated, ammonium salt.	PCS, RCD.
Tridecyl alcohol, ethoxylated and sulfated, sodium salt.	AAC, ARL, RCD.
All other	APX, PCS, PG, SEY.
*Natural fats and oils, sulfated:	
*Castor oil, sulfated, sodium salt	AAE, ACT, ACY, AML, APX, BRY, BSC, BSW, CRT, DEX, DRW, DUP, GAF, HRT, ICI, KAL, KNG, LEA, LUR, MRA, MRD, MRV, NOP, ONX, PC, S, SCO, SCP, SEA, SLC, WHI, WHW.
*Coconut oil, sulfated, sodium salt	ACY, MRD, NOP, RTC, SEA, WHW.
*Cod oil, sulfated, sodium salt	ACT, CRT, DRW, MRD, NOP, S, SEA, WAW, WHI, WHW.
Cottonseed oil, sulfated, sodium salt	NOP, RTC.
Grease, other than wool, sulfated, sodium salt	NOP, SEA, WHI, WHW.
Herring oil, sulfated, sodium salt	WHI.
Lard, sulfated, sodium salt	WAW.
Mixed fish oils, sulfated, sodium salt	AML, SCO, WHI.
Mixed vegetable oils, sulfated, sodium salt	PCI.
Mustard seed oil, sulfated, sodium salt	LUR, NOP.
*Neat's-foot oil, sulfated, sodium salt	ACT, CRT, KAL, LUR, MRD, NOP, PC, SEA, WHW.
*Peanut oil, sulfated, sodium salt	ACY, ICI, LUR, NOP, SCP, SLC.
Redfish oil, sulfated, sodium salt	WHI.
*Ricebran oil, sulfated, sodium salt	EFH, KNG, LUR, NOP.
*Soybean oil, sulfated, sodium salt	CRT, DRW, HRT, KAL, MRD, NOP, ONX.
*Sperm oil, sulfated, sodium salt	ACT, CLD, CRT, DRW, HRT, KAL, KNG, LEA, MRD, NOP, ONX, RTC, S, SEA, WHI, WHW.

TABLE 19B.--*Surface-active agents for which U.S. production or sales were reported, identified by manufacturer, 1966*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
Anionic Surface-Active Agents--Continued	
Sulfuric acid esters (and salts thereof)--Continued	
*Natural fats and oils, sulfated--Continued	
*Tallow, sulfated, sodium salt	ACT, ACY, BRY, BSW, DRW, EFH, ICI, KAL, LEA, LUR, MRA, MRD, NOP, ONX, PC, PCI, SCP, SEY, SID, SNW, SOS, WHI, WHW.
Whale oil, sulfated, sodium salt	KNG.
Other anionic surface-active agent: Tridecyl alcohol, ethoxylated and carbonated, sodium salt.	S.
Cationic Surface-Active Agents	
*Amine oxides and oxygen-containing amines (except those having amide linkages):	
*2-(8-Heptadecenyl)-1-(2-hydroxyethyl)-2-imidazoline	GGY, NLC, ONX, UVC.
*2-Heptadecyl-1-(2-hydroxyethyl)-2-imidazoline	GGY, HDG, MOA, UVC.
*(Mixed alkyl)amine, ethoxylated	APD, CIB, GAF, NOP, RH.
*Rosin amine, ethoxylated	HPC, NLC, PCS, RTF.
*(Soybean oil alkyl)amine, ethoxylated	AAC, ARC, VAC.
*(Tallow alkyl)amine, ethoxylated	AAC, ADM, ARC, CIB, DUP.
*Other amine oxides and oxygen-containing amines (except those having amide linkages):	
Acyclic:	
N,N-bis(2-hydroxyethyl)(coconut oil alkyl)amine oxide.	ARC, ENJ.
N,N-Bis(2-hydroxyethyl)dodecylamine	CTL, FIN.
N,N-Bis(2-hydroxyethyl)octadecylamine	FIN.
N,N-Bis(2-hydroxyethyl)(tallow alkyl)amine	TXT.
N,N-Bis(2-hydroxyethyl)(tallow alkyl)amine acetate	PG.
(Coconut oil alkyl)amine, ethoxylated	AAC, APD, ARC, NLC, SNW, TCH, VAC.
(Coconut oil alkyl)amine, ethoxylated, acetate	RPC.
(Coconut oil alkyl)amine, ethoxylated, maleate	SDH.
N,N-Dimethylhexadecylamine oxide	ONX.
(Hydrogenated tallow alkyl)amine, ethoxylated	CIB, TCH, VAC.
N-(2-Hydroxyethyl)-N,N',N'-tris(2-hydroxypropyl) ethylenediamine.	NLC.
N-(2-Hydroxyethyl)-N,N',N'-tris(2-hydroxypropyl) ethylenediamine distearate, methyl sulfate.	DUP.
Octadecylamine, ethoxylated	ARC, ICI, TCH.
Polyethylenepolyamine, alkoxylated	NLC.
N-(Tallow alkyl)trimethylenediamine, ethoxylated	ARC, RTF.
N,N,N',N'-Tetrakis(2-hydroxyethyl)ethylenediamine	NLC.
N,N,N',N'-Tetrakis(2-hydroxypropyl)ethylenediamine dioleate, methyl sulfate.	DUP.
N,N,N',N'-Tetrakis(2-hydroxypropyl)ethylenediamine, propoxylated and ethoxylated.	WYN.
N,N,N',N'-Tetrakis(2-hydroxypropyl)ethylenediamine dioleate, methyl sulfate.	DUP.
All other	GAF, x.
Cyclic:	
2-(8-Heptadecenyl)-4,4-bis(hydroxymethyl)-2-oxazoline.	COM, UVC.
2-(8-Heptadecenyl)-4-hydroxymethyl-4-methyl-2-oxazoline.	COM, UVC.
N-Hexadecylmorpholine	APD.
N-(2-Hydroxyethyl)-1,2-diphenylethylenediamine	APX, PCS.
1-(2-Hydroxyethyl)-2-nonyl-2-imidazoline	PCS, UVC.
1-(2-Hydroxyethyl)-2-nor(coconut oil alkyl)-2-imidazoline.	MOA, UVC.
1-(2-Hydroxyethyl)-2-nor(tall oil alkyl)-2-imidazoline.	NLC, UVC.
1-(2-Hydroxyethyl)-2-tridecyl-2-imidazoline hydrochloride.	GGY, UVC.
1-(2-Hydroxyethyl)-2-undecyl-2-imidazoline	GGY, UVC.
Piperazine, ethoxylated	GAF.
N-(Soybean oil alkyl)morpholine	APD.
*Amines and amine oxides having amide linkages:	
*Carboxylic acid - diamine and polyamine condensates:	
Adipic and stearic acids - diethylenetriamine condensate.	APX.
*Coconut oil acids - diethylenetriamine condensate	APX, NOP, TXT.

TABLE 19B.--*Surface-active agents for which U.S. production or sales were reported, identified by manufacturer, 1966*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
Cationic Surface-Active Agents--Continued	
*Amines and amine oxides having amide linkages--Continued	
*Carboxylic acid - diamine and polyamine condensates--Continued	
Coconut oil acids - N,N-dimethyltrimethylenediamine condensate.	JRG, RCD, TXT.
Mixed fatty acids - polyalkylenepolyamine condensate--	NLC.
Oleic acid - 1-(2-aminoethyl)piperazine condensate----	TXT.
*Oleic acid - diethylenetriamine condensate----------	APD, HDG, PCS, TXT.
Oleic acid - diethylenetriamine condensate, acetic acid salt.	PCS.
Oleic acid - N,N-dimethyltrimethylenediamine condensate.	CCW, SNW.
Pelargonic acid - tetraethylenepentamine condensate---	ICI.
Stearic acid - diethylenetriamine condensate----------	APX, CST, DEP, HRT, ONX, PCS, S.
Stearic acid - N,N-diethylethylenediamine condensate--	CBP.
Stearic acid - dipropylenetriamine condensate---------	JOR.
Stearic acid - tetraethylenepentamine condensate------	ICI, ONX, PCS.
Tall oil acids - diethylenetriamine condensate--------	NCW.
Tall oil acids - polyalkylenepolyamine condensate-----	TXT, UVC.
All other----------	EMR, VND, WM.
*Carboxylic acid - diamine and polyamine condensates, ethoxylated:	
Coconut oil acids - diethylenetriamine condensate, polyethoxylated.	TCC.
Coconut oil acids - ethylenediamine condensate, monoethoxylated.	ARL, NOP.
*Oleic acid - ethylenediamine condensate, monoethoxylated.	CLD, DEX, NOP, SOC, TNA.
Palm oil acids - ethylenediamine condensate, monoethoxylated.	APX.
Stearic acid - diethylenetriamine condensate, polyethoxylated.	TCC.
*Stearic acid - ethylenediamine condensate, monoethoxylated.	AML, CLD, CMG, CST, DEP, DEX, ICI, MRA, NOP, S, SNW.
Stearic acid - ethylenediamine condensate, polyethoxylated.	APD.
*Other amines and amine oxides having amide linkages:	
N,N-Bis(2-hydroxyethyl)-2-(stearamidomethoxy)-ethylamine.	CIB.
3-Lauramido-N,N-dimethylpropylamine oxide----------	SNW.
Polypeptide, ethyl ester----------	MYW.
Rosinpolyamidoimidazoline----------	GRD, UVC.
Stearic acid - N-(2-cyanoethyl)diethylenetriamine condensate. (amine/acid ratio = 1/2).	CIB.
*Amines, not containing oxygen (and salts thereof):	
*Amine salts:	
(Coconut oil alkyl)amine acetate----------	ADM, ARC, FOR.
N-(Coconut oil alkyl)trimethylenediamine acetate------	ARC, PCS.
(Hydrogenated tallow alkyl)amine acetate----------	ADM, ARC.
(9-Octadecenyl)amine acetate----------	GNM.
Octadecylamine acetate----------	ACY, ARC.
Octylamine acetate----------	ARC.
(Soybean oil alkyl)amine acetate----------	ARC.
(Tallow alkyl)amine acetate----------	ADM, ARC, FOR.
N-(Tallow alkyl)trimethylenediamine acetate----------	ARC, FOR.
N-(Tallow alkyl)trimethylenediamine naphthenate-------	APD, FOR.
N-(Tallow alkyl)trimethylenediamine oleate----------	FOR.
All other----------	ADM.
*Diamines and polyamines:	
1-(2-Aminoethyl)-2-(8-heptadecenyl)-2-imidazoline-----	NLC.
1-(2-Aminoethyl)-2-heptadecyl-2-imidazoline----------	PCS.
1-(2-Aminoethyl)-2-(mixed alkyl)-2-imidazoline--------	RTF.
1-(2-Aminoethyl)-2-nor(tall oil alkyl)-2-imidazoline--	NLC.
*N-(Coconut oil alkyl)trimethylenediamine----------	ARC, FOR, GNM, HUM.
2-(8-Heptadecenyl)-2-imidazoline----------	PCS.
2-Heptadecyl-2-imidazoline----------	SCO.
N-(Mixed alkyl)polyethylenepolyamine----------	CCW.
2-Nonyl-2-imidazoline----------	PCS.
*N-(9-Octadecenyl)trimethylenediamine----------	ARC, FOR, GNM.
N-(Soybean oil alkyl)trimethylenediamine----------	ARC, HUM.

TABLE 19B.--*Surface-active agents for which U.S. production or sales were reported, identified by manufacturer, 1966*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
Cationic Surface-Active Agents--Continued	
*Amines, not containing oxygen (and salts thereof)--Continued	
*Diamines and polyamines--Continued	
N-(Tallow alkyl)dipropylenetriamine	GNM.
*N-(Tallow alkyl)trimethylenediamine	ARC, FOR, GNM, HUM.
*Primary monoamines:	
*(Coconut oil alkyl)amine	ADM, ARC, FOR, GNM, HUM.
(Cottonseed oil alkyl)amine	FOR.
*Dodecylamine	ADM, ARC, FOR, GNM.
Hexadecylamine	ADM, ARC, FOR.
*(Hydrogenated tallow alkyl)amine	ADM, ARC, FOR, GNM, HUM.
(Mixed alkyl)amine	GNM.
(Mixed tert-alkyl)amine	RH.
*9-Octadecenylamine	ARC, FOR, GNM.
*Octadecylamine	ADM, ARC, FOR, GNM.
Octylamine	ARC, RH, UCC.
(Soybean oil alkyl)amine	ARC, HUM.
(Tall oil alkyl)amine	FOR, GNM.
*(Tallow alkyl)amine	ADM, ARC, FOR, GNM, HUM.
*Secondary and tertiary monoamines:	
Bis(coconut oil alkyl)amine	ARC.
Bis(hydrogenated tallow alkyl)amine	ARC, FOR.
N,N-Dimethyl(coconut oil alkyl)amine	BRD, HUM, PG.
N,N-Dimethyldodecylamine	BRD.
N,N-Dimethylhexadecylamine	ARC, BRD.
N,N-Dimethyl(hydrogenated tallow alkyl)amine	ARC.
N,N-Dimethyl(mixed alkyl)amine	PG, RH.
*N,N-Dimethyloctadecylamine	ARC, BRD, HUM, PG.
N,N-Dimethyl(soybean oil alkyl)amine	ARC.
N,N-Dimethyltetradecylamine	ARC, BRD.
N-Methylbis(coconut oil alkyl)amine	FOR, GNM.
N-Methylbis(hydrogenated tallow alkyl)amine	ARC, FOR, GNM.
N-Methylbis(mixed alkyl)amine	PG.
N-Methyldioctadecylamine	FOR.
Tridodecylamine	GNM.
Trioctylamine	GNM.
Tris(hydrogenated tallow alkyl)amine	GNM.
*Oxygen-containing quaternary ammonium salts (except those having amide linkages):	
(2-Aminoethyl)ethyl(hydrogenated tallow alkyl)-(2-hydroxyethyl)ammonium ethyl sulfate.	LUR.
Benzyl(coconut oil alkyl)bis(2-hydroxyethyl)ammonium chloride.	CIB.
Benzyl(coconut oil alkyl, ethoxylated)dimethylammonium chloride.	GAF.
1-Benzyl-2-heptadecyl-1-(2-hydroxyethyl)-2-imidazolinium chloride.	PCS, UVC.
1-Benzyl-1-(2-hydroxyethyl)-2-nor(tall oil alkyl)-2-imidazolinium chloride.	NLC.
Bis(2-hydroxyethyl, ethoxylated)methyl(9-octadecenyl) ammonium chloride.	ARC.
Bis(2-hydroxyethyl, ethoxylated)methyloctadecylammonium chloride.	ARC.
(Coconut oil alkyl)bis(2-hydroxyethyl, ethoxylated)-methylammonium chloride.	ARC, VAC.
(Ethoxybenzyl)dimethyl(octylphenoxy)ammonium chloride	RH.
(Ethoxybenzyl)dimethyl(octyltolyloxy)ammonium chloride	RH.
1-Ethyl-2-(8-heptadecenyl)-1-(2-hydroxyethyl)-2-imidazolinium ethyl sulfate.	APD.
N-Ethyl-N-hexadecylmorpholinium ethyl sulfate	APD.
N-Ethyl-N-(soybean oil alkyl)morpholinium ethyl sulfate	APD.
2-Hydroxytrimethylenebis[(coconut oil alkyl)dimethyl-ammonium chloride].	CIB.
(Tridecylbenzyl)diethyl(2-hydroxyethyl)ammonium chloride.	SNW.
Triethyl(octadecyloxymethyl)ammonium chloride	DAN.
All other	TCC.

TABLE 19B.--*Surface-active agents for which U.S. production or sales were reported, identified by manufacturer, 1966*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
Cationic Surface-Active Agents--Continued	
*Quaternary ammonium salts having amide linkages:	
Benzylbis(2-hydroxyethyl)(2-stearamidomethoxyethyl) ammonium chloride.	CIB.
2-Heptadecyl-1-methyl-1-(2-stearamidoethyl)- imidazolinium methyl sulfate.	CUL.
(2-Hydroxyethyl)dimethyl(3-stearamidopropyl)ammonium dihydrogen phosphate.	ACY.
(2-Hydroxyethyl)dimethyl(3-stearamidopropyl)ammonium nitrate.	ACY.
(3-Lauramidopropyl)trimethylammonium methyl sulfate-----	ACY.
Trimethyl(3-oleamidopropyl)ammonium methyl sulfate------	CIB.
All other----------	DUP, NLC, VAC.
*Quaternary ammonium salts, not containing oxygen:	
*Acyclic:	
*Bis(coconut oil alkyl)dimethylammonium chloride-------	ARC, ENJ, FOR, GNM, VAC.
*Bis(hydrogenated tallow alkyl)dimethylammonium chloride.	ADM, ARC, FOR, GNM, VAC.
Bis(hydrogenated tallow alkyl)dimethylammonium methyl sulfate.	x.
(Coconut oil alkyl)trimethylammonium chloride---------	ARC, FOR, GNM.
(Cottonseed oil alkyl)trimethylammonium chloride------	FOR.
Didodecyldimethylammonium bromide----------	ONX.
Dimethylbis(mixed alkyl)- and Trimethyl(mixed alkyl)- ammonium chloride.	GNM.
Dimethylbis(9-octadecenyl)ammonium chloride----------	GNM.
Dimethylbis(soybean oil alkyl)ammonium chloride-------	ARC.
Dimethyldioctadecylammonium chloride----------	FOR, PG.
Dimethyldioctadecylammonium methyl sulfate----------	ONX.
*Dodecyltrimethylammonium bromide and chloride:	
Dodecyltrimethylammonium bromide----------	DUP.
Dodecyltrimethylammonium chloride----------	ARC, FOR, GNM.
Ethyldimethyl(mixed alkyl)ammonium ethyl sulfate------	JOR.
Ethyldimethyl(9-octadecenyl)ammonium bromide----------	ONX.
Ethylhexadecyldimethylammonium bromide----------	FIN.
*Hexadecyltrimethylammonium bromide----------	DUP, FIN, ICI.
Hexadecyltrimethylammonium chloride----------	ARC.
Hexadecyltrimethylammonium p-toluenesulfonate---------	FIN.
(Hydrogenated tallow alkyl)trimethylammonium chloride.	ARC, FOR, HUM.
Methyltrioctylammonium chloride----------	GNM.
Methyltris(mixed alkyl)ammonium chloride----------	ADM, VAC.
*N,N,N′,N′,N′-Pentamethyl-N-(tallow alkyl)trimethylene- bis[ammonium chloride].	ARC, GNM, ORO.
Trimethyloctadecylammonium chloride----------	ARC, GNM.
Trimethyl(soybean oil alkyl)ammonium chloride---------	ARC, VAC.
Trimethyl(tallow alkyl)ammonium chloride----------	ARC, FOR, GNM.
All other----------	STC.
*Benzenoid:	
*Benzyl(coconut oil alkyl)dimethylammonium chloride----	CRT, DEP, LUR, TXT.
*Benzyldimethyl(mixed alkyl)ammonium chloride----------	AAC, BRD, CUL, FIN, ONX, PG, RH, RTF, TXT, VAC, WSN.
*Benzyldimethyloctadecylammonium chloride----------	CUL, FIN, ONX, PCS, RET, WSN.
Benzyldimethyltetradecylammonium chloride----------	SNW, WSN.
*Benzyldodecyldimethylammonium chloride----------	FIN, ONX, SDH, WSN.
Benzylhexadecyldimethylammonium chloride----------	ONX, RH.
Benzyl(hydrogenated tallow alkyl)dimethylammonium chloride	HUM, PCS.
1-Benzylpyridinium chloride----------	DEP.
Benzyltrimethylammonium chloride----------	COM.
*(3,4-Dichlorobenzyl)dodecyldimethylammonium chloride--	CUL, ONX, VAC, WSN.
(Dodecylbenzyl)triethylammonium chloride----------	PC.
*(Dodecylbenzyl)trimethylammonium chloride----------	CUL, NLC, VAC.
2-Dodecylisoquinolinium bromide----------	CUL, ONX.
(Dodecylmethylbenzyl)trimethylammonium chloride-------	RH.
1-Dodecylpyridinium chloride----------	HK.
(Ethylbenzyl)dimethyl(mixed alkyl)ammonium chloride---	ONX.
Phenyltrimethylammonium chloride----------	BKL.

TABLE 19B.---*Surface-active agents for which U.S. production or sales were reported, identified by manufacturer, 1966*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
Nonionic Surface-Active Agents	
*Carboxylic acid amides:	
*Carboxylic acid - alkanolamine condensates:	
*Diethanolamine condensates (amine/acid ratio = 2/1):	
*Capric acid	GGY, PCS, UVC.
Castor oil acids	ONX, PCS, VAL.
*Coconut oil acids	AML, ARD, BSC, BSW, CIB, CLI, CRT, CTL, DEP, EFH, HAL, HLI, HRT, JOR, KNP, LUR, MOA, NOP, PC, PCS, PNX, RCD, SBC, SEY, STP, SWT, TCC, TXC, UNN, UVC, VAC, VND, WIC, WTC.
Coconut oil and tall oil acids	CSB.
Coconut oil and tallow acids	CLI, PG.
*Lauric acid	ARD, CLI, DRW, NOP, ONX, PCS, PG, RCD, WTC.
Lauric and myristic acids	TXN.
Linoleic acid	VND.
*Oleic acid	CCW, CLI, HLI, UVC, VAC, STP, WTC.
Palmitic acid	CMG.
Pelargonic acid	EMR, PCS.
*Stearic acid	AML, EMR, JOR, NOP, ONX, SCO, TXC, VAL, WTC.
*Tall oil acids	EFH, MRA, UVC, WTC.
Unspecified mixed fatty acids	BSC, HLI.
*Diethanolamine condensates (amine/acid ratio = 1/1):	
*Coconut oil acids	APX, ARD, CCL, CLI, CTL, DRW, EMK, GGY, HLI, MOA, MRV, NOP, ONX, PCS, PEK, QCP, RCD, RPC, RTF, SBC, SEY, STP, TXT, UVC, VAC.
*Lauric acid	CTL, CUL, DRW, LEV, MOA, ONX, PCS, PG, RTF, SBC, STP, TXT.
Lauric and myristic acids	CLI, TXT.
*Oleic acid	GGY, NOP, PCS, SBC, SCP, SWT, TCC, TXT, VAC.
Palmitic and stearic acids	BSC, MRA, PCS.
*Stearic acid	BSC, DEP, EMR, GGY, GLY, RPC, SEY, UVC.
Tall oil acids	MRV, PCS.
Tallow acids	RPC.
Unspecified mixed fatty acids	STP.
*Ethanolamine condensates (amine/acid ratio = 2/1):	
*Coconut oil acids	CTL, PCS, RTF, STP, UVC, VND, WTC.
Hydrogenated castor oil acids	GLY.
Hydrogenated tallow acids	GLY.
Lauric acid	CTL, WTC.
Stearic acid	CLI.
*Ethanolamine condensates (other amine/acid ratios):	
Coconut oil acids (amine/acid ratio = 1/1)	HRT, MOA, PG, STP.
Lauric and myristic acids (amine/acid ratio = 1/1)	TXT.
Oleic acid (amine/acid ratio = 1/1)	VPC.
Stearic acid (amine/acid ratio = 1/1)	MOA, VND.
Stearic acid (amine/acid ratio = 1/2)	GLY, WTC.
*Isopropanolamine condensates:	
Coconut oil acids	DSO, MOA, STP.
*Lauric acid	ARD, CLI, MOA, PCS, WTC.
Lauric and myristic acids	LEV, TXT.
Oleic acid	WTC.
*Other alkanolamine condensates:	
Coconut oil acids - diethanolamine condensate (amine/acid ratio = 1.4/1).	JRG.
Coconut oil acids - diethanolamine condensate (amine/acid ratio = 1/2).	PCS.
Lauric acid - diethanolamine condensate (amine/acid ratio = 1.6/1).	WON.
Stearic acid - methanolamine condensate	DUP, ICI.
*Carboxylic acid - alkanolamine condensates, ethoxylated:	
Coconut oil acids - ethanolamine condensate, ethoxylated.	STP.
Hydrogenated tallow acids - ethanolamine condensate, ethoxylated.	ARC, NOP.
Oleic acid - ethanolamine condensate, ethoxylated	ARC, GAF.
Oleic acid - methanolamine condensate, ethoxylated	GAF
Tall oil acids - ethanolamine condensate, ethoxylated	JCC.
*Carboxylic acid - diamine and polyamine condensates (nonionic):	
Oleic acid - ethylenediamine condensate (amine/acid ratio = 1/2).	CCW, GLY, HDG.

TABLE 19B. *--Surface-active agents for which U.S. production or sales were reported, identified by manufacturer, 1966--*Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
Nonionic Surface-Active Agents--Continued	
*Carboxylic acid amides--Continued	
*Carboxylic acid - diamine and polyamine condensates (nonionic)--Continued	
Stearic acid - N,N'-diethylethylenediamine condensate (amine/acid ratio = 1/2).	SNW.
*Stearic acid - ethylenediamine condensate (amine/acid ratio = 1/2).	CCW, CTN, GLY, ICI.
All other	NOP.
*Carboxylic acid esters:	
*Anhydrosorbitol esters:	
Anhydrosorbitol dioleate	APD.
Anhydrosorbitol ester of mixed fatty acids	GLY.
*Anhydrosorbitol monoester of tall oil acids	APD, GLY, HDG, RTF, TCH.
*Anhydrosorbitol monolaurate	APD, GLY, HDG, PCS, TCH.
Anhydrosorbitol mono-oleate	AAC, APD, DRW, GLY, HAL, HDG, PCS, TCH.
Anhydrosorbitol monopalmitate	APD, GLY, PCS.
Anhydrosorbitol monostearate	AAC, APD, DRW, GLY, HDG, PCS.
Anhydrosorbitol sesquioleate	AAC, GLY.
Anhydrosorbitol tetrastearate	APD.
Anhydrosorbitol triester of tall oil acids	GLY, TCH.
*Anhydrosorbitol trioleate	APD, GLY, HDG, PCS, TCH.
Anhydrosorbitol tristearate	APD, GLY, HDG.
*Ethoxylated anhydrosorbitol esters:	
Ethoxylated anhydrosorbitol monoester of tall oil acids.	TCH.
*Ethoxylated anhydrosorbitol monolaurate	AAC, APD, DRW, GLY, HDG, PCS, TCH.
*Ethoxylated anhydrosorbitol mono-oleate	AAC, APD, ARC, DRW, GLD, GLY, HDG, PCS, TCH.
*Ethoxylated anhydrosorbitol monopalmitate	AAC, APD, GLY, PCS, TCH.
*Ethoxylated anhydrosorbitol monostearate	AAC, APD, DRW, GLY, HDG, PCS, TCH.
Ethoxylated anhydrosorbitol triester of castor oil acids.	APD.
Ethoxylated anhydrosorbitol triester of tall oil acids.	APD, RTF.
*Ethoxylated anhydrosorbitol trioleate	AAC, APD, GLY, TCH.
*Ethoxylated anhydrosorbitol tristearate	AAC, APD, GLY, PCS, TCH.
*Ethylene glycol and diethylene glycol esters:	
Diethylene glycol dioleate	GLY.
Diethylene glycol distearate	ARC, GLY.
Diethylene glycol monoester of coconut oil acids	EMR.
Diethylene glycol monoester of tall oil acids	HDG.
*Diethylene glycol monolaurate	ARC, CCW, GLY, HAL, HDG, KAL, NOP, WTC.
*Diethylene glycol mono-oleate	ARC, HAL, NOP, WTC.
Diethylene glycol monoricinoleate	GLY.
*Diethylene glycol monostearate	ARC, CCW, CLI, HAL, NOP, PCS, QCP, SEY, UVC, VAL, VND, WTC.
Diethylene glycol sesquiester of tall oil acids	QCP, WTC.
Diethylene glycol sesquilaurate	GLY.
Diethylene glycol sesquistearate	WM.
*Ethylene glycol distearate	ARC, EMR, HAL, HDG, PCS.
Ethylene glycol mono-oleate	HAL.
*Ethylene glycol monostearate	ARC, CCW, CLI, EFH, GLY, HAL, HDG, KNP, PCS, VND, WM.
Ethylene glycol sesquistearate	WM.
*Glycerol esters:	
*Complex glycerol esters:	
Glycerol diacetyltartrate monostearate	DRW, PCS, WTC.
Glycerol lactate palmitate	DRW, GLD.
Glycerol lactate stearate	APD, GLD.
Glycerol maleate mono-oleate	NOP, WTC.
Glycerol monoester, acetylated	EK.
Glycerol monoester of mixed fatty acids, acetylated	EFH, WTC.
Glycerol mono-oleate, acetylated	x.
*Glycerol esters of chemically defined acids:	
Glycerol dioleate	ARC, HAL.
Glycerol distearate	APX, ARC.
Glycerol monocaprylate	ARC, DRW.
*Glycerol monolaurate	ARC, GLY, HAL, KNP.
*Glycerol mono-oleate	APD, ARC, CCW, DRW, EFH, EK, EMR, GLY, HAL, HDG, PCS, SWT, WM.

TABLE 19B.--*Surface-active agents for which U.S. production or sales were reported, identified by manufacturer, 1966*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
Nonionic Surface-Active Agents--Continued	
*Carboxylic acid esters--Continued	
*Glycerol esters--Continued	
*Glycerol esters of chemically defined acids--Continued	
*Glycerol monoricinoleate	BAC, CCW, HAL.
*Glycerol monostearate	ARC, CCW, CHL, CRT, DRW, EK, GLY, GRO, HAL, HDG, JRG, LUR, MRA, NOP, NW, PCS, PG, SNW, SWT, TCC, UVC, VND, WM, WTC, x.
*Glycerol esters of mixed acids:	
Glycerol monoester of coconut oil acids	DRW, GLY, HDG, SWT, WM.
Glycerol monoester of corn oil acids	GLD.
Glycerol monoester of cottonseed oil acids	DRW, EK, HDG, PCS.
Glycerol monoester of hydrogenated cottonseed oil acids.	GLD, LEV, PCS.
Glycerol monoester of hydrogenated soybean oil acids.	DRW, GLD.
Glycerol monoester of lard acids	EK, GLD, GLY, PCS.
Glycerol monoester of peanut oil acids	DRW.
Glycerol sesquiester of mixed fatty acids	APD.
All other	EK, LEV, PCS.
*Natural fats and oils, ethoxylated:	
*Castor oil, ethoxylated	APD, BAG, DRW, EMR, GAF, GLY, ICI, NLC, NOP, PCS, RTF, TCH, VAC.
Hydrogenated castor oil, ethoxylated	APD, GAF, TCH, VAC.
Lanolin, ethoxylated	AAC, APD, DRW, PCS.
*Polyethylene glycol esters:	
*Polyethylene glycol esters of chemically defined acids:	
*Polyethylene glycol dilaurate	ARC, DEX, EFH, GLY, HAL, HDG, JOR, NOP, UVC, WM.
*Polyethylene glycol dioleate	ARC, CLD, EFH, ENJ, GGY, GLY, HAL, HDG, NOP, PCS, UVC, VND, x.
*Polyethylene glycol distearate	ARC, GLY, HAL, HDG, PCS, QCP.
Polyethylene glycol methylcarbitol maleate	CCA.
*Polyethylene glycol monolaurate	AAC, ARC, BSC, CCA, GGY, GLY, HAL, HDG, JOR, KNP, NOP, SYC, TCH, TXT, UVC.
*Polyethylene glycol mono-oleate	ARC, CCA, CLD, CRC, CRT, DEX, DRW, EMR, GAF, GGY, GLY, HAL, HDG, ICI, NOP, ONX, PCS, SWT, SYC, TCH, UVC, VAC, WM, WTC, x.
Polyethylene glycol monopalmitate	APD, GLY.
Polyethylene glycol monopelargonate	EMR.
Polyethylene glycol monoricinoleate	AAC, ARC, BAC, HAL, NOP, TCH.
*Polyethylene glycol monostearate	AML, APD, ARC, CRT, DEP, DEX, DRW, EMR, GAF, GGY, GLY, HAL, HDG, ICI, KNP, NOP, ONX, PC, PCS, PD, RH, SEY, TCC, TCH, VND, WTC.
Polyethylene glycol sesquioleate	PCS.
*Polyethylene glycol esters of rosin and tall oil acids:	
Polyethylene glycol diester of tall oil acids	GLY.
Polyethylene glycol monoester of rosin acids	NLC.
Polyethylene glycol monoester of tall oil acids	GLY, SOS.
Polyethylene glycol sesquiester of rosin acids	APD, HPC, QCP.
*Polyethylene glycol sesquiester of tall oil acids	AML, APD, APX, DRW, HDG, MON, NOP, OMC, RTF, TCH, WTC.
Polyethylene glycol unspecified ester of tall oil acids.	ARC.
*Polyethylene glycol esters of other mixed acids:	
Polyethylene glycol diester of trimerized castor oil acids.	GLY.
Polyethylene glycol ester of unspecified mixed fatty acids.	ENJ.
Polyethylene glycol monoester of coconut oil acids	EMR, GLY, PCS.
Polyethylene glycol monoester of soybean oil acids	SYC.
Polyethylene glycol monoester of tallow acids	SOS.
Polyethylene glycol sesquiester of castor oil acids	GGY, WTC.
*Polyethylene glycol sesquiester of coconut oil acids.	ARL, DRW, NOP, ONX, PCS, PG, VND.
Polyethylene glycol sesquiester of tallow acids	ONX.
*Polyglycerol esters:	
Polyglycerol distearate	PCS.
Polyglycerol lactate oleate	DRW.
Polyglycerol mono-oleate	HDG, VND, WTC.

TABLE 19B.--*Surface-active agents for which U.S. production or sales were reported, identified by manufacturer, 1966*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
Nonionic Surface-Active Agents--Continued	
*Carboxylic acid esters--Continued	
*Propanediol esters:	
1,2-Propanediol distearate	HAL.
1,3-Propanediol monoester of coconut oil acids	DRW.
*1,2-Propanediol monolaurate	ARC, HAL, SBC, WM.
1,2-Propanediol mono-oleate	ARC, HAL.
*1,2-Propanediol monostearate	APD, ARC, CCW, EK, GLD, GLY, HAL, HDG, JRG, PCS, PG.
All other	PCS.
*Other carboxylic acid esters:	
Anhydrosorbitol glycerol monolaurate	APD, PCS.
Coconut oil acids, ethoxylated methanol ester	JOR.
Di-isobutylene maleate	RH.
Ethoxylated glycerol sesquiester of mixed fatty acids	APD.
Ethoxylated 1,2-propanediol monostearate	APD.
Ethoxylated sorbitol beeswax ester	APD.
Ethoxylated sorbitol hexaester of tall oil acids	APD, TCH.
Ethoxylated sorbitol hexaoleate	APD, TCH.
Ethoxylated sorbitol lanolin ester	APD.
Ethoxylated sorbitol mono-oleate	APD.
Ethoxylated sorbitol monostearate	SNW.
Ethoxylated sorbitol oleate, acetylated	APD.
Ethoxylated sorbitol pentaester of tall oil acids	APD.
Ethoxylated sorbitol pentalaurate	APD.
Ethoxylated sorbitol stearate	APD.
Ethoxylated sorbitol tetraester of lauric and oleic acids.	APD.
Ethoxylated sorbitol tetraester of tall oil acids	APD.
Methylglucoside laurate	HDG.
Methylglucoside oleate	HDG.
Pentaerythritol distearate	VAL.
Polyalkylene glycol adipate	PFZ.
Polyalkylene glycol diglycolate	NLC, RTF.
Polyalkylene glycol naphthenate	APD.
Sucrose esters of fatty acids	SUG.
All other	CCW, STC, WM.
*Ethers:	
*Benzenoid ethers:	
Alkylphenol - formaldehyde condensates, alkoxylated:	
(Mixed alkyl)phenol - formaldehyde, alkoxylated	RTF.
Nonylphenol - formaldehyde, alkoxylated	NLC, RTF.
tert-Octylphenol - formaldehyde, ethoxylated	SDW.
Pentylphenol - formaldehyde, alkoxylated	RTF.
Diisobutylphenol, ethoxylated	GAF, RH.
*Dinonylphenol, ethoxylated	GAF, JCC, STP.
*Dodecylphenol, ethoxylated	GAF, MON, PCS, UCC.
*Iso-octylphenol, ethoxylated	APX, CIB, DRW, NOP, OMC.
(Mixed alkyl)phenol, ethoxylated	GAF.
(Mixed alkyl)phenol, ethoxylated, butyl ether	RH.
(Mixed alkyl)phenoxypoly(ethyleneoxy)ethyl chloride	GAF.
*Nonylphenol, ethoxylated	APD, CIB, CLY, DOW, DRW, GAF, HPC, JCC, MON, NLC, OMC, PCS, RH, RTF, STP, TCH, UCC.
Nonylphenol, ethoxylated and propoxylated	RTF.
Nonylphenoxypoly(ethyleneoxy)ethyl iodide	GAF.
Pentylphenol, ethoxylated	RTF.
*Phenol, ethoxylated	APD, GAF, JCC, NOP, TCH, UCC.
Phenol, propoxylated	NLC.
Tetradecylphenol, ethoxylated	ORO, PCS.
Tridecylphenol, ethoxylated	PCS.
Xylenol, ethoxylated	NLC.
All other	RH, VPC.
*Nonbenzenoid ethers:	
Linear alcohols, alkoxylated:	
Decyl alcohol, ethoxylated	GAF, ICI, PCS.
Decyloxypoly(ethyleneoxy)ethyl chloride	GAF.
Decyl and octyl alcohols, ethoxylated	GAF.
*Dodecyl alcohol, ethoxylated	AAC, APD, DRW, DUP, GAF, GLY, JCC, OMC, PCS.
*Hexadecyl alcohol, ethoxylated	ADM, APD, CIB, ICI, NAC.
*Mixed linear alcohols, ethoxylated	ADM, CO, GAF, JCC, LAK, MON, NLC, PCS, RH, SHC, STP, TCH, UCC.

TABLE 19B.--*Surface-active agents for which U.S. production or sales were reported, identified by manufacturer, 1966*--**Continued**

Chemical	Manufacturers' identification codes (according to list in table 22)
Nonionic Surface-Active Agents--Continued	
*Ethers--Continued	
*Nonbenzenoid ethers--Continued	
Linear alcohols, alkoxylated--Continued	
Mixed linear alcohols, ethoxylated and propoxylated	RTF, STP, WYN.
*9-Octadecenyl alcohol, ethoxylated	AAC, ADM, APD, CIB, DUP, GAF, ICI, NOP, TCH, VAC, VPC.
*Octadecyl alcohol, ethoxylated	APD, CIB, DUP, HDG.
Sperm oil alcohol, ethoxylated	DUP.
Tallow alcohol, ethoxylated	AAC, ADM.
Other ethers and thioethers:	
tert-Dodecyl mercaptan, ethoxylated	AAC, MON.
Glucose, ethoxylated	RH.
Isodecyl alcohol, ethoxylated	PCS.
Iso-octyl alcohol, ethoxylated	GAF.
Poly(mixed ethylene, propylene)glycol	NLC, UCC.
Polypropylene glycol, ethoxylated	NLC, PCS, RTF, WYN.
Rosin alcohol, ethoxylated	CIB, HPC.
Sorbitol, ethoxylated	APD, TCH.
Sorbitol, propoxylated and ethoxylated	APD.
Sucrose, propoxylated	APD.
2,4,7,9-Tetramethyl-5-decyne-4,7-diol, ethoxylated	CUC.
*Tridecyl alcohol, ethoxylated	AAC, APD, DRW, EFH, GAF, GLY, ICI, JCC, MON, NLC, OMC, PCS, RTF, TCH, UCC.
Tridecyl alcohol, propoxylated and ethoxylated	JCC.
Trimethylheptanol, ethoxylated	UCC.
Trimethylolpropane, alkoxylated	JCC, RTF.
All other	SNW, VAC.
*Other nonionic surface-active agents:	
Bis(octadecenyloxypolyethylene glycol) ester of 1,6-hexamethylenedicarbamic acid.	CIB.
3,5-Dimethyl-1-hexyn-3-ol	CUC.
3,6-Dimethyl-4-octyne-3,6-diol	CUC.
Dodecylbenzenesulfonic acid - diethanolamine condensate, fatty acid monoester.	MAH.
Ethylene glycol dibenzenesulfonate	NES.
Glycerol sesquiester of hydrogenated castor oil acids, borated and ethoxylated.	GLY.
Octyl phosphate, ethoxylated	DUP, SFA.
2,4,7,9-Tetramethyl-5-decyne-4,7-diol	CUC.
Tri(castor oil alkyl) phosphate	GLY.

Pesticides and Related Products

TABLE 20B.--*Pesticides and related products for which U.S. production or sales were reported, identified by manufacturer, 1966*

[Pesticides and related products 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 date are accepted in confidence and may not be published. Manufacturers' identification codes shown below are taken from table 22. 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 22)
PESTICIDES AND RELATED PRODUCTS, CYCLIC	
*Fungicides:	
2,6-Bis(dimethylaminomethyl)cyclohexanone	MRK.
5-Chloro-2-benzothiazolethiol, laurylpyridium salt	VNC.
2,4-Dichloro-6-(o-chloroanilino)-s-triazine	CHG.
1,4-Dichloro-2,5-dimethoxybenzene	DUP.
2,3-Dichloro-1,4-naphthoquinone (Dichlone)	USR.
2,6-Dichloro-4-nitroaniline (DCNA)	CWN.
*3,5-Dimethyl-1,3,5,2H-tetrahydrothiadiazine-2-thione (DMTT).	MRK, OTC, SF, WRC.
Diphenylammonium propionate	MRK.
3,3'-Ethylenebis(tetrahydro-4,6-dimethyl-2H-1,3,5-thiadiazine-2-thione).	DUP.
2-Heptadecyl-2-imidazoline (Glyodin)	UCC.
2-Mercaptobenzothiazole, monoethanolamine salt	VNC.
*Mercury fungicides:	
N-(Ethylmercuri)-p-toluene sulfonanilide	DUP.
Hydroxymercurichlorophenol	DUP.
Hydroxymercurinitrophenol	DUP.
Mercurial turf fungicides	MAL.
Methylmercury quinolinolate	MRK.
2-(Phenylmercuriamino)ethyl acetate	CLY.
Phenylmercuricammonium acetate	TRO.
Phenylmercuric borate	TRO.
Phenylmercuric hydroxide	MRK.
Phenylmercuric lactate	MRK.
Phenylmercuric naphthonate	MRK.
Phenylmercuric oleate	CLY, HNX, MRK, TRO.
Phenylmercuric propionate	MRK.
N-Phenylmercuriformamide	VIN.
Tris(2-hydroxyethyl)(phenylmercuri)ammonium lactate	CLY.
2-(1-Methyl-n-heptyl)-4,6-dinitrophenyl crotonate (Dinocap).	RH.
3-(2-Methylpiperidino)propyl-3,4-dichlorobenzoate (Piperalin).	LIL.
*Naphthenic acid, copper salt	CCA, FER, HNX, MCI, MLD, SHP, SOC, SRR, TGL, TRO, WTC.
Pentachloronitrobenzene (PCNB)	OMC.
*Pentachlorophenol (PCP)	BXT, DOW, FRO, MON, RCI, SFD.
Pentachlorophenol, sodium salt	DOW, MON, RCI.
*8-Quinolinol (8-Hydroxyquinoline), copper salt	GAM, HNX, MRK.
Tetrachloro-p-benzoquinone (Chloranil)	USR.
2,3,4,6-Tetrachlorophenol and sodium salt	DOW.
N-Trichloromethylthio-4-cyclohexene-1,2-dicarboximide (Captan).	CHO.
N-Trichloromethylthiophthalimide (Folpet)	CHO.
*2,4,5-Trichlorophenol	DA, DOW, HK, HPC.
*2,4,5-Trichlorophenol, ethanolamine salt	BKL, GAF.
*2,4,5-Trichlorophenol, sodium salt	DOW.
2,4,6-Trichlorophenol	DOW, RBC.
Other fungicides	MRK.
*Herbicides and plant hormones:	
4-Amino-3,5,6-trichloropicolinic acid (Picloram)	DOW.
5-Bromo-3-sec-butyl-6-methyluracil (Bromacil)	DUP.
3-tert-Butyl-5-chloro-6-methyluracil	DUP.
N-Butyl-N-ethyl-α,α,α-trifluoro-2,6-dinitro-p-toluidine (Benefin).	LIL.
2-Butynyl-4-chloro-m-chlorocarbanilate (Barban)	SPN.
2-Chloro-4-ethylamino-6-isopropylamino-s-triazine (Atrazine).	GGY.
3'-Chloro-2-methyl-p-valerotoluidide (Solan)	FMN.
3-(p-Chlorophenyl)-1,1-dimethylurea (Monuron)	DUP.
3-(p-Chlorophenyl)-1,1-dimethylurea trichloroacetate	ACN.
3-Cyclohexyl-5,6-trimethyleneuracil	DUP.

TABLE 20B.--*Pesticides and related products for which U.S. production or sales were reported, identified by manufacturer, 1966*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
PESTICIDES AND RELATED PRODUCTS, CYCLIC--Continued	
*Herbicides and plant hormones--Continued	
2,6-Di-tert-butyl-p-tolylmethylcarbamate	HPC.
2,5-Dichloro-3-aminobenzoic acid, ammonium salt	GAF.
3,6-Dichloro-o-anisic acid (Dicamba)	VEL.
2,4-Dichlorobenzyltributylphosphonium chloride	SM.
2-(2,4-Dichlorophenoxy)ethyl sulfate, sodium salt (Sesone).	GAF.
2-(2,4-Dichlorophenoxy)propionic acid (Dichlorprop)	HPC.
3-(3,4-Dichlorophenyl)-1,1-dimethylurea (Diuron)	DUP.
3-(3,4-Dichlorophenyl)-1-methoxy-1-methylurea (Linuron)	DUP.
3-(3,4-Dichlorophenyl)-1-methyl-1-n-butylurea (Neburon)	DUP.
2,4-Dichlorophenyl-4-nitrophenyl ether	RH.
3',4'-Dichloropropionanilide (Propanil)	CIS, MON, RH.
1,2-Dihydropyridazine-3,6-dione (Maleic hydrazide)(MH)	ACY, USR.
N-(beta-O,O-Diisopropyl-dithiophosphorylethyl)-benzene sulfonamide (Bensulide).	SF.
N,N-Dimethyl-2,2-diphenylacetamide (Diphenamid)	CWN, LIL, x.
1,1-Dimethyl-3-phenylurea (Fenuron)	DUP.
1,1-Dimethyl-3-phenylurea trichloroacetate	ACN.
Dimethyl-tetrachloroterephthalate	DA.
*Dinitrobutylphenol (DNBP)	CIS, DOW, FMN.
*Dinitrobutylphenol, ammonium salt	CIS, DOW, FMN.
Dinitrobutyl phenol, triethanolamine salt	CIS, DOW, FMN.
Dinitrocresol (DNOC)	CIS, FMN.
Dinitrocresol, sodium salt	CIS, FMN.
Diphenylacetonitrile (Diphenatrile)	LIL.
2-Ethylamino-4-isopropylamino-6-methylmercapto-s-triazine (Ametryne).	GGY.
S-Ethyl hexahydro-1H-azepine-1-carbothioate (Molinate)	SF.
Gibberellic acid	ABB, MRK.
3-(Hexahydro-4,7-methanoindan-5-yl)-1,1-dimethylurea (Norea).	HPC.
3-Indolebutyric acid	ARA.
Isopropyl N-phenylcarbamate (IPC)	PPG.
Isopropyl N-(3-chlorophenyl)carbamate (CIPC)	PPG.
1-(2-Methylcyclohexyl)-3-phenylurea (Siduron)	DUP.
2-Methylmercapto-4,6-bis-(isopropylamino)-s-triazine (Prometryne).	GGY.
1-Naphthaleneacetic acid and derivatives:	
1-Naphthaleneacetamide	AMC.
*1-Naphthaleneacetic acid (NAA)	AMC, COK, THM.
*1-Naphthaleneacetic acid, methyl ester	AMC.
*1-Naphthaleneacetic acid, sodium salt	AMC, BKL.
N-1-Naphthylphthalamic acid (NPA)	USR.
7-Oxabicyclo[2.2.1]heptane-2,3-dicarboxylic acid, disodium salt (Endothal).	PAS.
Phenoxyacetic acid derivatives:	
4-Chloro-2-methylphenoxyacetic acid (MCPA)	CHC, CLY, RIV.
4-Chlorophenoxyacetic acid, potassium salt	GTH.
*2,4-Dichlorophenoxyacetic acid (2,4-D)	CHC, DA, DOW, HPC, MON, THM, TMH.
*2,4-Dichlorophenoxyacetic acid esters and salts:	
2,4-Dichlorophenoxyacetic acid, 2-butoxyethyl ester	AMC.
2,4-Dichlorophenoxyacetic acid, butoxypoly-propyleneglycol ester.	DOW.
*2,4-Dichlorophenoxyacetic acid, n-butyl ester	AMC, DA, DOW, HPC, IMR, MON, RIV.
2,4-Dichlorophenoxyacetic acid, sec-butyl ester	CHC, MON.
*2,4-Dichlorophenoxyacetic acid, dimethylamine salt	ALC, AMC, CHC, DA, DOW, HPC, RIV, TMH.
2,4-Dichlorophenoxyacetic acid, ethanolamine and isopropanolamine salt.	DOW.
2,4-Dichlorophenoxyacetic acid, ethyl ester	AMC.
2,4-Dichlorophenoxyacetic acid, 2-ethylhexyl ester	DA, HPC.
*2,4-Dichlorophenoxyacetic acid, iso-octyl ester	CHC, DOW, MON, RIV.
*2,4-Dichlorophenoxyacetic acid, isopropyl ester	AMC, CHC, DA, DOW, HPC, MON.
2,4-Dichlorophenoxyacetic acid, lithium salt	GTH, RIV.
2,4-Dichlorophenoxyacetic acid, sodium salt	DOW.
*2,4,5-Trichlorophenoxyacetic acid (2,4,5-T)	DA, DOW, HPC, MON, THM.
*2,4,5-Trichlorophenoxyacetic acid esters and salts:	
2,4,5-Trichlorophenoxyacetic acid, amyl esters	HPC.
2,4,5-Trichlorophenoxyacetic acid, 2-butoxyethyl ester.	AMC.
2,4,5-Trichlorophenoxyacetic acid, butoxy-polypropyleneglycol ester.	DOW.

TABLE 20B.--*Pesticides and related products for which U.S. production or sales were reported, identified by manufacturer, 1966*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
PESTICIDES AND RELATED PRODUCTS, CYCLIC--Continued	
*Herbicides and plant hormones--Continued	
Phenoxyacetic acid derivatives--Continued	
*2,4,5-Trichlorophenoxyacetic acid esters and salts--Continued	
*2,4,5-Trichlorophenoxyacetic acid, n-butyl ester---	DA, DOW, HPC, MON, RIV.
2,4,5-Trichlorophenoxyacetic acid, 2-ethylhexyl ester.	DA, HPC.
*2,4,5-Trichlorophenoxyacetic acid, iso-octyl ester-	DOW, MON, RIV, TMH.
2,4,5-Trichlorophenoxyacetic acid, triethyl amine salt.	DOW, HPC, RIV.
*Phenylmercury acetate (PMA)----------	BKM, CLY, MRK, TRO, WRC.
Polychloro-tetrahydro-methanoindene (Polychlorodicyclopentadiene) isomers.	VEL.
N-m-Tolyl phthalamic acid----------	USR.
2-(2,4,5-Trichlorophenoxy)propionic acid (Silvex)------	DOW, HPC.
2-(2,4,5-Trichlorophenoxy)propionic acid, 2-ethylhexyl ester.	HPC.
2-(2,4,5-Trichlorophenoxy)propionic acid, isooctyl ester.	RIV.
α,α,α-Trifluoro-2,6-dinitro-N,N-dipropyl-p-toluidine (Trifluralin).	LIL.
Tris-(2,4-dichlorophenoxyethyl)phosphite (2,4-DEP)-----	USR.
Insect attractants: tert-Butyl 4(or 5)-chloro-2-methylcyclohexanecarboxylate (Trimedlure).	TBK.
*Insecticides:	
Allethrin (allyl homolog of Cinerin I)----------	BPC.
3-sec-Amylphenyl-N-methylcarbamate----------	OTC, x.
Benzyl thiocyanate----------	HK.
2-sec-Butyl-4,6-dinitrophenyl-3,3-dimethylacrylate (Binapacryl).	FMN, FMP.
Chlorinated insecticides:	
*Aldrin-toxaphene group:	
Heptachloro-tetrahydro-endo-methanoindene (Heptachlor).	VEL.
Hexachloro-epoxy-octahydro-endo-endo-dimethanonaphthalene (Endrin).	SHC, VEL.
Hexachloro-epoxy-octahydro-endo-exo-dimethanonaphthalene (Dieldrin).	SHC.
Hexachloro-hexahydro-endo-exo-dimethanonaphthalene-(Aldrin).	SHC.
Octachloro-hexahydro-methanoindene (Chlordan)------	VEL.
Terpene polychlorinates----------	HN.
Toxaphene (Chlorinated camphene)----------	HPC.
2,2-Bis(p-chlorophenyl)-1,1-dichloroethane(DDD) (TDE)	ACN, RH.
1,1-Bis(p-chlorophenyl)-2-nitrobutane----------	COM.
1,1-Bis(p-chlorophenyl)-2-nitropropane----------	COM.
*α-Bis(p-chlorophenyl)β,β,β-trichloroethane (DDT)-----	ACN, DA, LEB, MTO, OMC.
2-(p-tert-Butylphenoxy)isopropyl-2′-chloroethyl sulfite.	USR.
2-(2-(p-tert-Butylphenoxy)-1-methylethoxy)-1-methylethyl-2-chloroethyl sulfite.	USR.
Chlorobenzilate----------	GGY.
p-Chlorophenyl p-chlorobenzenesulfonate (Ovex)-------	AMP, CIS, DOW.
o-Chlorophenyl-N-methylcarbamate----------	OTC.
p-Chlorophenyl 2,4,5-trichlorophenyl sulfone (Tetradifon).	FMN.
Decachlorooctahydro-1,3,4-metheno-2H-cyclobuta [cd] pentalene-2-one.	NAC.
1,1-Dichloro-2,2-bis(p-ethylphenyl)ethane----------	RH.
4,4′-Dichloro-α-trichloromethylbenzhydrol (Dicofol)--	RH.
Dodecachlorooctahydro-1,3,4-metheno-2H-cyclobuta [cd] pentalene (Mirex).	NAC.
*Hexachlorocyclohexane (Benzene hexachloride) (BHC)---	DA, HK, PPG.
*Hexachlorocyclohexane, 100% γ-isomer (Lindane)------	HK.
Hexachloro-hexahydro-methano-benzodioxathiepine 3-oxide (Endosulfan).	HK.
1,1,1-Trichloro-2,2-bis(p-methoxyphenyl)ethane (Methoxychlor).	CHF, DUP.
N,N-Diethyl-m-toluamide (DEET)----------	HPC, PFZ.
Di-n-propyl isocinchomeronate----------	MGK.
Isobornyl thiocyanoacetate----------	CIS, HPC.
2-Methyl-2-(methylthio)propionaldehyde O-methylcarbamoyl oxime.	UCC.
1-Naphthyl N-methylcarbamate (Carbaryl)----------	UCC.

TABLE 20B.--*Pesticides and related products for which U.S. production or sales were reported, identified by manufacturer, 1966*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
PESTICIDES AND RELATED PRODUCTS, CYCLIC--Continued	
*Insecticides--Continued	
*Organophosphorus insecticides:	
4-tert-Butyl-2-chlorophenyl methyl methylphosphoramidite.	DOW.
S-[[(p-Chlorophenyl)thio]methyl] O,O-diethyl phosphorodithioate (Carbophenothion).	SF.
O,O-Diethyl O-3-chloro-4-methyl-1-oxo-2H-1-benzopyran-7-yl phosphorothioate (Coumaphos).	CHG.
Diethyl-1-(2,4-dichlorophenyl)-2-chlorovinyl phosphate.	SHC.
O,O-Diethyl O-(2-isopropyl-4-methyl-6-pyrimidinyl) phosphorothioate (Diazinon).	GGY.
O,O-Diethyl O-p-(methylsulfinyl)phenyl phosphorothioate.	CHG.
*O,O-Diethyl O-p-nitrophenyl phosphorothioate (Parathion).	AMP, MON, SF, SHC.
O,O-Dimethyl S-(p-chlorophenylthio)methyl phosphorodithioate.	SF.
O,O-Dimethyl O-[4-(methylthio)-m-tolyl] phosphorothioate (Fenthion).	CHG.
*O,O-Dimethyl O-p-nitrophenyl phosphorothioate (Methyl parathion).	AMP, MON, SF, SHC.
O,O-Dimethyl S-[4-oxo-1,2,3-benzotriazin-3(4H)-ylmethyl] phosphorodithioate.	CHG.
O,O-Dimethyl S-phthalimidomethyl phosphorodithioate-	SF.
Dimethyl 2,4,5-trichlorophenyl phosphorothionate (Ronnel).	DOW.
2,3-p-Dioxane S,S-bis(O,O-diethylphosphorodithioate) (Dioxathion).	HPC.
O-Ethyl O-p-nitrophenyl phenylphosphonothioate (EPN)	SF.
α-Methylbenzyl 3-(dimethoxyphosphinyloxy)-cis-crotonate.	SHC.
O,O,O′,O′-Tetramethyl O,O′-Thiodi-p-phenylene phosphorothioate.	ACY.
All other organophosphorus insecticides----------	SF.
Nematocides:	
O,O-Diethyl O-(2,4-dichlorophenyl) phosphorothioate---	SM.
O,O-Diethyl O-2-pyrazinyl phosphorothioate (Thionazin)	ACY.
*Rodenticides:	
3-(α-Acetonylbenzyl)-4-hydroxycoumarin (Warfarin)-----	MOT, PEN.
2-Pivaloyl-1,3-indandione (Pindone)----------	MOT, PIC.
Other rodenticides----------	AMC, NES.
Synergists:	
α-[2-(2-n-Butoxyethoxy)-ethoxy]-4,5-methylenedioxy-2-propyltoluene (Piperonyl butoxide).	FMN, FMP.
N-(2-Ethylhexyl)bicyclo(2.2.1)-5-heptene-2,3-dicarboximide.	MGK.
Other synergists----------	CTN.
PESTICIDES AND RELATED PRODUCTS, ACYCLIC	
*Fungicides:	
Bis-1,4-bromoacetoxy-2-butene----------	VIN.
Cadmium succinate----------	MAL.
1-Chloro-2-nitropropane (Korax)----------	FMN, FMP.
Disodium cyanodithioimidocarbonate----------	BKM.
Dithiocarbamic acid fungicides:	
*Dimethyldithiocarbamic acid, ferric salt (Ferbam)---	DUP, FMN, RBC, WRC.
Dimethyldithiocarbamic acid, manganese salt---------	FMN.
Ethylene bis(dithiocarbamic acid), diammonium salt--	CIS, RBC.
*Ethylene bis(dithiocarbamic acid), disodium salt (Nabam).	CIS, DUP, FMN, RH.
Ethylene bis(dithiocarbamic acid), manganese salt (Maneb).	CIS, DUP, RH.
*Ethylene bis(dithiocarbamic acid), zinc salt (Zineb).	CIS, DUP, FMN, RH.
Polyethylenethiuram disulfide (PETD)----------	FMN.
Other dithiocarbamic acid fungicides----------	VNC.
n-Dodecylguanidine acetate (Dodine)----------	ACY.
Mercury fungicides:	
Chloromethoxypropylmercuric acetate----------	TRO.
Ethylmercuric chloride----------	DUP.
Ethylmercuric phosphate----------	DUP.

TABLE 20B.--*Pesticides and related products for which U.S. production or sales were reported, identified by manufacturer, 1966*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
PESTICIDES AND RELATED PRODUCTS, ACYCLIC--Continued	
*Fungicides--Continued	
Mercury fungicides--Continued	
3-Methyl(mercurithio)-1,2-propanediol	DUP
Methylmercuric acetate	DUP.
Methylmercuric hydroxide	MRT.
All other acyclic fungicides:	
Dimethyl thiocarbonyl disulfide	CLY.
2-Propene-1,1-diol diacetate	SHC.
Other	BFG.
*Herbicides and plant hormones:	
Cacodylic acid	ASL.
2-Chloroallyl diethyldithiocarbamate (CDEC)	MON.
2-Chloro-N,N-diallylacetamide (CDAA)	MON.
2,3-Dichloroallyl diisopropylthiolcarbamate (Diallate)	MON.
2,2-Dichloropropionic acid, sodium salt (Dalapon)	DOW.
N-Dimethylamino succinamic acid	USR.
S-Ethyl di-N,N-propylthiocarbamate (EPTC)	SF.
Ethyl xanthogen disulfide	RBC.
Methanearsonic acid, disodium salt (DSMA)	ASL, CLY.
Methanearsonic acid, dodecyl- and octylammonium salts	CLY, VIN.
Methanearsonic acid, sodium salt (MSMA)	VIN.
S-Propyl butylethylthiocarbamate (Pebulate)	SF.
S-Propyl dipropylthiocarbamate (Vernolate)	SF.
S,S,S-Tributyl phosphorotrithioate	CHG.
Tributyl phosphorotrithioate	SW.
Trichloroacetic acid, sodium salt (TCA)	DOW.
S-2,3,3-Trichloroallyl N,N-diisopropylthiolcarbamate (Tri-allate).	MON.
*Insecticides:	
2-(2-Butoxyethoxy)ethyl thiocyanate	RH.
Butoxy polypropylene glycol	UCC.
Metaldehyde	COM.
*Organophosphorus insecticides:	
S-[1,2-Bis(ethoxycarbonyl)ethyl] O,O-dimethyl phosphorodithioate (Malathion).	ACY.
2-Carbomethoxy-1-propen-2yl dimethyl phosphate	SHC.
1,2-Dibromo-2,2-dichloroethyl dimethyl phosphate (Naled).	SHC
O,O-Diethyl S-2-(ethylthio)ethyl phosphorodithioate (Disulfoton).	CHG.
O,O-Diethyl O-2-(ethylthio)ethyl phosphorothioate (Demeton O).	CHG.
O,O-Diethyl S-2-(ethylthio)ethyl phosphorothioate (Demeton S).	CHG.
O,O-Diethyl S-(ethylthio)methyl phosphorodithioate (Phorate).	ACY.
3-(Dimethoxyphosphinyloxy)-N,N-dimethyl-cis-crotonamide.	SHC.
O,O-Dimethyl-O-2,2-dichlorovinyl phosphate (DDVP)	SHC.
O,O-Dimethyl S-(N-methylcarbamoylmethyl) phosphorodithioate (Dimethoate).	ACY.
Dimethyl phosphate of 3-hydroxy-N-methyl-cis-crotonamide.	SHC.
S-[2-(Ethylsulfinyl)ethyl] O,O-dimethyl phosphorodithioate (Oxydemetonmethyl).	CHG.
O,O,O′,O′-Tetraethyl S,S′-methylene bis-phosphorodithioate (Ethion).	FMN, FMP.
*Tetraethyl pyrophosphate (TEPP)	ALC, AMP, OTH.
Tetra-n-propyl dithiopyrophosphate	SF.
2-Thiocyanoethyl dodecanoate	RH.
Other acyclic insecticides	HK, x.
*Rodenticides: Sodium fluoracetate	RBC.
*Soil conditioners: Polyacrylonitrile, hydrolyzed, sodium salt.	ACY.

TABLE 20B.--*Pesticides and related products for which U.S. production or sales were reported, identified by manufacturer, 1966*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
PESTICIDES AND RELATED PRODUCTS, ACYCLIC--Continued	
*Soil fumigants:	
2-Aminobutane carbonate	LIL.
*1,2-Dibromo-3-chloropropane (DBCP)	AMP, BST, DOW, SHC.
1,3-Dichloropropene	DOW.
1,3-Dichloropropene, 1,2-dichloropropane	DOW, SHC.
*Methyl bromide (Bromomethane)	AMP, DOW, FRO, GTL, MCH.
N-Methyldithiocarbamic acid, sodium salt (Metham)	DUP, SF.
Trichloronitromethane (Chloropicrin)	DOW, IMC.
All other soil fumigants	SF.

Miscellaneous Chemicals

TABLE 21B. -- *Miscellaneous chemicals for which U.S. production or sales were reported, identified by manufacturer, 1966*

[Miscellaneous chemicals for which separate statistics are given in table 21A are marked with an asterisk (*); chemicals 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 22. 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 22)
MISCELLANEOUS CHEMICALS, CYCLIC	
6-Acetoxy-2,4-dimethyl-m-dioxane	GIV.
Adenosine phosphates	PLB.
2-Aminobenzothiazole	FMT.
2-Amino-4,6-dimercapto-1,3,5-triazine	ACY.
1-(2-Aminoethyl)piperazine	JCC.
1-(3-Aminopropyl)morpholine	JCC.
Anisaldehyde bisulfite	GIV.
Arylalkyl phosphites	WES.
Barium octylphenate	CCA.
Benzoic acid salts:	
Aluminum benzoate	GAF.
Cobalt benzoate	SHP.
*Sodium benzoate, tech	HN.
*Sodium benzoate, U.S.P	HK, HN, MON, PFZ, VEL.
p-Benzoquinone (p-Quinone)	EKT.
Benzothiazole	ACY.
*Benzoyl peroxide	AZT, CAD, NOC, RCI, SDH, UPR, WTL.
Biological stains	HLC, NAC.
Bis(2,4-dichlorobenzoyl) peroxide	CAD.
2,4-Bis(4-hydroxy-3,5-di-tert-butyl-phenoxy)-6-(n-octyl-thio)-1,3,5-triazine.	GGY.
Bis(2-hydroxypropoxyphenyl)methane	JCC.
2,4-Bis(n-octylthio)-6-(4'-hydroxy-3',5'-di-tert-butyl-anilino)-1,3,5-triazine.	GGY
Boron fluoride-phenol complex	ACG.
*Butyl benzoate	FRO, TCC, VEL.
p-tert-Butylbenzoic acid, barium bis-salt	CCA.
n-Butylferrocene	ARA.
2(and 3)-tert-Butyl-4-methoxyphenol	EKT.
p-tert-Butyl-α-methylcinnamaldehyde	GIV.
tert-Butyl peroxybenzoate	WTL.
4-tert-Butylphenyl salicylate	DOW.
4-tert-Butylpyrocatechol	BKL, DOW.
Camphene	GLD, HPC.
Cellulose acetate phthalate	x.
Centralite-1 (N,N'-Diethyl-N,N'-diphenylurea)	OTC, PAS.
Chemical indicators	EK, HLC, LAM, NAC.
Chemical reagents	ACG, CLB, EK, GFS, HLC, LAM, NAC, PIC.
Chloramine B (Sodium derivative of N-chlorobenzene sulfonamide).	NES.
Chlorinated terphenyls	KPS.
2-Chloroacetophenone	GAM.
1-(3-Chloroallyl)-3,5,7-triaza-1-azon iaadamantane chloride.	DOW.
(o-Chlorobenzylidene)malononitrile	GAM.
5-Chloro-2-hydroxybenzophenone	DOW.
Chlorophyllin, sodium-potassium-copper	KCH.
Cobalt phthalocyaninedisulfonic acid	NAC.
Cumene hydroperoxide	HPC, RCI.
Cyclohexanone peroxide	CAD, WTL.
Cyclohexene-1,2-dicarboxylic acid (Tetrahydrophthalic acid) disubstituted, polyester salts: Barium and cadmium salts.	RCI.
1,4-Cyclohexylenedimethanol	EKT.
*Cyclopropane	MAL, OH, OMS, TAE.
Cytidine and derivatives	PLB.
Decahydronaphthalene (Decalin)	DUP.
Decyl diphenyl phosphite	HK, x.
Dehydroacetic acid, and sodium salt	GAN.
2,5-Di-tert-amylhydroquinone	EKT.
Diazodinitrophenol	HPC.

TABLE 21B. --*Miscellaneous chemicals for which U.S. production or sales were reported, identified by manufacturer, 1966*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
MISCELLANEOUS CHEMICALS, CYCLIC--Continued	
2,4-Dibenzoylresorcinol	DOW.
1,3-Dibromo-5,5-dimethylhydantoin	ARA.
2,6-Di-tert-butyl-p-cresol:	
*Food grade	CAT, EKT, HPC, KPT, SHC.
*Tech	CAT, EKT, HPC, KPT, PRD, SHC.
Di-n-butylferrocene	ARA.
2,5-Di-tert-butylhydroquinone	EKT.
Di-tert-butyl peroxyphthalate	WTL.
2,4-Dichlorobenzoyl peroxide	WTL.
1,3-Dichloro-5,5-dimethylhydantoin	GLY.
Dichloro-s-triazine-2,4,6(1H,3H,5H)trione (Dichloroisocyanuric acid), potassium and sodium salts.	MON.
Dicyclohexylammonium nitrite	OMC.
Didecyl phenyl phosphite	HK.
N,N-Diethyl-p-phenylenediamine	FMT.
Digitonin	PEN.
2,5-Dihydroxybenzenesulfonic acid	NES.
2,2'-Dihydroxy-4,4'-dimethoxybenzophenone	GAF.
2,6-Dihydroxyisonicotinic acid (2,6-Dihydroxy-4-carboxypyridine).	EK.
2,2'-Dihydroxy-4-methoxybenzophenone	ACY.
2,2'-Dihydroxy-4-(octadecyloxy)benzophenone	ACY.
3,5-Diiodosalicylic acid	MRT.
Diisopropylbenzene hydroperoxide	HPC.
Diisopropyl-m,p-cresols	GIV.
*p-Dimethoxybenzene (Dimethyl ether of hydroquinone)	ASL, EKT, GAF, ICO, TBK.
α,α-Dimethylbenzyl hydroperoxide	ACP.
2,5-Dimethyl-2,5-di(peroxyphenyl)hexane	WTL.
2,5-Dimethylhexane-2,5-diperoxybenzoate	UPR.
2,6-Dimethylmorpholine	DOW.
4,4-Dinitrocarbanilide-4,6-dimethyl-2-pyrimidinol	MRK.
Di-n-octadecyl 3,5-di-tert-butyl-4-hydroxyphenyl phosphonate.	GGY.
Dioxane (1,4-Diethylene oxide)	DOW, UCC.
2,5-Diphenyl-p-benzoquinone	EKT.
Dithioammilide, monoethanolamine salt	ACY.
4-(Dodecyloxy)-2-hydroxybenzophenone	DUP, EKT.
Enzymes:	
Hydrolytic:	
Amylases	BAX, CRN, OMS, PMP, RH, WBC.
Proteases	BAX, PFZ, PMP, RH, WBC.
Other	MLS, RH, WBC.
Nonhydrolytic	PLB, WBC.
1,2-Epoxy-3-phenoxypropane (Glycidyl phenyl ether)	SHC.
6-Ethoxy-m-anol (Propenylmethylguaethol)	ICO.
Ethyl cellulose phthalate	EK.
2-Ethylhexyl octylphenyl phosphite	x.
Ethyl hydrocaffeate	ICO.
*4-Ethylmorpholine	JCC, UCC.
Ferrocene	ARA.
*Flotation reagents:	
Dicresylphosphorodithioic acid (Dicresylthiophosphoric acid).	ACY.
Dicresylphosphorodithioic acid, ammonium salt	ACY.
Dicresylphosphorodithioic acid, sodium salt	KCU.
2,2'-Dimethylthiocarbanilide (Di-o-tolylthiourea)	DUP, RBC.
Rosin amines	HPC.
Thiocarbanilide (Diphenylthiourea)	ACY, NAC.
Fluorinated benzenoid chemicals	PIC.
Furan derivatives:	
2-Furaldehyde (Furfural)	QKO.
Tetrahydrofurfuryl alcohol	QKO.
Gallic acid	MAL.
*Gasoline additives:	
N,N'-Bis(1,4-dimethylpentyl)-p-phenylenediamine	EKT.
2,6-Di-tert-butylphenol	SHC, TNA.
N,N-Di-sec-butyl-o-phenylenediamine	DUP, EKT.
*N,N'-Di-sec-butyl-p-phenylenediamine	DUP, EKT, UPM.
N,N'-Diisopropyl-p-phenylenediamine	DUP, EKT.

TABLE 21B.--*Miscellaneous chemicals for which U.S. production or sales were reported, identified by manufacturer, 1966*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
MISCELLANEOUS CHEMICALS, CYCLIC--Continued	
*Gasoline additives--Continued	
*N,N'-Disalicylidene-1,2-propanediamine	DUP, EKT, TX, UPM, x.
Methylcyclopentadienylmanganese tricarbonyl	TNA.
4,4'-Methylenebis(2,6-di-tert-butylphenol)	ENJ, SHC, TNA.
2,2'-Thiobis[6-tert-butyl-4-methylphenol]	CAT.
Glyceryl p-aminobenzoate	VND.
Glyceryl tribenzoate	VEL.
Guanosine phosphates	PLB.
5,6,7,8,9,9-Hexachloro-1,2,3,4,4a,5,8,8a-octahydro-5,8-methano-2,3-naphthalic anhydride (Cloran).	WSN.
*Hexamethylenetetramine, tech	BOR, DUP, HKD, HMP, HN, PLS, UCC.
o-(2-Hydroxy-p-anisoyl)benzoic acid	ACY.
N-(2-Hydroxyethyl)gentisamide	ICO.
2-Hydroxy-4-methoxybenzophenone	ACY, GAF.
2-Hydroxy-4-methoxy-5-sulfobenzophenone trihydrate	ACY.
2-(2'-Hydroxy-5'-methylphenyl)benzotriazole	GGY.
2-Hydroxy-4-n-octoxybenzophenone	ACY.
Hydroxyphenylbenzotriazole derivative	GGY.
2-(2-Hydroxyphenyl)-4(3)-quinazolone	x.
1-Hydroxy-2-pyridine (Omadine)	OMC.
2-Imidazolidinethione (1,3-Ethylene-2-thiourea)	PAS.
Inosine and phosphates	PLB.
Isoamyl p-dimethylaminobenzoate	VND.
Isocyanuric acid	MON.
Isophorone	UCC.
Isopropyl-o-cresol	CP.
p-Isopropyl-α-methylcinnamaldehyde	GIV.
Isopropylmorpholine	JCC.
Ketene, dimer	EKT.
*Lubricating oil and grease additives:	
Chlorosulfurized and sulfurized compounds:	
Liquid disulfide	HK.
Tall oil ester, sulfurized	LUB.
Terpenes, sulfurized	LUB.
All other	LUB.
Oil-soluble petroleum sulfonates:	
Oil-soluble petroleum sulfonate, ammonium salt	SIN.
*Oil-soluble petroleum sulfonate, barium salt	CO, LUB, TX, x.
*Oil-soluble petroleum sulfonate, calcium salt	CO, ENJ, LUB, ORO, SHO, SON, TX.
*Oil-soluble petroleum sulfonate, sodium salt	CO, ENJ, MOR, NOP, PAR, SHO, SOC, SOI, SON, TX.
All other	CO.
Phenol salts:	
Barium salt of dodecylphenol	TX.
Barium salt of nonylphenol	CCA.
Calcium salt of octylphenol-formaldehyde	SHC.
Calcium salt of polypropylphenol	ORO.
All other phenol salts	ENJ, LUB, MON, ORO, SIN, x.
All other	ENJ, LUB, MON, ORO, TNA, TX, x.
Maleic anhydride half esters, vinyl ether copolymers	GAF.
p-Menthane	HPC.
8-p-Menthyl hydroperoxide	HNW, HPC.
p-Methoxybenzylidenemalonic acid, dimethyl ester	ACY.
4-Methoxyphenol	ASL, EKT.
2-Methylaziridine	ICO.
2,2'-Methylenebis[4-chlorophenol] (Dichlorophene)	GIV.
Methylenebis[5,5-dimethylhydantoin]	GLY.
2,2'-Methylenebis[3,4,6-trichlorophenol] (Hexachlor	GIV.
2,2'-Methylendi-p-cresol (Bis(5-methyl-2-hydroxyphenyl)-methane).	GIV.
Methyl gallate	HSH.
Methylglucoside	CRN.
4-Methylmorpholine	JCC, UCC.
5-Methyl-5-norbornene-2,3-dicarboxylic anhydride (Methyl-bicyclo[2.2.1]hept-5-ene-2,3-dicarboxylic anhydride).	ICO.
Methyl phenyl phosphates	TNA.
1-Methyl-2-pyrrolidone, monomer	GAF.
Methyl triphenyl phosphonium bromide	ALD.
Methyl vinyl ether-toluene polymer	GAF.
Methyl vinyl ether-xylene polymer	GAF.

TABLE 21B. --*Miscellaneous chemicals for which U.S. production or sales were reported, identified by manufacturer, 1966*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
MISCELLANEOUS CHEMICALS, CYCLIC--Continued	
*Morpholine	DOW, JCC, UCC.
Morpholine salt of p-toluenesulfonic acid	AMB.
*Napthenic acid salts:	
Aluminum naphthenate	HSH, WTC.
Barium naphthenate	CCA.
Cadmium naphthenate	CCA.
*Calcium naphthenate	CCA, CCC, FER, HNX, HSH, MCI, MLD, SHP, SOC, SRR, SW, TRO, WTC, x, x.
Cobalt lead manganese naphthenate	HNX, HSH.
*Cobalt naphthenate	CCA, CCC, FER, HNX, HSH, MCI, MLD, MON, SHP, SOC, SRR, SW, TRO, WTC, x, x.
*Iron naphthenate	CCA, CCC, HNX, HSH, MCI, MLD, SOC, WTC.
Lead manganese naphthenate	CCA.
*Lead naphthenate	CCA, CCC, CCW, FER, HNX, HSH, MCI, MLD, SHP, SOC, SRR, SW, TRO, WTC, x, x.
Lithium naphthenate	CCA.
*Manganese naphthenate	CCA, CCC, FER, HNX, HSH, MLD, SHP, SOC, SRR, SW, TRO, WTC, x.
Nickel naphthenate	CCA.
Rare earths naphthenate	CCA, HNX.
Sodium naphthenate	CCA.
Strontium naphthenate	CCA.
*Zinc naphthenate	CCA, CCC, FER, HNX, HSH, MCI, MLD, SHP, SOC, SRR, SW, TRO, WTC.
o-Nitrobenzoic acid and sodium salt	WAY.
Norbornane-2-methanol (Bicyclo(2,2,1)-heptane-2-methanol)	ICO.
5-Norbornen-2-ylmethyl acrylate (Bicylo[2.2.1]-hept-5-ene-2-methylol acrylate).	ICO.
1-Octadecenyl-2-naphthenyltetrahydropyrimidine	x.
Octadecyl 3-(3,5-di-tert-butyl-4-hydroxyphenyl)-propionate	GGY.
Octylphenol cyclotetrasiloxane	x.
Organic mercury compounds:	
Phenyl mercuric borate	TRO.
Other	x.
1,10-Phenanthroline	COK.
p-Phenolsulfonic acid	PRD.
Phenolthiosulfonic acid	GAF.
2-Phenoxyethanol (Ethylene glycol monophenyl ether)	DOW, JCC.
2-(2-Phenoxyethoxy)ethanol (Diethylene glycol phenyl ether).	DOW.
2,2'-(p-Phenylene)diethanol	EKT.
Phenyl hydrogen phosphate	x.
5-Phosphonylribose 1-pyrophosphate	PLB.
Photographic chemicals:	
N-(o-Acetamidophenethyl)-1-hydroxy-2-naphthamide	EKT.
2-(4-Amino-N-ethyl-m-toluidino)ethanol	EKT.
*Benzotriazole	EK, FMT, MEE, MRT.
p-Benzylaminophenol hydrochloride	EK.
Catechol (Pyrocatechin)	KPT.
3-Chloro-4-diethylaminobenzenediazonium chloride (p-Diazo-2-chloro-N,N-diethylaniline) - zinc chloride.	FMT, IDC.
Chlorohydroquinone	EK.
2,4-Diaminophenol dihydrochloride (Amidol)	VPC.
2[N-(2,4-Di-tert-amylphenoxyacetyl) amido]-4,6-dichloro-5-methylphenol.	IDC.
2,5-Dibutoxy-4-morpholinobenzenediazonium chlorozincate	ESA, FMT, IDC.
4-Diazo-1-morpholinobenzene	FMT.
*2,5-Diethoxy-4-morpholinobenzenediazonium chlorozincate	ESA, FMT, GAF, IDC.
*p-Diethylaminobenzenediazonium chloride (p-Diazo-N,N-diethylaniline) - zinc chloride.	FMT, GAF, IDC, MRT.
p-Diethylaminobenzenediazonium (p-Diazo-N,N-diethylaniline) fluoroborate.	IDC.
N,N-Diethyl-p-phenylenediamine hydrochloride	EKT, FMT.
*N,N-Diethyltoluene-2,5-diamine, monohydrochloride	EKT, FMT, IDC.
2,5-Dihydroxybenzenesulfonic acid	EK.
2,7-Dihydroxy-3,6-naphthalene sulfonate	FMT.
p-Dimethylaminobenzenediazonium chloride (p-Diazo-N,N-dimethylaniline) - zinc chloride.	FMT, IDC.
4-(2',6'-Dimethylmorpholinyl)benzenediazonium chloride - zinc chloride.	IDC.

TABLE 21B. --*Miscellaneous chemicals for which U.S. production or sales were reported, identified by manufacturer, 1966*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
MISCELLANEOUS CHEMICALS, CYCLIC--Continued	
Photographic chemicals--Continued	
p-Diphenylaminediazonium sulfate	FMT.
p-(N-Ethylbenzimido)benzenediazonium chloride (p-Diazo-N-benzyl-N-ethylaniline) - zinc chloride.	FMT, MRT.
p-[Ethyl(2-hydroxyethyl)amino]benzenediazonium chloride (p-Diazo-N-ethyl-N-hydroxyethylaniline) - zinc chloride.	FMT, IDC.
N-Ethyl-N-hydroxyethyl-p-phenylenediamine sulfate	IDC.
N-Ethyl-N-(β-methanesulfonamidoethyl)toluene-2,5-diamine sulfate.	EKT.
Hydroquinone (Hydroquinol)	EKT.
p-[(2-Hydroxyethyl)methylamino]benzenediazonium chloride (p-Diazo-N-hydroxyethyl-N-methylaniline) - zinc chloride.	FM.
1-Hydroxy-N-(2-hydroxyethyl)-2-naphthamide (2,3-Oxynaphthoic-mono-ethanolamide).	FMT.
1-(3-Hydroxyphenyl)urea	FMT, IDC.
4-Methoxy-1-naphthol	x.
p-Methylaminophenol sulfate (Metol)	EK.
5-Methylbenzotriazole	EK.
2-Methylbenzoxazole	FMT.
4-Methyl-1-phenyl-3-pyrazolidinone	WAY.
4-Morpholinylbenzenediazonium chloride - zinc chloride salt.	IDC.
4-Morpholinylbenzenediazonium fluoroborate	IDC.
6-Nitrobenzimidazole	EK, FMT.
Octylphenyl salicylate	EKT.
Phenyl-5-mercaptotetrazole	CFC, FMT.
1-Phenyl-3-pyrazolidinone	GGY, WAY.
4-Phenylpyrocatechol	x.
Polyvinyl cinnamate	WAY.
2-Resorcylic monoethanolamide	FMT.
4,4'-Thiodiresorcinol (Diresorcyl sulfide)	BKC.
1-(2,4,6-Trichlorophenyl)-3-(4-nitroanilino)-2-pyrazolin-5-one.	EKT.
All other	EK, EKT, IDC, WAY.
Phthalic acid, lead salt, dibasic	NTL.
*Pinene (α- and β-)	ARZ, CBY, GLD, HNW, HPC.
Poly-4-(2-acryloxy ethoxy)-2-hydroxybenzophenone	ACY.
Polyethylene terephthalate	DUP, EK.
*Propyl gallate	EKT, HN, HSH.
Pyrogallol (Pyrogallic acid)	HSH, MAL.
Resorcinol monobenzoate	EKT.
Rosin acid salts:	
Aluminum resinate	JMS, MAL.
Calcium resinate	JMS, SW.
Cobalt manganese resinate	JMS.
Copper resinate	JMS.
Iron resinate	HSH, JMS.
Lead resinate	JMS.
Manganese resinate	JMS.
Zinc resinate	JMS, SW.
Salicylanilide, nonmedicinal	DUP, FIN, MEE, PCW.
Salicylic acid, lead salt	NTL.
Silicones	DCC.
Sodium cresoxide (Cresylic acid, sodium salt)	DEX, GOC.
Sodium ferric ethylenediamine di-o-hydroxyphenylacetate	GGY.
Sucrose benzoate	VEL.
Sulfosalicylic acid	MON, MRK.
Tall oil fatty acid chloride	GAF.
*Tall oil salts (Linoleic-rosin acid salts):	
*Calcium tallate	CCA, CCC, DYS, HNX, HSH, MCI, MLD, SRR, TRO, WTC.
*Cobalt tallate	CCA, CCC, FER, HNX, MCI, MLD, SHP, SRR, TRO, WTC.
Copper tallate	CCA, MLD, SHP.
Iron tallate	CCA, MCI, MLD, SRR, WTC.
Lead manganese tallate	HSH, MCI.
*Lead tallate	CCA, CCC, FER, HNX, HSH, MCI, MLD, SHP, SRR, TRO, WTC, x.
*Manganese tallate	CCA, CCC, FER, HNX. HSH, MCI, MLD, SRR, TRO, WTC.
Zinc tallate	CCA, HSH, MCI.
Tannic acid	HSH, MAL.

TABLE 21B. --*Miscellaneous chemicals for which U.S. production or sales were reported, identified by manufacturer, 1966*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
MISCELLANEOUS CHEMICALS, CYCLIC--Continued	
*Tanning materials, synthetic:	
Hydroxytoluenesulfonic acid, formaldehyde condensate (Cresol-formaldehyde sulfonate), sodium salt.	GGY.
*2-Naphthalenesulfonic acid, formaldehyde condensate and salts.	AKS, GRD, NOP, NYC, RH.
1-Phenol-2-sulfonic acid, formaldehyde condensate (Phenol-formaldehyde, sulfonated).	NAC, NOP, RH.
1-Phenol-4-sulfonic acid, formaldehyde condensate	AKS.
Styrene maleic anhydride interpolymer, partial sodium salt.	DUP.
Sulfonyldiphenolsulfonic acid, formaldehyde condensate	GAF.
All other	GGY.
Tetra(n-butyl)ammonium picrate	MED.
3,3',4,4'-Tetrachlorophenylurea	OTC.
Tetrahydromethylthiophene-1,1-dioxide	PLC.
1,2,3,4-Tetrahydronaphthalene (Tetralin)	DUP.
Tetrahydrothiophene	ORO, PAS.
Tetrahydrothiophene-1,1-dioxide (Sulfolane)	PLC.
Tetrakis[methylene-3-(3',5'-di-tert-butyl-4'-hydroxyphenol) propionate]methane.	GGY.
Tetramethylaminoethylpiperazine	JCC.
Tetraphenyltin	x.
*Textile chemicals, other than surface-active agents:	
*1,3-Bis(hydroxymethyl)-2-imidazolidone (Dimethylol ethylene urea).	ACY, AKS, DEX.
N',N'-Diphenyl-1,2-propanediamine	SNW.
1-[(Octadecyloxy)methyl]pyridinium chloride	DUP.
Phenol, sulfurated	GAF.
Tetrahydro-3,5-bis(methoxymethyl)-4H-1,3,5-oxadiazine-4-one (1,3-Bis(methoxymethyl)uron).	DEX.
2,2',4,4'-Tetrahydroxybenzophenone	GAF.
All other	AKS, x, x.
2,2'-Thiobis[4-chlorophenol]	GIV.
2,2'-Thiobis[4,6-dichlorophenol]	SDH.
[2,2'-Thiobis(4-octylphenolate)]-n-butylamine nickel	ACY.
Thiophene	PAS.
o-Toluidine formaldehyde hydrochloride	RBC.
o-Tolylbiguanide	MON.
Triaryl phosphites	WES.
3,4',5-Tribromosalicylanilide	DOW, FIN, MEE, TRO, x.
3,4',5-Tribromosalicylanilide and dibromosalicylanilide mixtures.	FIN.
3,4,4'-Trichlorocarbanilide	MON.
Trichloromelamine	WTH.
1,3,5-Trichloro-s-triazine-2,4,6(1H,3H,5H)trione (Trichloroisocyanuric acid).	MON.
Tri-(m,p)-cresyl borate	USB.
3-Trifluoromethyl-4,4'-dichlorocarbonalide	GGY.
α,α,α-Trifluoro-p-toluidine (p-Aminobenzotrifluoride)	PIC.
2,4,6-Trinitroresorcinol, lead derivative	x.
s-Trioxane	CEL.
Triphenylphosphine	CCW.
Triphenyl phosphite	HK, MON.
Triphenyltin acetate	x.
Triphenyltin chloride	x.
Tris(1-aziridinyl)phosphine oxide	DOW.
Uridine derivatives	PLB.
1-Vinyl-2-pyrrolidinone, monomer and polymer	GAF.
1-Vinyl-2-pyrrolidinone - acrylamide copolymer	GAF.
1-Vinyl-2-pyrrolidinone - ethyl - acrylamide copolymer	GAF.
1-Vinyl-2-pyrrolidinone - vinyl acetate copolymer	GAF.
MISCELLANEOUS CHEMICALS, ACYCLIC	
Cellulose Esters and Ethers	
*Cellulose esters:	
*Cellulose acetate	AV, CEL, DUP, EKT.
Cellulose acetate butyrate	EKT.

TABLE 21B. --*Miscellaneous chemicals for which U.S. production or sales were reported, identified by manufacturer, 1966*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued	
Cellulose Esters and Ethers--Continued	
*Cellulose esters--Continued	
Cellulose acetate propionate	EKT.
Cellulose propionate	CEL.
Nitrocellulose (Cellulose nitrate)	DUP, HPC.
*Cellulose ethers:	
Ethylcellulose	DOW, HPC.
Ethylhydroxyethylcellulose	HPC.
Hydroxyethylcellulose	HPC, UCC.
Methylcellulose	DOW.
*Sodium carboxymethylcellulose, 100%	BUK, DUP, HPC, KON, WMP, WYN.
Sodium carboxymethylhydroxyethylcellulose	HPC.
Lubricating Oil Additives	
Chlorosulfurized hydrocarbon	ENJ.
Chlorosulfurized lard oil	CCW.
Chlorosulfurized sperm oil	CCW.
Oxidized hydrocarbons	ALX.
*Phosphorodithioates (Dithiophosphates):	
Zinc di(butylhexyl) phosphorodithioate	ORO.
Zinc dihexyl phosphorodithioate	MON.
Zinc diisopropyl phosphorodithioate	SIN.
All other	ENJ, LUB, MON, SIN, x.
Sulfurized butenes	LUB.
*Sulfurized lard oil	CCW, GOC, NLC, SIN, WBG.
*Sulfurized sperm oil	CCW, LUB, QCP, SIN, SOI.
All other	CCW, ENJ, HK, LUB, MON, ORO, SIN, SOI, TX.
Nitrogenous Compounds	
Acetaldehyde, 1,1-dimethyl hydrazone	DIX.
Acetamide	ACG.
Acetamidine hydrochloride	MRK.
Acetamidoethanol (n-Acetyl-ethanolamine)	RBC.
Acetone semicarbazone	NOR.
Acetonitrile	EKX, SOH, UCC.
*Acrylonitrile	ACY, BFG, DUP, MON, SOH, UCC.
Adiponitrile	DUP, MON.
Allyl-sec-butylcyanoacetic acid, ethyl ester	SDW.
1-Allyl-3-(2-hydroxyethyl)-2-thiourea	FMT, IDC.
Allyl isocyanate	CTN.
Allyl isothiocyanate, non-perfume grade	ICO.
Amidinourea (Granylurea) phosphate	ACY.
*Amines:	
Allylamines	SHC.
*n-Butylamine, mono-	EKT, PAS, UCC, VGC.
tert-Butylamine, mono-	MON, RH.
n-Butylethylamine	PAS.
n-Butylmethylamine	PAS.
*Di-n-butylamine	PAS, UCC, VGC.
Di-n-butylmethylamine	UCC.
Diethylamine hydrochloride	CFC, x.
Diethylenetriamine	DOW, JCC, UCC.
N,N-Diethylethylenediamine	CBP, COK.
N^1,N^1-Diethyl-1,4-pentanediamine (Novoldiamine)	SDH.
Diethylaminopropylamine	UCC.
Dihexylamine	VGC.
Diisobutylamine	PAS, VGC.
Dimethylamine hydrochloride	EK, GAM.
Dimethylamine sulfate	RH.
N,N-Dimethyl-1,3-propanediamine	JCC.
Dimethylaminopropylamine	UCC.
Dipentylamine (Diamylamine)	PAS, VGC.
*Dipropylamine	ENJ, PAS, UCC, VGC.
Dipropylenetriamine	UCC.
*Ethylamines:	
Diethylamine	DUP, ESC, PAS, UCC, VGC.
Ethylamine, mono-	ESC, PAS, UCC, VGC.
Triethylamine	ESC, PAS, UCC, VGC.

TABLE 21B. --*Miscellaneous chemicals for which U.S. production or sales were reported, identified by manufacturer, 1966*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued	
Nitrogenous Compounds--Continued	
Amines--Continued	
Ethylenediamine	DOW, JCC, UCC.
Ethylenediamine sulfate	EK.
1,6-Hexanediamine (Hexamethylenediamine)	CEL, DUP, ELP, MON.
3,3'-Iminobispropylamine	JCC, UCC.
Isobutylamine	PAS.
*Isopropylamines:	
Diisopropylamine	ESC, PAS, UCC, VGC.
Isopropylamine, mono-	ESC, PAS, UCC, VGC.
*Methylamines:	
Dimethylamine	CFC, COM, DUP, ESC, PAS, RH.
Methylamine, mono-	COM, DUP, ESC, GAF, PAS, RH.
Trimethylamine	COM, DUP, ESC, PAS, RH.
Methylamine hydrochloride	EK, RBC.
Methyltriethylenediamine	JCC.
Pentaethylenehexamine	DOW.
Pentylamine (Monoamylamine)	EK, PAS.
1,2-Propanediamine (Propylenediamine)	JCC, UCC.
1,3-Propanediamine (1,3-Diaminopropane)	UCC.
Propylamine mono-	PAS, UCC.
Tetraethylenepentamine	DOW, UCC.
N,N,N',N'-Tetramethyl-1,3-butanediamine	UCC.
Tetramethylethylenediamine	RH.
Tributylamine	PAS.
Triethylenetetramine	DOW, UCC.
Tripentylamine	PAS.
Other	AIB, AID, DUP, EK, NLC, ONX, SNW, VGC.
2-Amino-1-butanol	ACY, COM.
2-Aminoethanethiol (2-Mercaptoethylamine) hydrochloride	EVN.
1-Aminoethanol (Acetaldehyde ammonia)	PAS.
2-Aminoethanol (Monoethanolamine) hydrochloride	WSN.
2-Aminoethanol (Monoethanolamine) sulfite	EVN, SUM.
Aminoethoxyethanol	JCC.
2-(2-Aminoethylamino)ethanol (Aminoethylethanolamine)	DOW, JCC, UCC.
2-Aminoethyl mercaptoacetate (Monoethanolamine thioglycolate).	EVN, HAB.
2-Amino-2-ethyl-1,3-propanediol	COM.
2-Aminoethyl vinyl ether	MEE.
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.
2-Amino-1-propanol	LIL.
3-Amino-1-propanol	UCC.
*1,1'-Azobisformamide	FMT, NPI, USR.
2,2'-Azobis[2-methylpropionitrile] (Azobisisobutyronitrile)	DUP.
1,3-Bis(2-hydroxyethyl)-2-thiourea	IDC.
1,3-Bis(hydroxymethyl)urea (Dimethylolurea)	GLY, x.
N,O-Bis(trimethylsilyl)acetamide	PIC.
Biuret	SW.
N-Bromoacetamide	ARA.
N-Bromosuccinimide (Succinibromimide)	ARA, SDW.
2,3-Butanedione monoxime	EK.
2-Butanone oxime	AIB, CCA, MLD, NAC, TRO.
tert-Butyl carbazate	AID.
n-Butyl cyanoacetate	KF.
1-Butyl-3-ethyl-2-thiourea	PAS.
2,2'-(Butylimino)diethanol (N,N-Bis(2-hydroxyethyl)-butylamine).	PAS.
Butyl isocyanate	CWN, UPJ.
Butyraldehyde oxime	NAC.
n-Butyronitrile	EKX.
*Caprolactam (2-Oxohexamethylenimine)	DBC, DUP, NAC.
Chloroacetamide	BPC, DOW.
Chloroacetonitrile	BPC.
Chlorocholine chloride	ACY.

TABLE 21B. --*Miscellaneous chemicals for which U.S. production or sales were reported, identified by manufacturer, 1966*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued	
Nitrogenous Compounds--Continued	
*2-Chloro-N,N-dimethylethylamine (Dimethylaminoethyl chloride) hydrochloride.	ABB, GAM, HEX, MCH, NES, PAS.
3-Chloro-N,N-dimethylpropylamine	SK.
2-Chloro-N,N-dimethylpropylamine hydrochloride	MCH.
3-Chloro-N,N-dimethylpropylamine hydrochloride	MCH.
2-Chloroethylamine	ICI.
β-Chloroallyl-N-methylamine	LIL.
N-Chlorosuccinimide (Succinichlorimide)	ARA, NAC.
2-Chlorotriethylamine hydrochloride	HEX, MCH, x.
2-Chloro-N,N-diethylethylamine hydrochloride	PAS.
Choline base	RH.
Coco nitrile	FOR.
Coconut oil amide	ARC, PG.
Cottonseed oil nitrile	FOR.
Creatine & creatinine	PFN.
Crotononitrile	KF.
2-Cyanoacetamide	KF.
2-Cyanoacethydrazide	KF.
Cyanoacetic acid	KF.
Cyanogen bromide	EK.
2-Dibutylaminoethanol	AAC, PAS.
1,3-Dibutyl-2-thiourea	PAS, RBC.
1,4-Dicyanobutene	x.
Diethyl acetamidomalonate	SDW.
Diethylaminoethanethiol hydrochloride	EVN.
*2-Diethylaminoethanol	AAC, PAS, UCC.
2-(2-Diethylaminoethoxy)ethanol	PAS.
2-Diethylaminoethyl methacrylate	DUP.
Diethylcarbamoyl chloride	GAM.
Diethyldithiocarbamic acid, sodium salt	EK.
N,N-Diethyldodecanamide	EK.
Diethylhydroxylamine	PAS.
1,3-Diethyl-2-thiourea	PAS, RBC.
2-Diisopropylaminoethanol (N-Diisopropylethanolamine)	PAS, UCC.
Diisopropylammonium nitrite	OMC.
1,3-Diisopropyl-2-thiourea	PAS.
Di(methoxyethyl)amine	VGC.
N,N-Dimethylacetamide	DUP.
2-Dimethylaminoethanethiol hydrochloride	EVN.
*2-Dimethylaminoethanol	AAC, JCC, PAS, RH, UCC.
3-Dimethylaminopropionitrile	ACY.
Dimethylaminoethyl methacrylate	AAC.
2-Dimethylamino-2-methyl-1-propanol	COM.
Dimethylcarbamoyl chloride	CTN, OTC.
N-(3-Dimethylaminopropyl)oleamide	DUP.
N,N-Dimethylformamide	DUP.
1,1-Dimethylhydrazine	FMP.
Dithiooxamide	MAL.
2,5-Dithiobiurea	ACY.
tert-Dodecyldisuccinamide	x.
Erucamide	ADM, FIN.
*Ethanolamines:	
*2-Aminoethanol (Monoethanolamine)	ACP, DOW, JCC, UCC.
*2,2′-Aminodiethanol (Diethanolamine)	ACP, DOW, JCC, UCC.
*2,2′,2″-Nitrilotriethanol (Triethanolamine)	ACP, DOW, JCC, UCC.
Ethoxymethylenemalononitrile	KF.
3-Ethoxypropionitrile	ACY.
Ethyl acetamidocyanoacetate	SDW.
Ethyl allyl(1-methyl-2-pentynyl)cyanoacetate	LIL.
2-Ethylaminoethanol (Ethylmonoethanolamine)	PAS.
Ethyl carbamate	BKL, FMP.
Ethyl carbodiimide hydrochloride	OTC.
Ethyl cyanoacetate	KF.
Ethyl diazoacetate	ALD.
2-Ethylhexyl cyanoacetate	GAF, KF.
N-Ethyl-N-hydroxyethyl-1,4-pentanediamine	SDW.
5-(N-Ethyl-N-hydroxyethylamino)-2-pentanone	SDW.
Ethyl isocyanate	CTN, OTC.

TABLE 21B. --*Miscellaneous chemicals for which U.S. production or sales were reported, identified by manufacturer, 1966*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued	
Nitrogenous Compounds--Continued	
Formamide	DUP.
Formamidine disulfide dihydrochloride	WAY.
Glycine (Aminoacetic acid), non-medicinal	BPC, CHT.
Glycine ethyl ester hydrochloride	BPC.
Glycine salts:	
Cupric glycinate	BPC.
Potassium glycinate	BPC.
Sodium glycinate	BPC.
Glycolonitrile	ACY.
Guanidine hydrochloride	ACY.
Hexamethylenediammonium adipate (Nylon salt)	CEL, MON.
Hydracrylonitrile (Ethylene cyanohydrin)	UCC.
2-Hydrazinoethanol (2-Hydroxyethylhydrazine)	NOR.
N-2-Hydroxyethylacetamide	USR.
Hydroxyethyl carbamate	JCC.
2-(Hydroxymethyl)-2-nitro-1,3-propanediol (Tris-(hydroxymethyl)nitromethane).	COM.
Isobutyronitrile	EKX.
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.
3-Isopropoxypropionitrile	ACY, DUP.
3-Isopropoxypropylamine	DUP.
2-Isopropylaminoethanol	PAS.
Isopropyl carbamate	BKL.
Isopropyl ethylthionocarbamate	DOW.
Lactonitrile	MON.
Lauronitrile (Dodecyl nitrile)	FOR.
Malonamide	KF.
Malononitrile	KF.
Methacrylamide	BFG, RH, x.
Methacrylonitrile	SOH.
Methoxyamine hydrochloride	EK.
3-Methoxypropionitrile	DUP.
3-Methoxypropylamine	DUP, EKT, JCC.
N-Methylacetamide	ACI, EK.
2-Methylaminoethanol (N-Methylethanolamine)	UCC.
Methylamino dimethyl acetal	LIL.
Methyl carbamate	BKL, FMP.
Methyl cyanoacetate	KF.
Methyl α-cyanoacrylate	EKT.
N,N′-Methylenebis(acrylamide)	ACY.
N,N′-Methylenebis(octadecanamide)	ARC.
N-Methylglucamine	DUP.
Methyl isocyanate	CTN, OTC.
2,2′-(Methylimino)diethanol (Methyldiethanolamine)	UCC.
*2-Methyllactonitrile (Acetone cyanohydrin)	ACY, RH, x.
2-Methyl-2-nitro-1,3-propanediol	COM.
2-Methyl-2-nitro-1-propanol	COM.
Methylpolyethanolamine	GAF.
N-Methyltaurine	GAF.
N-Methyltaurine, sodium salt	TNA.
N-Methylurea	LIL.
*Nitriloacids and salts:	
(Diethylenetrinitrilo)pentaacetic acid	HMP.
(Diethylenetrinitrilo)pentaacetic acid, monosodium hydrogen ferric salt.	GGY.
(Diethylenetrinitrilo)pentaacetic acid, pentasodium salt	GGY.
(Diethylenetrinitrilo)pentaacetic acid, sodium salt	CWL, DOW, GGY, HMP, RPC, TCC.
N,N-Dihydroxyethylglycine, sodium salt	CWL, DOW, HMP.
Ethanoldiglycine, disodium salt	HMP.
(Ethylenedinitrilo)tetraacetic acid (Ethylenediaminetetraacetic acid).	DOW, GGY, HMP.
(Ethylenedinitrilo)tetraacetic acid, calcium disodium salt.	DOW, GGY.
(Ethylenedinitrilo)tetraacetic acid, diammonium salt	DOW.

TABLE 21B.--*Miscellaneous chemicals for which U.S. production or sales were reported, identified by manufacturer, 1966*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued	
Nitrogenous Compounds--Continued	
*Nitriloacids and salts--Continued	
*(Ethylenedinitrilo)tetraacetic acid, disodium salt	DOW, EK, GGY, HMP, BPC.
(Ethylenedinitrilo)tetraacetic acid, disodium copper salt, dihydrate.	GGY.
(Ethylenedinitrilo)tetraacetic acid, disodium zinc salt, dihydrate.	GGY.
(Ethylenedinitrilo)tetraacetic acid, manganese salt	GGY.
(Ethylenedinitrilo)tetraacetic acid, monosodium iron salt.	GGY, HMP, RPC.
(Ethylenedinitrilo)tetraacetic acid, tetrapotassium salt	GGY.
*(Ethylenedinitrilo)tetraacetic acid, tetrasodium salt	CRT, CWL, DOW, GGY, HMP, HRT, RPC, TCC.
*(Ethylenedinitrilo)tetraacetic acid, trisodium salt	GGY, HMP, NOP.
(N-Hydroxyethylethylenedinitrilo)triacetic acid	GGY.
*(N-Hydroxyethylethylenedinitrilo)triacetic acid, trisodium salt.	CRT, CWL, DOW, GGY, HMP, RPC, TCC.
Nitrilotriacetic acid, trisodium salt	GGY, HMP.
Other	EK, HMP.
2-Nitro-1-butanol	COM.
Nitroethane	COM.
Nitromethane	COM.
1-Nitropropane	COM.
2-Nitropropane	COM.
*Nylon, 6 and 6/6 polymer for fiber	DUP, MON, NAC.
Octadecyl isocyanate	CWN, MOB.
*Oleamide (Octadecene amide)	ADM, ARC, FIN, HUM.
Oleonitrile (Octodecene nitrile)	ARC, FOR.
Oleoylhydroxamic acid	WAY, WOB.
Oleoylpalmitamide	FIN.
*Pentaerythritol tetranitrate	DUP, HPC, TRJ.
Pentyl nitrate (Amyl nitrate)	TNA.
Polyacrylamide	ACY, NLC.
Polyacrylonitrile	DUP.
n-Propyl carbamate	BKL.
Propyl isocyanate	CWN, OTC.
Propyl nitrate	TNA.
Quaternary ammonium compounds	EK, PAS, RSA.
Ricinolamide	TKL.
*Sarcosine (N-Methylaminoacetic acid)	GAF, GGY, HMP, VPC.
Semicarbazide base	FMT.
Semicarbazide hydrochloride	FMT.
Semioxamazide	NOR.
*Stearamide (Octadecane amide)	ADM, ARC, DUP, FIN, HUM.
Stearonitrile (Octadecanenitrile)	FOR, HUM.
Succinimide	NAC.
Tallow amide, hydrogenated	ADM, ARC.
Tall oil nitrile	FOR.
Tallow nitrile	ADM, FOR.
Tallow nitrile, hydrogenated	FOR.
N,N,N′,N′-Tetrakis(2-hydroxypropyl)ethylenediamine	WYN.
Tetramethylguanidine	ACY.
Tetramethylurea	OTC.
Thioacetamide	BKC.
3,3′-Thiodipropionitrile	ACY, HAB.
Thiosemicarbazide	ACY, FMT.
Triallyl cyanurate	ACY.
Triisopropanolamine borate	USB.
N-Trimethylsilylacetamide	EK, PIC.
*Urea in compounds or mixtures, 100% basis:	
*In feed compounds	ACN, ACY, DUP, GSC, JDC, KET, MON, MSC, SOH, VLN.
*In liquid fertilizer	ACN, CFC, CNC, DUP, ESC, FCA, FTX, GCC, GOC, HKY, HPC, JDC, KET, MON, MSC, NIT, OMC, PLC, PPC, SHC, SNI, SOH, VLN, WYC, x.
*In solid fertilizer	ACN, ACY, CNC, DUP, GCC, GOC, HPC, JDC, MON, MSC, PPC, SHC, SNO, SOH, VLN.
In plastics	DUP, MON.
All other	ACN, ACY, DUP, HPC, MON, SHC, SNO, SOH, VLN, x.
Urea peroxide	FBM.

TABLE 21B. --*Miscellaneous chemicals for which U.S. production or sales were reported, identified by manufacturer, 1966*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued	
Nitrogenous Compounds--Continued	
Urea - urethane copolymer	DUP.
γ-Valeronitrile	SEL.
All other nitrogenous compounds	ADM, CFC, x.
Acids, Acid Anhydrides, and Acyl Halides	
*Acetic acid, synthetic, 100%	BOR, CEL, EKT, HPC, PUB, UCC.
*Acetic anhydride, 100%:	
From acetaldehyde	HPC.
From acetic acid, other than recovered, by the vapor-phase process.	CEL, EKT.
From acetic acid, recovered, by the vapor-phase process	CEL.
From ethylene	UCC.
Acetyl chloride	TBK.
Aconitic acid	PCW.
*Acrylic acid	BFG, GEL, DBC, MMM, UCC.
*Adipic acid	CEL, DUP, ELP, MON, NAC, RH.
Adipoyl chloride	CFC, EK.
Azelaic acid	EMR.
Behenic acid	ADM, HUM.
α-Bromo(lauric-stearic) acid	DUP.
Butylstannoic acid	CCW.
*Butyric acid	CEL, EKT, UCC.
Butyric anhydride	EKT.
Butyryl chloride	HK.
Castor oil fatty acids, dehydrated	BAC, SF.
*Chloroacetic acid, mono-	BUK, DA, DOW, HPC, MON.
Chloroacetyl chloride	DOW.
Citric acid	MLS, PFZ.
Crotonic acid (2-Butenoic acid)	EKT.
*Decanoyl chloride	CAD, TBK, UPR, WTL.
Diglycolic acid	DUP.
Di-n-propylacetic acid	x.
Di-n-propylacetyl chloride	CTN.
Dodecenylsuccinic anhydride	HMY, MON, NAC.
Dodecylsuccinic anhydride	x.
Erucic acid	ARC.
2-Ethylbutyric acid (Diethylacetic acid)	UCC.
2-Ethylhexanoic acid (α-Ethylcaproic acid)	EKT, UCC.
2-Ethylhexanoyl chloride	WTL.
*Formic acid, 90%	DUP, HN, SF, UCC.
*Fumaric acid	HN, MON, NAC, PCC, PFZ PTT.
*Gluconic acid, tech	CWL, DLI, IBI, PFZ.
Glutaric anhydride	UCC.
Glycolic acid (Hydroxyacetic acid)	DUP.
n-Hexadecenylsuccinic anhydride	HMY.
Isethionic acid (2-Hydroxyethanesulfonic acid)	GAF.
Isoascorbic acid	BAX, MRK, PFZ.
Isobutyric acid	EKT.
Isobutyric anhydride	EKT.
Isodecanoic acid mixed isomers	UCC.
Iso-octanoic acid	UCC.
Itaconic acid (Methylenesuccinic acid)	PFZ.
Lactic acid:	
Edible, 100%	CLN, MON.
Technical, 100%	CLN, MON.
Lauroyl bromide	DOW.
*Lauroyl chloride	CAD, GAF, ONX, TBK, THC, UPR, WTL.
Levulinic acid	CRZ.
Maleic acid	NAC, PFN, PFZ.
*Maleic anhydride	HN, KPS, MON, NAC, PCC, PTT, RCI.
Malic acid	EK, NAC, PFN,
Malonic acid	KF.
Mercaptoacetic acid (Thioglycolic acid)	EVN, HAB, RET.
β-Mercaptopropionic acid	EVN.
Mercaptosuccinic acid (Thiomalic acid)	EVN.
Methacrylic acid	DUP, RH.

TABLE 21B.--*Miscellaneous chemicals for which U.S. production or sales were reported, identified by manufacturer, 1966*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued	
Acids, Acid Anhydrides, and Acyl Halides--Continued	
Methanesulfonic acid	EK, PAS.
2-Methylvaleric acid (2-Methylpentanoic acid)	UCC.
Mucochloric acid (2,3-Dichloro-3-formylacrylic acid)	EKT.
Nonanoic acid (Pelargonic acid)	EMR, GIV.
Nonenylsuccinic anhydride	HMY.
Octanoyl chloride	HK.
Octenylsuccinic anhydride	HMY.
Oleoyl chloride	DEP, GAF, TBK.
*Oxalic acid	ACG, HK, MAL, PFZ, SF.
*Palmitoyl chloride	GAF, HAL, OPC, TBK.
Pelargonyl chloride	WTL.
Peroxyacetic acid	FMB.
Pivaloyl chloride	WRL.
Polyacrylic acid	RH.
Polygalacturonic acid	SKG.
*Propionic acid	CEL, COM, EKT, UCC.
Propionic anhydride	CEL, EKT, UCC.
Propionyl chloride	ABB, TBK.
2-Propylvaleric acid (Dipropylacetic acid)	BPC.
Sebacic acid	RH, WTH.
Sorbic acid (2,4-Hexadienoic acid)	UCC.
Stearyl-2-lactic acid	x.
Succinic acid	BKC, NAC.
Succinic anhydride	NAC.
Tallow fatty acyl chloride	GAF.
d-Tartaric acid	BKC.
Tetrahydroxysuccinic acid (Dioxytartic acid)	ACY.
Thioacetic acid	EK, EVN.
Thiolactic acid	EVN.
3,3'-Thiodipropionic acid	EVN.
Trichloroacetic acid	DOW.
Trichloroacetyl chloride	EK.
(Trichloromethyl)phosphonic acid	DCC.
Trifluoroacetic anhydride	CIB, EK.
Valeric acid	UCC.
All other	ABB, AIB, DUP, EK, KF, PIC, RH, UCC.
Salts of Organic Acids	
*Acetic acid salts:	
Aluminum acetate	ACY, UCC.
Aluminum subacetate	MAL.
*Ammonium acetate	ACG, BKC, MAL, WSN.
Barium acetate	ACG, BKC, MAL.
Cadmium acetate	BKC, HSH, MAL, SHP.
Calcium acetate	ACG, BKC, MAL.
Chromium acetate	ACY.
Cobalt acetate	BKC, HSH, SHP.
*Copper acetate	ACG, BKC, UCC.
Lead acetate	ACG, BKC, MAL, SW.
Lead subacetate	ACG, BKC, MAL.
Lead tetraacetate	ARA.
Magnesium acetate	ACG, BKC.
Manganese acetate	HSH, SHP.
Mercuric acetate	ACG, MAL.
Methylmercury acetate	DUP.
Nickel acetate	BKC, HSH, SHP.
*Potassium acetate	ACG, BKC, CWL, MAL, UCC, WSN.
Silver acetate	MAL.
*Sodium acetate	ACG, BKC, CEL, DAN, EKT, MAL, UCC, WSN.
Sodium diacetate	UCC.
Strontium acetate	BKC.
Uranyl acetate	BKC.
*Zinc acetate	ACG, BKC, HSH, MAL, SNW, UCC.
*Zirconium acetate	HSH, NTL, SNW, TZC.
Chloroacetic acid, sodium salt	DOW.
3-Chloro-2-butene-1-sulfonic acid, sodium salt	x.
Chlorohydroxylactic acid, aluminum, sodium salt	REH.

TABLE 21B.--*Miscellaneous chemicals for which U.S. production or sales were reported, identified by manufacturer, 1966*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued	
Salts of Organic Acids--Continued	
Citric acid salts:	
Ammonium citrate	MAL, PFZ.
Calcium citrate	PFZ.
Ferric ammonium citrate	MAL, PFZ.
Ferric citrate	MAL.
Ferrous calcium citrate	x.
Potassium citrate	MLS, PFZ.
Sodium citrate	MLS, PFZ.
*2-Ethylhexanoic acid (α-Ethylcaproic acid) salts:	
Aluminum 2-ethylhexanoate	WTC.
Barium 2-ethylhexanoate	CCA.
Cadmium 2-ethylhexanoate	CCA.
*Calcium 2-ethylhexanoate	CCA, FER, HNX, HSH, MCI, SRR, SW, WTC.
*Cobalt 2-ethylhexanoate	CCA, FER, HNX, HSH, MCI, MLD, SHP, SRR, SW, WTC.
Copper 2-ethylhexanoate	CCA, SRR.
Dibutyltin di-2-ethylhexanoate	x.
Iron 2-ethylhexanoate	CCA, SRR.
*Lead 2-ethylhexanoate	CCA, HNX, HSH, MCI, SHP, SRR, SW, WTC.
Lithium 2-ethylhexanoate	SRR.
Manganese 2-ethylhexanoate	CCA, HNX.
Nickel 2-ethylhexanoate	MCI.
Potassium 2-ethylhexanoate	CCA, SRR.
Rare earths 2-ethylhexanoate	CCA.
Stannous 2-ethylhexanoate	WTC.
Strontium 2-ethylhexanoate	CCA.
*Zinc 2-ethylhexanoate	CCA, HNX, HSH, MCI, SRR, WTC.
*Zirconium 2-ethylhexanoate	CCA, HNX, WTC.
Formic acid salts:	
*Aluminum formate	CFC, SF, UCC, WSN.
Ammonium formate	ACG, WSN.
Calcium formate	TRJ.
Chromic formate	GAF.
Copper formate	CTN.
Lead formate	NTL.
Nickel formate	HSH.
Potassium formate	CFC.
Sodium formate, refined	ACG, BKC.
Sodium formate, tech	HPC, TRJ.
Fumaric acid, lead salt	NTL.
Glucoheptonic acid, zinc salt	PFN.
Gluconic acid salts:	
Ammonium gluconate	PFZ.
*Sodium gluconate	CWL, DLI, IBI, PFZ, PMP.
Glycolic acid salts:	
Aluminum glycolate	CIB.
Sodium glycolate	CFC, MED.
9H-Hexadecafluorononanoic acid, ammonium salt	DUP.
Humic acids, sodium salts	NLC.
Isoascorbic acid, sodium salt	MRK, PFZ.
Lactic acid salts:	
Aluminum sodium lactate	TZC.
Calcium lactate	SHF.
*Linoleic acid salts:	
*Calcium linoleate	CCA, LEF, SHP, SRR.
*Cobalt linoleate	HSH, SHP, SRR.
Copper linoleate	WTC.
Lead linoleate	SHP, SRR.
Lead manganese linoleate	SDH, SRR.
Manganese linoleate	SHP.
Maleic acid, tribasic lead salt	NTL.
*Mercaptoacetic acid (Thioglycolic acid) salts:	
Ammonium mercaptoacetate	EVN, HAB, TNI.
Antimony mercaptoacetate	CCA.
Calcium mercaptoacetate	EVN.
Dibutyltin bis(iso-octyl mercaptoacetate)	x.
Dibutyltin mercaptoacetate	CCA.
Potassium mercaptoacetate	EVN.
Sodium mercaptoacetate	EVN, MED.

TABLE 21B.--*Miscellaneous chemicals for which U.S. production or sales were reported, identified by manufacturer, 1966*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued	
Salts of Organic Acids--Continued	
Mercaptopropionic acid, dibutyltin salt	CCA, x.
Methylsuccinic acid, disodium salt	SDW.
Neodecanonoic acid salts	CCA.
Octanoic acid (Caprylic acid) salts:	
Aluminum octanoate	NOP.
Stannous octanoate	CCW, x.
Zinc octanoate	BKC.
*Oleic acid salts:	
Aluminum oleate	MAL, WTC.
Ammonium oleate	BCN.
Barium zinc oleate	WTC.
Copper oleate	MLD, WTC.
Stannous oleate	CCW, x.
*Oxalic acid salts:	
Ammonium oxalate	ACG, BKC, PFZ.
Calcium oxalate	SF.
Copper oxalate	CFC.
Ferric ammonium oxalate	PFZ.
Ferric oxalate	PFZ.
Ferric sodium oxalate	PFZ.
Ferrous oxalate	BKL.
Potassium binoxalate	ACG, BKC, PFZ.
Sodium binoxalate	ACG, BKC, MAL, SF.
Other	DUP.
Palmitic acid salts:	
*Aluminum palmitate	ACY, NOP, WTC.
Zinc palmitate	ACY, NOP, WTC.
Phosphorodithioic acid salts (Dithiophosphates):	
Potassium dihexyl phosphorodithioate	ACY.
Sodium di-sec-butyl diethyl phosphorodithioate	ACY.
Sodium di-sec-butyl phosphorodithioate	ACY.
Sodium diethyl phosphorodithioate	ACY.
Sodium dihexyl phosphorodithioate	ACY.
Sodium diisopropyl phosphorodithioate	ACY.
Other	ACY.
*Polyacrylic acid salts:	
Ammonium polyacrylate	BFG.
Potassium polyacrylate	BFG.
Sodium polyacrylate	AIC, BFG, JOR, RH.
Polymethacrylic acid, sodium salt	GRD.
*Propionic acid salts:	
*Calcium propionate	CEL, HFT, PFZ, UCC, WSN.
*Sodium propionate	CEL, PFZ, UCC, WSN.
Zinc propionate	BKC.
Ricinoleic acid salts:	
Calcium ricinoleate	BAC.
Lithium ricinoleate	BAC.
Sodium ethyl oxalacetate	FMP.
Sodium polypectate	SKG.
Sodium sorbitol borate	APD.
Sorbic acid salts:	
Potassium sorbate	UCC.
Sodium sorbate	UCC.
*Stearic acid salts:	
*Aluminum stearates:	
*Aluminum distearate	ACY, JTC, LEF, MAL, NOC, NOP, PRP, SYP, WTC.
*Aluminum monostearate	JTC, LEF, MAL, NOP, WTC.
*Aluminum tristearate	ACY, JTC, LEF, MAL, NOC, NOP, PRP, SYP.
Ammonium stearate	LEF, NOP.
Barium stearate	JTC, LEF, NOC, NOP, PRP, SYP, WTC.
Cadmium stearate	NOP, PRP, SYP, WTC.
*Calcium stearate	ACY, HNX, JTC, LEF, MAL, NOC, NOP, PRP, SYP, WTC.
Cobalt stearate	WTC.
Copper stearate	NOC, WTC.
Ferric stearate	WTC.
Ferrous stearate	HSH, WTC.
*Lead stearate	LEF, NOP, NTL, PRP, WTC.

TABLE 21B.--*Miscellaneous chemicals for which U.S. production or sales were reported, identified by manufacturer, 1966*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued	
Salts of Organic Acids--Continued	
Stearic acid salts--Continued	
Lead stearate, dibasic	NTL.
*Lithium stearate	LEF, NOP, PRP, SYP, WTC.
*Magnesium stearate	ACY, LEF, MAL, NOC, NOP, PRP, SYP, WTC.
Manganese stearate	NOC.
Nickel stearate	WTC.
*Zinc stearate	ACY, BCN, CCA, HNX, JTC, LEF, MAL, NOC, NOP, PRP, SYP, WTC.
All other	APD.
Succinic acid, sodium salt	MAL.
Sugar acids, sodium salt	PFN.
Tartaric acid salts:	
Antimony potassium tartrate	PFZ.
Potassium bitartrate	ATC.
Potassium sodium tartrate	PFZ.
Sodium bitartrate	PFZ.
Valeric acid, ammonium salt	RSA, UCC.
Xanthic acid salts:	
Potassium n-butylxanthate	USR.
Potassium ethylxanthate	ACY, DOW.
Potassium hexylxanthate	DOW.
Potassium isopropylxanthate	DOW.
Potassium pentylxanthate	ACY, DOW.
Potassium sec-pentylxanthate	DOW.
Sodium n-butylxanthate	KCC, USR.
Sodium sec-butylxanthate	ACY, DOW.
Sodium ethylxanthate	ACY, DOW.
Sodium isobutylxanthate	DOW.
Sodium isopropylxanthate	ACY, DOW.
All other salts of organic acids	DUP, EK, GLY, x.
Aldehydes and Ketones	
*Acetaldehyde	CEL, COM, DUP, EKT, EKX, HPC, MON, PUB, SHC, UCC.
*Acetone:	
From cumene	ACP, CLK, HPC, MON, SHC, SKO, SOC.
*From isopropyl alcohol	EKT, ENJ, SHC, UCC.
Other	CEL, DIX, HPC.
Acrolein (Acrylaldehyde)	SHC, UCC.
Aldol (Acetaldol)	UCC.
*2-Butanone (Methyl ethyl ketone)	CEL, DIX, ENJ, SHC, SPI, UCC.
Butyraldehyde	CEL, EKX, UCC.
*Chloral (Trichloroacetaldehyde)	DA, FMB, GGY, MTO.
5-Chloro-2-pentanone	SDW.
1-Chloro-1-penten-3-one (β-Chlorovinyl ethyl ketone)	ABB.
Chloro-2-propanone (Chloroacetone)	EK, MRK.
Crotonaldehyde	CEL, EKT, UCC.
Dihydropseudoionone	GIV.
1,3-Dihydroxy-2-propanone (Dihydroxyacetone)	BAX, PFZ.
2-Ethylbutryaldehyde	UCC.
2-Ethylhexanal (α-Ethylcaproaldehyde)	EKX, UCC.
*Formaldehyde (37% by weight)	ACP, BOR, CBC, CEL, COM, DUP, GAF, GOC, HKD, HN, HPC, MON, RCI, RH, TRJ, UCC.
Glutaraldehyde	UCC.
Glyoxal	UCC.
2-Heptanone (Methyl amyl ketone)	UCC.
Hexaldehyde	EKX, GIV.
2,5-Hexanedione (Acetonylacetone)	RBC.
*4-Hydroxy-4-methyl-2-pentanone (Diacetone alcohol)	CEL, SHC, UCC.
Isobutyraldehyde	EKX, UCC.
Isodecaldehyde, mixed isomers	UCC.
Isovalerone (Diisobutyl ketone)	EKT, UCC.
Lactide (3,6-Dimethyl-2,5-p-dioxanedione)	CLN.
4-Methoxy-4-methyl-2-pentanone	SHC.
5-Methyl-2-hexanone (Methyl isoamyl ketone)	EKT, UCC.
*4-Methyl-2-pentanone (Methyl isobutyl ketone)	EKT, ENJ, SHC, UCC.
4-Methyl-3-penten-2-one (Mesityl oxide)	SHC, UCC.

TABLE 21B.--*Miscellaneous chemicals for which U.S. production or sales were reported, identified by manufacturer, 1966*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued	
Aldehydes and Ketones--Continued	
Methylpseudoionone	GIV.
2-Methylvaleraldehyde (2-Methylpentaldehyde)	UCC.
Octanal, tech.	IFF.
2-Octanone (Hexyl methyl ketone)	TBK, WTH.
3-Octanone (Amyl ethyl ketone)	TBK.
Paraformaldehyde	CEL, HN, HPC.
Paraldehyde (Paracetaldehyde)	UCC.
2,4-Pentanedione (Acetylacetone)	UCC.
2-Pentanone (Methyl propyl ketone)	UCC.
3-Pentanone (Diethyl ketone)	HEX.
Propionaldehyde	EKX, UCC.
Pseudoionone	GIV.
Pyruvaldehyde	UCC.
Tetrahydropseudoionone	GIV.
2,6,8-Trimethyl-4-nonanone (Isobutyl heptyl ketone)	UCC.
All other	CEL, EK, GIV.
Alcohols, Monohydric, Unsubstituted	
*Alcohols C_9 or lower:	
Allyl alcohol	DOW, SHC.
Amyl alcohols:	
Unmixed:	
2-Methyl-1-butanol	UCC.
2-Methyl-2-butanol (tert-Amyl alcohol)	SHC.
3-Methylbutanol	UCC.
1-Pentanol	UCC.
2-Pentanol	UCC.
3-Pentanol	EK.
Mixed:	
Fusel oil, refined	PUB.
Other than fusel oil	CEL, UCC.
*Butyl alcohols:	
Primary:	
*Iso (Isopropylcarbinol)	DBC, EKX, ENJ, SHC, UCC.
*Normal (n-Propylcarbinol)	CEL, CO, DBC, EKX, ENJ, SHC, UCC.
Secondary (Methylethylcarbinol)	ENJ, SHC.
Tertiary (Trimethylcarbinol)	SHC.
Mixed	DBC, EKX.
2,6-Dimethyl-4-heptanol (Diisobutylcarbinol)	UCC.
*Ethyl alcohol, synthetic	CEL, DUP, EKX, ENJ, HPC, SHC, UCC, USI.
2-Ethyl-1-butanol	UCC.
*2-Ethyl-1-hexanol	CEL, EKX, ENJ, SHC, UCC.
2-Ethyl-4-methyl-1-pentanol	EKX.
4-Ethyl-1-octyn-3-ol	CUC.
Heptyl alcohol	EKX.
Hexyl alcohol	EKX, ENJ, UCC.
Hexynol	CUC, LIL.
*Iso-octyl alcohols	ENJ, GOC, HOU, OXO, TID, UCC.
*Isopropyl alcohols	ENJ, SHC, UCC.
*Methanol, synthetic	ACN, BOR, CEL, COM, DUP, ENJ, ESC, GOC, HN, HPC, MON, RCI, RH, TCC, UCC.
2-Methyl-3-buten-2-ol	CUC.
2-Methyl-3-butyn-2-ol	CUC.
4-Methyl-2-pentanol (1-Methylisobutyl carbinol)	SHC, UCC.
3-Methyl-1-pentyn-3-ol (Methylparafynol)	CUC.
1-Octanol	DUP.
2-Octanol (sec-Capryl alcohol)	RH, WTH.
Octanols, other	EKX, PG.
Propyl alcohol (Propanol)	CEL, UCC.
2-Propyn-1-ol	GAF.
All other (Including mixtures)	CEL, CO, PG, TNA.
*Alcohols C_{10} or higher:	
1-Decanol	DUP, TNA.
3,9-Diethyl-6-tridecanol	UCC.
Dodecyl alcohol (Lauryl alcohol) (95%)	DUP, PG, RH.
7-Ethyl-2-methyl-4-hendecanol	UCC.

TABLE 21B. --*Miscellaneous chemicals for which U.S. production or sales were reported, identified by manufacturer, 1966*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued	
Alcohols, Monohydric, Unsubstituted--Continued	
*Alcohols C_{10} or higher--Continued	
1-Hexadecanol (Cetyl alcohol) (95%)	ADM, DUP, GIV, RH.
Hexadecyl alcohols	ENJ, PG.
*Isodecyl alcohol	ENJ, GOC, HOU, OXO, TID, UCC.
1-Octadecanol (Stearyl alcohol) (95%)	ADM, DUP, PG, RH.
cis-9-Octadecen-1-ol (Oleyl alcohol)	ADM, DUP.
Tetradecyl alcohols	PG.
Tridecanol mixed isomers	ENJ, GOC, HOU, TID, UCC.
2,6,8-Trimethyl-4-nonanol	UCC.
All other (Including mixtures)	ADM, CO, EKX, GYR, PG, RH, SHC, TNA, x, x.
Polyhydric Alcohols and Their Esters and Ethers	
*Polyhydric alcohols:	
1,4-Butanediol	GAF.
1,2(and 1,3)-Butanediol (Butylene glycol)	CEL.
2-Butene-1,4-diol	GAF.
2-Butyne-1,4-diol	GAF.
3-Chloro-1,2-propanediol (Glycerol α-chlorohydrin)	EVN, OTC.
1,10-Decanediol	NEP.
2,5-Dimethyl-2,5-hexanediol	CUC.
2,5-Dimethyl-3-hexyne-2,5-diol	CUC.
2,2-Dimethyl-1,3-propanediol (Neopentyl glycol)	EKX.
*Ethylene glycol	ACP, APD, CAU, CEL, DOW, DUP, EKX, GAF, HCH, JCC, OMC, UCC, WYN.
2-Ethyl-1,3-hexanediol	UCC.
2-Ethyl-2-(hydroxymethyl)-1,3-propanediol (Trimethylolpropane).	CEL.
Glycerol, synthetic	APD, DOW, SHC.
1,6-Hexanediol	CEL.
1,2,6-Hexanetriol	UCC.
2-(Hydroxymethyl)-2-methyl-1,3-propanediol (Trimethylolethane).	TRJ.
Mannitol	APD.
3-Mercapto-1,2-propanediol (Thioglycerol)	EVN.
Methylglycerol	APD.
2-Methyl-2,4-pentanediol (Hexylene glycol)	CEL, SHC, UCC.
2-Methyl-2-propyl-1,3-propanediol	ABB, BKL, ICO.
1,9-Nonanediol	ADM.
*Pentaerythritol	CEL, COM, HN, HPC, RCI, TRJ.
*Propylene glycol (1,2-Propanediol)	APD, CEL, DOW, DUP, JCC, OMC, UCC, WYN.
*Sorbitol	APD, BRD, MRK, PFZ.
2,2,4-Trimethyl-1,3-pentanediol	EKX.
*Polyhydric alcohol esters:	
1,3-Butanediol dimethacrylate	SAR.
2-(2-Butoxyethoxy)ethyl acetate	UCC.
2-Butoxyethyl acetate	UCC.
Diethylene glycol chloroformate	PPG.
2-Ethoxyethyl acetate	DOW, EKT, UCC.
Ethylene glycol diacetate	UCC.
Ethylene glycol dimercaptoacetate	EVN.
Ethylene glycol dimethacrylate	SAR.
Ethylene glycol hydroxyacetate	CCA.
2-Ethyl-1,3-hexanediol titanate	DUP.
2-Ethyl-2(hydroxymethyl)-1,3-propanediol trimethacrylate	SAR.
Glyceryl monoacetate (Monoacetin)	ARC, HAL.
Glyceryl triacetate (Triacetin)	EKT, UCC.
Glycol adipate	x.
Hexanetriol octoate	ARC.
Hydroxyethyl methacrylate	AAC.
Hydroxypropyl methacrylate	JCC.
Hydroxypivalyl hydroxypivalate	EKX.
2-Methoxyethyl acetate	UCC.
Methoxytriethyleneglycol acetate	RBC.
Pentaerythritol caprylate	DRW.
Pentaerythritol pelargonate	DRW.
Polyethylene glycol dimethacrylate	SAR.
Propylene glycol diacetate	x.

TABLE 21B.--*Miscellaneous chemicals for which U.S. production or sales were reported, identified by manufacturer, 1966*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued	
Polyhydric Alcohols and Their Esters and Ethers--Continued	
*Polyhydric alcohol esters--Continued	
Sucrose octa-acetate	PD.
Tetraethylene glycol dimethacrylate	SAR.
Triethylene glycol dimethacrylate	SAR.
Tri(hexylene glycol) biborate	USB.
2,2,4-Trimethyl-1,3-pentanediol monoisobutyrate	EKX.
All other	EK, TNI.
*Polyhydric alcohol ethers:	
3-(Allyloxy)-1,2-propanediol (Allyl glyceryl ether)	SHC.
Bis(2-butoxyethyl) ether (Diethylene glycol di-n-butyl ether).	UCC.
Bis(2-ethoxyethyl) ether (Diethylene glycol diethyl ether).	UCC.
Bis(hydroxyethyl) ether butynediol	GAF.
Bis[2-(2-methoxyethoxy)ethyl] ether (Tetraethylene glycol dimethyl ether).	ASL.
Bis(2-methoxyethyl) ether (Diethylene glycol dimethyl ether).	ASL, OMC.
*2-Butoxyethanol (Ethylene glycol monobutyl ether)	DOW, JCC, OMC, SHC, UCC.
*2-(2-Butoxyethoxy)ethanol (Diethylene glycol monobutyl ether).	DOW, JCC, OMC, SHC, UCC.
2-[2-(2-Butoxyethoxy)ethoxy]ethanol (Triethylene glycol monobutyl ether).	DOW, OMC, UCC.
1-Butoxyethoxy-2-propanol	UCC.
1,2-Dibutoxyethane (Ethylene glycol di-n-butyl ether)	UCC.
*Diethylene glycol	ACP, CAU, DIX, DOW, EKX, GAF, HCH, JCC, OMC, UCC, WYN.
Diethylene glycol, borated	GLY.
Dimethoxyethane (Ethylene glycol dimethyl ether)	ASL.
*Dipropylene glycol	CEL, DOW, JCC, OMC, UCC, WYN.
*2-Ethoxyethanol (Ethylene glycol monoethyl ether)	DOW, JCC, OMC, UCC.
*2-(2-Ethoxyethoxy)ethanol (Diethylene glycol monoethyl ether).	DOW, JCC, OMC, UCC.
*2-[2-(2-Ethoxyethoxy)ethoxy]ethanol (Triethylene glycol monoethyl ether).	DOW, OMC, UCC.
Ethoxypropanol	UCC.
*Glycerol tri(polyoxypropylene) ether	JCC, OMC, UCC, WYN.
2-[2-(Hexyloxy)ethoxy]ethanol	UCC.
1-Isobutoxy-2-propanol (Propylene glycol isobutyl ether).	DOW.
Isobutoxyethanol	UCC.
*2-Methoxyethanol (Ethylene glycol monomethyl ether)	DOW, JCC, OMC, UCC.
*2-(2-Methoxyethoxy)ethanol (Diethylene glycol monomethyl ether).	DOW, JCC, OMC, UCC.
*2-[2-(2-Methoxyethoxy)ethoxy]ethanol (Triethylene glycol monomethyl ether).	DOW, OMC, UCC.
2-(2-Methoxyethoxy)ethyl 2-methoxyethyl ether (Triethylene glycol dimethyl ether).	ASL.
Methoxypolyethylene glycol	JCC, UCC.
*1-Methoxy-2-propanol	DOW, SHC, UCC.
3-(3-Methoxypropoxy)propanol	DOW, UCC.
3-[3-(3-Methoxypropoxy)propoxy]propanol	DOW.
Methyl butynoxyethanol	CUC.
Polyethoxyethylglycerol	GLY.
Polyethoxyethylsorbitol	GLY.
*Polyethylene glycol	ACP, DOW, DUP, GAF, JCC, OMC, UCC, WYN.
Polypropoxy ethers	ACS, DOW, WYN.
*Polypropylene glycol	DOW, JCC, NLC, OMC, UCC, WYN.
Polytetramethylene ether glycol	QKO, x.
Tetraethylene glycol	DOW, UCC.
1,1,3,3-Tetramethoxypropane	KF.
2,2'-Thiodiethanol (Thiodiglycol)	PIC, UCC.
*Triethylene glycol	ACP, CAU, DOW, GAF, HCH, JCC, OMC, UCC.
Tripropylene glycol	DOW, UCC.
All other	DOW, UCC, WYN.
Esters of Monohydric Alcohols:	
Allyl methacrylate	SAR.

TABLE 21B. --*Miscellaneous chemicals for which U.S. production or sales were reported, identified by manufacturer, 1966*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued	
Esters of Monohydric Alcohols--Continued	
Amyl acetates, 90%:	
Amyl acetate (n-Pentyl acetate)	PUB.
Isopentyl acetate (Isoamyl acetate)	NW, TBK.
Mixed	CEL, ENJ, UCC.
*Butyl acetates:	
Iso	EKT, ENJ, UCC.
*Normal	CEL, EKT, ENJ, PUB, SHC, UCC.
Secondary	ENJ, HPC, PUB, SHC.
Tertiary	ENJ.
Mixed	CEL.
Butyl acrylate	CEL, DBC, UCC.
Butyl chloroacetate	MON.
n-Butyl α-hydroxy-α-methylbutyrate	BPC.
Butyl lactate	COM.
tert-Butyl peroxyacetate	WTL.
tert-Butyl peroxy-2-ethylhexanoate	WTL.
tert-Butyl peroxyisobutyrate	WTL.
tert-Butyl peroxyisopropylcarbonate	PPG.
tert-Butyl peroxypivalate	WTL.
Cetyl lactate	VND.
Diallyl maleate	FMP.
Dibutyl fumarate	MON, PFZ, RCI, RUB.
*Dibutyl maleate	CUC, DUP, MON, RCI, RUB.
Diethyl sec-butylethylmalonate	ABB.
Diethyl butylmalonate	BPC.
Diethyl sec-butylmalonate	ABB.
Diethyl carbonate (Ethyl carbonate)	CTN, FMP.
Diethyl diethylmalonate (Diethyl malonic ester)	BPC, LIL.
Diethyl (ethoxymethylene)malonate	KF.
Diethyl ethylisopentylmalonate	LIL.
Diethyl ethylmalonate (Ethyl malonic ester)	LIL.
Diethyl ethyl(1-methylbutyl)malonate (Ethyl 1-methyl butyl malonic ester).	ABB, BPC.
Diethyl ethyl(1-methylpropyl)malonate	BPC.
Di(2-ethyl-1-hexyl) fumarate	RUB.
Di(2-ethyl-1-hexyl) maleate	RUB.
Diethyl maleate	ACY, UCC.
Diethyl malonate (Malonic ester)	ABB, KF, LIL.
Diethyl (1-methylbutyl)malonate	ABB, LIL.
Diethyl methylmalonate	BPC.
Diethyl (1-methylpropyl)malonate	BPC.
Diethyl oxalate (Ethyl oxalate)	FMP.
Diethyl succinate	ICO.
Di-iso-nonyl maleate	RUB.
Diiso-octyl fumarate	RUB.
Diisopropyl peroxydicarbonate (Isopropyl percarbonate)	PPG.
*Dilauryl 3,3'-thiodipropionate	ACY, CCW, EVN, HAB.
Dimethyl acetylenedicarboxylate	EK.
Dimethyl carbonate	CTN.
2,5-Dimethylhexane 2,5-diperoctoate	UPR.
Dimethyl malonate	KF.
Di(4-methyl-2-pentyl) maleate	RUB.
Dioctyl maleate	HRT, MON, PCC.
Distearyl 3,3'-thiodipropionate	ACY, CCW, EVN.
Dithiobis(stearyl propionate)	EVN.
Ditridecyl maleate	RUB.
Di(tridecyl) 3,3'-thiodipropionate	ACY, EVN.
2-(2-Ethoxyethoxy)ethyl acetate	UCC.
*Ethyl acetate (85%)	CEL, EKT, ENJ, HPC, MON, PUB, UCC.
Ethyl acetoacetate	EKT, UCC.
*Ethyl acrylate	CEL, DBC, RH, UCC.
Ethyl chloroacetate	DOW, KF, MON.
Ethyl chloroformate	CTN, FMP.
*Ethylene carbonate	DOW, JCC, UCC.
Ethyl formate	COM.
2-Ethyl-1-hexyl acetate	EKT, UCC.
2-Ethyl-1-hexyl acrylate	CEL, DBC, UCC.

TABLE 21B.--*Miscellaneous chemicals for which U.S. production or sales were reported, identified by manufacturer, 1966*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued	
Esters of Monohydric Alcohols--Continued	
2-Ethyl-1-hexyl methacrylate	x.
Ethyl 2-hydroxy-3-methylbutyrate (Ethyl hydroxyisovalerate)	RH.
Ethylidene diacetate	CEL.
Ethyl propionate	NW, TBK.
Ethyl silicate (Tetraethoxysilane)	MTR, SFA, UCC.
Ethyl sulfate (Diethyl sulfate)	UCC.
Ethyl thioglycolate	EVN.
Fatty acid esters, not included with plasticizers or surface-active agents:	
Butyl palmitate	PCS.
Dimethyl brassylate	EMR.
Ethyl stearate	ICO.
Hexadecyl stearate	ARC, ICI.
Isopropyl linoleate	VND.
Methyl esters of coconut oil	HUM, PG.
Methyl esters of cottonseed oil	BFR.
Methyl esters of tallow	BFR, CHL, HUM.
Methyl 12-hydroxystearate	BAC, HUM.
Methyl myristate	HUM.
All other	EMR, GLY, GRO, PCS, RT, SUG.
Isobutyl acrylate	DBC.
Isobutyl isobutyrate	EKX.
Isobutyl undecylenate	GIV.
Isodecyl acrylate	UCC.
*Iso-octyl mercaptoacetate	CCW, EVN, HAB.
Iso-octyl 3-mercaptopropionate	EVN.
*Isopropyl acetate	EKT, ENJ, HPC, UCC.
Isopropyl chloroformate	CTN, PPG.
Lauryl lactate	VND.
Methallylidine diacetate	UCC.
*Methyl acetate	BOR, EK, MON, UCC.
Methyl acetoacetate	EKT, UCC.
Methyl acrylate, monomer	CEL, DBC, RH.
Methyl borate	CAL, MHI, SFA.
Methyl chloroacetate	DOW, KF.
Methyl chloroformate	CTN.
Methyl dichloroacetate	KF, PD.
Methyl formate	DUP.
Methyl methacrylate, monomer	ACY, DUP, RH.
4-Methyl-2-pentyl acetate	PUB, SHC, UCC.
Methyl sulfate (Dimethyl sulfate)	DUP.
Methyl vinyl acetate	UCC.
Myristyl lactate	VND.
Octadecyl 3-mercaptopropionate	EVN.
*Phosphorus acid esters:	
Bis(2-ethylhexyl) hydrogen phosphate	UCC.
Butyl phosphates	SF, x.
Chloropropyl phosphorothioate	TNA.
Dibutyl butylphosphonate	x.
Dibutyl hydrogen phosphate	x.
Didodecyl hydrogen phosphate	DUP.
Diethyl phosphorochloridothionate	SF.
Dimethyl methylphosphonate	x.
Dimethyl phosphorochloridothionate	SF.
Ethyl phosphates	SF, x.
Iso-octyl hydrogen phosphate	x.
Isopentyl octyl hydrogen phosphate	x.
Methyl phosphates	HK, SF, x.
Pentyl phosphates (Amyl phosphates)	SF.
Tributyl phosphate	COM, FMP.
Tributyl phosphite	x.
Tridecyl phosphite	HK.
Triethyl phosphite	x.
Triiso-octyl phosphite	x.
Trimethyl phosphate	TNA.
Trimethyl phosphite	x.
Tris(2-chloroethyl) phosphite	x.
Tris(2,3-dibromopropyl) phosphate	MCH.

TABLE 21B. --*Miscellaneous chemicals for which U.S. production or sales were reported, identified by manufacturer, 1966*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued	
Esters of Monohydric Alcohols--Continued	
*Phosphorus acid esters--Continued	
Tris(2-ethylhexyl) phosphite	HK.
Tris(octadecyl) phosphite	x.
All other	DUP, ENJ, MON, x.
Propyl acetate	CEL, EKT, ENJ, PUB, UCC.
Propylene carbonate	DOW, JCC.
Tetraoctyl orthosilicate	MON.
Titanic acid esters:	
Tetrabutyl titanate	DUP.
Tetraisopropyl titanate	DUP.
Tetrakis(2-ethylhexyl) titanate	DUP.
Other	DUP.
Triethyl borate	USB.
Triethyl orthoacetate	EK, KF.
Triethyl orthoformate	KF.
Triethyl orthopropionate	KF.
Triisodecyl orthoformate	KF.
Trimethyl orthoformate	KF.
*Vinyl acetate monomer	BOR, CEL, CUC, DUP, MON, NSC, UCC.
All other	DUP, EK, HAB, PCC, RH, SAR.
Halogenated Hydrocarbons	
1-Bromobutane (n-Butyl bromide)	BPC, CIB, MCH.
2-Bromobutane (sec-Butyl bromide)	ABB, BPC.
Bromochloromethane	DOW.
1-Bromo-3-chloropropane (Trimethylenechlorobromide)	DOW, MCH.
2-Bromo-2-chloro-1,1,1-trifluoroethane	ICI.
1-Bromododecane	DUP.
Bromoethane (Ethyl bromide)	DOW, MCH.
1-Bromohexane (n-Hexyl bromide)	BPC.
1-Bromo-3-methylbutane (Isoamyl bromide)	BPC, LIL.
1-Bromo-octadecane	DUP, GAF.
1-Bromopentane (n-Amyl bromide)	BPC, CIB.
2-Bromopentane (1-Methylbutyl bromide)	ABB, LIL.
1-Bromopropane (n-Propyl bromide)	BPC, CIB, EK.
2-Bromopropane (Isopropyl bromide)	BPC.
3-Bromopropene (Allyl bromide)	CIB, DOW.
Bromotrichloromethane	MCH.
Bromotrifluoromethane	DUP.
*Carbon tetrachloride	ACS, DA, DOW, FMB, FRO, PPG, SF.
*Chlorinated paraffins:	
Less than 35% chlorine	HK.
35%-64% chlorine	CCH, DA, DVC, HK, HPC, KEI, KPS, WOI.
65% or more chlorine	DA, DVC, WOI.
1-Chlorobutane (n-Butyl chloride)	PUB, UCC.
2-Chlorobutane (sec-Butyl chloride)	PLC.
1-Chloro-1,1-difluoroethane	ACG, DUP.
*Chlorodifluoromethane	ACG, DUP, KAI, PAS, UCC.
*Chloroethane (Ethyl chloride)	AME, DOW, DUP, HPC, PPG, SHC, TNA, USI.
*Chloroform	ACS, DA, DOW, DUP, FRO, SF.
2-Chloro-3-hexyne	LIL.
*Chloromethane (Methyl chloride)	ACS, ANM, DCC, DOW, DUP, FRO, TNA, UCC.
2-Chloro-2-methylpropane (tert-Butyl-chloride)	CIB, EK.
3-Chloro-2-methylpropene (Methallyl chloride)	FMP.
Chloropentafluoroethane	DUP.
3-Chloropropene (Allyl chloride)	DOW, SHC.
Chlorotrifluoroethylene (Trifluorovinyl chloride)	ACG, MMM.
Chlorotrifluoroethylene, polymerized	HK, MMM.
Chlorotrifluoromethane	ACG, DUP, PAS.
1,2-Dibromo-1,1-dichloroethane	DOW.
Dibromodifluoromethane	DOW.
1,2-Dibromoethane (Ethylene dibromide)	DOW, ETD, HCH, MCH.
Dibromoethane (Methylene bromide)	DOW.
1,4-Dibromopentane	SDW.
1,2-Dibromo-1,1,2,2-tetrafluoroethane	DUP.
Dichlorobutadiene	DUP.
1,4-Dichlorobutene	DUP.

TABLE 21B. --*Miscellaneous chemicals for which U.S. production or sales were reported, identified by manufacturer, 1966*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued	
Halogenated Hydrocarbons--Continued	
*Dichlorodifluoromethane	ACG, DUP, KAI, PAS, UCC.
*1,2-Dichloroethane (Ethylene dichloride)	AME, BFG, DA, DOW, DUP, JCC, MON, OMC, PPG, TNA, UCC.
*Dichloromethane (Methylene chloride)	ACS, DA, DOW, DUP, FRO, HK, SF.
*1,2-Dichloropropane (Propylene dichloride)	DOW, JCC, UCC.
2,3-Dichloropropane	DOW, UCC.
*Dichlorotetrafluoroethane	ACG, DUP, PAS, UCC.
1,1-Difluoroethane	ACG, DUP.
Difluorotetrachloroethane	DUP.
Diiodomethane (Methylene iodide)	NTB, SDW.
Hexachloroethane	NES.
Hexafluoropropylene, monomer	DUP.
Iodoethane (Ethyl iodide), tech	CLB, EK, FMT.
Iodoform (Triiodomethane), nonmedicinal	NTB.
Iodomethane (Methyl iodide)	CLB, EK, FMT, RSA.
1-Iodoperfluorohexane	x.
Lauryl chlorides	HK.
Octafluorocyclobutane	DUP.
1,1,2,2-Tetrabromoethane (Acetylene tetrabromide)	DOW.
Tetrabromoethane	DOW.
1,1,2,2-Tetrachloroethane (Acetylene tetrachloride)	DUP.
*Tetrachloroethylene (Perchloroethylene)	DA, DOW, DUP, FRO, HK, PPG, SF, TTX.
Tetrafluoroethylene, monomer	DUP.
Tetrafluoroethylene, polymer	DUP.
Tetrafluoromethane	DUP.
*1,1,1-Trichloroethane (Methyl chloroform)	DOW, HK, PPG, TNA.
1,1,2-Trichloroethane (Vinyl trichloride)	DOW, UCC.
*Trichloroethylene	DOW, DUP, HK, PPG, TTX.
*Trichlorofluoromethane	ACG, DUP, KAI, PAS, UCC.
1,2,3-Trichloropropane	DOW, SHC.
1,2,3-Trichloropropene	DOW.
Trichlorotrifluoroethane	ACG, DUP, PAS, UCC.
*Vinyl chloride, monomer (Chloroethylene)	ACS, AME, BFG, CUC, DA, DOW, GNT, GYR, HN, MNO, MON, TNA, UCC.
Vinyl fluoride	x.
Vinylidene chloride, monomer (1,1-Dichloroethylene)	DOW, TNA.
Vinylidene fluoride	x.
All other	BFG, CLB, DUP, EK, KPS.
All Other Miscellaneous Acyclic Chemicals	
Acetyl peroxide	WTL.
Alkyl sulfides, mixed	ORO.
Aluminum isopropoxide (Aluminum isopropylate)	CHT.
*2-Butanone peroxide	AZT, CAD, NOC, RCI, UPR, WTL.
*tert-Butyl hydroperoxide	AZT, CAD, UPR, WTL.
*tert-Butyl peroxide (Di-tert-butyl peroxide)	AZT, CAD, RCI, SHC, UPR, WTL.
Butyrolactone	GAF.
Caprolactone	UCC.
*Carbon disulfide	BKT, FMB, PAS, PPG, SF.
Carbonyl sulfide	TKL.
*2-Chloroethanol (Ethylene chlorohydrin)	OMC, TKL, UCC.
1-Chloro-2-propanol	EK.
*Decanoyl peroxide	CAD, UPR, WTL.
Dextran	PHR.
Dialdehyde starch	MLS.
Dichloropropanol	EK, ICO.
Diethylthiophosphoryl chloride	ACY.
2,4-Dihydroxy-3,3-dimethylbutyric acid, gammalactone (Pantolactone).	CKL.
2,5-Dimethyl-2,5-di(tert-butylperoxy)hexane	WTL.
2,5-Dimethyl-2,5-di(tert-butylperoxy)hexyne-3	WTL.
*Epoxides, ethers, and acetals:	
Acetone dimethylacetal (2,2-Dimethoxypropane)	DOW.
1-(Allyloxy)-2,3-epoxypropane (Allyl glycidyl ether)	DOW, SHC.
Bis(2-chloroethoxy)methane (Dichloroethylformal)	TKL.
Bis(2-chloroethyl) ether (Dichlorodiethyl ether)	DOW, UCC.

TABLE 21B. --*Miscellaneous chemicals for which U.S. production or sales were reported, identified by manufacturer, 1966*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued	
All Other Miscellaneous Acyclic Chemicals--Continued	
*Epoxides, ethers, and acetals--Continued	
Bis(2-chloro-1-methylethyl) ether (Dichloroisopropyl ether).	DOW.
1-Butoxy-2,3-epoxypropane (Butyl glycidyl ether)	SHC.
Butylene oxide	DOW, UCC.
Butyl ether (Di-n-butyl ether)	UCC.
Butyl vinyl ether	UCC.
2-Chloro-1,1-dimethoxyethane (Dimethyl chloracetal)	LIL.
2-Chloroethyl vinyl ether	UCC.
Chloromethyl methyl ether	HK, RH.
2,2-Dichloro-1,1-difluoroethyl methyl ether	DOW.
Epichlorohydrin	CBA, DOW, SHC.
*Ethylene oxide	ACP, CAU, DOW, EKX, GAF, HCH, JCC, OMC, SNO, UCC, WYN.
*Ethyl ether:	
Absolute	MAL.
Tech	ENJ, HPC, UCC, USI.
U.S.P	MAL, OMS.
Ethyl vinyl ether	UCC.
Glycidol (2,3-Epoxy-1-propanol)	DIX.
Glyoxal ethylene glycol bis acetal	FIN.
Isobutyl vinyl ether	GAF.
*Isopropyl ether	ENJ, SHC, UCC.
Methylal (Dimethoxymethane)	CEL.
*Methyl ether (Dimethyl ether)	COM, DUP, UCC.
Methyl vinyl ether	GAF, UCC.
Octadecyl vinyl ether	GAF.
Polychlorinated propyl ether	JCC.
*Propylene oxide	CEL, DOW, JCC, OMC, UCC, WYN.
Other	EK, EVN, JCC, PIC.
Ethanedithiol	RBC.
Ethanethiol	EK.
2-(Ethylmercapto)ethanol	PAS.
Fats and oils, chemically modified	ABB, BCN, CHL, DOM, RT, x.
Glucono-delta-lactone	PFZ.
Glucoheptonolactone	PFN.
Glutaraldehyde bis(sodium bisulfite)	IDC.
Glyoxal, sodium bisulfite	CFC.
Hexachlorodimethyl sulfone	SFA.
n-Hexadecyl disulfide	PAS.
Hydrocarbons:	
1-Butyne (Ethylacetylene)	CUC.
n-Dodecane	HMY.
Ethylene, from ethyl alcohol, medicinal grade	OH.
Hexadecane	HMY.
Myrcene	IFF.
n-Octane	HMY.
1-Octadecene	HMY.
1(and 2)-Octene	WTH.
Propyne (Methylacetylene)	CUC.
Other	CUC, GOC, HMY.
*Lauroyl peroxide	AZT, CAD, UPR, WTL.
Magnesium methylate	MRT, SFA.
Methanesulfanol	PAS.
Methyl disulfide	CRZ.
Methyl sulfide (Dimethyl sulfide)	CRZ, PAS.
Methyl sulfoxide	CRZ.
n-Octadecyl mercaptan	HMY.
1-Octanethiol (n-Octyl mercaptan)	PAS.
Organo-aluminum compounds:	
Ethylaluminum chlorides	TNA, TSA.
Isobutylaluminum chlorides	TNA, TSA.
Methylaluminum chlorides	TNA, TSA.
Other	TSA.
Organo-boron compounds	ACG, CAL, SFA.
Organo-lead compounds:	
*Tetraethyllead	DUP, HCH, NLC, TNA.
*Tetramethyllead	DUP, HCH, NLC, TNA.
Tetra(methyl-ethyl)lead	DUP, TNA.

TABLE 21B. --*Miscellaneous chemicals for which U.S. production or sales were reported, identified by manufacturer, 1966*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued	
All Other Miscellaneous Acyclic Chemicals--Continued	
Organo-lithium compounds	FTE.
Organo-magnesium halides	ARA, x.
Organo-mercury compounds	LIL, NTB.
Organo-silicon compounds	DCC, ORO, SF, SPD, UCS.
Organo-tin compounds:	
Bis(tributyltin) oxide	CCW, x.
Dibutyltin dichloride	CCW, x.
Dibutylmethoxytin (Dibutyl tin methoxide)	CCA.
Other	CCW, x.
Organo-zinc compounds	TNA.
Perchloromethanethiol (Perchloromethyl mercaptan)	CHO.
Perlargonyl peroxide	WTL.
*Phosgene (Carbonyl chloride)	CTN, DUP, MOB, NAC, OMC, OTC, PPG, RUC, UCC, UPJ, VDM.
Pine oil, synthetic	CBY.
Polyethylene polysulfide	BFG.
Propanone peroxide (Acetone peroxide)	SDH.
Propionyl peroxide	WTL.
Rare sugars	PFN.
Sodium ethoxide	FMP.
Sodium formaldehyde bisulfite	EK, IDC.
*Sodium formaldehyde sulfoxylate	HSH, NOP, RH, ROY.
*Sodium methoxide (Sodium methylate)	BFR, DA, DUP, HSH, KF, OMC, RBC, SFA.
Sodium octylate	FIN.
Succinyl peroxide	WTL.
Tetrakis(hydroxymethyl)phosphonium chloride	HK.
Tributylphosphine	CCW, x.
Tridecyl mercaptan	PAS.
Trioctylphosphine oxide	EK.
*Zinc formaldehydesulfoxylate	NOP, RH, ROY.
Other	ACY, AID, ALX, ARA, CCA, CCW, CWN, DCC, DUP, EK, EKX, ENJ, FER, ICO, KF, LIL, PFN, PRN, SF, SNW, SYP, TNA, UCC, x, x, x, x.

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.

For 1966, the Directory of Manufacturers lists approximately 825 primary manufacturers (see table 22). 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. Company divisions are usually listed under the parent company's name.

TABLE 22.--*Synthetic organic chemicals: Directory of manufacturers, 1966*

SECTION 1. ALPHABETICAL DIRECTORY BY CODE

[Names of synthetic organic chemical manufacturers that reported production or sales to the U.S. Tariff Commission for 1966 are listed below in the order of their identification codes as used in tables in pt. III. Section 2 of this table lists these manufacturers alphabetically and gives their office addresses.]

Code identification	Name of company	Code identification	Name of company
AAC	Alcolac Chemical Corp.	ARG	Argus Chemical Corp.
AAE	American Aniline & Extract Co., Inc.	ARK	Armstrong Cork Co.
AAI	American Alkyd Industries	ARL	Arol Chemical Products Co.
AAP	American Aniline Products, Inc.	ARM	Armour Agricultural Chemical Co.
ABB	Abbott Laboratories	ARN	Arenol Chemical Corp.
ABS	Abex Corp., American Brakeblok Div.	ARP	Armour Pharmaceutical Co.
ACB	Allied Chemical Corp., Barrett Div.	ARZ	Arizona Chemical Co.
ACC	Amoco Chemicals Corp.	ASH	Ashland Oil & Refining Co.
ACE	Acme Chemical Co.	ASL	Ansul Chemical Co.
ACG	Allied Chemical Corp., General Chemical Div.	AST	Astra Pharmaceutical Products, Inc.
ACI	Aceto Industrial Chemical Corp.	ASY	American Synthetic Rubber Corp.
ACN	Allied Chemical Corp., Agricultural Div.	ATC	American Tartars Corp.
ACP	Allied Chemical Corp., Plastics Div.	ATL	Atlantic Chemical Corp.
ACR	Acme Resin Corp.	ATP	Atco Chemical-Industrial Products, Inc., Fine Chemicals Div.
ACS	Allied Chemical Corp., Solvay Process Div.		
ACT	Arthur C. Trask Co.	ATR	Atlantic Richfield Co., ARCO Chemical Co. Div.
ACU	Allied Chemical Corp., Union Texas Petroleum Div.	ATU	Atlantic Tubing & Rubber Co.
		AUG	Augusta Chemical Co.
ACY	American Cyanamid Co.	AV	FMC Corp., American Viscose Div.
ADM	ADM Co.	AVS	Avisun Corp.
AFP	Air Products & Chemical, Inc., Apache Foam Products Div.	AZT	Aztec Chemicals, Inc.
AKS	Arkansas Co., Inc.	BAC	Baker Castor Oil Co.
ALB	Ames Laboratories, Inc.	BAL	Baltimore Paint & Chemical Corp.
ALC	Alco Chemical Corp.	BAR	American Rubber & Chemical Co.
ALD	Aldrich Chemical Co., Inc.	BAX	Baxter Laboratories, Inc.
ALF	Allied Chemical Corp., Fibers Div.	BCM	Belding Chemical Industries
ALL	Alliance Color & Chemical Co.	BCN	Lehn & Fink Products Corp., Beacon Div.
ALO	Alamo Industries, Inc.	BDO	Benzenoid Organics, Inc.
ALT	Crompton & Knowles Corp., Chemicals Group, Althouse & Bates Div.	BEN	Bennett's
		BFG	B. F. Goodrich Co., B. F. Goodrich Chemical Co. Div.
ALX	Alox Corp.		
AMB	American Bio-Synthetics Corp.	BFR	Branchflower Co.
AMC	Amchem Products, Inc.	BJL	Burdick & Jackson Laboratories, Inc.
AME	American Chemical Corp.	BKC	J. T. Baker Chemical Co.
AML	Amalgamated Chemical Corp.	BKL	Millmaster Onyx Corp., Berkeley Chemical Div.
AMO	American Oil Co. (Texas)	BKM	Buckman Laboratories, Inc.
AMP	American Potash & Chemical Corp.	BKS	Tenneco Chemicals, Inc., Berkshire Color Div.
AMR	Pacific Resins & Chemical Co.	BKT	J. T. Baker Chemical Co., Taylor Div.
AMS	Martin-Marietta Corp., Ridgway Color & Chemical Div.	BL	Belle Chemical Co., Inc.
		BLA	Blue Arrow, Inc.
ANM	Ancon Chemical Corp.	BLN	Brooklyn Color Works, Inc.
APD	Atlas Chemical Industries, Inc.	BLS	Beech-Nut Life Savers, Inc.
APR	Atlas Processing Co.	BME	Bendix Corp., Marshall-Eclipse Div.
APT	American Petrochemical Corp.	BOR	Borden Co., Borden Chemical Co. Div.
APV	Armstrong Paint & Varnish Works, Inc.	BOY	Walter N. Boysen Co.
APX	Apex Chemical Co., Inc.	BPC	Cowles Chemical Co., Benzol Products Div.
ARA	Arapahoe Chemicals, Div. of Syntex Corp.	BPL	Brand Plastics Co.
ARC	Armour Industrial Chemical Co.	BRD	Baird Chemical Industries, Inc.
ARD	Ardmore Chemical Co.	BRS	Bristol-Meyers Co., Bristol Laboratories Div.

TABLE 22.--*Synthetic organic chemicals: Directory of manufacturers, 1966*--Continued

Code identification	Name of company
BRU	M. A. Bruder & Sons, Inc.
BRY	Bryant Chemical Corp.
BSC	Burkart-Schier Chemical Co.
BST	Best Fertilizers Co.
BSW	Original Bradford Soap Works, Inc.
BUC	Blackman-Uhler Chemical Co.
BUK	Buckeye Cellulose Corp.
BUR	Burroughs-Wellcome & Co. (U.S.A.), Inc.
BXT	J. H. Baxter & Co.
CAD	Cadet Chemical Corp.
CAL	Callery Chemical Co.
CAT	Ashland Oil & Refining Co., Catalin Corp. Div.
CAU	Calcasieu Chemical Corp.
CBA	Ciba Corp., Ciba Products Co.
CBC	Georgia-Pacific Corp., Coos Bay Div.
CBD	Chembond Corp.
CBM	Carborundum Co., Coated Abrasives Div.
CBN	Columbian Carbon Co., Inc. and Chemicals Div.
CBP	Ciba Corp., Ciba Pharmaceutical Co. Div.
CBR	Colab Resin Corp.
CBT	Samuel Cabot, Inc.
CBY	Crosby Chemicals, Inc.
CCA	Carlisle Chemical Works, Inc., Advance Div.
CCC	Chase Chemical Corp.
CCH	Pearsall Chemical Co.
CCL	Charlotte Chemical Laboratories
CCO	Chemico, Inc.
CCP	Crown Central Petroleum Corp.
CCW	Carlisle Chemical Works, Inc.
CD	Budd Co., Polychem Div.
CEL	Celanese Corp. of America: Celanese Chemical Co. Div. Celanese Coatings Co. Celanese Plastics Co. Fibers Co. Div.
CFA	Cooperative Farm Chemicals Association
CFC	Sun Chemical Corp.-Kearny
CGL	Cargill, Inc.
CHC	Chipman Chemical Co., Inc.
CHF	Chemical Formulators, Inc.
CHG	Chemagro Corp.
CHL	Chemol, Inc.
CHO	Stauffer Chemical Co., Calhio Chemicals, Inc. Div.
CHT	Chattem Drug & Chemical Co., Chattem Chemicals Div.
CIB	Ciba Chemical & Dye Co.
CIK	Tenneco Chemicals, Inc., Cal/Ink Div.
CIS	Chemical Insecticide Corp.
CKL	Chemlek Laboratories, Inc.
CLB	Columbia Organic Chemicals Co., Inc.
CLC	Charles L. Huisking & Co., Inc., Clintbrook Chemical Co. Div.
CLD	Colloids, Inc.
CLI	Clintwood Chemical Co.
CLK	Clark Oil & Refining Corp.
CLN	Standard Brands, Inc., Clinton Corn Processing Co. Div.
CLV	Clover Chemical Co.
CLY	W. A. Cleary Corp.
CM	Carpenter-Morton Co.
CMG	Nyanza, Inc.
CMP	Commercial Products Co., Inc.
CNC	Columbian Nitrogen Corp.
CO	Continental Oil Co.
COK	Cockerille Chemicals, Inc.
COL	Collier Carbon & Chemical Corp.
COM	Commercial Solvents Corp.
CON	Concord Chemical Co., Inc.
COP	Coopers Creek Chemical Corp.
COR	Commonwealth Oil Refining Co., Inc.
CP	Colgate-Palmolive Co.
CPC	Childs Pulp Colors, Inc.
CPD	Chemical Products Corp.
CPV	Cook Paint & Varnish Co.
CPY	Copolymer Rubber & Chemical Corp.
CRC	Crown Chemical Corp.
CRN	Corn Products Co.
CRS	Carus Chemical Co., Inc.
CRT	Crest Chemical Corp.
CRY	Tenneco Manufacturing Co., Tenneco Plastics Div.
CRZ	Crown Zellerbach Corp., Chemical Products Div.
CSB	Chemical Services of Baltimore, Inc.
CSD	Cosden Oil & Chemical Co.
CSO	Cities Service Oil Co.
CST	Charles S. Tanner Co.
CTA	Conestoga Chemical Corp.
CTL	Continental Chemical Co.
CTN	Chemetron Corp., Chemetron Chemicals Div., Organic Chemical Dept.
CUC	Cumberland Chemical Corp., a Subsidiary of Air Reduction Co., Inc.
CUL	Culver Chemical Co.
CUT	Cutter Laboratories, Inc.
CW	General Mills, Inc., Chemical Div.
CWL	Cowles Chemical Co.
CWN	Upjohn Co., Carwin Organic Chemicals
CWP	Consolidated Papers, Inc.
CYC	Cyclamate Corp. of America
DA	Diamond Alkali Co., and Western Div.
DAN	Dan River Mills, Inc.
DAV	Conchemco, Inc., H. B. Davis Co. Div.
DBC	Dow Badische Co.
DCC	Dow Corning Corp.
DEG	Degen Oil & Chemical Co.
DEP	DePaul Chemical Co., Inc.
DEX	Dexter Chemical Corp.
DIX	Dixie Chemical Co.
DLH	Hess Oil & Chemical Corp.
DLI	Dawe's Laboratories, Inc.
DOM	Dominion Products, Inc.
DOW	Dow Chemical Co.
DPP	Dixie Pine Products Co., Inc.
DRW	Drew Chemical Corp.
DSC	Dye Specialties, Inc.
DSO	DeSoto Chemical Coatings, Inc.
DUN	Frank W. Dunne Co.
DUP	E. I. duPont de Nemours & Co., Inc.
DVC	Dover Chemical Corp.
DXS	Sunray DX Oil Co.
DYS	Davies-Young Soap Co.
EAK	J. S. & W. R. Eakins, Inc.
ECC	Eastern Color & Chemical Co.
EDC	Edcan Laboratories
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 Products Co.
EMK	Emkay Chemical Co.
EMR	Emery Industries, Inc.
EN	Endo Laboratories, Inc.
ENJ	Enjay Chemical Co.
EPC	Epoxylite Corp.
ESA	East Shore Chemical Co., Inc.
ESC	Escambia Chemical Corp.
ETD	Ethyl-Dow Chemical Co.
EVN	Evans Chemetics, Inc.

TABLE 22.--*Synthetic organic chemicals: Directory of manufacturers, 1966*--Continued

Code identification	Name of company
EW	Westinghouse Electric Corp., Insulating Materials Div. - Benolite
FAB	Fabricolor Manufacturing Corp.
FAR	Farnow, Inc.
FB	Fritzsche Bros., Inc.
FBF	Rexall Chemical Co., Fiberfil Div.
FBR	Fibreboard Corp.
FC	Franklin Chemical Co.
FCA	Farmers Chemical Association, Inc.
FCD	France, Campbell & Darling, Inc.
FCL	Federal Color Laboratories, Inc.
FEL	Felton Chemical Co., Inc.
FER	Ferro Corp., Ferro Chemical Div.
FG	Foster Grant Co., Inc.
FH	Foster-Heaton Co.
FIN	Fine Organics, Inc.
FIR	Firestone Tire & Rubber Co., Firestone Plastics Co. Div.
FIS	Fisher Melamine Corp.
FLH	H. B. Fuller Co.
FLM	Fleming Laboratories, Inc.
FLO	Florasynth, Inc.
FLW	W. P. Fuller Paint Co.
FMB	FMC Corp., Inorganic Chemicals Div.
FMN	FMC Corp., Niagara Chemical Div.
FMP	FMC Corp., Organic Chemicals Div.
FMT	Fairmount Chemical Co., Inc.
FOC	Farac Oil & Chemical Co., Div. of Handschy Chemical Co.
FOM	Formica Corp.
FOR	Foremost Chemical Products Co.
FRE	Freeman Chemical Corp.
FRL	Firestone Tire & Rubber Co., Firestone Rubber & Latex Products Co. Div.
FRM	Farmer's Chemical Co.
FRO	Vulcan Materials Co., Chemicals Div.
FRP	Filtered Rosin Products Co.
FRS	Firestone Tire & Rubber Co., Firestone Synthetic Rubber & Latex Co. Div.
FSH	Frisch & Co., Inc.
FTE	Foote Mineral Co.
FTX	Fel-Tex, Inc.
GAF	General Aniline & Film Corp., Dyestuff & Chemical Div.
GAM	Gamma Chemical Corp.
GAN	Gane's Chemical Works, Inc.
GCC	W. R. Grace & Co., Agricultural Products Div.
GDN	Lancaster Chemical Corp., Gordon Chemicals Co. Div.
GE	General Electric Co., Chemical Materials Dept.
GEI	General Electric Co., Insulating Materials Dept.
GFS	G. Frederick Smith Chemical Co.
GGC	Goodrich-Gulf Chemicals, Inc.
GGY	Geigy Chemical Corp.
GIL	Gilman Paint & Varnish Co.
GIV	Givaudan Corp.
GLC	General Latex & Chemical Corp.
GLD	Glidden Co., and Durkee Famous Foods Div.
GLX	Glasflex, Inc.
GLY	Glyco Chemicals, Inc.
GNF	General Foods Corp., Maxwell House Div.
GNM	General Mills, Inc.
GNT	General Tire & Rubber Co., Chemical Div.
GOC	Gulf Oil Corp.
GOR	Gordon Chemical Co., Inc.
GPM	General Plastics Manufacturing Co.
GPR	Grain Processing Corp.
GRA	Great American Plastics Co.
GRC	W. R. Grace & Co., Dubois Chemicals Div.
GRD	W. R. Grace & Co., Dewey & Almy Chemical Div.
GRG	P. D. George Co.
GRH	W. R. Grace & Co., Hatco Chemical Div.
GRL	W. R. Grace & Co., Vestal Laboratories Div.
GRO	A. Gross & Co., Inc.
GRS	Pontiac Refining Corp.
GRV	Guardsman Chemical Coatings, Inc.
GRW	Great Western Sugar Co.
GTH	Guth Chemical Co.
GTL	Great Lakes Chemical Corp.
GYR	Goodyear Tire & Rubber Co.
HAB	Halby Products Co., Inc.
HAL	C. P. Hall Co. of Illinois
HAM	Hampden Color & Chemical Co.
HAN	Hanna Paint Manufacturing Co., Inc.
HAP	Applied Plastics Co., Inc.
HCH	Houston Chemical Corp.
HCO	Nyanza, Inc., Hamilton Chemical Div.
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.
HKY	Hawkeye Chemical Co.
HLC	Hartman-Leddon Co.
HLI	Haag Laboratories, Inc.
HMP	W. R. Grace & Co., Hampshire Chemical Div.
HMY	Humphrey Chemical Co.
HN	Tenneco Chemicals, Inc.
HNC	H & N Chemical Co.
HNT	Huntington Laboratories, Inc.
HNW	Tenneco Chemicals, Inc., Newport Div.
HNX	Tenneco Chemicals, Inc., Nuodex Div.
HOF	Hoffmann-LaRoche, Inc.
HOU	Air Products & Chemicals, Inc., Houdry Process & Chemical Div.
HPC	Hercules, Inc.
HRS	Grow Chemical Corp., Harris Paint Co. Div.
HRT	Hart Products Corp.
HSC	Holland-Suco Color Co.
HSH	Harshaw Chemical Co., Div. of Kewanee Oil Co.
HST	American Hoechst Corp.
HUM	National Dairy Products Corp., Humko Products Chemical Div.
HUS	Husky Briquetting, Inc.
HVG	Haveg Industries, Inc., Resin & Compound Div.
HYC	Hysol Corp.
HYN	Hynson, Westcott & Dunning, Inc.
IBI	Industrial Biochemicals
ICC	Interchemical Corp., Color & Chemicals Div.
ICF	Interchemical Corp., Finishes Div.
ICI	I. C. I. (Organics), Inc.
ICO	Interchemical Corp., Organic Chemicals Dept.
IDC	Industrial Dyestuff Co.
IFF	International Flavors & Fragrances, Inc.
ILC	International Latex & Chemical Corp.
IMC	International Minerals & Chemical Corp.
IMP	Hercules, Inc., Imperial Color & Chemical Dept.
IMR	Imperial, Inc.
INL	Inland Steel Container Co.
IOC	Ritter Pfaudler Corp., Ionac Chemical Co. Div.
IPC	Interplastic Corp., Commercial Resins Div.
IPI	Isocyanate Products, Inc.
IPR	Inter-Pacific Resins, Inc.
IRC	IRC, Inc.
IRI	Ironsides Resins, Inc.

TABLE 22.--*Synthetic organic chemicals: Directory of manufacturers, 1966*--Continued

Code identification	Name of company
JCC	Jefferson Chemical Co., Inc.
JDC	Nipak, Inc.
JEN	Jennison-Wright Corp.
JMS	J. Meyer & Sons, Inc.
JNS	S. C. Johnson & Son, Inc.
JOB	Jones-Blair Paint Co.
JOR	Jordan Chemical Co.
JRG	Andrew Jergens Co.
JSC	Jersey State Chemical Co.
JTC	Joseph Turner & Co.
JWL	Jewel Paint & Varnish Co.
KAI	Kaiser Aluminum & Chemical Corp., Kaiser Chemicals Div.
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.
KEI	Keil Chemical Co.
KEL	Kelly-Pickering Chemical Corp.
KEN	Kendall Refining Co.
KET	Ketona Chemical Corp.
KF	Kay-Fries Chemicals, Inc.
KMC	Kohler-McLister Paint Co.
KMP	Kelly-Moore Paint Co.
KND	Knoedler Chemical Co.
KNG	Far-Best Corp., O. L. King Div.
KNP	Knapp Products, Inc.
KON	H. Kohnstamm & Co., Inc.
KPI	Kenrich Petrochemicals, Inc.
KPP	Sinclair-Koppers Co.
KPS	Koppers Pittsburgh Co.
KPT	Koppers Co., Inc., Tar & Chemical Div.
KRM	Lawter Chemicals, Inc., Krumbhaar Resin Div.
KYN	Kyanize Paints, Inc.
KYS	Keysor Chemical Co.
LAK	Lakeway Chemical Co.
LAM	LaMotte Chemical Products Co.
LAS	Lasco Industries, Inc.
LEA	Leatex Chemical Co.
LEB	Lebanon Chemical Corp.
LEF	Leffingwell Chemical Co.
LEM	B. L. Lemke & Co., Inc.
LEN	Leonard Refineries, Inc.
LEV	Lever Brothers Co.
LIL	Eli Lilly & Co.
LKL	Lakeside Laboratories, Div. of Colgate-Palmolive Co.
LKY	St. Regis Paper Co., Lake States Div.
LMI	North American Chemical Co.
LPC	Lignin Products Co.
LUB	Lubrizol Corp.
LUE	George Lueders & Co., Inc.
LUR	Laurel Products Corp.
LVR	C. Lever Co., Inc.
LVY	Fred'k H. Levey Co., Inc.
MAH	Maher Color & Chemical Co.
MAL	Mallinckrodt Chemical Works
MAN	Manganese Chemical Co., Div. of Pickands Mather & Co.
MAR	American Can Co.
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.
MCI	Mooney Chemicals, Inc.
MED	Medical Chemicals Corp.
MEE	Maumee Chemical Co.
MER	Merichem Co.
MET	M & T Chemicals, Inc.
MFG	Molded Fiber Glass Body Co., Resin Div.
MGK	McLaughlin Gormley King Co.
MGR	Magruder Color Co., Inc.
MHI	Ventron Corp., Metal Hydrides Div.
MID	Midland Industrial Finishes Co.
MIR	Miranol Chemical Co., Inc.
MLD	Metalead Products Corp.
MLS	Miles Laboratories, Inc., Chemicals Div.
MMM	Minnesota Mining & Manufacturing Co.
MNO	Monochem, Inc.
MNP	Minnesota Paints, Inc.
MOA	Mona Industries, Inc.
MOB	Mobay Chemical Co.
MOC	Marathon Oil Co., Texas Refining Div.
MON	Monsanto Co.
MOR	Mineral Oil Refining Co.
MOT	Motomco, Inc.
MPP	Midwest Plastic Products Co.
MR	Benjamin Moore & Co.
MRA	Metro-Atlantic, Inc.
MRB	Marblette Corp.
MRD	Marden-Wild Corp.
MRK	Merck & Co., Inc.
MRN	International Latex & Chemical Corp., Paisley Products Div.
MRO	W. R. Grace & Co., Marco Chemical Div.
MRT	Morton Chemical Co.
MRV	Marlowe-Van Loan Corp.
MRX	Max Marx Color & Chemical Co.
MSC	Mississippi Chemical Corp.
MTO	Montrose Chemical Corp. of California
MTR	Baldwin-Montrose Chemical Co., Inc., Montrose Chemical Div.
MYW	Stepan Chemical Co., Maywood Div.
NAC	Allied Chemical Corp., Industrial Chemicals Div.
NCI	Union Camp Corp., Chemical Div.
NCW	Nostrip Chemical Works, Inc.
NEO	Norda Essential Oil & Chemical Co., Inc.
NEP	Nepera Chemical Co., Inc.
NES	Nease Chemical Co., Inc.
NEV	Neville Chemical Co.
NIL	Nilok Chemicals, Inc.
NIT	Nitrin, Inc.
NIX	Tenneco Chemicals, Inc., Nixon-Baldwin Div.
NLC	Nalco Chemical Co.
NMC	National Milling & Chemical Co., Inc.
NOC	Norac Co., Inc. and subsidiary Mathe Chemical Co.
NON	A. P. Nonweiler Co.
NOP	Nopco Chemical Co., Inc.
NOR	Norwich Pharmacal Co.
NPC	Northwest Petrochemical Corp.
NPI	National Polychemicals, Inc.
NPP	National Plastic Products Co., Inc.
NPR	Newport Products Co., Div. of Safeway Stores, Inc.
NPV	Norris Paint & Varnish Co.
NRS	Norse Chemical Corp.
NSC	National Starch & Chemical Corp.
NSP	Alabama Binder & Chemical Corp.
NTB	National Biochemical Co.
NTC	National Casein Co.
NTL	National Lead Co.
NVF	N.V.F. Co.
NVT	Novamont Corp.
NW	Northwestern Chemical Co.

TABLE 22.--*Synthetic organic chemicals: Directory of manufacturers, 1966*--Continued

Code identification	Name of company
NYC	Tenneco Chemicals, Inc., New York Color Div.
OCF	Owens-Corning Fiberglas Corp.
OH	Air Reduction Co., Inc., Ohio Chemical & Surgical Equipment Co. Div.
OMC	Olin Mathieson Chemical Corp.
OMS	E. R. Squibb & Sons, Inc.
ONX	Millmaster Onyx Corp., Onyx Chemical Div.
OPC	Orbis Products Corp.
ORG	Organics, Inc.
ORO	Chevron Chemical Co., Additives Div.
ORT	Roehr Chemicals, Inc.
OSB	C. J. Osborn Co.
OTA	Ottawa Chemical Co.
OTC	Ott Chemical Co.
OTH	Chevron Chemical Co., Ortho Div.
OXO	Oxo Chemicals Co.
OXR	Onyx Oils & Resins, Inc.
PAI	Pennsylvania Industrial Chemical Corp.
PAN	Pan American Petroleum Corp.
PAR	Pennsylvania Refining Co.
PAS	Pennsalt Chemicals Corp.
PAT	Patent Chemicals, Inc.
PBY	Pillsbury Co., Chemical Div.
PC	Proctor Chemical Co., Inc.
PCC	USS Chemicals, Div. of U.S. Steel Corp.
PCH	Peerless Chemical Co.
PCI	Pioneer Chemical Works, Inc.
PCS	Emery Industries, Inc., Western Div.
PCW	Pfister Chemical Works
PD	Parke, Davis & Co.
PDC	Berncolors-Poughkeepsie, Inc.
PDJ	Joseph Davis Plastics Co.
PEK	Peck's Products Co.
PEL	Pelron Corp.
PEN	S. B. Penick & Co.
PER	Perry & Derrick Co.
PFN	Pfanstiehl Laboratories, Inc.
PFP	Phelan-Faust Paint Manufacturing Co., Phelan's Resins & Plastics Div.
PFW	Polak's Frutal Works
PFZ	Chas. Pfizer & Co., Inc.
PG	Procter & Gamble Co.
PGU	Gulf Oil Corp., Chemicals Dept., Perkins Glue Branch
PHR	Pharmachem Corp.
PIC	Pierce Organics, Inc.
PII	Polymer Industries, Inc.
PIL	Pilot Chemical Co.
PIT	Pitt-Consol Chemical Co.
PLA	Richardson Co., Richardson Polymers Div.
PLB	P-L Biochemicals, Inc.
PLC	Phillips Petroleum Co.
PLS	Plastics Engineering Co.
PLU	Plumb Chemical Corp.
PMC	Plastics Manufacturing Co.
PMP	Premier Malt Products, Inc.
PNT	Pantasote Co.
PNX	Phoenix Oil Co.
POL	Polymer Corp.
PPC	Premier Petrochemical Co.
PPG	Pittsburgh Plate Glass Co.
PPL	Pioneer Plastics Corp., Chemical Div.
PRC	Products Research & Chemical Corp.
PRD	Productol Chemical Co., Inc.
PRP	S. B. Penick & Co., Parsons-Plymouth Div.
PRT	Pratt & Lambert, Inc.
PRX	Purex Corp., Ltd.
PSC	Passaic Color & Chemical Co.
PSP	Georgia-Pacific Corp., Puget Sound Div.
PTO	Puerto Rico Chemical Co., Inc.
PTT	Petro-Tex Chemical Corp.
PUB	Publicker Industries, Inc.
PVI	Polyvinyl Chemicals, Inc.
PYL	Polychemical Laboratories, Inc.
PYR	Poly Resins
PYZ	Polyrez Co., Inc.
QCP	Quaker Chemical Corp.
QKO	Quaker Oats Co.
QUN	K. J. Quinn & Co., Inc.
RAB	Raybestos-Manhattan, Inc., Raybestos Div.
RBC	Roberts Chemicals, Inc.
RCC	Rexall Chemical Co.
RCD	Richardson Co.
RCI	Reichhold Chemicals, Inc.
RDA	Rhodia, Inc.
RED	Red Spot Paint & Varnish Co., Inc.
REH	Reheis Chemical Co., Div. of Armour Pharmaceutical Co.
REL	Reliance Universal, Inc.
REM	Remington Arms Co., Inc.
REN	Renroh Resins
RET	Rayette-Faberge, Inc.
REZ	Rezolin, Inc.
RGC	Rogers Corp.
RH	Rohm & Haas Co.
RIC	Atlantic Richfield Co., Richfield Div.
RIK	Riker Laboratories, Div. of Rexall Drug & Chemical Co.
RIL	Reilly Tar & Chemical Corp.
RIV	Riverdale Chemical Co.
RLS	Rachelle Laboratories, Inc.
ROC	Rock Hill Printing & Finishing Co.
ROM	United Merchants & Manufacturers, Inc., Roma Chemical Div.
ROY	Royce Chemical Co.
RPC	Refined Products Co.
RSA	R.S.A. Corp.
RSB	Rosenberg Bros. & Co.
RT	F. Ritter & Co.
RTC	Ritter Chemical Co., Inc.
RTF	Retzloff Chemical Co.
RUB	Hooker Chemical Corp., Ruco Div.
RUC	Rubicon Chemicals, Inc.
S	Sandoz, Inc.
SAC	Southeastern Adhesives Co.
SAL	Salsbury Laboratories
SAR	Sartomer Resins, Inc.
SBC	Scher Bros., Inc.
SBP	Sugar Beet Products Co.
SCC	Standard Chlorine Chemical Co., Inc.
SCF	Schaefer Varnish Co., Inc.
SCH	Schering Corp.
SCN	Schenectady Chemicals, Inc.
SCO	Scholler Bros., Inc.
SCP	Standard Chemical Products, Inc.
SCR	R. P. Scherer Corp.
SDC	Martin-Marietta Corp., Southern Dyestuff Co. Div.
SDG	Sterling Drug, Inc., Glenbrook Laboratories Div.
SDH	Sterling Drug, Inc., Hilton-Davis Chemical Co. Div.
SDW	Sterling Drug, Inc., Winthrop Laboratories Div.
SEA	Seaboard Chemicals, Inc.
SED	Seidlitz Paint & Varnish Co.

TABLE 22.--*Synthetic organic chemicals: Directory of manufacturers, 1966*--Continued

Code identification	Name of company
SEK	Sekisui Plastics Corp.
SEL	Selney Co., Inc.
SEP	Southeast Polymers, Inc.
SEY	Seydel-Woolley & Co., Inc.
SF	Stauffer Chemical Co., Industrial Chemical Div.
SFA	Stauffer Chemical Co., Specialty Chemical Div.
SFD	Sonford Chemical Co.
SH	Stein, Hall & Co., Inc.
SHA	Shanco Plastics & Chemicals, Inc.
SHC	Shell Oil Co., Shell Chemical Co. Div.
SHF	National Dairy Products Corp., Sheffield Chemical Co. Div.
SHL	Shulton, Inc.
SHM	Shamrock Oil & Gas Corp.
SHO	Shell Oil Co.
SHP	Shepherd Chemical Co.
SIC	Vistron Corp., Silmar Div.
SID	George F. Siddall Co., Inc.
SIM	Simpson Timber Co.
SIN	Sinclair Refining Co.
SIO	Standard Oil Co. of Ohio
SIP	James P. Sipe & Co.
SK	Smith, Kline & French Laboratories
SKC	Sinclair-Koppers Chemical Co.
SKG	Sunkist Growers, Inc.
SKO	Skelly Oil Co.
SLC	Soluol Chemical Co., Inc.
SLV	Sterling Drug, Inc., Salvo Chemical Div.
SM	Mobil Chemical Co.: Industrial Chemical Div. North Atlantic Div. Petrochemical Div.
SM	Socony Mobil Oil Co., Inc.: Mobil Chemical Co. Div. and Chemical Coatings Div., Louisville Plant
SMC	Stamford Chemical Co.
SNA	Sun Chemical Corp., Chemical Products Div.
SNC	Sonoco Products Co.
SNI	Kaiser Aluminum & Chemicals Corp., Kaiser Agricultural Chemicals Div.
SNO	SunOlin Chemical Co.
SNT	Suntide Refining Co.
SNW	Sun Chemical Corp., Chemical Products Div.
SOC	Standard Oil Co. of California, Chevron Chemical Co.
SOG	Signal Oil & Gas Co.
SOH	Sohio Chemical Co. & Solar Nitrogen Chemicals, Inc.
SOI	American Oil Co. (Maryland)
SOL	Solar Chemical Corp.
SON	Witco Chemical Co., Inc., Sonneborn Div.
SOR	Thomason Industries, Inc., Southern Resin Div.
SOS	Southern Sizing Co.
SPC	Sinclair Paint Co.
SPD	General Electric Co., Silicone Products Dept.
SPI	Sinclair Petrochemicals, Inc.
SPL	Spaulding Fibre Co., Inc.
SPN	Gulf Oil Corp., Chemicals Dept.
SPY	Standard Pyroxoloid Corp.
SRL	G. D. Searle & Co.
SRR	Stresen-Reuter International, International Minerals & Chemical Corp.
STA	A. E. Staley Manufacturing Co.
STC	Sou-Tex Chemical Co., Inc.
STG	Stange Co.
STP	Stepan Chemical Co., Industrial Chemicals Div., Millsdale Works
SUG	Sucro-Chemical, Div. of Colonial Sugars Co.
SUM	Summit Chemical Products Corp.
SUN	Sun Oil Co.
SVC	Sullivan Varnish Co.
SVT	Solvent Chemical Co., Inc.
SW	Sherwin-Williams Co.
SWT	Swift & Co.
SYC	Synthetic Chemicals, Inc.
SYN	Synthron, Inc.
SYP	Synthetic Products Co.
SYR	ADM Co., Synco Resins
SYV	Synvar Corp.
TAE	Chemetron Corp., National Cylinder Gas Div.
TBK	Universal Oil Products Co., Chemical Div.
TCC	Tanatex Chemical Corp.
TCH	Trylon Chemical Corp.
TCI	Texize Chemicals, Inc.
TDC	Diversey Corp.
TEN	Tennessee Copper Co.
TGL	Triangle Chemical Co.
THC	Thompson Apex Co., Div. of Continental Oil Co.
THM	Thompson Chemical Corp.
TIC	Ticonderoga Chemical Corp.
TID	Tidewater Oil Co.
TKL	Thiokol Chemical Corp.
TMH	Thompson-Hayward Chemical Co.
TMS	Sterling Drug, Inc., Thomasset Colors Div.
TNA	Ethyl Corp.
TNC	Sun Chemical Corp.
TNI	Gillette Chemical Co.
TOC	Tenneco Oil Co., Refining & Marketing Accounting
TRC	Toms River Chemical Corp.
TRJ	Trojan Powder Co.
TRO	Troy Chemical Co.
TSA	Texas Alkyls, Inc.
TTX	Detrex Chemical Industries, Inc.
TUS	Texas-U.S. Chemical Co.
TV	Sun Chemical Corp., Industrial Coatings Div.
TX	Texaco, Inc.
TXC	Tex Chem Co.
TXN	Textilana-Nease, Inc.
TXT	Textilana Corp.
TZC	Tizon Chemical Corp.
UBS	A. E. Staley Manufacturing Co., U B S Chemical Co. Div.
UCC	Union Carbide Corp., Chemicals Div.
UCP	Union Carbide Corp., Plastics Div.
UCS	Union Carbide Corp., Silicones Div.
UDI	Petrochemicals Co., Inc.
UHL	Paul Uhlich & Co., Inc.
UNC	Badische Products Corp.
UNG	Ungerer & Co.
UNN	United Chemical Corp. of Norwood
UNO	United Oil Manufacturing Co.
UNP	United Chemical Products Corp.
UNS	Union Starch & Refining Co., Inc.
UOC	Union Oil Co. of California
UPF	United States Pipe & Foundry Co.
UPJ	Upjohn Co.
UPL	United States Plywood Corp., California Div., Shasta Operations
UPM	Universal Oil Products Co.
UPR	U.S. Peroxygen Corp.
URC	United Carbon Co.
USB	U.S. Borax Research Corp.
USI	National Distillers & Chemical Corp.: A-B Chemical Corp. Div. National Petro Chemical Corp. Div. U.S. Industrial Chemicals Co. Div.
USO	U.S. Oil Co.
USR	Uniroyal, Inc., Uniroyal Chemical Div.

TABLE 22.--*Synthetic organic chemicals: Directory of manufacturers, 1966*--Continued

Code identification	Name of company
UTR	Utah Resin Co., Inc.
UVC	Universal Chemicals Corp.
VAC	Varney Chemical Corp.
VAL	Valchem
VAR	Reichhold Chemicals, Inc., Varcum Chemical Div.
VB	Vermilye-Bell
VDM	Van De Mark Chemical Co.
VEL	Velsicol Chemical Corp. & Industrial Chemicals Div.
VGC	Virginia Chemicals, Inc.
VIN	Vineland Chemical Co.
VLN	Valley Nitrogen Producers, Inc.
VLY	Chem-Fleur, Inc.
VNC	Vanderbilt Chemical Corp.
VND	Van Dyk & Co., Inc.
VPC	Verona-Pharma Chemical Corp.
VPT	Vickers Refining Co., Inc.
VSV	Valentine Sugars, Inc., Valite Div.
VTV	Vita-Var Corp., Div. of Textron Industries, Inc.
WAS	Purex Corp., Ltd.
WAW	W. A. Wood Co.
WAY	Philip A. Hunt Chemical Corp., Wayland Chemical Div.
WBC	Worthington Biochemical Corp.
WBG	White & Bagley Co.
WCA	West Coast Adhesives Co.
WCC	Witfield Chemical Corp.
WES	Weston Chemical Corp.
WHC	Whittaker Corp., Narmco Research & Development Div.
WHI	White & Hodges, Inc.
WHL	Whitmoyer Laboratories, Inc.
WHW	Whittemore-Wright Co., Inc.
WIC	Wica Chemicals, Inc.
WIL	Wilson & Co., Inc., Wilson Laboratories Div.
WJ	Warner-Jenkinson Manufacturing Co.
WLI	White Laboratories, Inc.
WLM	Wilmot & Cassidy, Inc.
WM	Wilson & Co., Inc., Wilson-Martin Div.
WMP	Warner Machine Products, Inc., Warner Chemical Div.
WOB	Woburn Chemical Corp.
WOI	Neville Chemical Co.
WON	Woonsocket Color & Chemical Co.
WRC	Wood Ridge Chemical Corp.
WRD	Weyerhaeuser Co., Wood Products Div.
WSN	Washine Chemical Corp.
WTC	Witco Chemical Co., Inc.
WTH	Wallace & Tiernan, Inc., Harchem Div.
WTL	Wallace & Tiernan, Inc., Lucidol Div.
WVA	West Virginia Pulp & Paper Co., Polychemicals Div.
WYC	Wycon
WYN	Wyandotte Chemicals Corp.
WYT	American Home Products Corp., Wyeth Laboratories, Inc. Div.
YAW	Young Aniline Works, Inc.

TABLE 22.--*Synthetic organic chemicals: Directory of manufacturers, 1966*--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 1966 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]

Identification code	Name of company	Office address
ADM	ADM Co	500 Investors Bldg., Minneapolis, MN 55440.
SYR	Synco Resins	32 Henry St., Bethel, CT 06801.
ABB	Abbott Laboratories	14th St. and Sheridan Rd., N. Chicago, IL 60664.
ABS	Abex Corp., American Brakeblok Div	900 W. Maple Rd., Troy, MI 48012.
ACI	Aceto Industrial Chemical Corp	126-02 Northern Blvd., Flushing, New York, NY 11368.
ACE	Acme Chemical Co	2506 N. 32nd St., Milwaukee, WI 53245.
ACR	Acme Resin Corp	1401 Circle Ave., Forest Park, IL 60130.
	Air Products & Chemicals, Inc.:	
AFP	Apache Foam Products Div	P.O. Box 7, Belvidere, IL 61008.
HOU	Houdry Process & Chemical Div	1339 Chestnut St., Philadelphia, PA 19107.
OH	Air Reduction Co., Inc., Ohio Chemical & Surgical Equipment Co. Div.	1400 E. Washington Ave., Madison, WI 53701.
NSP	Alabama Binder & Chemical Corp	P.O. Box 3179, Tuscaloosa, AL 35401.
ALO	Alamo Industries, Inc	16th Fl., Daniel Bldg., Greenville, SC 29606.
ALC	Alco Chemical Corp	Trenton Ave. and William St., Philadelphia, PA 19134.
AAC	Alcolac Chemical Corp	3440 Fairfield Rd., Baltimore, MD 21061.
ALD	Aldrich Chemical Co., Inc	2371 N. 30th St., Milwaukee, WI 53210.
ALL	Alliance Color & Chemical Co	P.O. Box 326, Ridgefield, NJ 07657.
	Allied Chemical Corp.:	
ACN	Agricultural Div	P.O. Drawer 61, Hopewell, VA 23860.
ACB	Barrett Div	40 Rector St., New York, NY 10006.
ALF	Fibers Div	1450 Broadway, New York, NY 10018.
ACG	General Chemical Div	Columbia Rd. and Park Ave., Morristown, NJ 07960.
NAC	Industrial Chemicals Div	Columbia Rd. and Park Ave., Morristown, NJ 07960.
ACP	Plastics Div	P.O. Box 365, Morristown, NJ 07960.
ACS	Solvay Process Div	P.O. Box 6, Solvay, NY 13209.
ACU	Union Texas Petroleum Div	P.O. Box 2120, Houston, TX 77001.
ALX	Alox Corp	3943 Buffalo Ave., Niagara Falls, NY 14302.
AML	Amalgamated Chemical Corp	Ontario and Rorer Sts., Philadelphia, PA 19134.
AMC	Amchem Products, Inc	Brookside Ave., Ambler, PA 19002.
AAI	American Alkyd Industries	Broad and 14th Sts., Carlstadt, NJ 07072.
AAE	American Aniline & Extract Co., Inc	Venango and F Sts., Philadelphia, PA 19134.
AAP	American Aniline Products, Inc	P.O. Box 3063, Paterson, NJ 07509.
AMB	American Bio-Synthetics Corp	710 W. National Ave., Milwaukee, WI 53204.
MAR	American Can Co	100 Park Ave., New York, NY 10017.
AME	American Chemical Corp	P.O. Box 9247, Long Beach, CA 90810.
ACY	American Cyanamid Co	Wayne, NJ 07470.
HST	American Hoechst Corp	129 Quidnick St., Coventry, RI 02816.
WYT	American Home Products Corp., Wyeth Laboratories, Inc. Div.	P.O. Box 8299, Philadelphia, PA 19101.
SOI	American Oil Co. (Maryland)	910 S. Michigan Ave., Chicago, IL 60680.
AMO	American Oil Co. (Texas)	910 S. Michigan Ave., Chicago, IL 60680.
APT	American Petrochemical Corp	3134 California St., N.E., Minneapolis, MN 55418.
AMP	American Potash & Chemical Corp	3000 W. 6th St., Los Angeles, CA 90054.
BAR	American Rubber & Chemical Co	P.O. Box 1034, Louisville, KY 40201.
ASY	American Synthetic Rubber Corp	P.O. Box 360, Louisville, KY 40201.
ATC	American Tartars Corp	420 Lexington Ave., New York, NY 10017.
ALB	Ames Laboratories, Inc	200 Rock Lane, Milford, CT 06460.
ACC	Amoco Chemicals Corp	130 E. Randolph Dr., Chicago, IL 60601.
ANM	Ancon Chemical Corp	1 Stanton St., Marinette, WI 54143.
ASL	Ansul Chemical Co	1 Stanton St., Marinette, WI 54143.
APX	Apex Chemical Co., Inc	200 S. 1st St., Elizabethport, NJ 07206.
HAP	Applied Plastics Co., Inc	130 Penn St., El Segundo, CA 90246.
ARA	Arapahoe Chemicals, Div. of Syntex Corp	2855 Walnut St., Boulder, CO 80302.
ARD	Ardmore Chemical Co	840 Valley Brook Ave., Lyndhurst, NJ 07071.
ARN	Arenol Chemical Corp	40-33 23d St., Long Island City, NJ 11101.
ARG	Argus Chemical Corp	633 Court St., Brooklyn, NY 11231.
ARZ	Arizona Chemical Co	Wayne, NJ 07470.
AKS	Arkansas Co., Inc	185 Foundry St., Newark, NJ 07105.
ARM	Armour Agricultural Chemical Co	P.O. Box 1685, Atlanta, GA 30301.
ARC	Armour Industrial Chemical Co	401 N. Wabash Ave., Chicago, IL 60609.
ARP	Armour Pharmaceutical Co	P.O. Box 511, Kankakee, IL 60901.
ARK	Armstrong Cork Co	Liberty and Charlotte Sts., Lancaster, PA 17604.
APV	Armstrong Paint & Varnish Works, Inc	1330 S. Kilbourn Ave., Chicago, IL 60623.
ARL	Arol Chemical Products Co	371 Wayne St., Jersey City, NJ 07302.

TABLE 22.--*Synthetic organic chemicals: Directory of manufacturers, 1966*--Continued

Identification code	Name of company	Office address
ASH	Ashland Oil & Refining Co	1401 Winchester Ave., Ashland, KY 41101.
CAT	Catalin Corp. Div	1 Park Ave., New York, NY 10016.
AST	Astra Pharmaceutical Products, Inc	7-1/2 Neponset St., Worcester, MA 01606.
ATP	Atco Chemical-Industrial Products, Inc., Fine Chemicals Div.	93 Main St., Franklin, NJ 07416.
ATL	Atlantic Chemical Corp	P.O. Box 216, Nutley, NJ 07110.
	Atlantic Richfield Co.:	
ATR	ARCO Chemical Co. Div	260 S. Broad St., Philadelphia, PA 19101.
RIC	Richfield Div	645 South Mariposa, Los Angeles, CA 90005.
ATU	Atlantic Tubing & Rubber Co	Mill St., Cranston, RI 02905.
APD	Atlas Chemical Industries, Inc	Wilmington, DE 19899.
APR	Atlas Processing Co	P.O. Box 1786, 3546 Midway St., Shreveport, LA 71102.
AUG	Augusta Chemical Co	P.O. Box 660, Augusta, GA 30903.
AVS	Avisun Corp	1608 Walnut St., Philadelphia, PA 19103.
AZT	Aztec Chemicals, Inc	P.O. Box 756, Elyria, OH 44035.
UNC	Badische Products Corp	Foot of Central Ave., Kearny, NJ 07032.
BRD	Baird Chemical Industries, Inc	185 Madison Ave., New York, NY 10016.
BAC	Baker Castor Oil Co	40 Avenue A, Bayonne, NJ 07002.
BKC	J. T. Baker Chemical Co	222 Red School Lane, Phillipsburg, NJ 08865.
BKT	Taylor Div	222 Red School Lane, Phillipsburg, NJ 08865.
MTR	Baldwin-Montrose Chemical Co., Inc., Montrose Chemical Div.	100 Lister Ave., Newark, NJ 07105.
BAL	Baltimore Paint & Chemical Corp	2325 Hollins Ferry Rd., Baltimore, MD 21230.
BXT	J. H. Baxter & Co	120 Montgomery St., San Francisco, CA 94104.
BAX	Baxter Laboratories, Inc	6301 N. Lincoln Ave., Morton Grove, IL 60053.
BLS	Beech-Nut Life Savers, Inc	Church St., Canajoharie, NY 13317.
BCM	Belding Chemical Industries	1407 Broadway, New York, NY 10018.
BL	Belle Chemical Co., Inc	P.O. Box 848, Lowell, NC 28089.
BME	Bendix Corp., Marshall-Eclipse Div	P.O. Box 238, Troy, NY 12180.
BEN	Bennett's	65 W. 1st S., Salt Lake City, UT 84110.
BDO	Benzenoid Organics, Inc	P.O. Box 156, Bellingham, MA 02019.
PDC	Berncolors-Poughkeepsie, Inc	P.O. Box 29, 77 N. Water St., Poughkeepsie, NY 12602.
BST	Best Fertilizers Co	P.O. Box 198, Lathrop, CA 95330.
BUC	Blackman-Uhler Chemical Co	P.O. Box 5627, Spartanburg, SC 29301.
BLA	Blue Arrow, Inc	5050 Edgewood Ct., Jacksonville, FL 32203.
BOR	Borden Co., Borden Chemical Co. Div	350 Madison Ave., New York, NY 10017.
MCB	Borg-Warner Corp., Marbon Chemical Div	P.O. Box 68, Washington, WV 26181.
BOY	Walter N. Boysen Co	1001 42d St., Oakland, CA 94608.
BFR	Branchflower Co	4501 Shilshole Ave., NW., Seattle, WA 98101.
BPL	Brand Plastics Co	130 E. Randolph Dr., Chicago, IL 60601.
BRS	Bristol-Meyers Co., Bristol Laboratories Div	P.O. Box 657, Syracuse, NY 13201.
BLN	Brooklyn Color Works, Inc	90 Linden Blvd., Hicksville, NY 11801.
BRU	M. A. Bruder & Sons, Inc	52d St. and Grays Ave., Philadelphia, PA 19143.
BRY	Bryant Chemical Corp	6 North St., N. Quincy, MA 02171.
BUK	Buckeye Cellulose Corp	2899 Jackson Ave., Memphis, TN 38108.
BKM	Buckman Laboratories, Inc	1256 N. McLean Blvd., Memphis, TN 38108.
CD	Budd Co., Polychem Div	70 S. Chapel St., Newark, DE 19711.
BJL	Burdick & Jackson Laboratories, Inc	1953 S. Harvey St., Muskegon, MI 49442.
BSC	Burkart-Schier Chemical Co	1228 Chestnut St., Chattanooga, TN 37402.
BUR	Burroughs-Wellcome & Co. (U.S.A.), Inc	1 Scarsdale Rd., Tuckahoe, NY 10707.
CBT	Samuel Cabot, Inc	246 Summer St., Boston, MA 02210.
CAD	Cadet Chemical Corp	2153 Lockport-Olcott Rd., Burt, NY 14028.
CAU	Calcasieu Chemical Corp	P.O. Box 1522, Lake Charles, LA 70601.
CAL	Callery Chemical Co	Callery, PA 16024.
CBM	Carborundum Co., Coated Abrasives Div	P.O. Box 477, Niagara Falls, NY 14302.
CGL	Cargill, Inc	Room 2008, 3 Penn Center Plaza, Philadelphia, PA 19102.
CCW	Carlisle Chemicals Works, Inc	West St., Reading, OH 45215.
CCA	Advance Div	500 Jersey Ave., New Brunswick, NJ 08903.
CM	Carpenter-Morton Co	376 W. 3d St., Everett, MA 02149.
CRS	Carus Chemical Co., Inc	1375 8th St., LaSalle, IL 61301.
CEL	Celanese Corp. of America:	
	Celanese Chemical Co. Div	522 5th Ave., New York, NY 10036.
	Celanese Coatings Co	1481 S. 11th St., Louisville, KY 40208.
	Celanese Plastics Co	550 Broad St., Newark, NJ 07102.
	Fibers Co. Div	P.O. Box 1414, Charlotte, NC 28201.
CCL	Charlotte Chemical Laboratories	P.O. Box 948, 5046 Old Pineville Rd., Charlotte, NC 28201.
CCC	Chase Chemical Corp	3527 Smallman St., Pittsburgh, PA 15201.

TABLE 22.--*Synthetic organic chemicals: Directory of manufacturers, 1966*--Continued

Identification code	Name of company	Office address
CHT	Chattem Drug & Chemical Co., Chattem Chemicals Div.	1715 W. 38th St., Chattanooga, TN 37409.
CHG	Chemagro Corp	P.O. Box 4913, Station "F", Kansas City, MO 64120.
CBD	Chembond Corp	P.O. Box 270, Springfield, OR 97477.
	Chemetron Corp.:	
CTN	Chemetron Chemicals Div., Organic Chemical Dept.	201 E. 42d St., New York, NY 10017.
TAE	National Cylinder Gas Div	840 N. Michigan Ave., Chicago, IL 60611.
VLY	Chem-Fleur, Inc	200 Pulaski St., Newark, NJ 07105.
CHF	Chemical Formulators, Inc	P.O. Box 26, Nitro, WV 25143.
CIS	Chemical Insecticide Corp	20 Whitman Ave., Metuchen, NJ 08840.
CPD	Chemical Products Corp	P.O. Box 449, Cartersville, GA 30120.
CSB	Chemical Services of Baltimore, Inc	Howard and West Sts., Baltimore, MD 21230.
CCO	Chemico, Inc	2508 E. Bailey Rd., Cuyahoga Falls, OH 44221.
CKL	Chemlek Laboratories, Inc	4040 W. 123d St., Alsip, IL 60658.
CHL	Chemol, Inc	P.O. Box 3227, Greensboro, NC 27402.
	Chevron Chemical Co.:	
ORO	Additives Div	200 Bush St., San Francisco, CA 94120.
OTH	Ortho Div	940 Hensley, Richmond, CA 94801.
CPC	Childs Pulp Colors, Inc	43 Summit St., Brooklyn, NY 11231.
CHC	Chipman Chemical Co., Inc	P.O. Box 2009, 297 Jersey Ave., New Brunswick, NJ 08903.
CIB	Ciba Chemical & Dye Co	Route 208, Fair Lawn, NJ 07410.
	Ciba Corp.:	
CBP	Ciba Pharmaceutical Co. Div	556 Morris Ave., Summit, NJ 07901.
CBA	Ciba Products Co	556 Morris Ave., Summit, NJ 07901.
CSO	Cities Service Oil Co	P.O. Box 300, Tulsa, OK 74101.
CLK	Clark Oil & Refining Corp	131st St. and Kedzie Ave., Blue Island, IL 60406.
CLY	W. A. Cleary Corp	P.O. Box 749, New Brunswick, NJ 08903.
CLI	Clintwood Chemical Co	1 N. LaSalle St., Chicago, IL 60602.
CLV	Clover Chemical Co	P.O. Box 146, Eighty Four, PA 15330.
COK	Cockerille Chemicals, Inc	Greenwood, VA 22943.
CBR	Colab Resin Corp	Main St., Tewksbury, MA 01876.
CP	Colgate-Palmolive Co	300 Park Ave., New York, NY 10022.
COL	Collier Carbon & Chemical Corp	714 W. Olympic Blvd., Los Angeles, CA 90015.
CLD	Colloids, Inc	394 Frelinghuysen Ave., Newark, NJ 07114.
CLB	Columbia Organic Chemicals Co., Inc	912 Drake St., Columbia, SC 29205.
CBN	Columbian Carbon Co	380 Madison Ave., New York, NY 10017.
	Chemicals Div	P.O. Box 1522, Lake Charles, LA 70601.
CNC	Columbian Nitrogen Corp	P.O. Box 1483, Augusta, GA 30903.
CMP	Commercial Products Co., Inc	117 Ethel Ave., Hawthorne, NJ 07641.
COM	Commercial Solvents Corp	260 Madison Ave., New York, NY 10016.
COR	Commonwealth Oil Refining Co., Inc	P.O. Box 4423, San Juan, PR 00905.
DAV	Conchemco, Inc., H. B. Davis Co. Div	Bayard and Severn Sts., Baltimore, MD 21230.
CON	Concord Chemical Co., Inc	205 S. 2d St., Camden, NJ 08103.
CTA	Conestoga Chemical Corp	Wilmington Industrial Park, Wilmington, DE 19801.
CWP	Consolidated Papers, Inc	Wisconsin Rapids, WI 54494.
CTL	Continental Chemical Co	270 Clifton Blvd., Clifton, NJ 07015.
CO	Continental Oil Co	9 Rockefeller Plaza, New York, NY 10020.
CPV	Cook Paint & Varnish Co	P.O. Box 389, N. Kansas City, MO 64141.
CFA	Cooperative Farm Chemicals Association	P.O. Box 308, Lawrence, KS 66044.
COP	Coopers Creek Chemical Corp	River Rd., W. Conshohocken, PA 19428.
CPY	Copolymer Rubber & Chemical Corp	P.O. Box 2591, Baton Rouge, LA 70821.
CRN	Corn Products Co	717 5th Ave., New York, NY 10022.
CSD	Cosden Oil & Chemical Co	P.O. Box 1311, Big Spring, TX 70720.
CWL	Cowles Chemical Co	12000 Shaker Blvd., Cleveland, OH 44120.
BPC	Benzol Products Div	237 South St., Newark, NJ 07114.
CRT	Crest Chemical Corp	225 Emmet St., Newark, NJ 07114.
ALT	Crompton & Knowles Corp., Chemicals Group, Althouse & Bates Div.	500 Pear St., Reading, PA 19603.
CBY	Crosby Chemicals, Inc	P.O. Drawer 32, DeRidder, LA 70634.
CCP	Crown Central Petroleum Corp	P.O. Box 1168, Baltimore, MD 21203.
CRC	Crown Chemical Corp	12 Dudley St., Providence, RI 02901.
CRZ	Crown Zellerbach Corp., Chemical Products Div	Camas, WA 98607.
CUL	Culver Chemical Co	1502 N. 25th St., Melrose Park, IL 60160.
CUC	Cumberland Chemical Corp., Subsidiary of Reduction Co., Inc.	150 E. 42d St., New York, NY 10017.
CUT	Cutter Laboratories, Inc	4th and Parker Sts., Berkeley, CA 94710.
CYC	Cyclamate Corp. of America	100 Lister Ave., Newark, NJ 07105.

TABLE 22.--*Synthetic organic chemicals: Directory of manufacturers, 1966* --Continued

Identification code	Name of company	Office address
DAN	Dan River Mills, Inc	Danville, VA 24540.
DYS	Davies-Young Soap Co	705 Albany St., Dayton, OH 45401.
PDJ	Joseph Davis Plastics Co	450 Schuyler Ave., Kearny, NJ 07032.
DLI	Dawe's Laboratories, Inc	4800 S. Richmond St., Chicago, IL 60632.
DEG	Degen Oil & Chemical Co	200 Kellogg St., Jersey City, NJ 07305.
DEP	DePaul Chemical Co., Inc	44-27 Purvis St., Long Island City, NY 11101.
DSO	DeSoto Chemical Coatings, Inc	1700 S. Mt. Prospect Ave., Des Plaines, IL 60018.
TTX	Detrex Chemical Industries, Inc	14331 Woodrow Wilson, Detroit, MI 48232.
DEX	Dexter Chemical Corp	845 Edgewater Rd., Bronx, NY 10474.
DA	Diamond Alkali Co	300 Union Commerce Bldg., Cleveland, OH 44114.
	Western Div	300 Union Commerce Bldg., Cleveland, OH 44114.
TDC	Diversey Corp	212 W. Monroe St., Chicago, IL 60606.
DIX	Dixie Chemical Co	3635 W. Dallas Ave., Houston, TX 77019.
DPP	Dixie Pine Products Co., Inc	P.O. Box 470, Hattiesburg, MS 39401.
DOM	Dominion Products, Inc	882 3d Ave., Brooklyn, NY 11232.
DVC	Dover Chemical Co	15th and Davis Sts., Dover, OH 44622.
DBC	Dow Badische Co	Williamsburg, VA 23185.
DOW	Dow Chemical Co	Midland, MI 48640.
DCC	Dow Corning Corp	P.O. Box 582, Midland, MI 48640.
DRW	Drew Chemical Corp	416 Division St., Boonton, NJ 07005.
DUN	Frank W. Dunne Co	1007 41st St., Oakland, CA 94608.
DUP	E. I. duPont de Nemours & Co., Inc	DuPont Bldg., Wilmington, DE 19898.
DSC	Dye Specialties, Inc	26 Journal Sq., Jersey City, NJ 07306.
EAK	J. S. & W. R. Eakins, Inc	55 Berry St., Brooklyn, NY 11211.
ECC	Eastern Color & Chemical Co	35 Livingston St., Providence, RI 02904.
EK	Eastman Kodak Co	343 State St., Rochester, NY 14650.
EKT	Tennessee Eastman Co. Div	P.O. Box 511, Kingsport, TN 37662.
EKX	Texas Eastman Co. Div	P.O. Box 2068, Longview, TX 75601.
ESA	East Shore Chemical Co., Inc	1180 Michigan Ave., Muskegon, MI 49440.
EDC	Edcan Laboratories	18 Marshall, S. Norwalk, CT 06856.
ELP	El Paso Products Co	P.O. Box 3986, Odessa, TX 79760.
EMR	Emery Industries, Inc	4300 Carew Tower, Cincinnati, OH 45202.
PCS	Western Div	8733 S. Dice Rd., Santa Fe Springs, CA 90670.
EMK	Emkay Chemical Co	319 2d St., Elizabeth, NJ 07206.
EN	Endo Laboratories, Inc	1000 Stewart Ave., Garden City, NY 11530.
ENJ	Enjay Chemical Co	60 W. 49th St., New York, NY 10020.
EPC	Epoxylite Corp	1428 N. Tyler Ave., S. El Monte, CA 91733.
ESC	Escambia Chemical Corp	P.O. Box 467, Pensacola, FL 32502.
TNA	Ethyl Corp	100 Park Ave., New York, NY 10017.
ETD	Ethyl-Dow Chemical Co	Midland, MI 48640.
EVN	Evans Chemetics, Inc	250 E. 43d St., New York, NY 10017.
	FMC Corp.:	
AV	American Viscose Div	1617 John F. Kennedy Blvd., Philadelphia, PA 19103.
FMB	Inorganic Chemicals Div	Sawyer Ave. and River Rd., Tonawanda, NY 14207, and 633 3d Ave., New York, NY 10017.
FMN	Niagara Chemical Div	100 Niagara St., Middleport, NY 14105.
FMP	Organic Chemicals Div	1701 Patapsco Dr., Baltimore, MD 21226, and P.O. Box 547, Nitro, WV 25143.
FAB	Fabricolor Manufacturing Corp	24-1/2 Van Houten St., Paterson, NJ 07505.
FMT	Fairmount Chemical Co., Inc	117 Blanchard St., Newark, NJ 07105.
FOC	Farac Oil & Chemical Co., Div of Handschy Chemical Co.	147th St. and Indiana Ave., Chicago, IL 60627.
KNG	Far-Best Corp., O. L. King Div	640 Gilman St., Berkeley, CA 94710.
FCA	Farmers Chemical Association, Inc	P.O. Box 67, Tyner, TN 37392.
FRM	Farmer's Chemical Co	P.O. Box 591, Kalamazoo, MI 49005.
FAR	Farnow, Inc	77 Jacobus Ave., S. Kearny, NJ 07032.
FCL	Federal Color Laboratories	4526 Chickering Ave., Cincinnati, OH 45232.
FTX	Fel-Tex, Inc	P.O. Box 68, Fremont, NB 68025.
FEL	Felton Chemical Co., Inc	599 Johnson Ave., Brooklyn, NY 11237.
FER	Ferro Corp., Ferro Chemical Div	P.O. Box 349, Bedford, OH 44014.
FBR	Fibreboard Corp	P.O. Box 4314, Oakland, CA 94623.
FRP	Filtered Rosin Products Co	P.O. Box 349, Baxley, GA 31513.
FIN	Fine Organics, Inc	205 Main St., Lodi, NJ 07644.
	Firestone Tire & Rubber Co.:	
FIR	Firestone Plastics Co. Div	P.O. Box 699, Pottstown, PA 19464.
FRL	Firestone Rubber & Latex Products Co. Div	P.O. Box 2290, Fall River, MA 02722.
FRS	Firestone Synthetic Rubber & Latex Co. Div	381 W. Wilbeth Rd., Akron, OH 44301.
FIS	Fisher Melamine Corp	90 Park Ave., New York, NY 10016.

TABLE 22.--*Synthetic organic chemicals: Directory of manufacturers, 1966*--Continued

Identification code	Name of company	Office address
FLM	Fleming Laboratories, Inc	P.O. Box 10372, Charlotte, NC 28201.
FLO	Florasynth, Inc	900 Van Nest Ave., Bronx, NY 10462.
FTE	Foote Mineral Co	Route 100, Exton, PA 19341.
FOR	Foremost Chemical Products Co	P.O. Box 599, Oakland, CA 94604.
FOM	Formica Corp	Wayne, NJ 07470.
FG	Foster Grant Co., Inc	289 N. Main St., Leominster, MA 01453.
FH	Foster-Heaton Co	16 E. 5th St., Paterson, NJ 07524.
FCD	France, Campbell & Darling, Inc	N. Michigan Ave., Kenilworth, NJ 07033.
FC	Franklin Chemical Co	2020 Bruck St., Columbus, OH 43207.
FRE	Freeman Chemical Corp	222 E. Main St., Port Washington, WI 53074.
FSH	Frisch & Co., Inc	88 E. 11th St., Paterson, NJ 07524.
FB	Fritzsche Bros., Inc	76 9th Ave., New York, NY 10011.
FLH	H. B. Fuller Co	1150 Eustic St., St. Paul, MN 55108.
FLW	W. P. Fuller Paint Co	450 E. Grand Ave., S. San Francisco, CA 94080.
GAM	Gamma Chemical Corp	90 Park Ave., New York, NY 10016.
GAN	Gane's Chemical Works, Inc	535 5th Ave., New York, NY 10017.
GGY	Geigy Chemical Corp	Saw Mill River Rd., Ardsley, NY 10502.
GAF	General Aniline & Film Corp., Dyestuff & Chemical Div.	P.O. Box 2164, Greenville, SC 29602, and P.O. Box 12, Linden, NJ 07036.
	General Electric Co.:	
GE	Chemical Materials Dept	1 Plastics Ave., Coshocton, OH 43812, and 1 Plastics Ave., Pittsfield, MA 01203.
GEI	Insulating Materials Dept	1 River Rd., Schenectady, NY 12305.
SPD	Silicone Products Dept	Waterford, NY 12188.
GNF	General Foods Corp., Maxwell House Div	1125 Hudson St., Hoboken, NJ 07030.
GLC	General Latex & Chemical Corp	666 Main St., Cambridge, MA 02139.
GNM	General Mills, Inc	S. Kensington Rd., Kankakee, IL 60901.
CW	Chemical Div	Quimby St., Ossining, NY 10562.
GPM	General Plastics Manufacturing Co	3481 S. 35th St., Tacoma, WA 98409.
GNT	General Tire & Rubber Co., Chemical Div	1708 Englewood Ave., Akron, OH 44309.
GRG	P. D. George Co	5200 N. 2d St., St. Louis, MO 63147.
	Georgia-Pacific Corp.:	
CBC	Coos Bay Div	P.O. Box 869, Coos Bay, OR 97420.
PSP	Puget Sound Div	P.O. Box 1236, Bellingham, WA 98225.
TNI	Gillette Chemical Co	P.O. Box 362, N. Chicago, IL 60064.
GIL	Gilman Paint & Varnish Co	W. 8th and Pine Sts., Chattanooga, TN 37401.
GIV	Givaudan Corp	125 Delawanna Ave., Clifton, NJ 07014.
GLX	Glasflex, Inc	Stirling, NJ 07980.
GLD	Glidden Co	900 Union Commerce Bldg., Cleveland, OH 44115.
	Durkee Famous Foods Div	2333 Logan Blvd., Chicago, IL 60647.
GLY	Glyco Chemicals, Inc	417 5th Ave., New York, NY 10016.
BFG	B. F. Goodrich Co., B. F. Goodrich Chemical Co. Div.	3135 Euclid Ave., Cleveland, OH 44137.
GGC	Goodrich-Gulf Chemicals, Inc	1717 E. 9th St., Cleveland, OH 44114.
GYR	Goodyear Tire & Rubber Co	1144 E. Market St., Akron, OH 44316.
GOR	Gordon Chemicals Co., Inc	88 Webster St., Worcester, MA 01603.
	W. R. Grace & Co.:	
GCC	Agricultural Products Div	P.O. Box 277, 147 Jefferson Ave., Memphis, TN 38101.
GRD	Dewey & Almy Chemical Div	62 Whittemore Ave., Cambridge, MA 02140.
GRC	Dubois Chemicals Div	634 Broadway, Cincinnati, OH 45202.
HMP	Hampshire Chemical Div	Poisson Ave., Nashua, NH 03060.
GRH	Hatco Chemical Div	629 Amboy St., Fords, NJ 08863.
MRO	Marco Chemical Div	1711 W. Elizabeth Ave., Linden, NJ 07036.
GRL	Vestal Laboratories Div	4963 Manchester Ave., St. Louis, MO 63110.
GPR	Grain Processing Corp	1600 Oregon St., Muscatine, LA 52761.
GRA	Great American Plastics Co	85 Water St., Fitchburg, MA 21420.
GTL	Great Lakes Chemical Corp	P.O. Box 2200, West Lafayette, IN 47906.
GRW	Great Western Sugar Co	P.O. Box 5308, Terminal Annex, Denver, CO 80217.
GRO	A. Gross & Co., Inc	295 Madison Ave., New York, NY 10017.
HRS	Grow Chemical Corp., Harris Paint Co. Div	1010-26 N. 19th St., Tampa, FL. 33601.
GRV	Guardsman Chemical Coatings, Inc	1350 Steele Ave. SW., Grand Rapids, MI 49502.
GOC	Gulf Oil Corp	P.O. Drawer 2100, Houston, TX 77001.
SPN	Chemicals Dept	Dwight Bldg., Kansas City, MO 64105.
PGU	Perkins Glue Branch	632 Cannon Ave., Lansdale, PA 19446.
GTH	Guth Chemical Co	332 S. Center St., Hillside, IL 60162.
HNC	H & N Chemical Co	90 Maltese Dr., Totowa, NJ 07512.
HLI	Haag Laboratories, Inc	14010 S. Seeley, Blue Island, IL 60406.
HAB	Halby Products Co., Inc	P.O. Box 366, Wilmington, DE 19899.

TABLE 22.--*Synthetic organic chemicals: Directory of manufacturers, 1966*--Continued

Identification code	Name of company	Office address
HAL	C. P. Hall Co. of Illinois	7300 S. Central Ave., Chicago, IL 60638.
HAM	Hampden Color & Chemical Co	5 Albany St., Springfield, MA 01101.
HAN	Hanna Paint Manufacturing Co., Inc	P.O. Box 147, Columbus, OH 43216.
HSH	Harshaw Chemical Co., Div. of Kewanee Oil Co	1945 E. 97th St., Cleveland, OH 44106.
HLC	Hartman-Leddon Co	60th St. and Woodland Ave., Philadelphia, PA 19143.
HRT	Hart Products Corp	1440 Broadway, New York, NY 10018.
HVG	Haveg Industries, Inc., Resin & Compound Div	900 Greenbank Rd., Wilmington, DE 19808.
HKY	Hawkeye Chemical Co	P.O. Box 899, Clinton, LA 52733.
HPC	Hercules, Inc	Hercules Tower, 910 Market St., Wilmington, DE 19899.
IMP	Imperial Color & Chemical Dept	P.O. Box 231, Glens Falls, NY 12803.
HER	Heresite & Chemical Co	822 S. 14th St., Manitowoc, WI 54220.
DLH	Hess Oil & Chemical Corp	280 Park Ave., New York, NY 10017.
HET	Heterochemical Corp	111 E. Hawthorne Ave., Valley Stream, NY 11582.
HEX	Hexagon Laboratories, Inc	3536 Peartree Ave., Bronx, NY 10469.
HDG	Hodag Chemical Corp	7247 N. Central Park Ave., Skokie, IL 60076.
HOF	Hoffmann-LaRoche, Inc	324-424 Kingsland Rd., Nutley, NJ 07110.
HFT	Hoffman-Taff, Inc	P.O. Box 1246 SSS, Springfield, MO 65805.
HSC	Holland-Suco Color Co	P.O. Box 2166, Huntington, WV 25722.
HK	Hooker Chemical Corp	Long Rd., Grand Island, NY 14072.
HKD	Durez Plastics Div	Walck Rd., N. Tonawanda, NY 14121.
RUB	Ruco Div	New South Rd., Hicksville, L.I., NY 11802.
EFH	E. F. Houghton & Co	303 W. Lehigh Ave., Philadelphia, PA 19133.
HCH	Houston Chemical Corp	1 Gateway Center, Pittsburgh, PA 15222.
CLC	Charles L. Huisking & Co., Inc., Clintbrook Chemical Co. Div.	417 5th Ave., New York, NY 10016.
HMY	Humphrey Chemical Co	Devine St., North Haven, CT 06473.
WAY	Philip A. Hunt Chemical Corp., Wayland Chemical Div.	P.O. Box 63, Lincoln, RI 02865.
HNT	Huntington Laboratories, Inc	P.O. Box 710, Huntington, IN 46750.
HUS	Husky Briquetting, Inc	P.O. Box 380, Cody, WY 82414.
HYN	Hynson, Westcott & Dunning, Inc	Charles and Chase Sts., Baltimore, MD 21201.
HYC	Hysol Corp	1100 Seneca Ave., Olean, NY 14760.
ICI	I.C.I. (Organics), Inc	55 Canal St., Providence, RI 02901.
IRC	IRC, Inc	401 N. Broad St., Philadelphia, PA 19108.
IMR	Imperial, Inc	W. 6th and Grass Sts., Shenandoah, IA 51601.
IBI	Industrial Biochemicals	U.S. Highway 1, Edison, NJ 08817.
IDC	Industrial Dyestuff Co	P.O. Box 4249, E. Providence, RI 02914.
INL	Inland Steel Container Co	6532 S. Menard Ave., Chicago, IL 60638.
	Interchemical Corp.:	
ICC	Color & Chemicals Div	150 Wagaraw Rd., Hawthorne, NJ 07506.
ICF	Finishes Div	1255 Broad St., Clifton, NJ 07015.
ICO	Organic Chemicals Dept	Berry Ave. and 13th St., Carlstadt, NJ 07072.
IFF	International Flavors & Frangrances, Inc	521 W. 57th St., New York, NY 10019.
ILC	International Latex & Chemical Corp	P.O. Drawer K, Playtex Park, Dover, DE 19901.
MRN	Paisley Products Div	1770 Canalport Ave., Chicago, IL 60616.
IMC	International Minerals & Chemical Corp	5401 Old Orchard Rd., Skokie, IL 60078.
IPR	Inter-Pacific Resins, Inc	P.O. Box 445, 1602 N. 18th St., Sweet Home, OR 97386.
IPC	Interplastic Corp., Commercial Resins Div	2015 N.E. Broadway St., Minneapolis, MN 55413.
IRI	Ironsides Resins, Inc	270 W. Mound St., P.O. Box 1999, Columbus, OH 43216.
IPO	Isocyanate Products, Inc	900 Wilmington Rd., New Castle, DE 19720.
JCC	Jefferson Chemical Co., Inc	P.O. Box 53300, Houston, TX 77052.
JEN	Jennison-Wright Corp	P.O. Box 691, Toledo, OH 43601.
JRG	Andrew Jergens Co	2535 Spring Grove Ave., Cincinnati, OH 45214.
JSC	Jersey State Chemical Co	59 Lee Ave., Haledon, NJ 07508.
JWL	Jewel Paint & Varnish Co	345 N. Western Ave., Chicago, IL 60612.
JNS	S. C. Johnson & Son, Inc	1525 Howe St., Racine, WI 53403.
JOB	Jones-Blair Paint Co	6969 Denton Dr., Dallas, TX 75235.
JOR	Jordan Chemical Co	Barclay Bldg., 1 Belmont Ave., Bala Cynwyd, PA 19004.
	Kaiser Aluminum & Chemical Corp.:	
SNI	Kaiser Agricultural Chemicals Div	P.O. Box 246, Savannah, GA 31402.
KAI	Kaiser Chemical Div	P.O. Box 337, Gramercy, LA 70052.
KAL	Kali Manufacturing Co	427 E. Moyer St., Philadelphia, PA 19125.
KF	Kay-Fries Chemicals, Inc	360 Lexington Ave., New York, NY 10017.
KEI	Keil Chemical Co	3000 Sheffield Ave., Hammond, IN 46320.
KMP	Kelly-Moore Paint Co	1015 Commercial St., San Carlos, CA 94070.
KEL	Kelly-Pickering Chemical Corp	956 Bransten Rd., San Carlos, CA 94070.
KEN	Kendall Refining Co	77 N. Kendall Ave., Bradford, PA 16701.

TABLE 22.--*Synthetic organic chemicals: Directory of manufacturers, 1966*--Continued

Identification code	Name of company	Office address
	Kennecott Copper Corp.:	
KCC	Chino Mines Div	Hurley, NM 88043.
KCU	Utah Copper Div	P.O. Box 11299, Salt Lake City, UT 84111.
KPI	Kenrich Petrochemicals, Inc	Foot of E. 22d St., Bayonne, NJ 07002.
KET	Ketona Chemical Corp	P.O. Box 6565, Tarrant Branch, Birmingham, AL 35217.
KYS	Keysor Chemical Co	26000 Bouquet Canyon Rd., Saugus, CA 91350.
KCH	Keystone Chemurgic Corp	R.D. 2, Bethlehem, PA 18017.
KCW	Keystone Color Works, Inc	151 W. Gay Ave., York, PA 17403.
KNP	Knapp Products, Inc	180 Hamilton Ave., Lodi, NJ 07644.
KND	Knoedler Chemical Co	651 High St., Lancaster, PA 17604.
KMC	Kohler-McLister Paint Co	P.O. Box 546, 1201 Osage St., Denver, CO 80201.
KON	H. Kohnstamm & Co., Inc	161 Avenue of the Americas, New York, NY 10013.
KPT	Koppers Co., Inc., Tar & Chemical Div	Koppers Bldg., 430 7th Ave., Pittsburgh, PA 15219.
KPS	Koppers Pittsburgh Co	Koppers Bldg., 430 7th Ave., Pittsburgh, PA 15219.
KYN	Kyanize Paints, Inc	2d and Boston Sts., Everett, MA 02149.
LKL	Lakeside Laboratories, Div. of Colgate-Palmolive Co.	1707 E. North Ave., Milwaukee, WI 53201.
LAK	Lakeway Chemical Co	5025 Evanston Ave., Muskegon, MI 49443.
LAM	LaMotte Chemical Products Co	Chestertown, MD 21620.
GDN	Lancaster Chemical Corp., Gordon Chemicals Co. Div.	500 A St., Wilmington, DE 19801.
LAS	Lasco Industries, Inc	1561 Chapin Rd., Montebello, CA 90640.
LUR	Laurel Products Corp	2600 Tioga St., Philadelphia, PA 19134.
KRM	Lawter Chemicals, Inc., Krumbhaar Resin Div	3550 Touhy Ave., Chicago, IL 60645.
LEA	Leatex Chemical Co	2722 N. Hancock St., Philadelphia, PA 19133.
LEB	Lebanon Chemical Corp	P.O. Box 180, Lebanon, PA 17042.
LEF	Leffingwell Chemical Co	P.O. Box 185, Brea, CA 92621.
BCN	Lehn & Fink Products Corp., Beacon Div	33 Richdale Ave., Cambridge, MA 02140.
LEM	B. L. Lemke & Co., Inc	199 Main St., Lodi, NJ 07644.
LEN	Leonard Refineries, Inc	E. Superior St., Alma, MI 48801.
LEV	Lever Brothers Co	390 Park Ave., New York, NY 10022.
LVR	C. Lever Co., Inc	Howard and Huntington Sts., Philadelphia, PA 19133.
LVY	Fred'k H. Levey Co., Inc	380 Madison Ave., New York, NY 10017.
LPC	Lignin Products Co	P.O. Box 960, Erie, PA 16512.
LIL	Eli Lilly & Co	740 S. Alabama St., Indianapolis, IN 46206.
LUB	Lubrizol Corp	29400 Lakeland Blvd., Wickliffe, OH 44117.
LUE	George Lueders & Co., Inc	427 Washington St., New York, NY 10013.
MET	M & T Chemicals, Inc	Woodbridge Rd. and Randolph Ave., Rahway, NJ 07065.
MGR	Magruder Color Co., Inc	1 Virginia St., Newark, NJ 07114.
MAH	Maher Color & Chemical Co	1700 N. Elston Ave., Chicago, IL 60622.
MAL	Mallinckrodt Chemical Works	3600 N. 2nd St., St. Louis, MO 63147.
MAN	Manganese Chemical Co., Div. of Pickands Mather & Co.	2000 Union Commerce Bldg., Cleveland, OH 44115.
MOC	Marathon Oil Co., Texas Refining Div	P.O. Box 1191, Texas City, TX 77590.
MRB	Marblette Corp	37-31 30th St., Long Island City, NY 11101.
MRD	Marden-Wild Corp	500 Columbia St., Somerville, MA 02143.
MRV	Marlowe-Van Loan Corp	P.O. Box 1851, 1511 Joshua Circle, High Point, NC 27261.
	Martin-Marietta Corp.:	
AMS	Ridgway Color & Chemical Div	75 Front St., Ridgway, PA 15853.
SDC	Southern Dyestuff Co. Div	P.O. Box 10098, Charlotte, NC 28201.
MRX	Max Marx Color & Chemical Co	192 Coit St., Irvington, NJ 07111.
MCA	Masonite Corp., Alpine Chemical Div	P.O. Box 2392, Gulfport, MS 39503.
NOC	Mathe Chemical Co	169 Millbank St., Lodi, NJ 07644.
MEE	Maumee Chemical Co	1310 Expressway Dr., Toledo, OH 43608.
MAY	Otto B. May, Inc	52 Amsterdam St., Newark, NJ 07105.
MCC	McCloskey Varnish Co	7600 State Rd., Philadelphia, PA 19136.
MGK	McLaughlin Gormley King Co	1715 S.E. 5th St., Minneapolis, MN 55414.
MED	Medical Chemicals Corp	4541 W. Grand Ave., Chicago, IL 60639.
MRK	Merck & Co., Inc	126 E. Lincoln Ave., Rahway, NJ 07065.
MER	Merichem Co	1914 Haden Rd., Houston, TX 77015.
MLD	Metalead Products Corp	P.O. Box 11005, 2901 Park Blvd., Palo Alto, CA 94306.
MRA	Metro-Atlantic, Inc	2027 Smith St., Centerdale, RI 02911.
JMS	J. Meyer & Sons, Inc	4321 N. 4th St., Philadelphia, PA 19140.
MCH	Michigan Chemical Corp	2 N. Riverside Plaza, Chicago, IL 60606.
MID	Midland Industrial Finishes Co	P.O. Box 620, E. Water, St., Waukegan, IL 60086.
MPP	Midwest Plastic Products Co	3251 Chicago Rd., Steger, IL 64075.
MLS	Miles Laboratories, Inc., Chemicals Div	Myrtle and McNaughton Sts., Elkhart, IN 46514.

TABLE 22.--*Synthetic organic chemicals: Directory of manufacturers, 1966*--Continued

Identification code	Name of company	Office address
	Millmaster Onyx Corp.:	
BKL	Berkeley Chemical Div	99 Park Ave., New York, NY 10016.
ONX	Onyx Chemical Div	Warren and Morris Sts., Jersey City, NJ 07302.
MOR	Mineral Oil Refining Co	4401 Park Ave., Dickinson, TX 77539.
MMM	Minnesota Mining & Manufacturing Co	2501 Hudson Rd., St. Paul, MN 55119.
MNP	Minnesota Paints, Inc	1101 S. 3d St., Minneapolis, MN 55415.
MIR	Miranol Chemical Co., Inc	277 Coit St., Irvington, NJ 07111.
MSC	Mississippi Chemical Corp	P.O. Box 388, Yazoo City, MS 39194.
MOB	Mobay Chemical Co	Penn Lincoln Parkway, W. Pittsburgh, PA 15205.
SM	Mobil Chemical Co.:	
	Industrial Chemical Div	401 E. Main St., Richmond, VA 23208.
	North Atlantic Div	612 South Flower St., Los Angeles, CA 90054.
	Petrochemical Div	P.O. Box 3868, Beaumont, TX 77704.
MFG	Molded Fiber Glass Body Co., Resin Div	4601 Benefit Ave., Ashtabula, OH 44004.
MOA	Mona Industries, Inc	65 E. 23d St., Paterson, NJ 07524.
MNO	Monochem, Inc	P.O. Box 488, Geismar, LA 70734.
MON	Monsanto Co.:	
	Bircham Bend Plant	190 Grochmal Ave., Indian Orchard, MA 01051.
	Chocolate Bayou Plant	P.O. Box 711, Alvin, TX 77511.
	Gering Plastics Dept	200 N. 7th St., Kenilworth, NJ 07033.
	Organic Chemical Div	800 N. Lindbergh Blvd., St. Louis, MO 63166.
	Plastics Div	730 Worcester St., Springfield, MA 01101; 5100 W. Jefferson Ave., Trenton, MI 48183; River Rd., Addyston, OH 45001, and P.O. Box 1311, Texas City, TX 77591.
	Textiles Div	350 5th Ave., New York, NY 10001.
	Western Div	9229 E. Marginal Way S., Seattle, WA 98108.
MTO	Montrose Chemical Corp. of California	500 S. Virgil Ave., Los Angeles, CA 90005.
MCI	Mooney Chemical, Inc	2301 Scranton Rd., Cleveland, OH 44113.
MR	Benjamin Moore & Co.	548 5th Ave., New York, NY 10036.
MRT	Morton Chemical Co	110 N. Wacker Dr., Chicago, IL 60606.
MOT	Motomco, Inc	89 Terminal Ave., Clark, NJ 07066.
NVF	N.V.F. Co	Maryland Ave. and Beech St., Wilmington, DE 19899.
NLC	Nalco Chemical Co	180 N. Michigan Ave., Chicago, IL 60601.
NTB	National Biochemical Co	3127 W. Lake St., Chicago, IL 60612.
NTC	National Casein Co	601 W. 80th St., Chicago, IL 60620.
	National Dairy Products Corp.:	
HUM	Humko Products Chemical Div	P.O. Box 398, Memphis, TN 38101.
SHF	Sheffield Chemical Co. Div	P.O. Box 630, Norwich, NY 13815.
USI	National Distillers & Chemical Corp.:	
	A-B Chemical Corp. Div	99 Park Ave., New York, NY 10016.
	National Petro Chemical Corp. Div	99 Park Ave., New York, NY 10016.
	U.S. Industrial Chemicals Co. Div	99 Park Ave., New York, NY 10016.
NTL	National Lead Co	111 Broadway, New York, NY 10006.
NMC	National Milling & Chemical Co., Inc	4601 Flat Rock Rd., Philadelphia, PA 19127.
NPP	National Plastic Products Co., Inc	Odenton, MD 21113.
NPI	National Polychemicals, Inc	51 Eames St., Wilmington, MA 01887.
NSC	National Starch & Chemical Corp	750 3d Ave., New York, NY 10017.
NES	Nease Chemical Co., Inc	P.O. Box 221, State College, PA 16801.
NEP	Nepera Chemical Co., Inc	Route 17 and Averill Ave., Harriman, NY 10926.
NEV & WOI	Neville Chemical Co	Neville Island P.O., Pittsburgh, PA 15225.
NPR	Newport Products Co., Div. of Safeway Stores, Inc.	1501 Mariposa St., San Francisco, CA 94107.
NIL	Nilok Chemicals, Inc	Mill St. and N. Transit Rd., Lockport, NY 14094.
JDC	Nipak, Inc	301 S. Howard St., Dallas, TX 75221.
NIT	Nitrin, Inc	P.O. Box 233, Cordova, IL 61242.
NON	A. P. Nonweiler Co	P.O. Box 1007, Oshkosh, WI 54901.
NOP	Nopco Chemical Co., Inc	60 Park Pl., Newark, NJ 07101.
NOC	Norac Co., Inc	405 S. Motor Ave., Azusa, CA 91703.
NEO	Norda Essential Oil & Chemical Co., Inc	475 10th Ave., New York, NY 10001.
NPV	Norris Paint & Varnish Co	1675 Commercial St., N.E., Salem, OR 97303.
NRS	Norse Chemical Corp	2121 Norse Ave., Cudahy, WI 53110.
LMI	North American Chemical Co	19 S. Canal St., Lawrence, MA 01843.
NW	Northwestern Chemical Co	120 N. Aurora St., W. Chicago, IL 60185.
NPC	Northwest Petrochemical Corp	P.O. Box 99, Anacortes, WA 98221.
NOR	Norwich Pharmacal Co	17 Eaton Ave., Norwich, NY 13815.
NCW	Nostrip Chemical Works, Inc	182 Liberty Ave., Jamaica, NY 11433.
NVT	Novamont Corp	P.O. Box 189, Kenova, WV 25530.

TABLE 22.--*Synthetic organic chemicals: Directory of manufacturers, 1966*--Continued

Identification code	Name of company	Office address
CMG	Nyanza, Inc	P.O. Box 349, Ashland, MA 01721.
HCO	Hamilton Chemical Div	45 Andrews St., Lowell, MA 01853.
OMC	Olin Mathieson Chemical Corp	445 W. 59th St., New York, NY 10019.
OXR	Onyx Oils & Resins, Inc	95 Broad St., New York, NY 10004.
OPC	Orbis Products Corp	475 10th Ave., New York, NY 10018.
ORG	Organics, Inc	1724 Greenleaf Ave., Chicago, IL 60628.
BSW	Original Bradford Soap Works, Inc	200 Providence St., W. Warwick, RI 02893.
OSB	C. J. Osborn Co	1301 W. Blancke St., Linden, NJ 07036.
OTA	Ottawa Chemical Co	700 N. Wheeling St., Toledo, OH 43605.
OTC	Ott Chemical Co	500 Agard Rd., Muskegon, MI 49945.
OCF	Owens-Corning Fiberglas Corp	P.O. Box 901, Toledo, OH 43614.
OXO	Oxo Chemicals Co	P.O. Box 127, Ironton, OH 45638.
PLB	P-L Biochemicals, Inc	1037 W. McKinley Ave., Milwaukee, WI 53205.
AMR	Pacific Resins & Chemical Co	3400 13th Ave. SW., Seattle, WA 98134.
PAN	Pan American Petroleum Corp	P.O. Box 591, Tulsa, OK 74102.
PNT	Pantasote Co	26 Jefferson St., Passaic, NJ 07056.
PD	Parke, Davis & Co	P.O. Box 118, Detroit, MI 48232.
PSC	Passaic Color & Chemical Co	28-36 Paterson St., Paterson, NJ 07501.
PAT	Patent Chemicals, Inc	335 McLean Blvd., Paterson, NJ 07504.
CCH	Pearsall Chemical Co	P.O. Box 108, Phillipsburg, NJ 08865.
PEK	Peck's Products Co	610 E. Clarence Ave., St. Louis, MO 63147.
PCH	Peerless Chemical Co	3850 Oakman Blvd., Detroit, MI 48204.
PEL	Pelron Corp	7847 W. 47th St., Lyons, IL 60534.
PEN	S. B. Penick & Co	100 Church St., New York, NY 10008.
PRP	Parsons-Plymouth Div	100 Church St., New York, NY 10008.
PAS	Pennsalt Chemicals Corp	3 Penn Center, Philadelphia, PA 19102.
PAI	Pennsylvania Industrial Chemical Corp	120 State St., Clairton, PA 15025.
PAR	Pennsylvania Refining Co	Union Bank Bldg., Butler, PA 16001.
PER	Perry & Derrick Co	2510 Highland Ave., Norwood, OH 45212.
UDI	Petrochemicals Co., Inc	1825 E. Spring St., Long Beach, CA 90806.
PTT	Petro-Tex Chemical Corp	P.O. Box 2584, Houston, TX 77001.
PFN	Pfanstiehl Laboratories, Inc	1219 Glen Rock Ave., Waukegan, IL 60085.
PCW	Pfister Chemical Works	P.O. Box 326, Ridgefield, NJ 07657.
PFZ	Chas. Pfizer & Co., Inc	235 E. 42d St., New York, NY 10017.
PHR	Pharmachem Corp	Broad and Wood Sts., Bethlehem, PA 18018.
PFP	Phelan-Faust Paint Manufacturing Co., Phelan's Resins & Plastics Div.	Oak St. and Buff Rd., P.O. Box 189, Burlington, IA 52602.
PLC	Phillips Petroleum Co	841-A Adams Bldg., Bartlesville, OK 74003.
PNX	Phoenix Oil Co	9505 Cassius Ave., Cleveland, OH 44105.
PIC	Pierce Organics, Inc	P.O. Box 98, Rockford, IL 61105.
PBY	Pillsbury Co., Chemical Div	608 2nd Ave. S., Minneapolis, MN 55402.
PIL	Pilot Chemical Co	11756 Burke St., Santa Fe Springs, CA 90670.
PCI	Pioneer Chemical Works, Inc	Route 73, Maple Shade, NJ 08052.
PPL	Pioneer Plastics Corp., Chemical Div	Pionite Rd., Auburn, ME 04210.
PIT	Pitt-Consol Chemical Co	191 Doremus Ave., Newark, NJ 07105.
PPG	Pittsburgh Plate Glass Co	1 Gateway Center, Pittsburgh, PA 15222.
PLS	Plastics Engineering Co	1607 Geele Ave., Sheboygan, WI 53082.
PMC	Plastics Manufacturing Co	2700 S. Westmoreland, Dallas, TX 75224.
PLU	Plumb Chemical Corp	4837 James St., Philadelphia, PA 19137.
PFW	Polak's Frutal Works	33 Sprague Ave., Middletown, NY 10940.
PYL	Polychemical Laboratories, Inc	490 Hunts Point Ave., New York, NY 10059.
POL	Polymer Corp	2120 Fairmont Ave., Reading, PA 19603.
PII	Polymer Industries, Inc	Viaduct Rd., Springdale, CT 06879.
PYR	Poly Resins	11655 Wicks St., Sun Valley, CA 91352.
PYZ	Polyrez Co., Inc	P.O. Box 320, Woodbury, NJ 08096.
PVI	Polyvinyl Chemicals, Inc	730 Main St., Wilmington, MA 01887.
GRS	Pontiac Refining Corp	3400 Lawrence Dr., Corpus Christi, TX 78403.
PRT	Pratt & Lambert, Inc	75 Tonawanda St., Buffalo, NY 14207.
PMP	Premier Malt Products, Inc	917 W. Juneau Ave., Milwaukee, WI 53201.
PPC	Premier Petrochemical Co	P.O. Box 100, Pasadena, TX 77501.
PG	Procter & Gamble Co	Ivorydale Technical Ctr., Rm. 2S25, Cincinnati, OH 45217.
PC	Proctor Chemical Co., Inc	P.O. Box 399, Salisbury, NC 28144.
PRD	Productol Chemical Co., Inc	615 S. Flower St., Los Angeles, CA 90017.
PRC	Products Research & Chemical Corp	2919 Empire Ave., Burbank, CA 91504.
PUB	Publicker Industries, Inc	1429 Walnut St., Philadelphia, PA 19102.
PTO	Puerto Rico Chemical Co., Inc	Rm. 72.2 - Carr. No. 2, Arecibo, PR 00613.
PRX & WAS	Purex Corp., Ltd	5101 Clark Ave., Lakewood, CA 90712, and 2260 N. Elston Ave., Chicago, IL 60614.

TABLE 22. --*Synthetic organic chemicals: Directory of manufacturers, 1966*--Continued

Identification code	Name of company	Office address
QCP	Quaker Chemical Corp	Elm and Sandy Sts., Conshohocken, PA 19428.
QKO	Quaker Oats Co	345 Merchandise Mart Plaza, Chicago, IL 60654.
QUN	K. J. Quinn & Co., Inc	195 Canal St., Malden, MA 02148.
RSA	R.S.A. Corp	690 Saw Mill River Rd., Ardsley, NY 10502.
RLS	Rachelle Laboratories, Inc	700 Henry Ford Ave., Long Beach, CA 90810.
RAB	Raybestos-Manhattan, Inc., Raybestos Div	75 E. Main St., Stratford, CT 06601.
RET	Rayette-Faberge, Inc	261 E. 5th St., St. Paul, MN 55101.
RED	Red Spot Paint & Varnish Co., Inc	110 Main St., Evansville, IN 47708.
RPC	Refined Products Co	624 Schuyler Ave., Lyndhurst, NJ 07071.
REH	Reheis Chemical Co., Div. of Armour Pharmaceutical Co.	325 Snyder Ave., Berkeley Heights, NJ 07922.
RCI	Reichhold Chemicals, Inc	525 N. Broadway, White Plains, NY 10602.
VAR	Varcum Chemical Div	Niagara Falls, NY 14302.
RIL	Reilly Tar & Chemical Corp	11 S. Meridan St., Indianapolis, IN 46204.
REL	Reliance Universal, Inc	4730 Crittenden Dr., P.O. Box 21067, Louisville, KY 40221, and 6901 Cavalcade, Houston, TX 77001.
REM	Remington Arms Co., Inc	939 Barnum Ave., Bridgeport, CT 06602.
REN	Renroh Resins	P.O. Box 1191, New Bern, NC 28560.
RTF	Retzloff Chemical Co	P.O. Box 45296, Houston, TX 77045.
RCC	Rexall Chemical Co	8480 Beverly Blvd., Los Angeles, CA 90048.
FBF	Fiberfil Div	1701 N. Heidelbach Ave., Evansville, IN 47717.
REZ	Rezolin, Inc	1651 18th St., Santa Monica, CA 90404.
RDA	Rhodia, Inc	600 Madison Ave., New York, NY 10022.
RCD	Richardson Co	2700 W. Lake St., Melrose Park, IL 60160.
PLA	Richardson Polymers Div	345 Morgan Lane, West Haven, CT 06516.
RIK	Riker Laboratories, Div. of Rexall Drug & Chemical Co.	19901 Nordhoff St., Northridge, CA 91324.
RT	F. Ritter & Co	4001 Goodwin Ave., Los Angeles, CA 90039.
RTC	Ritter Chemical Co., Inc	403 W. Main St., Amsterdam, NY 12010.
IOC	Ritter Pfaudler Corp., Ionac Chemical Co. Div.	Birmingham, NJ 08011.
RIV	Riverdale Chemical Co	220 E. 17th St., Chicago Heights, IL 60411.
RBC	Roberts Chemicals, Inc	P.O. Box 546, Nitro, WV 25143.
ROC	Rock Hill Printing & Finishing Co	Rock Hill, SC 29730.
ORT	Roehr Chemicals, Inc	52-20 37th St., Long Island City, NY 11101.
RGC	Rogers Corp	Rogers, CT 06263.
RH	Rohm & Haas Co	Independence Mall West, Philadelphia, PA 19105.
RSB	Rosenberg Bros. & Co	100 Landing Ave., Smithtown, NY 11787.
ROY	Royce Chemical Co	Carlton Hill P.O., E. Rutherford, NJ 07073.
RUC	Rubicon Chemicals, Inc	P.O. Box 517, Geismar, LA 70734.
LKY	St. Regis Paper Co., Lake States Div	603 W. Davenport St., Rhinelander, WI 54501.
SAL	Salsbury Laboratories	500 Gilbert St., Charles City, IA 50616.
S	Sandoz, Inc	P.O. Box 357, Fair Lawn, NJ 07410, and Route 10, Hanover, NJ 07936.
SAR	Sartomer Resins, Inc	P.O. Box 56, Essington, PA 19029.
SCF	Schaefer Varnish Co., Inc	1350 S. 15th St., Louisville, KY 40210.
SCN	Schenectady Chemicals, Inc	Congress St. and 10th Ave., Schenectady, NY 12301.
SBC	Scher Bros., Inc	P.O. Box 538, Allwood Station, Clifton, NJ 07012.
SCR	R. P. Scherer Corp	9425 Grinnell Ave., Detroit, MI 48213.
SCH	Schering Corp	1011 Morris Ave., Union, NJ 07083.
SCO	Scholler Bros., Inc	Collins and Westmoreland Sts., Philadelphia, PA 19134.
SEA	Seaboard Chemicals, Inc	30 Foster St., Salem, MA 01970.
SRL	G. D. Searle & Co	P.O. Box 5110, Chicago, IL 60680.
SED	Seidlitz Paint & Varnish Co	18th and Garfield Sts., Kansas City, MO 64141.
SEK	Sekisui Plastics Corp	666 Dietrich Ave., Hazelton, PA 18201.
SEL	Selney Co., Inc	65 9th St., Brooklyn, NY 11215.
SEY	Seydel-Woolley & Co., Inc	748 Rice St. NW., Atlanta, GA 30318.
SHM	Shamrock Oil & Gas Corp	P.O. Box 631, Amarillo, TX 79105.
SHA	Shanco Plastics & Chemicals, Inc	2716 Kenmore Ave., Tonawanda, NY 14150.
SHO	Shell Oil Co	52 W. 52d St., New York, NY 10019.
SHC	Shell Chemical Co. Div	113 W. 52d St., New York, NY 10019.
SHP	Shepherd Chemical Co	5000 Poplar St., Cincinnati, OH 45212.
SW	Sherwin-Williams Co	101 Prospect Ave. NW., Cleveland, OH 44101.
SHL	Shulton, Inc	697 Route 46, Clifton, NJ 07015.
SID	George F. Siddall Co., Inc	P.O. Box 925, Spartanburg, SC 29301.
SOG	Signal Oil & Gas Co	P.O. Box 5008, Harrisburg Station, Houston, TX 77012.
SIM	Simpson Timber Co	2301 N. Columbia Blvd., Portland, OR 97217.
SKC	Sinclair-Koppers Chemical Co	9822 La Porte Freeway, Houston, TX 77012.
KPP	Sinclair-Koppers Co	900 Koppers Bldg., Pittsburgh, PA 15219.

TABLE 22.--*Synthetic organic chemicals: Directory of manufacturers, 1966*--Continued

Identification code	Name of company	Office address
SPC	Sinclair Paint Co	3960 E. Washington Blvd., Los Angeles, CA 90023.
SPI	Sinclair Petrochemicals, Inc	600 5th Ave., New York, NY 10020.
SIN	Sinclair Refining Co	600 5th Ave., New York, NY 10020.
SIP	James B. Sipe & Co	P.O. Box 13090, Pittsburgh, PA 15243.
SKO	Skelly Oil Co	Oil Center Bldg., P.O. Box 1650, Tulsa, OK 74102.
GFS	G. Frederick Smith Chemical Co	867 McKinley Ave., Columbus, OH 43223.
SK	Smith, Kline & French Laboratories	1500 Spring Garden St., Philadelphia, PA 19101.
SM	Socony Mobil Oil Co., Inc.:	
	Mobil Chemical Co. Div	7301 Bessemer Ave., Cleveland, OH 44127 and Metuchen, NJ 08840.
	Chemical Coatings Div., Louisville Plant	1630 W. Hill Street, Louisville, KY 40210.
SOH	Sohio Chemical Co. & Solar Nitrogen Chemicals, Inc.	1434 Midland Bldg., Cleveland, OH 44115.
SOL	Solar Chemical Corp	Fuller St., Leominster, MA 01453.
SLC	Soluol Chemical Co., Inc	Green Hill and Market Sts., P.O. Box 112, W. Warwick, RI 02893.
SVT	Solvent Chemical Co., Inc	341 Commercial St., Malden, MA 02148.
SFD	Sonford Chemical Co	P.O. Box 127, Port Neches, TX 77651.
SNC	Sonoco Products Co	Hartsville, SC 29550.
STC	Sou-Tex Chemical Co., Inc	E. Catawba Ave., Mount Holly, NC 28120.
SAC	Southeastern Adhesives Co	P.O. Box 791, Lenoir, NC 28645.
SEP	Southeast Polymers, Inc	P.O. Box 309, Chattanooga, TN 37401.
SOS	Southern Sizing Co	P.O. Box 987, East Point, GA 30044.
SPL	Spaulding Fibre Co., Inc	310 Wheeler St., Tonawanda, NY 14150.
OMS	E. R. Squibb & Sons, Inc	745 5th Ave., New York, NY 10022.
STA	A. E. Staley Manufacturing Co	22d and Eldorado Sts., Decatur, IL 62525
UBS	U B S Chemical Co. Div	491 Main St., Cambridge, MA 02142.
SMC	Stamford Chemical Co	45 Jefferson St., P.O. Box 1131, Stamford, CT 06940.
CLN	Standard Brands, Inc., Clinton Corn Processing Co. Div.	1251 Beaver Channel Parkway, Clinton, IA 52733.
SCP	Standard Chemical Products, Inc	1301 Jefferson St., Hoboken, NJ 07030.
SCC	Standard Chlorine Chemical Co., Inc	1025 Belleville Turnpike, Kearny, NJ 07032.
SOC	Standard Oil Co. of California, Chevron Chemical Co.	200 Bush St., San Francisco, CA 94120.
SIO	Standard Oil Co. of Ohio	Midland Bldg., Cleveland, OH 44115.
SPY	Standard Pyroxoloid Corp	85 Pleasant St., Leominster, MA 01453.
STG	Stange Co	342 N. Western Ave., Chicago, IL 60612.
	Stauffer Chemical Co.:	
CHO	Calhio Chemicals, Inc. Div	380 Madison Ave., New York, NY 10017.
SF	Industrial Chemical Div	380 Madison Ave., New York, NY 10017.
SFA	Specialty Chemical Div	380 Madison Ave., New York, NY 10017.
SH	Stein, Hall & Co., Inc	605 3d Ave., New York, NY 10016.
STP	Stepan Chemical Co.:	
	Industrial Chemicals Div., Millsdale Works	Elwood, IL 60421.
MYW	Maywood Div	100 W. Hunter Ave., Maywood, NJ 07607.
	Sterling Drug, Inc.:	
SDG	Glenbrook Laboratories Div	90 Park Ave., New York, NY 10018.
SDH	Hilton-Davis Chemical Co. Div	2235 Langdon Farm Rd., Cincinnati, OH 45237.
SLV	Salvo Chemical Div	Military Rd., Rothschild, WI 54474.
TMS	Thomasset Colors Div	120 Lister Ave., Newark, NJ 07105.
SDW	Winthrop Laboratories Div	90 Park Ave., New York, NY 10016.
SRR	Stresen-Reuter International, International Minerals & Chemical Group.	400 W. Roosevelt Ave., Bensenville, IL 60106.
SUG	Sucro-Chemical Div. of Colonial Sugars Co	P.O. Drawer G, Gramercy, LA 70052.
SBP	Sugar Beet Products Co	302 Waller St., Saginaw, MI 48605.
SVC	Sullivan Varnish Co	410 N. Hart St., Chicago, IL 60622.
SUM	Summit Chemical Products Corp	11 William St., Belleville, NJ 07109.
TNC	Sun Chemical Corp	185 Foundry St., Newark, NJ 07105.
SNA	Chemical Products Div	441 Tompkins Ave., Staten Island, NY 10305.
SNW	Chemical Products Div	Wood River Junction, RI 02894.
TV	Industrial Coatings Div	135 W. Lake St., Northlake, IL 60164.
CFC	Sun Chemical Corp - Kearny	1106 Harrison Ave., Kearny, NJ 07029.
SKG	Sunkist Growers, Inc	720 E. Sunkist St., Ontario, CA 91764.
SUN	Sun Oil Co	1608 Walnut St., Philadelphia, PA 19103.
SNO	SunOlin Chemical Co	P.O. Box F, Claymont, DE 19703.
DXS	Sunray DX Oil Co	P.O. Box 2039, Tulsa, OK 74102.
SNT	Suntide Refining Co	P.O. Box 2608, Corpus Christi, TX 78403.
SWT	Swift & Co	115 W. Jackson Blvd., Chicago, IL 60604.
SYC	Synthetic Chemicals, Inc	335 McLean Blvd., Paterson, NJ 07504.
SYP	Synthetic Products Co	1636 Wayside Rd., Cleveland, OH 44112.

TABLE 22. --*Synthetic organic chemicals: Directory of manufacturers, 1966*--Continued

Identification code	Name of company	Office address
SYN	Synthron, Inc	Ryan Ave., Ashton, RI 02805.
SYV	Synvar Corp	917 Washington St., Wilmington, DE 19899.
TCC	Tanatex Chemical Corp	P.O. Box 388, Lyndhurst, NJ 07071.
CST	Charles S. Tanner Co	P.O. Box 3867, Park Place, Greensville, SC 29608.
HN	Tenneco Chemicals, Inc	300 E. 42d St., New York, NY 10017.
BKS	Berkshire Color Div	12th and Bern Sts., Reading, PA 19604.
CIK	Cal/Ink Div	711 Camelia St., Berkeley, CA 94710.
HNW	Newport Div	P.O. Box 911, Pensacola, FL 32502.
NYC	New York Color Div	374 Main St., Belleville, NJ 07109.
NIX	Nixon-Baldwin Div	Nixon, NJ 08818.
HNX	Nuodex Div	P.O. Box 2, Piscataway, NJ 08854.
CRY	Tenneco Manufacturing Co., Tenneco Plastics Div.	P.O. Box 2, Piscataway, NJ 08854.
TOC	Tenneco Oil Co., Refining & Marketing Accounting.	P.O. Box 2511, Houston, TX 77001.
TEN	Tennessee Copper Co	Copperhill, TN 37317.
TX	Texaco, Inc	1111 Rush Ave., Houston, TX 77052.
TSA	Texas Alkyls, Inc	P.O. Box 600, Deer Park, TX 77536.
TUS	Texas-U.S. Chemical Co	P.O. Box 667, Port Neches, TX 77651.
TXC	Tex Chem Co	20-21 Wagaraw Rd., Fair Lawn, NJ 07410.
TCI	Texize Chemicals, Inc	P.O. Box 368, Greenville, SC 29602.
TXT	Textilana Corp	12607 Cerise Ave., Hawthorne, CA 90250.
TXN	Textilana-Nease, Inc	1240 S. 88th St., Edwardsville, KS 66022.
TKL	Thiokol Chemical Corp	P.O. Box 27, Bristol, PA 19007.
SOR	Thomason Industries, Inc., Southern Resin Div.	P.O. Drawer 1600, Fayetteville, NC 28301.
THC	Thompson Apex Co., Div. of Continental Oil Co.	505 Central Ave., Pawtucket, RI 02862.
THM	Thompson Chemical Corp	3028 Locust St., St. Louis, MO 63103.
TMH	Thompson-Hayward Chemical Co	5200 Speaker Rd., Kansas City, KS 66110.
TIC	Ticonderoga Chemical Corp	Marguerite Ave., Leominster, MA 01453.
TID	Tidewater Oil Co	Delaware City, DE 19706.
TZC	Tizon Chemical Corp	Locktown Rd., Flemington, NJ 08822.
TRC	Toms River Chemical Corp	P.O. Box 71, Toms River, NJ 08753.
ACT	Arthur C. Trask Co	327 S. LaSalle St., Chicago, IL 60604.
TGL	Triangle Chemical Co	206 Lower Elm St., P.O. Box 4528, Macon, GA 31208.
TRJ	Trojan Powder Co	17 N. 7th St., Allentown, PA 18105.
TRO	Troy Chemical Co	338 Wilson Ave., Newark, NJ 07105.
TCH	Trylon Chemical Corp	P.O. Box 5101, Station B, Greenville, SC 29606.
JTC	Joseph Turner & Co	Pleasant View Terrace, Ridgefield, NJ 07451.
PCC	USS Chemicals Div. of U.S. Steel Corp	Grant Bldg., Pittsburgh, PA 15219.
UHL	Paul Uhlich & Co., Inc	90 West St., New York, NY 10006.
UNG	Ungerer & Co	161 Avenue of the Americas, New York, NY 10013.
NCI	Union-Camp Corp., Chemical Div	P.O. Box 6170, Jacksonville, FL 32205.
	Union Carbide Corp.:	
UCC	Chemicals Div	270 Park Ave., New York, NY 10017.
UCP	Plastics Div	270 Park Ave., New York, NY 10017.
UCS	Silicones Div	270 Park Ave., New York, NY 10017.
UOC	Union Oil Co. of California	461 S. Boylston St., Los Angeles, CA 90017.
UNS	Union Starch & Refining Co., Inc	301 Washington St., Columbus, IN 47201.
USR	Uniroyal, Inc., Uniroyal Chemical Div	Naugatuck, CT 06771.
URC	United Carbon Co	P.O. Box 149, Baytown, TX 77520.
UNN	United Chemical Corp. of Norwood	P.O. Box 327, Endicott St., Norwood, MA 02062.
UNP	United Chemical Products Corp	York and Colgate Sts., Jersey City, NJ 07302.
RCM	United Merchants & Mfgrs., Inc., Roma Chemical Div.	749 Quequechan St., Fall River, MA 02721.
UNO	United Oil Manufacturing Co	2d and Cascade Sts., Erie, PA 16512.
USB	U.S. Borax Research Corp	3075 Wilshire Blvd., Los Angeles, CA 90005.
USO	U.S. Oil Co	P.O. Box 4228, E. Providence, RI 02914.
UPR	U.S. Peroxygen Corp	850 Morton Ave., Richmond, CA 94804.
UPF	United States Pipe & Foundry Co	3300 1st Ave. N., Birmingham, AL 35202.
UPL	United States Plywood Corp., California Div., Shasta Operations.	P.O. Box 2317, Redding, CA 96001.
UVC	Universal Chemicals Corp	P.O. Box 1224, Ashton, RI 02865.
UPM	Universal Oil Products Co	30 Algonquin Rd., Des Plaines, IL 60018.
TBK	Chemical Div	State Highway 17, E. Rutherford, NJ 07073.
UPJ	Upjohn Co	7000 Portage Rd., Kalamazoo, MI 49001.
CWN	Carwin Organic Chemicals	Sackett Point Rd., North Haven, CT 06473.
UTR	Utah Resin Co., Inc	604-605 Kearns Bldg., Salt Lake City, UT 84101.

TABLE 22. --*Synthetic organic chemicals: Directory of manufacturers, 1966*--Continued

Identification code	Name of company	Office address
VAL	Valchem	1407 Broadway, New York, NY 10018.
VSV	Valentine Sugars, Inc., Valite Div	726 Whitney Bldg., New Orleans, LA 70130.
VLN	Valley Nitrogen Producers, Inc	P.O. Box 128, Helm, CA 93627.
VDM	Van De Mark Chemical Co	N. Transit Rd., Lockport, NY 14094.
VNC	Vanderbilt Chemical Corp	33 Winfield St., E. Norwalk, CT 06855.
VND	Van Dyk & Co., Inc	11 William St., Belleville, NJ 07109.
VAC	Varney Chemical Corp	2001 Afton Rd., Janesville, WI 53545.
VEL	Veliscol Chemical Corp	341 E. Ohio St., Chicago, IL 60611.
	Industrial Chemicals Div	4902 Central Ave., Chattanooga, TN 37410.
MHI	Ventron Corp., Metal Hydrides Div	12-24 Congress St., Beverly, MA 01915.
VB	Vermilye-Bell	21707 Bothell Way, Bothell, WA 98011.
VPC	Verona-Pharma Chemical Corp	P.O. Box 385, Springfield Rd., Union, NJ 07083.
VPT	Vickers Refining Co., Inc	P.O. Box 2240, Wichita, KS 67201.
VIN	Vineland Chemical Co	W. Wheat Rd., Vineland, NJ 08360.
VGC	Virginia Chemicals, Inc	West Norfolk, VA 23703.
SIC	Vistron Corp., Silmar Div	12335 S. Van Ness Ave., Hawthorne, CA 90250.
VTV	Vitra-Var Corp., Div. of Textron Industries, Inc.	177 Oakwood Ave., Orange, NJ 07050.
FRO	Vulcan Materials Co., Chemical Div.	P.O. Box 545, Wichita, KS 67201.
	Wallace & Tierman, Inc.:	
WTH	Harchem Div	25 Main St., Belleville, NJ 07109.
WTL	Lucidol Div	1740 Military Rd., Buffalo, NY 14240.
WJ	Warner-Jenkinson Manufacturing Co	2526 Baldwin St., St. Louis, MO 63106.
WMP	Warner Machine Products, Inc., Warner Chemical Div.	1200 Rochester Ave., Muncie, IN 47302.
WSN	Washine Chemical Corp	165 Main St., Lodi, NJ 07644.
WCA	West Coast Adhesives Co	11104 NW. Front Ave., Portland, OR 97231.
EW	Westinghouse Electric Corp., Insulating Materials Div. - Benolite.	Manor, PA 15665.
WES	Weston Chemical Corp	104 E. 40th St., New York, NY 10016.
WVA	West Virginia Pulp & Paper Co., Polychemicals Div.	P.O. Box 5207, N. Charleston, SC 29406.
WRD	Weyerhaeuser Co., Wood Products Div	118 S. Palmetto St., Marshfield, WI 54449.
WBG	White & Bagley Co	P.O. Box 1171, Worcester, MA 01601.
WHI	White & Hodges, Inc	576 Lawrence St., Lowell, MA 01852.
WLI	White Laboratories, Inc	Galloping Hill Rd., Kenilworth, NJ 07033.
WHL	Whitmoyer Laboratories, Inc	19 N. Railroad St., Myerstown, PA 17067.
WHC	Whittaker Corp., Narmco Research & Development Div.	3540 Aero Ct., San Diego, CA 92123.
WHW	Whittemore-Wright Co., Inc	62 Alford St., Boston, MA 02129.
WIC	Wica Chemicals, Inc	P.O. Box 506, Charlotte, NC 28201.
WLM	Wilmot & Cassidy, Inc	108 Provost St., Brooklyn, NY 11222.
	Wilson & Co., Inc.:	
WIL	Wilson Laboratories Div	4221 S. Western Blvd., Chicago, IL 60609.
WM	Wilson-Martin Div	Jackson and Swanson Sts., Philadelphia, PA 19148.
WTC	Witco Chemical Co., Inc	P.O. Box 305, Paramus, NJ 07652.
SON	Sonneborn Div	277 Park Ave., New York, NY 10017.
WCC	Witfield Chemical Corp	P.O. Box 1243, Wilmington, CA 90744.
WOB	Woburn Chemical Corp	1200 Harrison Ave., Harrison, NJ 07029.
WAW	W. A. Wood Co	108 Spring St., Everett, MA 02149.
WRC	Wood Ridge Chemical Corp	Park Pl. E., Wood Ridge, NJ 07075.
WON	Woonsocket Color & Chemical Co	176 Sunnyside Ave., Woonsocket, RI 02895.
WBC	Worthington Biochemical Corp	Route 9, Freehold, NJ 07728.
WYN	Wyandotte Chemicals Corp	1609 Biddle Ave., Wyandotte, MI 48192.
WYC	Wycon	P.O. Box 1087, Colorado Springs, CO 80901.
YAW	Young Aniline Works, Inc	2731 Boston St., Baltimore, MD 21224.

APPENDIX

U.S. Imports of Benzenoid Intermediates and Finished Benzenoid Products

Table 23 summarizes, for 1965 and 1966, U.S. imports of benzenoid chemicals and products entered under the Tariff Schedules of the United States (TSUS), schedule 4, part 1, subparts B and C. The data, which were obtained by analyzing invoices covering imports through U.S. customs districts, are given in detail in a separate report of the Tariff Commission.[1]

In 1966, general imports of benzenoid intermediates entered under schedule 4, part 1B, comprised 665 items with a total weight of 68.9 million pounds and an invoice value of $31.2 million. In 1965, imports consisted of 642 items with a total weight of 38.0 million pounds and an invoice value of $19.5 million. About half of the benzenoid chemicals and products imported in 1966 were declared to be "competitive" (duty based on "American selling price"). In 1966, imports of these products from Canada amounted to 23 percent of the total; imports from that country amounted to 15.6 million pounds, compared with 13 million pounds in 1965. In 1966, imports from Italy amounted to 5.8 million pounds, compared with 8.1 million pounds in 1965. Imports from West Germany amounted to 14.5 million pounds, compared with 7.2 million pounds in 1965. Imports from Japan totaled 14.4 million pounds in 1966, compared with 3.3 million pounds in 1965; and imports from the United Kingdom amounted to 8.1 million pounds, compared to 2.2 million pounds in 1965. Sizable quantities of intermediates were also imported in 1966 from Switzerland (2.0 million pounds), France (3.5 million pounds), and Sweden (0.9 million pounds).

The most important intermediates imported in 1966 were phenol, styrene, adipic acid, alkylbenzene, phthalic anhydride, Bisphenol A, polyalkylbenzene, ethylbenzene and 3-hydroxy-

TABLE 23.--*Benzenoid intermediates and finished benzenoid products: U.S. general imports, classified by use, 1965 and 1966*

Product	1965		1966	
	Quantity	Invoice value	Quantity	Invoice value
	1,000 pounds	*1,000 dollars*	*1,000 pounds*	*1,000 dollars*
Intermediates[1]	37,975	19,483	68,919	31,217
Finished benzenoid products, total	31,941	45,425	47,875	56,859
Dyes, total	12,276	20,505	13,715	25,817
Acid	1,808	...	2,555	...
Azoic dyes	22	...	14	...
Azoic components:				
Fast color bases	416	...	520	...
Fast color salts	185	...	269	...
Naphthol AS and its derivatives	1,093	...	1,558	...
Basic	1,227	...	1,136	...
Direct	931	...	1,159	...
Disperse	1,880	...	2,494	...
Fiber-reactive	652	...	1,249	...
Fluorescent brightening agents	229	...	247	...
Mordant	221	...	362	...
Solvent	168	...	265	...
Sulfur	37	...	45	...
Vat	3,374	...	1,761	...
All other	[2]33	...	[2]81	...
Benzenoid pigments (toners and lakes)	797	1,510	1,010	1,738
Medicinals and pharmaceuticals	3,408	12,551	4,674	10,855
Flavor and perfume materials	1,908	2,522	2,564	4,033
All other	[3]13,552	8,337	[3]25,912	14,416

[1] Includes small quantities of rubber-processing chemicals.
[2] Includes ingrain dyes.
[3] Includes organic pesticides and related products, plasticizers, surface active agents, and textile assistant.

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

[1] *Imports of Benzenoid Chemicals and Products, 1966,* TC Publication 216, 1967 [processed].

2-naphthoic acid (B.O.N.). In 1966, imports of phenol amounted to 8.6 million pounds and came from the United Kingdom, France and West Germany. Imports of styrene amounted to 8.5 million pounds and all came from Canada. Imports of adipic acid in 1966 totaled 5.3 million pounds, compared with 13.7 million pounds in 1965 and all came from Canada. Imports of alkylbenzene in 1966 amounted to 5.1 million pounds and imports of phthalic anhydride amounted to 4.6 million pounds. All of the alkylbenzene and most of the phthalic anhydride came from Japan. In 1966, imports of 4,4'-Isopropylidenediphenol (Bisphenol A), which came principally from the Netherlands and France, totaled 4.2 million pounds; imports of polyalkylbenzene, which came from Italy, totaled 3.7 million pounds; imports of ethylbenzene, which came from Canada, totaled 1.2 million pounds; and imports of B.O.N., which came from West Germany, Italy and Japan, totaled 917,000 pounds.

Imports in 1966 of all finished benzenoid chemicals and products that are dutiable under part 1C comprised 2,401 items, with a total weight of 47.9 million pounds and an invoice value of $56.9 million. In 1965, imports consisted of 2,223 items, with a total weight of 31.9 million pounds and an invoice value of $45.4 million. The most important group of finished benzenoid products imported in 1966 was benzenoid dyes. Imports of dyes amounted to $25.8 million (invoice value), or 45.4 percent of the value of all imports under part 1C. In 1965, imports of dyes amounted to $20.5 million (invoice value), or 45.1 percent of the value of all imports under part 1C.

Imports of medicinals and pharmaceuticals, the next most important group of products entered under part 1C in 1966, decreased in 1966, compared with 1965. In 1966, imports of medicinals and pharmaceuticals were valued at $10.9 million (invoice value), or 19.1 percent of the total value of imports under part 1C. In 1965, imports of medicinals and pharmaceuticals were valued at $12.6 million or 27.6 percent of total value of imports under part 1C. In 1966, imports of benzenoid pigments were valued at $1.7 million, compared with $1.5 million in 1965. Imports of benzenoid flavor and perfume materials in 1966 ($4.0 million) were 60 percent more than in 1965 ($2.5 million). Imports of other benzenoid products in 1966, entered under part 1C (chiefly polyamide resins and pesticides) were valued at $14.4 million, compared with $8.3 million in 1965.

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

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

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

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

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

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

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*Operation of the Trade Agreements Program: 15th Report, July 1962–June 1963 (TC Publication 147, 1965)

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