UNITED STATES TARIFF COMMISSION

SYNTHETIC ORGANIC CHEMICALS

United States Production and Sales, 1967

TC Publication 295

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

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Introduction

This is the fifty-first 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 1967 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 the 819 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.

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 given only where 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 1967 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 1967 was 176,541 million pounds--an increase of 4.4 percent over the output in 1966 (see table 1). Sales of these materials in 1967, which totaled 94,309 million pounds, valued at $11,466 million, were 4.6 percent larger than in 1966 in terms of quantity and 4.2 percent larger in terms of value. These figures include data on production and sales of chemicals measured at several successive steps in the manufacturing process, and therefore they necessarily reflect some duplication.

In 1967, production of all synthetic organic chemicals, including cyclic intermediates and finished chemical products, totaled 104,711 million pounds, or 4.1 percent more than the output in 1966 (see table 1). Production of cyclic intermediates (20,793 million pounds) was 6.8 percent larger in 1967 than in 1966; that of surface-active agents (3,479 million pounds) was 4.8 percent larger; that of plasticizer chemicals (1,263 million pounds) was 4.4 percent larger.

The output of other groups of synthetic organic chemicals which increased in 1967 compared to 1966 were miscellaneous chemicals and synthetic organic pigments (both 4.3 percent) and pesticides and related products (3.6 percent). Plastics and resin materials increased by 1.5 percent while flavor and perfume materials showed the smallest percentage gain in 1966 over 1967 (.8 percent).

TABLE 1.--*Synthetic organic chemicals and their raw materials: U.S. production and sales, 1966 and 1967*

Chemical	Production			Sales					
				Quantity			Value		
	1966	1967	Increase or decrease (-), 1967 over 1966[1]	1966	1967	Increase or decrease (-), 1967 over 1966[1]	1966	1967	Increase or decrease (-), 1967 over 1966[1]
	Million pounds	*Million pounds*	*Percent*	*Million pounds*	*Million pounds*	*Percent*	*Million dollars*	*Million dollars*	*Percent*
Grand total[2]	169,174	176,541	4.4	90,175	94,309	4.6	10,999	11,466	4.2
Tar	8,019	7,803	-2.7	3,613	3,547	-1.8	35	34	-2.6
Tar crudes	10,062	9,588	-4.7	6,348	6,132	-3.4	140	136	-3.1
Crude products from petroleum and natural gas	50,467	54,438	7.9	27,494	29,453	7.1	865	858	-.8
Synthetic organic chemicals, total[2]	100,627	104,711	4.1	52,720	55,177	4.7	9,958	10,438	4.8
Intermediates	19,467	20,793	6.8	8,852	9,461	6.9	925	1,000	8.1
Dyes	219	206	-5.9	204	199	-2.7	331	332	.2
Synthetic organic pigments	51	53	4.3	43	43	-1.0	108	108	.7
Medicinal chemicals	185	180	-2.9	136	127	-7.0	398	385	-3.3
Flavor and perfume materials	111	112	.8	98	97	-1.8	93	93	.8
Plastics and resin materials	13,585	13,793	1.5	11,472	11,977	4.4	2,740	2,673	-2.5
Rubber-processing chemicals	283	264	-6.8	209	201	-4.0	138	132	-4.6
Elastomers (synthetic rubbers)	3,929	3,823	-2.7	3,411	3,262	-4.4	918	874	-4.8
Plasticizers	1,209	1,263	4.4	1,156	1,162	.5	246	261	6.1
Surface-active agents	3,321	3,479	4.8	1,766	1,750	-.9	315	317	.6
Pesticides and related products	1,013	1,050	3.6	822	897	9.1	584	787	34.8
Miscellaneous chemicals	57,253	59,696	4.3	24,549	26,001	5.9	3,162	3,476	9.9

[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 1967 was 780 million gallons, or 2.7 percent less than the 802 million gallons produced in 1966. U.S. production of water-gas and oil-gas tar was not reported to the Commission for 1966 or 1967; 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 1967 amounted to 747 million gallons, of which 595 million gallons was consumed by distillation, 129 million gallons as fuel, and 23 million gallons in miscellaneous uses (table 2).

TABLE 2.--*Tar: U.S. production and consumption, 1966 and 1967*

[In thousands of gallons]

Product	1966	1967
PRODUCTION		
Coal tar from coke-oven byproduct plants, total[1]	801,867	780,334
CONSUMPTION		
Total	762,904	746,590
Tar consumed by distillation, total	604,582	594,621
Coal tar distilled or topped by coke-oven operators[1]	302,873	291,624
Coal tar and water-gas tar distilled by producers and tar distillers[2]	301,709	302,997
Tar consumed chiefly as fuel[1]	131,890	129,009
Tar consumed otherwise than by distillation or as fuel, total	26,432	22,960
Coal tar consumed at coke-oven plants for roads and upkeep[1]	2,192	2,468
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	24,240	20,492

[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, creosote oil, and pitch of tar. 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 1967 amounted to 969 million gallons--1.5 percent more than the 955 million gallons reported for 1966. These statistics include data for benzene produced from light oil and petroleum. Sales of benzene by coke-oven operators and petroleum operators in 1967 amounted to 564 million gallons, valued at $135 million, compared with 606 million gallons, valued at $147 million, in 1966. In 1967 the output of toluene[2] (including material produced for use in blending in aviation fuel) amounted to 644 million gallons--10.3 percent more than the 584 million gallons reported for 1966. Sales of toluene in 1967 were 385 million gallons, valued at $72 million, compared with 361 million gallons, valued at $62 million, in 1966. The output of xylene[2] in 1967 (including that produced for blending in motor fuels) was 455 million gallons, compared with 329 million gallons in 1966. About 99 percent of the 455 million gallons of xylene produced in 1967 was obtained from petroleum sources.

Production of crude naphthalene in 1967 (including 377 million pounds of petroleum-derived naphthalene) amounted to 898 million pounds, compared with 848 million pounds in 1966. In 1967 the output of creosote oil for wood preservation was 126 million gallons (100-percent creosote basis), compared with 133 million gallons in 1966. Production of road tar in 1967 was 50 million gallons, compared with 55 million gallons in 1966.

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 $597 million in 1967, compared with $552 million in 1966 and $500 million in 1965.

TABLE 3.--*Tar and tar crudes: Summary of U.S. production of specified products, average 1957-59, annual 1966 and 1967*

[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	1966	1967	Increase, or decrease (-)	
					1976 over 1957-59	1967 over 1966
					Percent	*Percent*
Tar[1]	1,000 gal--	760,816	801,867	780,334	2.6	-2.7
Benzene:						
Tar distillers[2]	1,000 gal--	27,130	...	...	...	...
Coke-oven operators	1,000 gal--	139,121	113,932	90,642	-34.8	-20.4
Petroleum operators	1,000 gal--	155,694	841,340	878,704	464.4	4.4
Total	1,000 gal--	321,945	955,272	969,346	201.1	1.5
Toluene:						
Tar distillers	1,000 gal--	4,162	...	...	...	...
Coke-oven operators	1,000 gal--	31,007	22,791	19,357	-37.6	-15.1
Petroleum operators	1,000 gal--	204,421	561,103	624,454	205.5	11.3
Total	1,000 gal--	239,590	583,894	643,811	168.7	10.3
Xylene:						
Tar distillers	1,000 gal--	795	...	...	...	...
Coke-oven operators	1,000 gal--	8,908	6,124	5,488	-38.4	-10.4
Petroleum operators	1,000 gal--	180,021	[3]322,560	[3]449,349	149.6	39.3
Total	1,000 gal--	189,724	328,684	454,837	139.7	38.4
Naphthalene:						
Crude[4]	1,000 lb--	396,882	493,634	520,991	31.3	5.5
Petroleum naphthalene, all grades	1,000 lb--	...	354,068	376,679	...	6.4
Total	1,000 lb--	396,882	847,702	897,670	126.2	5.9
Creosote oil (Dead oil):[5]						
Distillate as such (100% creosote basis)	1,000 gal--	90,913	114,725	108,832	19.7	-5.1
Creosote content of coal-tar solution (100% creosote basis)	1,000 gal--	14,172	18,141	17,402	22.8	-4.1
Total	1,000 gal--	105,085	132,866	126,234	20.1	-5.0

[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 (see 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, 1967*

[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--	252,138	94,504	13,229	$0.14
Intermediate light oil: Coke-oven operators	1,000 gal--	5,558	1,566	127	.08
Light-oil distillates:					
Benzene, specification and industrial grades, total[2 3]	1,000 gal--	969,346	563,867	135,240	.24
Coke-oven operators	1,000 gal--	90,642	88,169	20,941	.24
Petroleum operators	1,000 gal--	878,704	475,698	114,299	.24
Toluene, all grades, total[2 3]	1,000 gal--	643,811	384,550	71,897	.19
Coke-oven operators	1,000 gal--	19,357	18,619	3,693	.20
Petroleum operators	1,000 gal--	624,454	365,931	68,204	.19
Xylene, all grades, total[2 3]	1,000 gal--	454,837	274,419	49,887	.18
Coke-oven operators	1,000 gal--	5,488	5,763	[4]1,239	.21
Petroleum operators	1,000 gal--	449,349	268,656	48,648	.18
Solvent naphtha:[2] Coke-oven operators	1,000 gal--	3,633	2,558	411	.16
All other light-oil distillates, total	1,000 gal--	10,681	4,327	763	.18
Coke-oven operators	1,000 gal--	8,397	2,068	239	.12
Tar distillers[5]	1,000 gal--	2,284	2,259	524	.23
Naphthalene, crude (tar distillers and coke-oven operators), total[6]	1,000 lb--	520,991	302,593	13,081	.04
Solidifying at--					
Less than 74° C	1,000 lb--	84,202	...	...	...
74° C. to less than 79° C	1,000 lb--	436,789	...	...	...
Crude tar-acid oils:[2] Coke-oven operators	1,000 gal--	28,089	27,565	4,514	.16
Creosote oil (Dead oil) (tar distillers and coke-oven operators) (100% creosote basis), total[7]	1,000 gal--	126,234	116,184	[8]24,788	[8].21
Distillate as such (100% creosote basis)	1,000 gal--	108,832	98,824	19,766	.20
Creosote content of coal-tar solution (100% creosote basis)	1,000 gal--	17,402	17,360	[8]5,022	[8].29
All other distillate products, total[9]	1,000 gal--	...	14,229	2,531	.18
Coke-oven operators	1,000 gal--	3,241	3,192	323	.10
Tar distillers	1,000 gal--	...	11,037	2,208	.20
Tar, road	1,000 gal--	50,059	50,688	6,887	.14
Tar (crude and refined) for other uses[10]	1,000 gal--	9,408	9,406	2,048	.22
Pitch of tar (coke-oven operators and tar distillers):					
Hard (water softening point above 160° F.)	1,000 tons	941	701	26,800	38.23
Other[11]	1,000 tons	935	427	14,160	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 decreased in 1967, compared with 1966; production of xylene increased. 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] Revised.

[5] Includes solvent naphtha and rubber-reclaiming oils.

[6] 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.

[7] Statistics include only data for creosote oil sold for, or used in, wood preserving. In 1967, production of creosote in coal-tar solution (100% solution basis) amounted to 27,420 thousand gallons; sales were 27,355 thousand gallons, valued at 5,022 thousand dollars, with a unit value of $0.18 per gallon.

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

[9] Includes data for pyridine crude bases, crude cresylic acid, and neutral oil produced by tar distillers, and for crude sodium phenolate produced by coke-oven operators.

[10] Includes data for tar used for paint, pipe covering, saturating, and other uses.

[11] Includes soft and medium pitch of tar (water softening points less than 110° F., and 110° F. to 160° F.), 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.

Crude Products from Petroleum and Natural Gas for Chemical Conversion

Crude products that are derived from petroleum and natural gas[3] 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 (table 5A[4]). 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.

The output of crude products derived from petroleum and natural gas as a group amounted to 54,438 million pounds in 1967, or 7.9 percent more than the 50,467 million pounds reported for 1966. The larger output in 1967 is accounted for chiefly by increased production of propylene, xylenes, ethylene, toluene, and benzene. Sales of crude chemicals from petroleum in 1967 amounted to 29,453 million pounds, valued at $858 million, compared with 27,494 million pounds, valued at $865 million, in 1966.

The output of aromatic and naphthenic products from petroleum amounted to 16,455 million pounds in 1967, compared with 14,799 million pounds in 1966. Sales in 1967, which amounted to

TABLE 5A.--*Crude products from petroleum and natural gas for chemical conversion; U.S. production and sales, 1967*

[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	Sales	Unit value[1]
	1,000 pounds	*1,000 pounds*	*1,000 dollars*	*Per pound*
Grand total	54,438,232	29,453,233	858,071	$0.029
AROMATICS AND NAPHTHENES[2]				
Total	16,455,333	9,952,387	266,556	.027
Benzene (1° and 2°), total	6,484,836	3,510,651	114,299	.033
Benzene, 1°	5,597,280	...	...	...
Benzene, 2°	887,556	...	...	...
Naphthalene, all grades	376,679	280,920	13,772	.049
Naphthenic acids, total	24,498	12,771	1,330	.104
Acid number 150-199	6,355	...	...	...
All other	18,143	...	...	...
Toluene, all grades, total	4,539,781	2,660,318	68,204	.026
Nitration grade, 1°	2,846,896	1,794,876	48,093	.027
Pure commercial grade, 2°	600,400	272,712	6,311	.023
Solvent grade, 90%	131,013	79,897	1,851	.023
All other[3]	961,472	512,833	11,949	.023
Xylenes, mixed, total	3,239,807	1,937,010	48,648	.025
Xylene, 3°	934,106	895,648	21,478	.024
All other[3]	2,305,701	1,041,362	27,170	.026
All other aromatics and naphthenes[4]	1,789,732	1,550,717	20,303	.013

See footnotes at end of table.

[3] Statistics on aromatic chemicals from coal tar are given in table 4A, (Tar Crudes: U.S. production and sales, 1967).
[4] See also table 5B, pt. III, which lists these products and identifies the manufacturers.

TABLE 5A.--*Crude products from petroleum and natural gas for chemical conversion: U.S. production and sales, 1967--Continued*

Product	Production	Sales		
		Quantity	Value	Unit value[1]
ALIPHATIC HYDROCARBONS	*1,000 pounds*	*1,000 pounds*	*1,000 dollars*	*Per pound*
Total	37,982,899	19,500,846	591,515	$0.030
C_2 hydrocarbons, total	13,841,364	...	...	...
Acetylene[5]	429,464	...	...	...
Ethane	1,557,385	848,799	7,013	.008
Ethylene	11,854,515	3,353,371	132,560	.040
C_3 hydrocarbons, total	10,512,743	7,129,438	115,428	.016
Propane	4,123,574	3,903,796	49,431	.013
Propane-propylene mixture	617,354	...	...	...
Propylene	5,771,815	[6]3,225,642	[6]65,997	.020
C_4 hydrocarbons, total	8,226,160	5,156,664	231,759	.045
1,3-Butadiene, grade for rubbers (elastomers)	2,660,273	1,620,806	154,266	.095
Butadiene and butylene fractions	894,218	238,578	6,997	.029
n-Butane	2,031,069	1,384,780	15,149	.011
1-Butene	41,053	36,060	1,918	.053
1-Butene and 2-butene mixture[7]	1,391,717	1,125,019	31,856	.028
Isobutane	648,569	300,286	4,078	.014
Isobutylene	...	168,816	11,481	.068
All other[8]	559,261	282,319	6,014	.021
C_5 hydrocarbons, total	784,429	158,778	6,194	.039
Isoprene	196,302	27,605	3,884	.141
n-Pentane	4,989	4,960	223	.045
All other[9]	583,138	126,213	2,087	.016
All other aliphatic hydrocarbons and derivatives, total	4,618,203	2,853,796	98,561	.034
Alpha olefins[10]	328,834	234,156	12,120	.052
Diisobutylene (Diisobutene)	...	35,033	1,837	.052
Heptenes, mixed	288,158	195,828	7,665	.039
Hexane	212,187	...	...	...
Nonene (Tripropylene)	286,278	203,439	7,010	.034
Polybutene[11]	176,176	158,861	12,534	.079
Tetrapropylene	433,903	251,887	8,326	.033
Hydrocarbon derivatives[12]	34,140	21,674	5,717	.264
All other[13]	2,858,527	1,752,918	43,352	.025

[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, crude sodium carbolate and phenate, 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] Includes data for a small amount of propane-propylene mixture.
[7] The statistics represent principally the butene content of crude refinery gases from which butadiene is manufactured.
[8] Includes data for 2-butene, mixed butylenes, and mixed olefins.
[9] Includes data for pentanes, pentenes, and C_5 hydrocarbon mixtures.
[10] 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}.
[11] Includes compounds having a molecular weight of 3,000 or less.
[12] Includes data for tert-butylene mercaptan, di-tert-butyldisulfide and miscellaneous mercaptans.
[13] Includes data for ethane-ethylene mixture, heptane, methane, octanes, n-paraffins, and hydrocarbon mixtures.

9,952 million pounds, valued at $267 million, were 77 million pounds smaller, and valued at $6 million more, than those in 1966. Naphthalene was produced from petroleum sources in substantially greater quantities in 1967 than in 1966. The output of 1° and 2° benzene from petroleum amounted to 6,485 million pounds in 1967--4.4 percent more than the 6,209 million pounds produced in 1966. The output of toluene in 1967 was 4,540 million pounds--11.3 percent more than the 4,079 million pounds produced in 1966. Production of xylene was 3,240 million pounds in 1967, compared with 2,326 million pounds in 1966. These figures include toluene and xylene used in blends in aviation and motor-grade gasolines. The output of naphthenic acids amounted to 24.5 million pounds in 1967, about the same as that produced in 1966.

Production of all aliphatic hydrocarbons and derivatives from petroleum and natural gas was 37,983 million pounds in 1967, compared with 35,668 million pounds in 1966. Sales of these products were 19,501 million pounds, valued at $592 million, in 1967, compared with 17,465 million pounds, valued at $605 million, in 1966. The statistics on production of acetylene (table 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 1967, production of acetylene from hydrocarbon sources, amounted to 429 million pounds. Production of ethylene was 11,855 million pounds in 1967--5.5 percent more than the 11,241 million pounds produced in 1966. The output of propylene was 5,772 million pounds in 1967--23.4 percent more than the 4,677 million pounds produced in 1966. Production of 1,3-butadiene, one of the principal ingredients of S-type synthetic rubber, was 2,660 million pounds in 1967, compared with 2,922 million pounds in 1966. The output of 1,3-butadiene in 1966 was the largest on record.

The following tabulation shows the number of companies that reported production of organic chemical crudes in 1967:

Chemical group	*Number of companies and company divisions*
Tar crudes	13
Petroleum crudes	71

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 1967 was 104,711 million pounds, or 4.1 percent more than the output of 100,627 million pounds reported for 1966 (see table 6). Sales of synthetic organic chemicals in 1967 amounted to 55,177 million pounds, valued at $10,438 million, compared with 52,720 million pounds, valued at $9,958 million, in 1966. Production of all cyclic products (intermediates and finished products combined) in 1967 totaled 33,479 million pounds, or 4.2 percent more than the 32,133 million pounds produced in 1966. The output of acyclic organic chemicals in 1967 amounted to 71,232 million pounds-- 4.0 percent more than the 68,494 million pounds reported for 1966.

TABLE 6.--*Synthetic organic chemicals: Summary of U.S. production and sales of intermediates and finished products, average 1957-59, annual 1966 and 1967*

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

Chemical	Average 1957-59	1966	1967	Increase, or decrease (-)	
				1967 over 1957-59	1967 over 1966
				Percent	*Percent*
Organic chemicals, cyclic and acyclic, grand total:					
Production	45,598,853	100,626,696	104,711,357	129.6	4.1
Sales	23,744,812	52,719,594	55,176,823	132.4	4.7
Sales value	5,743,764	9,958,383	10,438,453	81.7	4.8
Cyclic, total:					
Production	14,381,651	32,132,902	33,479,469	132.8	4.2
Sales	8,829,037	18,867,433	19,328,628	118.9	2.4
Sales value	2,785,100	4,328,963	4,610,293	65.5	6.5
Acyclic, total:					
Production	31,217,202	68,493,794	71,231,888	128.2	4.0
Sales	14,915,775	33,852,161	35,848,195	140.3	5.9
Sales value	2,958,664	5,629,420	5,828,160	97.0	3.5
1. Intermediates, Cyclic					
Production	7,343,167	19,466,775	20,793,132	183.2	6.8
Sales	2,919,264	8,852,033	9,461,180	224.1	6.9
Sales value	481,920	925,092	1,000,359	107.6	8.1
2. Dyes, Cyclic					
Production	150,830	219,194	206,240	36.7	-5.9
Sales	141,731	204,135	198,592	40.1	-2.7
Sales value	182,513	331,453	332,049	81.9	.2
3. Synthetic Organic Pigments, Cyclic					
Production	38,603	51,128	53,322	38.1	4.3
Sales	30,218	43,316	42,867	41.8	-1.0
Sales value	58,648	107,594	108,354	84.8	.7

TABLE 6.--*Synthetic organic chemicals: Summary of U.S. production and sales of intermediates and finished products, average 1957-59, annual 1966 and 1967*--Continued

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

Chemical	Average 1957-59	1966	1967	Increase, or decrease (-)	
				1967 over 1957-59	1967 over 1966
4. Medicinal Chemicals					
Cyclic:				*Percent*	*Percent*
Production	70,654	116,164	110,129	55.9	-5.2
Sales	54,151	76,842	70,120	(1)	-8.8
Sales value	535,297	356,646	348,873	(1)	-2.2
Acyclic:					
Production	31,592	69,305	69,941	121.4	0.9
Sales	28,738	59,621	56,804	(1)	-4.7
Sales value	35,660	41,762	36,402	(1)	-12.8
5. Flavor and Perfume Materials					
Cyclic:					
Production	27,312	61,406	57,978	112.3	-5.6
Sales	22,446	49,597	47,285	110.7	-4.7
Sales value	33,903	60,915	52,866	55.9	-13.2
Acyclic:					
Production	19,033	49,264	53,558	181.4	8.7
Sales	19,958	48,717	49,311	147.1	1.2
Sales value	21,912	31,719	40,495	84.8	27.7
6. Plastics and Resin Materials					
Cyclic:					
Production	2,278,862	5,066,571	5,033,497	120.9	-.7
Sales	1,900,032	4,254,211	4,224,121	122.3	-.7
Sales value	518,501	988,001	1,036,940	100.0	5.0
Acyclic:					
Production	2,628,779	8,518,301	8,759,452	233.2	2.8
Sales	2,438,853	7,217,427	7,753,242	217.9	7.4
Sales value	864,523	1,752,080	1,635,690	89.2	-6.6
7. Rubber-Processing Chemicals					
Cyclic:					
Production	159,182	241,248	220,139	38.3	-8.8
Sales	115,704	182,790	169,970	46.9	-7.0
Sales value	74,479	123,581	116,318	56.2	-5.9
Acyclic:					
Production	29,150	42,087	43,994	50.9	4.5
Sales	22,127	26,495	30,878	39.5	16.5
Sales value	14,289	14,622	15,477	8.3	5.8
8. Elastomers (Synthetic Rubbers)					
Cyclic:					
Production	1,938,732	2,482,375	2,297,637	18.5	-7.4
Sales	1,726,757	2,108,089	1,940,099	12.4	-8.0
Sales value	404,897	463,222	439,580	8.6	-5.1
Acyclic:					
Production	521,811	1,446,812	1,524,908	192.2	5.4
Sales	509,262	1,303,169	1,321,945	159.6	1.4
Sales value	199,627	454,796	434,657	117.7	-4.4
9. Plasticizers					
Cyclic:					
Production	348,210	897,249	929,871	167.0	3.6
Sales	297,423	873,109	865,084	190.8	-.9
Sales value	83,509	156,967	167,827	101.0	6.9
Acyclic:					
Production	118,118	311,742	332,908	181.8	6.8
Sales	100,984	282,577	296,767	193.9	5.0
Sales value	38,772	89,034	93,142	140.2	4.6

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 1966 and 1967*--Continued

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

Chemical	Average 1957-59	1966	1967	Increase, or decrease (-)	
				1967 over 1957-59	1967 over 1966
10. Surface-Active Agents					
Cyclic:				*Percent*	*Percent*
Production	852,314	1,385,217	1,418,444	66.4	2.4
Sales	800,432	879,235	852,238	(1)	-3.1
Sales value	127,936	97,187	95,810	(1)	-1.4
Acyclic:					
Production	502,715	1,936,100	2,060,851	(1)	6.4
Sales	432,135	886,818	897,786	(1)	1.2
Sales value	113,215	217,726	220,877	(1)	1.4
11. Pesticides and related products					
Cyclic:					
Production	440,384	776,909	823,158	86.9	6.0
Sales	375,627	605,229	681,532	81.4	12.6
Sales value	150,837	446,946	627,742	316.2	40.4
Acyclic:					
Production	105,080	236,201	226,505	115.6	-4.1
Sales	91,938	217,027	215,831	134.8	-.6
Sales value	49,049	136,856	159,301	224.8	16.4
12. Miscellaneous					
Cyclic:					
Production	733,401	1,368,666	1,535,922	109.4	12.2
Sales	445,252	738,847	775,540	74.2	5.0
Sales value	132,660	271,359	283,575	113.8	4.5
Acyclic:					
Production	27,260,924	55,883,982	58,159,771	113.3	4.1
Sales	11,271,780	23,810,310	25,225,631	123.8	5.9
Sales value	1,621,617	2,890,825	3,192,119	96.8	10.4

[1]Data for 1967 are not comparable with those for average 1957-59.

The following tabulation shows, by chemical groups, the number of companies that reported production in 1967 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	220	Rubber-processing chemicals	32
Dyes	50	Elastomers (synthetic rubbers)	31
Synthetic organic pigments	34	Plasticizers	57
Medicinal chemicals	108	Surface-active agents	213
Flavor and perfume materials	54	Pesticides and related products	90
Plastics and resin materials	291	Miscellaneous chemicals	330

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 1967 nearly half of the total output of cyclic intermediates was sold; the rest was consumed chiefly by the producing plants in the manufacture of more advanced intermediates and finished products.

Total production of cyclic intermediates in 1967--20,793 million pounds--was the largest on record, and was 6.8 percent larger than the output of 19,467 million pounds reported for 1966. The larger output of cyclic intermediates in 1967 was attributable to increased demand by the chemical products industries, particularly those industries that produce pesticides, pigments, and plasticizers, and to an increase in exports. Sales of cyclic intermediates in 1967 amounted to 9,461 million pounds, valued at $1,000 million, compared with 8,852 million pounds, valued at $925 million, in 1966. In terms of quantity, sales of cyclic intermediates in 1967 were 6.9 percent larger than those in 1966 and in terms of value, 8.1 percent larger.

Production of ethylbenzene was 3,347 million pounds in 1967, or 3.2 percent larger than the 3,245 million pounds reported for 1966. Output of styrene in 1967 was 3,278 million pounds, an increase of 2.7 percent over the 3,192 million pounds in 1966. Other intermediates whose production exceeded 1 billion pounds in 1967 were cyclohexane (1,777 million pounds), phenol (1,356 million pounds), and cumene (1,134 million pounds). The output of other large-volume intermediates in 1967 compared with production in 1966 was as follows: Terephthalic acid, dimethyl ester, 936 million pounds (17.4 percent larger than in 1966); p-xylene, 757 million pounds (46.0 percent larger); phthalic anhydride, 727 million pounds (7.7 percent larger); terephthalic acid, 694 million pounds (35.0 percent larger); alkylbenzenes, 684 million pounds (4.3 percent smaller); o-xylene, 493 million pounds (22.3 percent larger); and chlorobenzene, 483 million pounds (16.2 percent smaller). Production of isocyanates amounted to 257 million pounds (15.0 percent larger than in 1966), and production of aniline was 226 million pounds, a decrease of 5.6 percent from 1966.

TABLE 7A.--*Cyclic intermediates: U.S. production and sales, 1967*

[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	20,793,132	9,461,180	1,000,359	$0.11
Acetanilide, tech	5,540	...	...	...
o-Acetoacetanisidide	523	...	...	...
Acetophenone, tech	1,773	1,191	287	.24
Alkylbenzenes[2]	684,416	641,895	59,238	.09
4'-Aminoacetanilide (Acetyl-p-phenylenediamine)	590	...	...	...
5-Amino-2-(p-aminoanilino)benzenesulfonic acid	4	...	...	...
2-(p-Aminoanilino)-5-nitrobenzenesulfonic acid	18	...	...	...
1-Aminoanthraquinone and salt	1,289	...	...	...
2-Aminoanthraquinone and salt	738	...	...	...
6-Amino-3,4'-azodibenzenesulfonic acid (C.I. Acid Yellow 9)	22	...	...	...
1-Amino-4-benzamidoanthraquinone	37	...	...	...
1-Amino-5-benzamidoanthraquinone	112	...	...	...
2-Amino-p-benzenedisulfonic acid [SO_3H=1]	26	...	...	...
1-Amino-4-bromo-9,10-dihydro-9,10-dioxo-2-anthracenesulfonic acid and sodium salt	144	...	...	...
1-Amino-2-bromo-4-hydroxyanthraquinone	208	...	...	...
1-Amino-2-bromo-4-p-toluidinoanthraquinone	10	...	...	...

See footnotes at end of table.

TABLE 7A.--*Cyclic intermediates: U.S. production and sales, 1967*--Continued

Chemical	Production	Sales		
		Quantity	Value	Unit value[1]
	1,000 pounds	*1,000 pounds*	*1,000 dollars*	*Per pound*
1-Amino-5-chloroanthraquinone	78	...	...	...
6-Amino-4-chloro-m-toluenesulfonic acid [SO_3H=1]	1,081	263	313	$1.19
1-Amino-2,4-dibromoanthraquinone	333	...	...	...
4-Amino-3-hydroxy-1-naphthalenesulfonic acid (1,2,4-acid)	459	...	...	...
6-Amino-4-hydroxy-2-naphthalenesulfonic acid (Gamma acid), sodium salt	278	...	...	...
7-Amino-4-hydroxy-2-naphthalenesulfonic acid (J acid), sodium salt	488	...	...	...
N-(4-Amino-3-methoxy-1-anthraquinonyl)-p-toluenesulfonamide	20	...	...	...
4'-Amino-N-methylacetanilide	21	...	...	...
6-Amino-1,3-naphthalenedisulfonic acid (Amino I acid)	807	...	...	...
7-Amino-1,3-naphthalenedisulfonic acid (Amino G acid)	637	...	...	...
4-Amino-1-naphthalenesulfonic acid (Naphthionic acid)	141	...	...	...
5-Amino-2-naphthalenesulfonic acid (1,6-Cleve's acid)	65	...	...	...
5(and 8)-Amino-2-naphthalenesulfonic acid (Cleve's acid, mixed)	53	...	...	...
6-Amino-2-naphthalenesulfonic acid (Broenner's acid)	115	...	...	...
8-Amino-1-naphthalenesulfonic acid (Peri acid)	134	...	...	...
8-Amino-2-naphthalenesulfonic acid (1,7-Cleve's acid)	98	...	...	...
2-Amino-5-nitrobenzenesulfonic acid [SO_3H=1]	33	...	...	...
2-Amino-4-nitrophenol	102	...	...	...
4-Amino-4'-nitro-2,2'-stilbenedisulfonic acid	145	...	...	...
p-[(p-Aminophenyl)azo]benzenesulfonic acid	217	...	...	...
4-Amino-m-toluenesulfonic acid [SO_3H=1]	239	...	...	...
6-Amino-m-toluenesulfonic acid [SO_3H=1]	399	209	192	.92
Aniline (Aniline oil)	225,556	117,627	12,799	.11
7-Anilino-4-hydroxy-2-naphthalenesulfonic acid (Phenyl J acid)	58	...	...	...
Anilinomethanesulfonic acid and salt	321	...	...	...
8-Anilino-1-naphthalenesulfonic acid (Phenyl peri acid)	225	...	...	...
o-Anisidine	2,279	755	549	.73
o-Anisidinomethanesulfonic acid	442	...	...	...
Anthra[1,9-cd]pyrazol-6(2H)-one (Pyrazoleanthrone)	32	...	...	...
N,N'-(1,5-Anthraquinonylene)dianthranilic acid	22	...	...	...
Benzaldehyde, tech	4,475	...	...	...
1-Benzamido-5-chloroanthraquinone	112	...	...	...
7H-Benz[de]anthracen-7-one (Benzanthrone)	1,754	338	450	1.33
1,2,4,5-Benzenetetracarboxylic-1,2:4,5-dianhydride	...	56	239	4.27
Benzoic acid, tech	22,339	10,173	1,762	.17
2-Benzothiazolethiol (2-Mercaptobenzothiazole), sodium salt	23,160	...	...	...
o-Benzoylbenzoic acid	5,107	...	...	...
[3,3'-Bianthra[1,9-cd]pyrazole]-6,6'-(2H,2'H)dione (Pyrazoleanthrone yellow)	24	...	...	...
[4,4'-Bi-7H-benz[de]anthracene]-7,7'-dione	523	...	...	...
1,4-Bis[1-anthraquinonylamino]anthraquinone	99	...	...	...
4,4'-Bis[dimethylamino]benzophenone (Michler's ketone)	75	...	...	...
3-Bromo-7H-benz[de]anthracen-7-one (3-Bromobenzanthrone)	163	...	...	...
1-Bromo-4-(methylamino)anthraquinone	53	...	...	...
6-Bromo-3-methyl-7H-dibenz[f,ij]isoquinoline-2,7-(3H)-dione	5	...	...	...
1-Chloroanthraquinone	184	...	...	...
2-Chloroanthraquinone	793	...	...	...
Chlorobenzene, mono-	483,294	67,857	4,145	.06
o-(p-Chlorobenzoyl)benzoic acid	933	...	...	...
1-Chloro-2,4-dinitrobenzene (Dinitrochlorobenzene)	6,257	1,768	272	.15
6-Chlorometanilic acid	17	...	...	...
1-Chloro-2-methylanthraquinone	225	...	...	...
2-Chloro-4-nitroaniline (o-Chloro-p-nitroaniline)	275	221	206	.93
4-Chloro-2-nitroaniline (p-Chloro-o-nitroaniline)	503	463	379	.82
1-Chloro-5-nitroanthraquinone	84	...	...	...
1-Chloro-2-nitrobenzene (Chloro-o-nitrobenzene)	34,226	12,402	951	.08
1-Chloro-4-nitrobenzene (Chloro-p-nitrobenzene)	101,508	...	...	...
4-Chloro-3-nitrobenzenesulfonamide	420	...	...	...
2-Chloro-5-nitrobenzenesulfonic acid and sodium salt	368	...	...	...
4-Chloro-3-nitrobenzenesulfonyl chloride	553	...	...	...
o-(4-Chloro-3-nitrobenzoyl)benzoic acid	147	...	...	...
α-Chlorotoluene (Benzyl chloride)	66,390	10,789	1,927	.18
[(4-Chloro-o-tolyl)thio]acetic acid	58	...	...	...
Cinnamoyl chloride	86	...	...	...

See footnotes at end of table.

TABLE 7A.--*Cyclic intermediates: U.S. production and sales, 1967*--Continued

Chemical	Production	Sales		
		Quantity	Value	Unit value[1]
	1,000 pounds	*1,000 pounds*	*1,000 dollars*	*Per pound*
Cresols, total[3]	78,068	70,456	14,041	$0.20
o-Cresol	16,945	17,860	2,393	.13
(m,p)-Cresol	35,972	31,685	4,715	.15
All other[4]	25,151	20,911	6,933	.33
Cresylic acid, refined[3]	42,386	51,808	7,376	.14
Cumene	1,134,334	...	...	...
Cyclohexane	1,776,620	1,801,949	69,014	.04
Cyclohexanol	...	3,384	803	.24
Cyclohexanone	429,457	17,422	3,088	.18
Cyclohexylamine	11,571	5,148	1,358	.26
1,4-Diaminoanthraquinone	47	...	...	...
2,6-Diaminoanthraquinone	193	...	...	...
1,4-Diamino-2,3-dihydroanthraquinone	500	...	...	...
4,4'-Diamino-2,2'-stilbenedisulfonic acid	8,523	...	...	...
4,5'-Dibenzamido-1,1'-iminodianthraquinone	149	...	...	...
1,5-Dibenzoylnaphthalene	330	...	...	...
3,9-Dibromo-7H-benz[de]anthracen-7-one	367	...	...	...
1,5-Dichloroanthraquinone	106	...	...	...
o-Dichlorobenzene	50,366	45,970	4,721	.10
p-Dichlorobenzene	66,482	64,719	5,782	.09
3,3'-Dichlorobenzidine base and salts	3,025	2,783	3,454	1.24
2,5-Dichloro-4-(3-methyl-5-oxo-2-pyrazolin-1-yl)benzenesulfonic acid	389	25	59	2.36
1,4-Dichloro-2-nitrobenzene (Nitro-p-dichlorobenzene)	623	32	7	.22
2,5-Dichlorosulfanilic acid [SO_3H=1]	96	...	...	...
Dicyclopentadiene (includes cyclopentadiene)	66,562	40,801	2,285	.06
p-(Diethylamino)benzaldehyde	28	...	...	...
N,N-Diethylaniline	1,617	959	491	.51
9,10-Dihydro-9,10-dioxo-1,8-anthracenedisulfonic acid, potassium salt	282	...	...	...
9,10-Dihydro-9,10-dioxo-2,6-anthracenedisulfonic acid and salt	421	...	...	...
9,10-Dihydro-9,10-dioxo-1-anthracenesulfonic acid and salt (Gold salt)	3,253	...	...	...
9,10-Dihydro-5-nitro-9,10-dioxo-1-anthracenesulfonic acid	108	...	...	...
1,4-Dihydroxyanthraquinone (Quinizarin)	2,068	216	257	1.19
1,5-Dihydroxyanthraquinone (Anthrarufin)	172	...	...	...
2,6-Dihydroxyanthraquinone (Anthraflavic acid)	7	...	...	...
1,5-Dihydroxy-4,8-dinitroanthraquinone	76	...	...	...
1,8-Dihydroxy-4,5-dinitroanthraquinone (4,5-Dinitrochrysazin)	247	...	...	...
16,17-Dihydroxyviolanthrone (Dihydroxydibenzanthrone)	405	...	...	...
3,3'-Dimethoxybenzidine (o-Dianisidine)	370	343	578	1.69
N,N-Dimethylaniline	15,145	...	...	...
N,N-Dimethylbenzylamine	93	87	108	1.24
2,4-Dinitroaniline	187	94	69	.73
2,4-Dinitrophenol, tech	775	...	...	...
4,4'-Dinitrostilbene-2,2'-disulfonic acid	11,443	...	...	...
Diphenylamine	28,244	24,498	5,327	.22
1,4-Di-p-toluidinoanthraquinone	145	...	...	...
Divinylbenzene	2,661	1,977	1,523	.77
p-Dodecylphenol	13,610	...	...	...
N-Ethylaniline, refined	1,185	...	...	...
α-(N-Ethylanilino)-p-toluenesulfonic acid	116	...	...	...
Ethylbenzene[5]	3,347,308	469,781	18,800	.04
N-Ethyl-N-phenylbenzylamine	427	...	...	...
3-(N-Ethyl-m-toluidino)propionitrile	71	...	...	...
Hydroquinone, tech	14,206	10,516	7,450	.71
p-Hydroxybenzenesulfonic acid	5,088	5,034	729	.14
4-Hydroxymetanilamide	78	...	...	...
4-Hydroxymetanilic acid	64	...	...	...
3-Hydroxy-2,7-naphthalenedisulfonic acid, disodium salt	1,301	...	...	...
6-Hydroxy-2-naphthalenesulfonic acid and sodium salt	447	217	172	.79
N-(7-Hydroxy-1-naphthyl)acetamide	22	...	...	...
1,1'-Iminobis[4-aminoanthraquinone]	129	...	...	...
1,1'-Iminobis[5-benzamidoanthraquinone]	24	...	...	...

See footnotes at end of table.

TABLE 7A.--*Cyclic intermediates: U.S. production and sales, 1967*--Continued

Chemical	Production	Sales		
		Quantity	Value	Unit value[1]
	1,000 pounds	*1,000 pounds*	*1,000 dollars*	*Per pound*
7,7′-Iminobis[4-hydroxy-2-naphthalenesulfonic acid]	10	...	...	...
1,1′-Iminobis[4-nitroanthraquinone]	116	...	...	...
1,1′-Iminodianthraquinone (1,1′-Dianthrimide)	114	...	...	...
Isocyanic acid derivatives, total	257,096	217,260	69,371	$0.32
Diphenylmethane 4,4′-diisocyanate (MDI)	5,578	3,228	3,255	1.01
Toluene 2,4- and 2,6-diisocyanate (80/20 mixture)	199,695	183,206	53,832	.29
Other isocyanic acid derivatives	51,823	30,826	12,284	.40
4,4′-Isopropylidenediphenol (Bisphenol A)	130,352	50,555	10,410	.21
Isoviolanthrone (Isodibenzanthrone)	41	...	...	...
Leuco quinizarin (1,4,9,10-Anthratetrol)	172	...	...	...
Melamine	78,082	49,981	12,233	.24
dl-p-Mentha-1,8-diene (Limonene)	7,920	7,042	448	.06
o-Mercaptobenzoic acid (Thiosalicylic acid)	22	...	...	...
Metanilic acid(m-Aminobenzenesulfonic acid)	1,124	...	...	...
1-(Methylamino)anthraquinone	639	...	...	...
4,4′-Methylenebis[N,N-dimethylaniline] (Methane base)	992	432	247	.57
2-Methyl-1-nitroanthraquinone	77	...	...	...
p-(3-Methyl-5-oxo-2-pyrazolin-1-yl)benzenesulfonic acid	126	...	...	...
4-(3-Methyl-5-oxo-2-pyrazolin-1-yl)-m-toluenesulfonic acid [SO_3H=1]	12	...	...	...
3-Methyl-1-phenyl-2-pyrazolin-5-one (Developer Z)	127	95	153	1.61
α-Methylstyrene	15,941	10,468	904	.09
Naphthalene, solidifying at 79° C. or above (refined flake) (from domestic crude)	2,280	...	...	...
2,7-Naphthalenedisulfonic acid	38	...	...	...
1,4,5,8-Naphthalenetetracarboxylic acid	72	...	...	...
Naphth[1,2-d][1,2,3]oxadiazole-5-sulfonic acid	328	...	...	...
p-Nitroaniline	9,001	...	...	...
5-Nitro-o-anisidine [NH_2=1]	119	...	...	...
Nitrobenzene	347,700	12,623	1,136	.09
m-Nitrobenzenesulfonic acid and sodium salt	3,090	2,551	919	.36
7(and 8)-Nitronaphth[1,2-d][1,2,3]oxadiazole-5-sulfonic acid	278	...	...	...
p-Nitrophenol and sodium salt	15,370	15,145	5,868	.39
3-Nitro-p-toluenesulfonic acid [SO_3H=1]	67	...	...	...
5-Nitro-o-toluenesulfonic acid [SO_3H=1]	10,419	...	...	...
2-Nitro-p-toluidine [NH_2=1]	864	...	...	...
5-Nitro-o-toluidine [NH_2=1]	156	192	269	1.40
Nonylphenol	55,681	26,445	2,944	.11
1-[(7-Oxo-7H-benz[de]anthracen-3-yl)amino]anthraquinone	391	...	...	...
1,1′-[(7-Oxo-7H-benz[de]anthracen-3,9-ylene)diimino]dianthraquinone	578	...	...	...
3,4,9,10-Perylenetetracarboxylic-3,4:9,10-diimide	202	...	...	...
Phenol, grand total[3]	1,356,331	547,352	48,774	.09
Natural, total	59,108	53,858	5,140	.10
From coal tar	40,823	40,261	3,735	.09
From petroleum	18,285	13,597	1,405	.10
Synthetic, total	1,297,223	493,494	43,634	.09
From cumene	721,339	313,150	27,209	.09
Other synthetic	575,884	180,344	16,425	.09
Phenylacetonitrile (α-Tolunitrile)	...	349	178	.51
p-Phenylazoaniline (C.I. Solvent Yellow 1) and hydrochloride	271	...	...	...
p-Phenylenediamine	642	...	...	...
1-Phenyl-1,2-propanedione, 2-oxime	266	...	...	...
Phthalic anhydride	727,472	403,455	48,180	.12
Picolines, total[3]	4,540	4,144	1,864	.45
2-Picoline (α-Picoline)	3,221	3,172	1,593	.50
Other picolines	1,319	972	271	.28
Piperidine	382	...	...	...
Primuline base	31	...	...	...

See footnotes at end of table.

TABLE 7A.--*Cyclic intermediates: U.S. production and sales, 1967*--Continued

Chemical	Production	Sales		
		Quantity	Value	Unit value[1]
	1,000 pounds	*1,000 pounds*	*1,000 dollars*	*Per pound*
Propiophenone	342	...	...	...
8,16-Pyranthrenedione	29	...	...	...
2° Pyridine[3]	5,363	5,126	3,049	$0.59
Salicylaldehyde	3,444	2,166	2,137	.99
Salicyclic acid, tech	30,149	5,333	1,852	.35
Styrene, all grades	3,278,137	1,551,343	119,543	.08
Terephthalic acid	693,981	...	...	...
Terephthalic acid, dimethyl ester	936,152	353,470	69,365	.20
1,4,5,8-Tetrachloroanthraquinone	107	...	...	...
1,4,5,8-Tetrahydroxyanthraquinone, leuco derivative	167	...	...	...
3,3'-Thiobis[7H-benz[de]anthracen-7-one]	54	...	...	...
Toluene-2,4-diamine (4-m-Tolylenediamine)	62,792	...	...	...
o-(p-Toluoyl)benzoic acid	240	...	...	...
4-(o-Tolylazo)-o-toluidine (C.I. Solvent Yellow 3)	306	26	32	1.23
2,4,6-Trichloro-s-triazine (Cyanuric chloride)	...	5,091	1,620	.32
1,3,3-Trimethyl-Δ^2,α-indolineacetaldehyde	172	...	...	...
1,3,3-Trimethyl-2-methyleneindoline (Trimethyl base)	393	...	...	...
7,7'-Ureylenebis[4-hydroxy-2-naphthalenesulfonic acid] (J acid urea)	342	...	...	...
Violanthrone (Dibenzanthrone)	254	...	...	...
o-Xylene	493,219	464,947	13,909	.03
p-Xylene	757,347	635,229	51,966	.08
All other cyclic intermediates	2,694,055	1,606,134	301,698	.19

[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 coal tar and some m-cresol and p-cresol.
[5] Does not include ethylbenzene produced and consumed in continuous-process styrene manufacture.

Table 7A[1] gives statistics on production and sales of cyclic intermediates in 1967. 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. Individual statistics given in the table represent more than 87 percent of the total quantity of intermediates produced. Since many of the intermediates included in the statistics represent successive steps in production, the totals necessarily include considerable duplication.

[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 1966-67.

Dyes

This report covers domestic production and sales of synthetic dyes (table 8A[2]), all of which are 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 are manufactured by one or more domestic producers. The large number of dyes results from the many different types of materials to which dyes are applied, the different conditions of service for which dyes are required, and 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.

Total domestic production of dyes in 1967 amounted to 206 million pounds, or 5.9 percent less than the 219 million pounds produced in 1966. Sales of dyes in 1967 amounted to 199 million pounds, valued at $332 million, compared with 204 million pounds, valued at $331 million, in 1966. In terms of quantity, sales of dyes in 1967 were 2.7 percent smaller than in 1966 and in terms of value, 0.2 percent larger. The average unit value of sales of all dyes in 1967 was $1.67 a pound, or 3.1 percent greater than the $1.62 a pound reported in 1966.

Although the output and sales of dyes declined slightly in 1967 compared with 1966, the output of many individual dyes was cut back substantially during 1967. The output of a number of important medium- and low-priced dyes was much smaller in 1967 than in 1966. Production of Mordant Black 11 was 359,000 pounds in 1967, or 83.0 percent less than the 2.1 million pounds produced in 1966; that of Mordant Black 17 was 178,000 pounds, or 72.9 percent less than the 656,000 pounds produced in 1966; and that of Acid Blue 9 was 426,000 pounds, or 71.9 percent less than the 1.5 million pounds produced in 1966. Other important dyes whose output was substantially smaller in 1967 than in 1966 were Direct Black 80 (44.0 percent), Direct Blue 2 (43.2 percent), Acid Black 1 (42.7 percent), Vat Green 9 (32.5 percent), Vat Blue 20 (32.6 percent), Vat Green 8 (29.9 percent), Vat Black 27 (25.8 percent), and Vat Green 3 (21.7 percent).

Conversely, the output of a number of important dyes was larger in 1967 than in 1966. Production of Vat Yellow 2 was 2.9 million pounds, or 22.3 percent more than the 2.4 million pounds produced in 1966; that of Vat Green 1 was 4.7 million pounds, or 16.1 percent more than the 4.1 million pounds produced in 1966. Other important dyes whose output was larger in 1967 than in 1966 were Basic Orange 21 (110.8 percent), Basic Yellow 11 (41.3 percent), Direct Yellow 106 (40.4 percent), Vat Orange 1 (33.1 percent), Vat Orange 15 (28.3 percent), and Direct Yellow 11 (16.1 percent).

[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 1966-67.

TABLE 8A.--*Benzenoid dyes: U.S. production and sales, 1967*

[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	206,240	198,592	332,049	$1.67
ACID DYES				
Total	17,546	17,495	38,641	2.21
Acid yellow dyes, total	3,912	3,586	8,607	2.40
Acid Yellow 3	40	37	123	3.32
Acid Yellow 11	58	53	126	2.38
Acid Yellow 17	506	539	1,127	2.09
Acid Yellow 23	452	332	771	2.32
Acid Yellow 36	213	208	322	1.55
Acid Yellow 40	257	231	650	2.81
Acid Yellow 42	62	56	97	1.73
Acid Yellow 44	39	42	130	3.10
Acid Yellow 54	82	77	163	2.12
Acid Yellow 73	...	78	174	2.23
Acid Yellow 99	51	78	178	2.28
Acid Yellow 124	116	110	268	2.44
Acid Yellow 151	259	278	674	2.42
All other	1,777	1,467	3,804	2.59
Acid orange dyes, total	2,677	2,828	4,641	1.64
Acid Orange 1	59	59	152	2.58
Acid Orange 7	556	570	600	1.05
Acid Orange 8	417	393	473	1.20
Acid Orange 10	284	319	405	1.27
Acid Orange 24	383	498	689	1.38
Acid Orange 60	90	85	208	2.45
Acid Orange 74	56	...	...	...
Acid Orange 116	282	307	689	2.24
All other	550	597	1,425	2.39
Acid red dyes, total	3,080	2,582	5,062	1.96
Acid Red 1	381	463	422	.91
Acid Red 4	100	100	179	1.79
Acid Red 14	95	88	123	1.40
Acid Red 18	77	94	106	1.13
Acid Red 26	111	114	139	1.22
Acid Red 37	33	43	124	2.88
Acid Red 73	285	241	561	2.33
Acid Red 85	141	152	271	1.78
Acid Red 87	646	...	...	...
Acid Red 88	91	120	162	1.35
Acid Red 89	26	22	30	1.36
Acid Red 99	70	63	134	2.13
Acid Red 114	94	102	230	2.25
Acid Red 137	139	140	424	3.03
Acid Red 151	169	174	364	2.09
Acid Red 182	54	51	153	3.00
Acid Red 186	22	19	54	2.84
All other	546	596	1,586	2.66
Acid violet dyes, total	303	387	846	2.19
Acid Violet 1	39	49	77	1.57
Acid Violet 3	38	78	158	2.03
Acid Violet 7	38	53	72	1.36
Acid Violet 12	...	22	39	1.77
Acid Violet 49	77	63	161	2.56
All other	111	122	339	2.78

See footnotes at end of table.

TABLE 8A.--*Benzenoid dyes: U.S. production and sales, 1967*--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	3,105	3,289	10,151	$3.09
Acid Blue 7	49	70	237	3.39
Acid Blue 9	426	598	842	1.41
Acid Blue 25	169	153	842	5.50
Acid Blue 40	43	46	197	4.28
Acid Blue 41	63	59	210	3.56
Acid Blue 43	...	17	139	8.18
Acid Blue 45	637	528	1,621	3.07
Acid Blue 62	25	29	186	6.41
Acid Blue 78	29	36	270	7.50
Acid Blue 90	...	9	114	12.67
Acid Blue 113	532	533	938	1.76
Acid Blue 158 and 158A	133	158	350	2.22
All other	999	1,053	4,205	3.99
Acid green dyes, total	800	914	2,690	2.94
Acid Green 3	102	149	204	1.37
Acid Green 9	...	20	84	4.20
Acid Green 16	102	98	411	4.19
Acid Green 20	42	37	64	1.73
Acid Green 25	305	316	927	2.93
All other	249	294	1,000	3.40
Acid brown dyes, total	693	742	1,604	2.16
Acid Brown 14	337	330	466	1.41
All other	356	412	1,138	2.76
Acid black dyes, total	2,976	3,167	5,040	1.59
Acid Black 1	722	815	1,047	1.28
Acid Black 24	61	95	165	1.74
Acid Black 48	15	22	127	5.77
Acid Black 52	697	728	1,207	1.66
Acid Black 60	74	85	297	3.49
Acid Black 107	179	159	423	2.66
All other	1,228	1,263	1,774	1.40
AZOIC DYES AND COMPONENTS				
Azoic Compositions				
Total	1,740	1,887	3,381	1.79
Azoic Yellow 1	28	24	39	1.62
Azoic Orange 3	72	82	144	1.76
Azoic Red 1	149	147	270	1.84
Azoic Red 2	79	79	134	1.70
Azoic Red 6	179	177	298	1.68
Azoic Blue 3	131	119	246	2.07
Azoic Brown 9	181	181	567	3.13
Azoic black dyes	595	777	1,115	1.44
All other azoic compositions	326	301	568	1.89
Azoic Diazo Components, Bases (Fast Color Bases)				
Total	797	752	1,104	1.47
Azoic Diazo Component 4, base	11	...	...	...
Azoic Diazo Component 5, base	...	6	17	2.83
Azoic Diazo Component 10, base	...	8	21	2.62
Azoic Diazo Component 12, base	124	127	127	1.00
Azoic Diazo Component 32, base	207	203	286	1.41
All other azoic diazo components, bases	455	408	653	1.60

See footnotes at end of table.

TABLE 8A.--*Benzenoid dyes: U.S. production and sales, 1967*--Continued

Dye	Production	Sales		
		Quantity	Value	Unit value[1]
AZOIC DYES AND COMPONENTS--Continued				
Azoic Diazo Components, Salts (Fast Color Salts)	*1,000 pounds*	*1,000 pounds*	*1,000 dollars*	*Per pound*
Total	1,814	1,890	1,717	$0.91
Azoic Diazo Component 1, salt	...	13	14	1.08
Azoic Diazo Component 3, salt	570	544	284	.52
Azoic Diazo Component 5, salt	41	58	60	1.03
Azoic Diazo Component 6, salt	66	67	68	1.01
Azoic Diazo Component 8, salt	39	50	48	.96
Azoic Diazo Component 9, salt	123	150	95	.63
Azoic Diazo Component 10, salt	30	37	40	1.08
Azoic Diazo Component 11, salt	30	23	29	1.26
Azoic Diazo Component 12, salt	53	57	58	1.02
Azoic Diazo Component 13, salt	226	257	177	.69
Azoic Diazo Component 28, salt	255	278	241	.87
Azoic Diazo Component 44, salt	17	...	...	...
Azoic Diazo Component 48, salt	...	10	13	1.30
Azoic Diazo Component 49, salt	102	104	271	2.61
All other azoic diazo components, salts	262	242	319	1.32
Azoic Coupling Components (Naphthol AS and Derivatives)				
Total	1,945	1,617	2,707	1.67
Azoic Coupling Component 2	348	...	...	...
Azoic Coupling Component 3	11	12	34	2.83
Azoic Coupling Component 4	8	8	16	2.00
Azoic Coupling Component 5	...	10	27	2.70
Azoic Coupling Component 7	303	311	523	1.68
Azoic Coupling Component 14	186	147	268	1.82
Azoic Coupling Component 17	87	...	...	...
Azoic Coupling Component 18	482	415	460	1.11
Azoic Coupling Component 19	10	9	43	4.78
Azoic Coupling Component 20	62	41	75	1.83
Azoic Coupling Component 21	71	56	103	1.84
Azoic Coupling Component 29	...	8	17	2.12
Azoic Coupling Component 43	17	16	44	2.75
All other azoic coupling components	360	584	1,097	1.88
BASIC DYES				
Total	11,896	11,623	30,123	2.59
Basic yellow dyes, total	2,701	2,701	8,295	3.07
Basic Yellow 2	397	433	940	2.17
Basic Yellow 11	865	757	2,917	3.85
Basic Yellow 13	273	257	914	3.56
All other	1,166	1,254	3,524	2.81
Basic orange dyes, total	1,563	1,643	3,251	1.98
Basic Orange 1	352	370	395	1.07
Basic Orange 2	477	591	747	1.26
Basic Orange 21	565	508	1,480	2.91
All other	169	174	629	3.61
Basic red dyes, total	1,584	1,383	4,370	3.16
Basic Red 9	...	8	27	3.38
Basic Red 14	385	395	1,189	3.01
All other	1,199	980	3,154	3.22
Basic violet dyes, total	3,103	2,889	6,022	2.08
Basic Violet 1	971	858	1,102	1.28
Basic Violet 4	33	29	98	3.38
Basic Violet 10	330	310	1,130	3.65
Basic Violet 16	136	119	402	3.38
All other	1,633	1,573	3,290	2.09

See footnotes at end of table.

TABLE 8A.--*Benzenoid dyes: U.S. production and sales, 1967*--Continued

Dye	Production	Sales		
		Quantity	Value	Unit value[1]
BASIC DYES--Continued	*1,000 pounds*	*1,000 pounds*	*1,000 dollars*	*Per pound*
Basic blue dyes, total	1,588	1,503	5,166	$3.44
Basic Blue 1	77	56	185	3.30
Basic Blue 5	34	23	109	4.74
Basic Blue 9	...	386	846	2.19
Basic Blue 26	53	53	172	3.25
All other	1,424	985	3,854	3.91
Basic Green 1	89	86	285	3.31
Basic Green 4	503	605	1,516	2.51
Basic Brown 1	171	189	309	1.63
Basic Brown 4	525	558	722	1.29
All other basic dyes	69	66	187	2.83
DIRECT DYES				
Total	32,264	32,549	49,138	1.51
Direct yellow dyes, total	9,383	9,116	14,150	1.55
Direct Yellow 4	457	434	887	2.04
Direct Yellow 5	138	174	511	2.94
Direct Yellow 6	514	564	822	1.46
Direct Yellow 11	1,074	984	978	.99
Direct Yellow 12	327	300	785	2.62
Direct Yellow 26	...	6	18	3.00
Direct Yellow 28	239	270	540	2.00
Direct Yellow 44	697	646	1,155	1.79
Direct Yellow 50	309	347	772	2.22
Direct Yellow 105	244	241	565	2.34
Direct Yellow 106	1,137	1,089	1,863	1.71
All other	4,247	4,061	5,254	1.29
Direct orange dyes, total	2,201	2,169	5,110	2.36
Direct Orange 1	18	23	49	2.13
Direct Orange 8	142	145	225	1.55
Direct Orange 15	226	204	220	1.08
Direct Orange 26	54	60	129	2.15
Direct Orange 29	125	119	289	2.43
Direct Orange 34	111	105	241	2.30
Direct Orange 37	48	50	132	2.64
Direct Orange 39	217	222	445	2.00
Direct Orange 72	412	402	886	2.20
Direct Orange 73	114	104	405	3.89
Direct Orange 81	76	80	242	3.02
Direct Orange 102	246	238	639	2.68
All other	412	417	1,208	2.90
Direct red dyes, total	3,572	3,130	6,672	2.13
Direct Red 1	186	169	296	1.75
Direct Red 2	245	248	450	1.81
Direct Red 4	37	24	67	2.79
Direct Red 10	20	18	29	1.61
Direct Red 13	72	75	124	1.65
Direct Red 16	77	61	117	1.92
Direct Red 23	217	219	534	2.44
Direct Red 24	182	184	377	2.05
Direct Red 26	317	126	297	2.36
Direct Red 28	249	212	297	1.40
Direct Red 31	23	17	77	4.53
Direct Red 37	97	87	236	2.71
Direct Red 39	43	50	142	2.84
Direct Red 72	319	283	566	2.00
Direct Red 75	22	17	60	3.53
Direct Red 79	139	130	326	2.51
Direct Red 80	354	379	667	1.76
Direct Red 81	429	368	916	2.49

See footnotes at end of table.

TABLE 8A.--*Benzenoid dyes: U.S. production and sales, 1967*--Continued

Dye	Production	Sales		
		Quantity	Value	Unit value[1]
DIRECT DYES--Continued				
Direct red dyes--Continued	*1,000 pounds*	*1,000 pounds*	*1,000 dollars*	*Per pound*
Direct Red 83	106	97	168	$1.73
Direct Red 122	...	7	30	4.29
Direct Red 149	...	20	55	2.75
All other	438	339	841	2.48
Direct violet dyes, total	224	178	509	2.86
Direct Violet 9	131	100	239	2.39
All other	93	78	270	3.46
Direct blue dyes, total	6,316	6,249	9,736	1.56
Direct Blue 1	369	363	737	2.03
Direct Blue 2	1,035	1,148	1,036	.90
Direct Blue 6	518	439	271	.62
Direct Blue 8	32	47	95	2.02
Direct Blue 15	...	20	20	1.00
Direct Blue 22	20	22	40	1.82
Direct Blue 24	16	13	15	1.15
Direct Blue 25	48	41	105	2.56
Direct Blue 67	35	32	132	4.12
Direct Blue 71	35	52	135	2.60
Direct Blue 76	176	179	269	1.50
Direct Blue 78	118	113	331	2.93
Direct Blue 80	537	529	794	1.50
Direct Blue 86	1,111	1,107	1,723	1.56
Direct Blue 98	115	125	236	1.89
Direct Blue 120 and 120A	111	121	265	2.19
Direct Blue 126	130	156	439	2.81
Direct Blue 151	...	15	21	1.40
Direct Blue 218	911	828	1,560	1.88
All other	999	899	1,512	1.68
Direct green dyes, total	1,115	1,125	2,411	2.14
Direct Green 1	314	290	365	1.26
Direct Green 6	417	387	544	1.41
Direct Green 8	31	37	51	1.38
All other	353	411	1,451	3.53
Direct brown dyes, total	1,660	1,751	2,377	1.36
Direct Brown 1	91	89	121	1.36
Direct Brown 1A	95	93	132	1.42
Direct Brown 2	190	172	270	1.57
Direct Brown 6	77	89	99	1.11
Direct Brown 31	110	115	352	3.06
Direct Brown 74	69	65	103	1.58
Direct Brown 95	573	628	599	.95
Direct Brown 111	...	41	146	3.56
Direct Brown 154	277	331	306	.92
All other	178	128	249	1.95
Direct black dyes, total	7,793	8,831	8,173	.93
Direct Black 4	147	143	153	1.07
Direct Black 9	26	41	61	1.49
Direct Black 19	74	93	148	1.59
Direct Black 22	312	481	472	.98
Direct Black 38	5,304	6,101	4,802	.79
Direct Black 51	71	79	256	3.24
Direct Black 80	1,079	1,105	1,008	.91
All other	780	788	1,273	1.62
DISPERSE DYES				
Total	18,309	16,577	40,981	2.47
Disperse yellow dyes, total	4,814	4,500	8,298	1.84
Disperse Yellow 3	1,959	1,840	2,720	1.48

See footnotes at end of table.

TABLE 8A.--*Benzenoid dyes: U.S. production and sales, 1967*--Continued

Dye	Production	Sales		
		Quantity	Value	Unit value[1]
DISPERSE DYES--Continued	*1,000 pounds*	*1,000 pounds*	*1,000 dollars*	*Per pound*
Disperse yellow dyes--Continued				
Disperse Yellow 5	140	70	247	$3.53
Disperse Yellow 8	...	31	113	3.65
Disperse Yellow 23	368	296	602	2.03
Disperse Yellow 33	353	278	436	1.57
Disperse Yellow 34	335	246	423	1.72
Disperse Yellow 42	650	747	1,122	1.50
Disperse Yellow 54	172	224	861	3.84
All other	837	768	1,774	2.31
Disperse orange dyes, total	1,765	1,486	2,720	1.83
Disperse Orange 3	157	114	195	1.71
Disperse Orange 5	148	126	291	2.31
Disperse Orange 17	192	146	235	1.61
Disperse Orange 25	...	49	92	1.88
All other	1,268	1,051	1,907	1.81
Disperse red dyes, total	2,232	1,993	6,575	3.30
Disperse Red 1	227	214	361	1.69
Disperse Red 5	71	74	131	1.77
Disperse Red 11	...	45	286	6.36
Disperse Red 13	...	16	23	1.44
Disperse Red 15	62	65	202	3.11
Disperse Red 17	138	136	146	1.07
Disperse Red 60	220	167	578	3.46
Disperse Red 65	39	42	86	2.05
All other	1,475	1,234	4,762	3.86
Disperse violet dyes, total	259	240	839	3.50
Disperse Violet 1	42	42	145	3.45
Disperse Violet 4	44	18	65	3.61
Disperse Violet 27	65	69	114	1.65
All other	108	111	515	4.64
Disperse blue dyes, total	7,143	6,337	19,393	3.06
Disperse Blue 1	330	243	971	4.00
Disperse Blue 3	1,892	1,495	2,475	1.66
Disprese Blue 7	549	510	3,196	6.27
Disperse Blue 64	80	46	105	2.28
All other	4,292	4,043	12,646	3.13
Disperse black dyes, total	1,777	1,772	2,321	1.31
Disperse Black 1	102	115	164	1.43
All other	1,675	1,657	2,157	1.30
All other disperse dyes	319	249	835	3.35
FIBER-REACTIVE DYES				
Fiber-reactive dyes, total	2,033	2,067	8,967	4.34
Reactive blue dyes	707	674	3,482	5.17
All other reactive dyes	1,326	1,393	5,485	3.94
FLUORESCENT BRIGHTENING AGENTS				
Total	27,622	24,944	51,991	2.08
Fluorescent Brightening Agent 9	318	343	448	1.31
Fluorescent Brightening Agent 28	1,410	1,396	2,178	1.56
All other fluorescent brightening agents	25,894	23,205	49,365	2.13
FOOD, DRUG, AND COSMETIC COLORS				
Total	3,234	3,224	11,750	3.64

See footnotes at end of table.

TABLE 8A.--*Benzenoid dyes: U.S. production and sales, 1967*--Continued

Dye	Production	Sales		
		Quantity	Value	Unit value [1]
FOOD, DRUG, AND COSMETIC COLORS--Continued				
Food, Drug, and Cosmetic Dyes	*1,000 pounds*	*1,000 pounds*	*1,000 dollars*	*Per pound*
Total	2,959	2,998	10,437	$3.48
FD&C Blue No. 1	65	59	666	11.29
FD&C Blue No. 2	...	29	278	9.59
FD&C Red No. 2	969	970	2,599	2.68
FD&C Red No. 3	98	119	1,525	12.82
FD&C Yellow No. 5	922	839	2,478	2.95
FD&C Yellow No. 6	761	817	2,118	2.59
All other food, drug, and cosmetic dyes	144	165	773	4.68
Drug and Cosmetic and External Drug and Cosmetic Dyes				
Total	275	226	1,313	5.81
D&C Orange No. 4	5	3	18	6.00
D&C Red No. 7	...	11	40	3.64
D&C Red No. 19	8	12	64	5.33
D&C Red No. 21	33	26	89	3.42
D&C Red No. 36	9	10	35	3.50
D&C Yellow No. 5	22	16	39	2.44
All other drug and cosmetic and external drug and cosmetic dyes	198	148	1,028	6.95
MORDANT DYES				
Total	1,465	2,095	3,379	1.61
Mordant yellow dyes, total	208	223	393	1.76
Mordant Yellow 1	...	35	52	1.49
Mordant Yellow 8	10	13	25	1.92
All other	198	175	316	1.81
Mordant orange dyes, total	93	127	210	1.65
Mordant Orange 1	...	20	30	1.50
Mordant Orange 6	54	78	94	1.21
All other	39	29	86	2.97
Mordant red dyes	122	112	309	2.76
Mordant blue dyes	58	62	168	2.71
Mordant brown dyes, total	211	213	522	2.45
Mordant Brown 1	74	37	86	2.32
Mordant Brown 33	...	34	68	2.00
Mordant Brown 40	...	13	35	2.69
All other	137	129	333	2.58
Mordant black dyes, total	760	1,342	1,732	1.29
Mordant Black 3	...	32	48	1.50
Mordant Black 11	359	807	972	1.20
Mordant Black 13	...	26	60	2.31
Mordant Black 17	178	293	305	1.04
All other	223	184	347	1.89
All other mordant dyes	13	16	45	2.81
SOLVENT DYES				
Total	11,049	10,652	18,130	1.70
Solvent yellow dyes, total	1,100	1,005	2,238	2.23
Solvent Yellow 2	25	30	54	1.80
Solvent Yellow 3	27	41	63	1.54

See footnotes at end of table.

TABLE 8A.--*Benzenoid dyes: U.S. production and sales, 1967*--Continued

Dye	Production	Sales		
		Quantity	Value	Unit value[1]
SOLVENT DYES--Continued				
Solvent yellow dyes--Continued	*1,000 pounds*	*1,000 pounds*	*1,000 dollars*	*Per pound*
Solvent Yellow 14	737	638	621	$0.97
All other	311	296	1,500	5.07
Solvent orange dyes, total	524	468	899	1.92
Solvent Orange 3	41	20	41	2.05
Solvent Orange 7	...	115	148	1.29
All other	483	333	710	2.13
Solvent red dyes, total	1,549	1,482	3,272	2.21
Solvent Red 24	312	291	563	1.93
Solvent Red 26	301	292	569	1.95
Solvent Red 33	17	...	...	...
Solvent Red 49	...	47	301	6.40
All other	919	852	1,839	2.16
Solvent violet dyes, total	713	733	1,050	1.43
Solvent Violet 8	428	458	563	1.23
All other	285	275	487	1.77
Solvent blue dyes, total	1,407	1,322	5,338	4.04
Solvent Blue 38	...	124	693	5.59
All other	1,407	1,198	4,645	3.88
Solvent brown dyes, total	58	59	214	3.63
Solvent Brown 12	14	10	29	2.90
All other	44	49	185	3.78
All other solvent dyes	5,698	5,583	5,119	.92
SULFUR DYES[2]				
Sulfur dyes	...	16,892	10,737	.64
VAT DYES				
Total	56,805	53,849	58,025	1.08
Vat yellow dyes, total	5,397	5,696	8,136	1.43
Vat Yellow 2, 8-1/2%	2,941	3,007	2,678	.89
Solubilized Vat Yellow 4	...	6	55	9.17
All other	2,456	2,683	5,403	2.01
Vat orange dyes, total	3,854	3,342	8,429	2.52
Vat Orange 1, 20%	1,290	1,035	2,899	2.80
Solubilized Vat Orange 1, 26%	8	8	74	9.25
Vat Orange 2, 12%	423	388	790	2.04
Vat Orange 3, 13-1/2%	72	50	132	2.64
Vat Orange 4, 6%	74	82	259	3.16
Vat Orange 5, 10%	...	82	136	1.66
Solubilized Vat Orange 5, 30%	4	5	53	10.60
Vat Orange 9, 12%	239	184	382	2.08
Vat Orange 15, 10%	639	655	1,329	2.03
All other	1,105	853	2,375	2.78
Vat red dyes, total	2,150	1,044	2,535	2.43
Vat Red 1, 13%	352	370	639	1.73
Solubilized Vat Red 1, 37%	...	4	35	8.75
Vat Red 13, 11%	154	100	297	2.97
Vat Red 15, 10%	...	187	210	1.12
Vat Red 32, 20%	101	69	263	3.81
All other	1,543	314	1,091	3.47
Vat violet dyes, total	689	669	1,497	2.24
Vat Violet 1, 11%	213	234	619	2.65
Vat Violet 2, 20%	36	...	...	...

See footnotes at end of table.

TABLE 8A.--*Benzenoid dyes: U.S. production and sales, 1967*--Continued

Dye	Production	Sales		
		Quantity	Value	Unit value[1]
VAT DYES--Continued				
Vat violet dyes--Continued	*1,000 pounds*	*1,000 pounds*	*1,000 dollars*	*Per pound*
Vat Violet 9, 12%	110	...	...	...
Vat Violet 13, 6-1/4%	266	248	338	$1.36
All other	64	187	540	2.89
Vat blue dyes, total	18,777	18,458	11,397	.62
Vat Blue 6, 8-1/3%	2,852	2,897	3,153	1.09
Vat Blue 20, 14%	733	631	856	1.36
All other	15,192	14,930	7,388	.49
Vat green dyes, total	12,764	12,205	9,348	.77
Vat Green 1, 6%	4,706	4,950	3,062	.62
Vat Green 3, 10%	4,206	3,673	2,802	.76
Vat Green 8, 8-1/2%	2,489	2,092	1,897	.91
Vat Green 9, 12-1/2%	926	1,057	943	.89
All other	437	433	644	1.49
Vat brown dyes, total	3,825	3,937	7,072	1.80
Vat Brown 1, 11%	763	706	1,153	1.63
Vat Brown 3, 11%	1,181	1,263	2,296	1.82
Vat Brown 5, 13%	87	93	147	1.58
All other	1,794	1,875	3,476	1.85
Vat black dyes, total	9,349	8,498	9,611	1.13
Solubilized Vat Black 1, 27-1/2%	...	3	24	8.00
Vat Black 9, 16%	169	178	442	2.48
Vat Black 25, 12-1/2%	5,249	4,642	3,185	.69
Vat Black 27, 12-1/2%	1,130	1,087	3,340	3.07
All other	2,801	2,588	2,620	1.01
All other dyes[3]	17,721	479	1,278	2.67

[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, miscellaneous dyes, and production data for sulfur 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 1967, by class of application. Four application classes of dyes accounted for approximately two-thirds of all the dyes produced. Vat dyes accounted for 27.5 percent of the total; direct dyes, for 15.6 percent; fluorescent brighteners, for 13.4 percent; and acid dyes, for 8.5 percent. Of these four classes of dyes, the output of fluorescent brighteners was 19.0 percent larger in 1967 than in 1966, but the output of acid dyes was 24.4 percent smaller in 1967 than in 1966; direct dyes, 13.6 percent smaller; and vat dyes, 1.1 percent smaller.

Of the remaining classes, the output of the disperse dyes was 18.3 million pounds in 1967, or 9.7 percent more than the 16.7 million pounds produced in 1966. Production of basic dyes was 6.8 percent larger in 1967 than in 1966; fiber-reactive dyes, 6.5 percent larger; and solvent dyes, 2.6 percent larger. On the other hand, the output of mordant dyes was 65.8 percent smaller in 1967 than in 1966; azoic dyes and components, 32.9 percent smaller, and food, drug, and cosmetic colors, 3.8 percent smaller.

Table 10 shows production and sales of dyes, by chemical class. In 1967, three chemical classes of dyes accounted for more than two-thirds of all the dyes produced: Azo dyes accounted for 28.7 percent of the total; anthraquinone dyes, for 25.1 percent; and stilbene dyes, for 13.9 percent. The output of the stilbene dyes was 16.8 percent larger in 1967 than in 1966, but that of azo dyes was 14.9 percent smaller and anthraquinone dyes, 4.7 percent smaller. Of the remaining chemical classes for which statistics are published, the output of methine dyes was 67.5 percent larger in 1967 than in 1966; quinoline dyes, 48.8 percent larger; cyanine dyes, 28.8 percent larger; nitro dyes, 25.1 percent larger; and phthalocyanine dyes, 16.3 percent larger. On the other hand, the output of thiazole dyes was 24.1 percent smaller in 1967 than in 1966; triarylmethane dyes, 13.6 percent smaller; and ketone imine dyes, 11.8 percent smaller.

TABLE 9.--*Benzenoid dyes: U.S. production and sales, by class of application, 1967*

Class of application	Production	Sales		
		Quantity	Value	Unit value[1]
	1,000 pounds	*1,000 pounds*	*1,000 dollars*	*Per pound*
Total	206,240	198,592	332,049	$1.67
Acid	17,546	17,495	38,641	2.21
Azoic dyes and components:				
Azoic compositions	1,740	1,887	3,381	1.79
Azoic diazo components, bases (Fast color bases)	797	752	1,104	1.47
Azoic diazo components, salts (Fast color salts)	1,814	1,890	1,717	.91
Azoic coupling components (Naphthol AS and derivatives)	1,945	1,617	2,707	1.67
Basic	11,896	11,623	30,123	2.59
Direct	32,264	32,549	49,138	1.51
Disperse	18,309	16,577	40,981	2.47
Fiber-reactive	2,033	2,067	8,967	4.34
Fluorescent brightening agents	27,622	24,944	51,991	2.08
Food, drug, and cosmetic colors	3,234	3,224	11,750	3.64
Mordant	1,465	2,095	3,379	1.61
Solvent	11,049	10,652	18,130	1.70
Sulfur[2]	...	16,892	10,737	.64
Vat	56,805	53,849	58,025	1.08
All other[3]	17,721	479	1,278	2.67

[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, and production data for sulphur 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, 1967*

Chemical class	Production	Sales		
		Quantity	Value	Unit value[1]
	1,000 pounds	*1,000 pounds*	*1,000 dollars*	*Per pound*
Total	206,240	198,592	332,049	$1.67
Acridine	...	9	26	2.89
Anthraquinone	51,704	48,486	86,671	1.79
Azo, total	59,304	59,648	111,181	1.86
Monoazo	23,576	23,357	49,537	2.12
Disazo	18,639	18,148	33,534	1.85
Trisazo	9,963	10,878	11,835	1.09
Polyazo	1,854	2,121	3,729	1.76
Not specified	5,272	5,144	12,546	2.44
Azoic	6,296	6,146	8,909	1.45
Cyanine	662	657	2,119	3.23
Ketone imine	443	510	1,149	2.25
Methine	2,146	1,831	6,103	3.33
Nitro	1,788	1,729	2,891	1.67
Oxazine	...	239	1,009	4.22
Phthalocyanine	2,073	1,966	5,236	2.66
Quinoline	778	799	2,539	3.18
Stilbene	28,648	25,944	44,780	1.73
Sulfur[2]	...	16,892	10,737	.64
Thiazine	...	386	847	2.19
Thiazole	445	478	1,071	2.24
Triarylmethane	6,855	6,740	14,942	2.22
Xanthene	1,770	885	4,502	5.09
All other[3]	43,328	25,247	27,337	1.08

[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 production and sales of aminoketone, azine, coumarin, hydroxyketone, indigoid, nitroso, oxidation bases, vat sulfur, and miscellaneous dyes; and production of acridine, oxazine, sulfur, and thiazine 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 1967 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 1967 was 53.3 million pounds--4.3 percent more than the 51.1 million pounds produced in 1966 and 11.0 percent more than the 48.0 million pounds produced in 1965. Total sales of benzenoid pigments in 1967 amounted to 42.9 million pounds, valued at $108.4 million, compared with 43.3 million pounds, valued at $107.6 million, in 1966 and 38.0 million pounds, valued at $93.6 million, in 1965. In terms of quantity, sales of benzenoid pigments in 1967 were 1.0 percent smaller than in 1966 and 12.7 percent larger than in 1965; in terms of value, sales in 1967 were 0.7 percent larger than in 1966 and 15.7 percent larger than in 1965.

Production of toners in 1967 amounted to 49.2 million pounds--5.4 percent more than the 46.6 million pounds reported for 1966. Sales in 1967 were 39.0 million pounds, valued at $104.7 million, compared with 39.1 million pounds, valued at $103.6 million, in 1966. Sales in 1967 were thus 0.3 percent smaller than those in 1966 in terms of quantity, and 1.0 percent larger in terms of value. The individual toners listed in the report which were produced in the largest quantities in 1967 were Pigment Blue 15, alpha form, 5.0 million pounds; Pigment Green 7, 4.5 million pounds; Pigment Yellow 12, 4.4 million pounds; Pigment Red 49, barium toner, 3.7 million pounds; Pigment Blue 15, beta form, 3.2 million pounds; Pigment Blue 19, 2.9 million pounds; and Pigment Red 48, 2.5 million pounds.

Production of lakes totaled 4.2 million pounds in 1967--7.7 percent less than the 4.5 million pounds reported for 1966. Sales of lakes in 1967 amounted to 3.9 million pounds, valued at $3.7 million, compared with sales in 1966 of 4.2 million pounds, valued at $4.0 million. Sales in 1967 were thus 8.0 percent smaller than those in 1966 in terms of quantity, and 7.4 percent smaller in terms of value.

For each of 15 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 12 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, without revealing the operations of individual companies.

[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 1966-67.

TABLE 11A.--*Benzenoid pigments: U.S. production and sales, 1967*

[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	53,322	42,867	108,354	$2.53
TONERS				
Total	49,168	39,000	104,680	2.68
Yellow toners, total	8,790	5,909	16,110	2.73
Hansa yellows, total	1,334	1,046	2,586	2.47
Pigment Yellow 1, C.I. 11 680	655	465	874	1.88
Pigment Yellow 3, C.I. 11 710	153	87	194	2.23
Pigment Yellow 73	292	...	...	...
Pigment Yellow 74, C.I. 11 741	142	127	438	3.45
Other Hansa yellows	92	367	1,080	2.94
Benzidine yellows, total	7,145	4,731	12,085	2.55
Pigment Yellow 12, C.I. 21 090	4,430	2,605	5,756	2.21
Pigment Yellow 13, C.I. 21 100	291	190	601	3.16
Pigment Yellow 14, C.I. 21 095	1,749	1,412	3,469	2.46
Pigment Yellow 17, C.I. 21 105	326	239	728	3.05
Other benzidine yellows	349	285	1,531	5.37
All other	311	132	1,439	10.90
Orange toners, total	997	861	3,006	3.49
Pigment Orange 2, C.I. 12 060	59	52	79	1.52
Pigment Orange 5, C.I. 12 075	263	230	367	1.60
Pigment Orange 13, C.I. 21 110	152	147	478	3.25
Pigment Orange 16, C.I. 21 160	307	252	669	2.65
All other	216	180	1,413	7.85
Red and violet toners, total	21,886	18,285	43,628	2.39
Naphthol reds, total	776	522	2,128	4.08
Pigment Red 2, C.I. 12 310	60	29	75	2.59
Pigment Red 5, C.I. 12 490	81	56	285	5.09
Pigment Red 13, C.I. 12 395	5	4	17	4.25
Pigment Red 17, C.I. 12 390	100	84	256	3.05
Pigment Red 18, C.I. 12 350	11	...	...	...
Pigment Red 22, C.I. 12 315	90	68	204	3.00
Pigment Red 23, C.I. 12 355	155	141	478	3.39
Other naphthol reds	274	140	813	5.81
Pigment Red 1, C.I. 12 070, dark	153	117	145	1.24
Pigment Red 1, C.I. 12 070, light	212	173	214	1.24
Pigment Red 3, C.I. 12 120	1,724	1,545	2,344	1.52
Pigment Red 4, C.I. 12 085	270	209	305	1.46
Pigment Red 6, C.I. 12 090	38	26	41	1.58
Pigment Red 38, C.I. 21 120	218	166	735	4.43
Pigment Red 48, C.I. 15 865	2,525	2,283	4,275	1.87
Pigment Red 49, C.I. 15 630:				
Barium toner	3,674	3,085	3,161	1.02
Calcium toner	1,467	1,354	1,450	1.07
Sodium toner	220	265	284	1.07
Pigment Red 52, C.I. 15 860	1,477	1,434	2,175	1.52
Pigment Red 53, C.I. 15 585, barium toner	2,183	1,773	2,372	1.34
Pigment Red 54, C.I. 14 830, calcium toner	72	61	141	2.31
Pigment Red 57, C.I. 15 850, calcium toner	1,051	873	1,313	1.50
Pigment Red 63, C.I. 15 880	56	52	97	1.87
Pigment Red 81, C.I. 45 160, PMA	363	316	1,917	6.07
Pigment Red 81, C.I. 45 160, PTA	135	119	784	6.59
Pigment Red 90, C.I. 45 380	1,770	930	1,731	1.86
(Vat Red 29), C.I. 71 140	31	...	...	...
Pigment Violet 1, C.I. 45 170, PMA	100	95	302	3.18
Pigment Violet 1, C.I. 45 170, PTA	75	66	442	6.70
Pigment Violet 3, C.I. 42 535, fugitive	542	537	762	1.42
Pigment Violet 3, C.I. 42 535, PMA	433	359	1,050	2.92

See footnotes at end of table.

TABLE 11A. *--Benzenoid pigments: U.S. production and sales, 1967*--Continued

Pigment	Production	Sales		
		Quantity	Value	Unit value[1]
TONERS--Continued				
	1,000 pounds	*1,000 pounds*	*1,000 dollars*	*Per pound*
Red and violet toners--Continued				
Pigment Violet 3, C.I. 42 535, PTA	43	37	164	$4.43
Pigment Violet 23	85	66	1,205	18.26
All other	2,193	1,822	14,091	7.73
Blue toners, total	11,819	9,595	28,196	2.94
Pigment Blue 1, C.I. 42 595, PMA	172	146	746	5.11
Pigment Blue 1, C.I. 42 595, PTA	25	16	92	5.75
Pigment Blue 9, C.I. 42 025, PTA	...	6	32	5.33
Pigment Blue 14, C.I. 42 600, PMA	56	60	523	8.72
Pigment Blue 15, C.I. 74 160, alpha form	5,049	3,692	10,474	2.84
Pigment Blue 15, C.I. 74 160, beta form	3,166	2,510	7,903	3.15
Pigment Blue 19, C.I. 42 750A	2,899	2,867	6,748	2.35
Pigment Blue 22, C.I. 69 810	26	27	464	17.19
Pigment Blue 25, C.I. 21 180	218	106	322	3.04
All other	208	165	892	5.41
Green toners, total	5,251	3,980	13,083	3.29
Pigment Green 1, C.I. 42 040, PTA	9	7	45	6.43
Pigment Green 2, C.I. 42 040 and 49 005, PMA	75	68	359	5.28
Pigment Green 2, C.I. 42 040 and 49 005, PTA	57	50	214	4.28
Pigment Green 4, C.I. 42 000, PTA	7	8	31	3.88
Pigment Green 7, C.I. 74 260	4,483	3,353	10,792	3.22
Pigment Green 8, C.I. 10 006	193	166	196	1.18
Pigment Green 36, C.I. 74 265	196	167	576	3.45
All other	231	161	870	5.40
Brown toners, total	181	149	428	2.87
Pigment Brown 5, C.I. 15 800	119	96	152	1.58
All other	62	53	276	5.21
Black toners	244	221	229	1.04
LAKES				
Total	4,154	3,867	3,674	.95
Red lakes:				
Pigment Red 60, C.I. 16 105	189	210	319	1.52
Pigment Red 83, C.I. 58 000	82	61	223	3.66
(Acid Red 26), C.I. 16 150	565	580	268	.46
Violet lakes: Pigment Violet 5, C.I. 58 055	201	143	320	2.24
All other lakes[2]	3,117	2,873	2,544	.89

[1] Calculated from rounded figures.
[2] Includes all black, blue, brown, orange, and yellow lakes, " all other" red, and "all other" violet lakes.

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

The abbreviation 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, 1967*

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	2,605	5,857	$2.25
Dry full-strength toner	569	1,197	2.10
Dry extended toner, dry dispersions, and aqueous dispersions[3] [4]	180	384	2.13
Flushed color	1,856	4,276	2.30
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	2,126	6,374	3.00
Dry full-strength toner	1,395	4,362	3.13
Dry extended toner and dry dispersions[4]	71	196	2.76
Aqueous dispersions[3]	423	1,109	2.62
Flushed color	237	707	2.98
Pigment Red 3, C.I. 12 120, total	1,545	2,399	1.55
Dry full-strength toner and dry extended toner[4]	984	1,477	1.50
Aqueous dispersions[3]	101	130	1.29
Flushed color	460	792	1.72
Pigment Red 48, C.I. 15 865, total	2,283	4,275	1.87
Dry full-strength toner	2,110	3,931	1.86
Dry extended toner and dry dispersions[4]	78	146	1.87
Aqueous dispersions[3]	31	81	2.61
Flushed color	64	117	1.83
Pigment Red 49, C.I. 15 630, barium toner, total	3,085	3,261	1.06
Dry full-strength toner	2,280	2,346	1.03
Dry extended toner and aqueous dispersions[3] [4]	90	91	1.01
Flushed color	715	824	1.15
Pigment Red 49, C.I. 15 630, calcium toner, total	1,354	1,574	1.16
Dry full-strength toner and dry dispersions[4]	1,123	1,204	1.07
Aqueous dispersions[3] and flushed color[4]	231	370	1.60
Pigment Red 49, C.I. 15 630, sodium toner[4]	265	298	1.12
Pigment Red 53, C.I. 15 585, barium toner, total	1,773	2,422	1.37
Dry full-strength toner, dry extended toner, and dry dispersions[4]	1,089	1,446	1.33
Aqueous dispersions[3] and flushed color[4]	684	976	1.43
Pigment Red 90, C.I. 45 380, total	930	1,845	1.98
Dry full-strength toner	16	34	2.12
Dry extended toner, dry dispersions, and aqueous dispersions[3] [4]	13	25	1.92
Flushed color	901	1,786	1.98
Pigment Violet 3, C.I. 42 535, fugitive, total	537	762	1.42
Dry full-strength toner and dry extended toner[4]	270	398	1.47
Flushed color	267	364	1.36
Pigment Violet 3, C.I. 42 535, permanent (PMA and PTA), total	396	1,253	3.16
Dry full-strength toner	277	827	2.99
Dry extended toner, dry dispersions and aqueous dispersions[3] [4]	34	166	4.88
Flushed color	85	260	3.06
Pigment Blue 15, C.I. 74 160, alpha form, total	3,692	10,495	2.84
Dry full-strength toner	1,441	4,039	2.80
Dry extended toner	719	2,389	3.32
Dry dispersions	184	507	2.76
Aqueous dispersions[3]	1,138	2,902	2.55
Flushed color	210	658	3.13

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, 1967*--Continued

Selected pigments by commercial forms	Sales		
	Quantity[1]	Value	Unit value[2]
	1,000 pounds	*1,000 dollars*	*Per pound*
Pigment Blue 15, C.I. 74 160, beta form, total	2,510	7,907	$3.15
Dry full-strength toner	1,027	3,345	3.26
Dry extended toner and dry dispersions[4]	334	1,162	3.48
Aqueous dispersions[3]	499	1,373	2.75
Flushed color	650	2,027	3.12
Pigment Blue 19, C.I. 42 750A, total	2,867	6,748	2.35
Dry full-strength toner and dry extended toner[4]	212	525	2.48
Aqueous dispersions[3] and flushed color[4]	2,655	6,223	2.34
Pigment Green 7, C.I. 74 260, total	3,353	10,792	3.22
Dry full-strength toner	1,342	4,337	3.23
Dry extended toner	440	1,660	3.77
Dry dispersions	323	1,009	3.12
Aqueous dispersions[3]	988	2,872	2.91
Flushed color	260	914	3.52

[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.

Table 13A shows statistics for production and sales of medicinal chemicals grouped by pharmacological class.[4] The statistics 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 semisynthetic penicillins. All quantities are given in terms of 100-percent content of the pure bulk drug.

Sales of antibiotics for the years 1965-67 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.

[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 1966-67.

[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, 1967*

[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	180,070	126,924	385,275	$3.04
Acyclic	69,941	56,804	36,402	.64
Benzenoid[3]	91,651	58,305	263,656	4.52
Cyclic nonbenzenoid[4]	18,478	11,815	85,217	7.21
Antibiotics, total[5]	9,464	4,744	96,586	20.36
For medicinal use, total	5,223	2,390	65,056	27.22
Antifungal and antitubercular antibiotics	1,034	718	10,754	14.98
Bacitracin	20	20	969	48.45
Penicillin G, potassium[6]	569	...	...	...
Other antibiotics for medicinal use	3,600	1,652	53,333	32.28
For other uses, total	4,241	2,354	31,530	13.39
Bacitracin	241	187	2,571	13.75
All other	4,000	2,167	28,959	13.36
Anticoagulants, total	9	4	1,092	273.00
Sodium heparin	3	2	1,008	504.00
All other	6	2	84	42.00
Antihistamines, total	391	199	4,847	24.36
Antinauseants	50	...	...	...
Chlorpheniramine maleate	37	13	219	16.85
Pheniramine maleate	20	23	340	14.78
All other	284	163	4,288	26.31
Anti-infective agents, total	31,399	20,501	84,263	4.11
Arsenic and bismuth compounds	3,970	...	...	...
Caprylates and undecylenates	397	379	454	1.20
Mercury compounds, total	55	...	...	...
Thimerosal	...	4	184	46.00
All other	55	...	...	...
Phenolic antiseptics and disinfectants	320	210	384	1.83
Piperazine base and salts, total	8,913	5,393	3,917	.73
Piperazine	4,017	994	904	.91
All other	4,896	4,399	3,013	.68
Quinoline derivatives, total	805	396	1,785	4.51
Diiodohydroxyquin	29	23	99	4.30
Oxyquinoline sulfate	...	8	30	3.75
All other	776	365	1,656	4.54
Sulfonamides	5,046	...	...	...
Groups listed above for which separate sales data may not be shown	...	4,000	11,412	2.85
Other anti-infective agents, total	11,893	10,119	66,127	6.53
Anthelmintic and antifungal agents	5,412	...	...	...
Antiprotozoan and antiviral agents	3,595	...	...	...
Urinary antiseptics	798	722	1,376	1.91
All other	2,088	9,397	64,751	6.89
Antineoplastic agents and local anesthetics, total	899	...	...	...
Lidocaine	...	5	161	32.20
All other	899	...	...	...

See footnotes at end of table.

TABLE 13A. --*Medicinal chemicals: U.S. production and sales, 1967*--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	546	344	6,665	$19.38
Parasympatholytic (anticholinergic) agents (except tropane derivatives), total	91	52	2,486	47.81
Quaternary ammonium compounds	41	24	1,014	42.25
Tertiary amines	50	28	1,472	52.57
Sympathomimetic (adrenergic) agents, total	446	287	3,954	13.78
Isoproterenol salts	...	(7)	15	40.65
Phenylpropanolamine hydrochloride	198	203	1,322	6.51
All other	248	84	2,617	31.15
Other autonomic drugs	9	5	225	45.00
Cardiovascular agents, total	723	519	16,291	31.39
Cardiac drugs	...	11	189	17.18
Rauwolfia and veratrum alkaloids	(8)	...	...	...
Vasodilators	54	...	...	...
Other cardiovascular agents	669	508	16,102	31.70
Central depressants and stimulants, total	43,477	27,701	56,710	2.05
Amphetamines, total	86	74	581	7.85
Amphetamine base and sulfate (racemic)	39	35	150	4.29
Dextroamphetamine sulfate	25	...	...	...
All other	22	39	431	11.05
Analgesics and antipyretics, total	37,669	23,746	34,302	1.44
Salicylates, total	33,105	20,300	12,381	.61
Aspirin	30,383	...	...	...
All other	2,722	20,300	12,381	.61
Other analgesics and antipyretics	4,564	3,446	21,921	6.36
Antidepressants	116	...	...	...
Barbiturates, total	668	456	2,078	4.56
Butabarbital, sodium	...	44	319	7.25
Phenobarbital, sodium	5	...	...	...
All other	663	412	1,759	4.27
Hypnotics and sedatives (except barbiturates)[9]	481	...	...	...
Skeletal muscle relaxants, total	268	117	634	5.42
Succinylcholine chloride	7	...	...	...
All other	261	117	634	5.42
Tranquilizers, total	1,704	998	4,658	4.67
Meprobamate	1,260	913	2,329	2.55
Other tranquilizers[9]	444	85	2,329	27.40
Other central depressants and stimulants	2,485	2,310	14,457	6.26
Dermatological agents, total	12,996	9,388	4,167	.44
Bismuth subgallate	23	...	...	...
Salicylic acid	11,479	8,057	3,093	.38
All other	1,494	1,331	1,074	.81
Expectorants and mucolytic agents, total	2,231	1,345	2,254	1.68
Guaiacol and its derivatives	...	855	1,450	1.70
All other	2,231	490	804	1.64
Gastrointestinal agents, total	52,237	48,014	17,661	.37
Betaine base, hydrate, and hydrochloride	53	39	66	1.69
Choleretics and hydrocholeretics	116	...	...	...
Choline chloride (all grades)	38,649	34,404	5,232	.15
Methionine and its hydroxy analogue	10,998	12,150	9,245	.76
Other gastrointestinal agents	2,421	1,421	3,118	2.19
Hormones and synthetic substitutes, total	1,783	328	17,205	52.45
Synthetic hypoglycemic agents	1,538	241	848	3.52
Other hormones and synthetic substitutes	245	87	16,357	188.01
Renal-acting and edema-reducing agents, total	1,390	168	4,204	25.02
Mercurial diuretics	10	1	38	38.00
Theobromine and theophylline derivatives, total	104	88	259	2.94
Aminophylline	32	...	...	...
All other	72	88	259	2.94
Other renal-acting and edema-reducing agents	1,276	79	3,907	49.46

See footnotes at end of table.

TABLE 13A. --*Medicinal chemicals: U.S. production and sales, 1967*--Continued

Chemicals	Production[1]	Sales[1]		
		Quantity	Value	Unit value[2]
	1,000 pounds	*1,000 pounds*	*1,000 dollars*	*Per pound*
Therapeutic nutrients, total	3,142	1,470	1,832	$1.25
Amino acids and salts	1,301	819	1,157	1.41
Calcium gluconate	...	332	211	.64
Other therapeutic nutrients	1,841	319	464	1.45
Vitamins, total	17,568	11,108	65,847	5.93
Vitamin A alcohol and esters, total[10]	1,053	716	16,720	23.35
Vitamin A palmitate (feed grade)	667	527	10,410	19.75
All other	386	189	6,310	33.39
Vitamin B-complex, total	6,504	4,469	24,586	5.50
Niacin (all grades)	2,306	...	...	...
Niacinamide	867	742	1,505	2.03
Pantothenic acid and derivatives, total	1,820	926	3,014	3.25
Calcium pantothenate (racemic) (feed grade)	1,256	511	1,546	3.03
All other	564	415	1,468	3.54
Riboflavin (all grades)	878	776	6,071	7.82
Other B-complex vitamins	633	2,025	13,996	6.91
Vitamin C, total	9,160	5,282	11,350	2.15
Ascorbic acid	7,379	...	...	...
All other	1,781	5,282	11,350	2.15
Vitamin D_2 (Ergocalciferol)[10]	1	1	124	124.00
Vitamin E[10]	638	547	9,742	17.81
Vitamin K:				
Menadione	85	...	...	...
Menadione sodium bisulfite	99	56	517	9.23
Other vitamins	28	37	2,808	75.89
Miscellaneous medicinal chemicals[11]	1,815	1,086	5,490	5.06

[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.

[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 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-----	5,922	4,707	3,540	$752.07
For medicinal use	-----BU-----	446	454	969	2,134.36
For other uses	-----BU-----	5,476	4,253	2,571	604.51
Neomycin, for all uses	-----Kg-----	151,668	52,286	2,498	47.78
Penicillins, for all uses, total	-----BU-----	1,424,566	851,778	25,175	29.56
Penicillin G, potassium, for medicinal use	-----BU-----	411,613	...	...	...
Penicillin G, procaine for all uses	-----BU-----	727,972	541,744	9,918	18.31
All other, for all uses	-----BU-----	284,981	310,034	15,257	49.21
Tetracyclines, for all uses	-----Kg-----	1,522,767	616,780	32,019	51.91

Footnotes for table 13A--Continued

[6] Production of all penicillins, for all uses, amounted to 2,574 thousand pounds; sales amounted to 1,618 thousand pounds, valued at 25,175 thousand dollars.
[7] Sales of isoproterenol salts amounted to 369 pounds.
[8] Production of rauwolfia and veratrum alkaloids amounted to 225 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 methyprylon. U.S. production of these 6 drugs amounted to 474 thousand pounds in 1967.
[10] 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 B_{12} and D_3, which were not separately publishable, in terms of 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	
Vitamin A alcohol and esters, total-	-----BU-----	970,254	622,048	16,720	$26.88
Vitamin A palmitate (feed grade)--	-----BU-----	550,153	434,128	10,410	23.98
All other----------	-----BU-----	420,101	187,920	6,310	33.58
Vitamin D_2 (Ergocalciferol)---------	-----BU-----	20,433	18,451	124	6.72
Vitamin E----------	-----MU-----	343,974	301,123	9,742	32.35

[11] Includes production and sales of diagnostic agents, hematological agents (except anticoagulants), smooth-muscle relaxants, and miscellaneous unclassified medicinal chemicals; also includes sales of all other antineoplastic agents and local anesthetics.

Total U.S. production of bulk medicinal chemicals in 1967 amounted to 180 million pounds, or 2.9 percent less than the 185 million pounds produced in 1966, and 12.9 percent more than the 160 million pounds produced in 1965. Total sales of bulk medicinal chemicals in 1967 amounted to 127 million pounds, valued at $385 million, compared with sales in 1966 of 136 million pounds, valued at $398 million. Sales in 1967 were thus 7.0 percent smaller than in 1966, in terms of quantity, and 3.3 percent smaller, in terms of value.

Production of the more important groups of medicinal chemicals in 1967 was as follows: Antibiotics, 9.5 million pounds (2 percent smaller than in 1966), of which 5.2 million pounds was for medicinal use and 4.2 million pounds was for other uses; anti-infective agents other than antibiotics, 31.4 million pounds (6 percent smaller than in 1966); central depressants and stimulants, 43.5 million pounds (10 percent smaller); and vitamins, 17.6 million pounds (0.1 percent larger). Production of some of the more important individual products listed in the table was as follows: Choline chloride, 38.6 million pounds (7 percent larger than in 1966); aspirin, 30.4 million pounds (11 percent smaller); salicylic acid, 11.5 million pounds (0.1 percent larger); methionine and its hydroxy analogue, 11 million pounds (21 percent smaller); piperazine base and salts, 8.9 million pounds (3 percent larger); ascorbic acid, 7.4 million pounds (3 percent smaller); anti-infective sulfonamides, 5.0 million pounds (7 percent smaller); penicillins, 1,425 trillion units (15 percent smaller); tetracyclines, 1.5 million kilograms (9 percent smaller); vitamin A, 970 trillion units (3 percent larger); and vitamin E, 344 billion units (24 percent larger).

Flavor and Perfume Materials

This report covers domestic production and sales of organic chemicals used to impart flavors and odors to foods, beverages, cosmetics, and soaps (table 14A).[6] These aromatic chemicals are also utilized to neutralize or mask unpleasant odors in industrial processes and products as well as in consumer products.

Total domestic production of flavor and perfume materials in 1967 amounted to 111.5 million pounds, or 0.8 percent more than the 110.7 million pounds produced in 1966. Sales of these materials in 1967 amounted to 96.6 million pounds, valued at $93.4 million, compared with 98.3 million pounds valued at $92.6 million, in 1966.

[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 1966-67.

TABLE 14A.--*Flavor and perfume materials: U.S. production and sales, 1967*

[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	111,536	96,596	93,361	$0.97
FLAVOR AND PERFUME MATERIALS, CYCLIC				
Total	57,978	47,285	52,866	1.12
Benzenoid and Naphthalenoid				
Total	48,068	39,231	36,993	.94
4-Allyl-2-methoxyphenol (Eugenol)	304	309	598	1.93
4-Allyl-1,2-(methylenedioxy)-benzene (Safrole)	...	66	57	.86
p-Anisaldehyde	805	844	1,176	1.39
Anisyl acetate	...	4	14	3.86
Benzophenone[2]	261	132	141	1.06
Benzyl acetate	1,411	1,184	530	.45
Benzyl alcohol[2]	6,123	5,098	2,083	.41
Benzyl butyrate	...	6	8	1.29
Benzyl glyceryl acetal	3	4	10	2.31
Benzyl phenylacetate	2	3	7	2.61
Benzyl propionate	12	13	14	1.07
Benzyl salicylate	408	372	468	1.26
Cinnamyl acetate	...	3	9	2.64
Cinnamyl alcohol	208	180	248	1.38
Cinnamyl anthranilate	1	1	5	9.80
Cinnamyl propionate	...	1	4	5.32
Coumarin	1,146	1,125	2,221	1.98
Ethyl phenylglycidate	...	2	9	4.75
Hydratropaldehyde, dimethyl acetal	...	1	8	5.69
Hydrocoumarin	39	35	142	4.04
Isobutyl phenylacetate	27	27	25	.89
Isobutyl salicylate	57	62	52	.83
Isopentyl salicylate	466	484	332	.69
4'-Methoxyacetophenone (Acetanisole)	13	13	29	2.25
2-Methoxy-4-propenylphenol (Isoeugenol)	133	142	388	2.74
Methyl anthranilate	...	209	351	1.68
α-Methylbenzyl acetate (Styralyl acetate)	...	45	40	.88
α-Methylcinnamaldehyde	7	...	...	...
Methyl salicylate	4,612	4,595	2,211	.48
α-Pentylcinnamaldehyde	432	440	553	1.26
Phenethyl acetate	112	90	91	1.02
Phenethyl isobutyrate	6	7	16	2.27
2-Phenethyl phenylacetate	...	23	62	2.69
2-Phenoxyethyl isobutyrate	...	2	7	3.82
3-Phenyl-1-propanol (Hydrocinnamic alcohol)	33	21	40	1.91
Piperonal (Heliotropin)	222	182	436	2.39
p-Propenylanisole (Anethole)	2,280	2,307	1,121	.49
Sweeteners, synthetic	17,501	12,669	8,152	.64
p-Tolyl acetate (p-Cresyl acetate)	7	4	16	4.41
All other benzenoid and naphthalenoid materials	11,437	8,526	15,319	1.80
Terpenoid, Heterocyclic, and Alicyclic				
Total	9,910	8,054	15,873	1.97
Cedryl acetate	158	158	434	2.75
Ionones	342	...	...	...
Isobornyl acetate	1,002	939	355	.38
p-Menthan-3-one (Menthone)	8	9	30	3.28
Menthol, synthetic, tech. & U.S.P	652	557	2,147	3.85
Methylionones	482	500	1,971	3.94
Terpineols	3,140	3,060	996	.33

See footnotes at end of table.

TABLE 14A.--*Flavor and perfume materials: U.S. production and sales, 1967*--Continued

Material	Production	Sales		
		Quantity	Value	Unit value[1]
FLAVOR AND PERFUME MATERIALS, CYCLIC--Continued				
Terpenoid, Heterocyclic, and Alicyclic--Continued	*1,000 pounds*	*1,000 pounds*	*1,000 dollars*	*Per pound*
α-Terpinyl acetate	524	530	324	$0.61
Vetivenyl acetate	26	25	599	23.64
All other terpenoid, heterocyclic and alicyclic materials	3,576	2,276	9,017	3.96
FLAVOR AND PERFUME MATERIALS, ACYCLIC				
Total	53,558	49,311	40,495	.82
Allyl hexanoate	18	...	...	...
Citral (Geranial and Neral)	308	71	263	3.71
Citronellyl acetate	28	29	48	1.68
Citronellyl formate	7	19	37	1.95
Citronellyl isobutyrate	4	...	...	...
3,7-Dimethyl-trans-2,6-octadien-1-ol (Geraniol)	1,310	1,113	1,221	1.10
3,7-Dimethyl-6-octen-1-ol (Citronellol)	590	554	811	1.46
Ethyl butyrate	371	352	237	.67
Ethyl hexanoate (Ethyl caproate)	14	...	...	...
Ethyl nonanoate	...	3	9	3.11
Geranyl acetate	92	81	136	1.68
Geranyl formate	...	9	21	2.34
Glutamic acid, monosodium salt (Monosodium glutamate)	45,211	42,175	29,589	.70
Hydroxycitronellal	531	522	2,001	3.83
Hydroxycitronellal, dimethyl acetal	5	7	32	4.81
Isopentyl butyrate	54	64	51	.80
Isopentyl formate	2	4	5	1.45
Rhodinol	17	14	390	28.22
All other acyclic materials	4,996	4,294	5,644	1.31

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

Production of cyclic flavor and perfume materials in 1967 amounted to 58.0 million pounds; sales amounted to 47.3 million pounds, valued at $52.9 million. The individual chemical in the cyclic group produced in the greatest volume in 1967 again was benzyl alcohol (6.1 million pounds). Production of synthetic sweeteners amounted to 17.5 million pounds in 1967, compared with 17.3 million pounds in 1966.

U.S. output of acyclic flavor and perfume materials in 1967 amounted to 53.6 million pounds; sales of these materials amounted to 49.3 million pounds, valued at $40.5 million. 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 chemical totaled 45.2 million pounds in 1967, slightly less than the 45.7 million pounds reported in 1966.

In 1967, many of the flavor and perfume materials were reclassified; as a result, 1967 production and sales totals for individual groups are not comparable with totals for groups in previous years.

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 1967 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-67). However, the data given include some companies which are not covered in the

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

TABLE 15A.--*Plastics and resin materials: U.S. production and sales, by chemical classes and uses, 1967*

[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	13,792,949	11,977,363	2,672,630	$0.22
Plastics and resin materials, benzenoid	5,033,497	4,224,121	1,036,940	.25
Plastics and resin materials, nonbenzenoid	8,759,452	7,753,242	1,635,690	.21
THERMOSETTING RESINS				
Total	3,514,928	2,791,537	716,338	.26
Alkyd resins, total	638,478	[3]313,293	86,130	.27
Domestic:				
Phthalic anhydride type	549,775	262,429	72,172	.27
Polybasic acid type	88,703	50,864	13,958	.27
Coumarone-indene and petroleum polymer resins, total	284,162	286,601	31,413	.11
Floor tile	47,268	45,993	...	...
Rubber compounding	66,899	65,119	...	...
All other uses	169,995	148,881	...	...
Sales for export	...	26,608	...	...
Epoxy resin:				
Unmodified, total	131,424	130,349	65,867	.51
Bonding and adhesives	...	16,488	...	...
Protective coatings	...	54,996	...	...
Reinforced plastics	...	26,256	...	...
All other uses	...	17,922	...	...
Sales for export	...	14,687	...	...
Modified	5,868	4,484	3,552	.79
Polyester resins,[4] total	513,492	449,183	125,139	.28
Reinforced plastics:				
Sheets, flat and corrugated	...	45,817	...	...
All other	...	278,943	...	...
Surface coatings	...	5,839	...	...
All other uses	...	108,702	...	...
Sales for export	...	9,882	...	...
Phenolic and other tar acid resins, total	983,413	789,661	186,230	.24
Molding materials	275,967	244,683	...	...
Bonding and adhesive resins for:				
Laminating	119,738	68,112	...	...
Coated and bonded abrasives	27,336	19,281	...	...
Friction materials	35,837	33,231	...	...
Thermal insulation	116,546	55,068	...	...
Foundry or shell molding	65,749	62,020	...	...
Plywood	175,235	157,179	...	...
Fibrous and granulated wood	35,330	27,654	...	...
Protective coatings, unmodified and modified	36,387	26,600	...	...
All other uses	95,288	79,406	...	...
Sales for export	...	16,427	...	...
Polyurethane and diisocyanate resins	88,604	65,944	35,294	.54
Rosin modifications, total	133,889	122,002	22,337	.18
Rosin and rosin esters, unmodified (ester gums)	27,313	25,901	5,331	.21
All other	106,576	96,101	17,006	.18

See footnotes at end of table.

TABLE 15A.--*Plastics and resin materials: U.S. production and sales, by chemical classes and uses, 1967*--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				
Urea and melamine resins, total	690,062	585,236	135,769	$0.23
Textile treating and coating resins	74,633	66,295	...	...
Paper treating and coating resins	60,007	39,780	...	...
Bonding and adhesive resins for:				
Laminating	57,856	35,313	...	...
Plywood	128,471	115,157	...	...
Fibrous and granulated wood	190,043	176,370	...	...
Protective coatings	55,962	37,020	...	...
All other uses (including molding)	123,090	101,546	...	...
Sales for export	...	13,755	...	...
All other thermosetting resins[5]	45,536	44,784	24,607	.55
THERMOPLASTIC RESINS				
Total	10,278,021	9,185,826	1,956,292	.21
Cellulose plastics materials, total	171,380	167,185	109,237	.65
Sheets, continuous:				
Under 0.003 gage	16,632	16,778	...	...
0.003 gage and over	43,184	44,175	...	...
All other sheets, rods, and tubes	5,067	6,213	...	...
Molding and extrusion materials	106,497	100,019	...	...
Polyamide resins: Nylon type	63,089	53,782	51,636	.96
Polyolefin plastics materials:				
Polyethylene, density 0.940 and below:[6]				
Production and sales	2,716,380	2,538,688	373,897	.15
Sales and use, total	...	2,572,780	...	...
Injection molding	...	352,669	...	...
Blow molding	...	44,689	...	...
Film and sheet	...	1,094,354	...	...
Extrusion coating on paper and other substrates	...	307,430	...	...
Wire and cable	...	264,950	...	...
All other extruded products, including pipe and conduit	...	37,258	...	...
All other domestic uses	...	214,264	...	...
Export sales	...	257,166	...	...
Polyethylene, density over 0.940:				
Production and sales	[7]1,082,176	919,960	155,465	.17
Sales and use, total	...	976,411	...	...
Injection molding	...	217,172	...	...
Blow molding	...	402,619	...	...
Film and sheet	...	38,485	...	...
Extrusion coating on paper and other substrates	...	6,506	...	...
Wire and cable	...	34,561	...	...
Pipe and conduit	...	38,236	...	...
Other extruded products	...	20,685	...	...
All other domestic uses	...	130,220	...	...
Export sales	...	87,927	...	...
Polypropylene:				
Production and sales	662,276	599,035	128,086	.21
Sales and use, total	...	650,146	...	...
Injection and blow molding[8]	...	281,598	...	...
Film and sheet	...	56,139	...	...
Fibers and filaments	...	159,912	...	...
Other extruded products[9]	...	39,763	...	...
All other uses	...	39,026	...	...
Export sales	...	73,708	...	...

See footnotes at end of table.

TABLE 15A.--*Plastics and resin materials: U.S. production and sales, by chemical classes and uses, 1967*--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*
Styrene type plastics materials, total	2,391,103	2,161,466	447,760	$0.21
ABS and SAN resins:[10]				
Production and sales	371,203	347,572	114,072	.33
Sales and use, total	...	367,030	...	
Molding	...	184,204	...	
Extrusion	...	99,180	...	
All other domestic uses	...	51,973	...	
Export sales	...	31,673	...	
Styrene and styrene copolymer resins:				
Production[11] and sales	2,019,900	1,813,894	333,688	.18
Sales and use, total	...	2,000,325	...	
Molding	...	1,003,361	...	
Textile and paper treating and coating	...	214,091	...	
Emulsion paint	...	37,196	...	
Extrusion	...	250,781	...	
All other domestic uses (including foam and foamable materials)	...	420,103	...	
Export sales	...	74,793	...	
Vinyl resins (resin content):				
Polyvinyl chloride and copolymers:				
Production and sales, total	2,142,438	1,927,942	302,110	.16
Suspension homopolymers	1,303,459	...	...	
Suspension copolymers	550,139	...	...	
Dispersions (paste)	288,840	...	...	
Sales and use, total	...	2,112,276	...	
Calendering, except flooring	...	394,952	...	
Flooring:				
Calendered	...	265,229	...	
Coated	...	52,294	...	
Paper and textile coating, and other paper and textile uses	...	101,341	...	
Protective coatings and adhesives	...	72,445	...	
Wire and cable	...	195,801	...	
Extruded film and sheet	...	102,502	...	
Other extruded products	...	297,014	...	
Sound records	...	105,247	...	
Injection and blow molding	...	71,782	...	
Plastisol formulating and molding	...	77,770	...	
All other domestic uses	...	305,149	...	
Export sales	...	70,750	...	
Polyvinyl acetate:				
Production and sales, total	342,370	251,200	73,369	.29
Latexes	223,375	...	...	
Resins	118,995	...	...	
Sales and use, total	...	310,525	...	
Emulsion paints	...	95,461	...	
Adhesives	...	116,971	...	
Paper treating	...	24,661	...	
Textile treating	...	7,695	...	
All other domestic uses	...	63,270	...	
Export sales	...	2,467	...	
Polyvinyl alcohol	43,484	37,008	16,236	.44
Other vinyl resins[12]	143,635	95,788	44,494	.46
All other thermoplastic resins[13]	519,690	433,772	254,002	.59

[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] Includes 3,532 thousand pounds sold for export.

[4] 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.

Footnotes for table 15A--Continued

[5] 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.
[6] Represents data for polyethylene produced by the high-pressure process and for ethylene copolymers.
[7] Represents production of polyethylene by the low-pressure process.
[8] Principally for injection molding.
[9] Includes data for extrusion coating, wire and cable coating, pipe and conduit, and other extruded products.
[10] ABS resins are polymers of acrylonitrile, styrene, and butadiene. SAN resins are polymers of styrene and acrylonitrile.
[11] Includes straight polystyrene, 850 million pounds; rubber-modified polystyrene, 746 million pounds; styrene-butadiene copolymers, 289 million pounds; and all other, 135 million pounds.
[12] Includes data for polyvinyl butyral, polyvinyl formal, and polyvinylidene chloride.
[13] Includes data for acrylic, fluorocarbon, non-nylon type polyamide, polycarbonate, polyoxymethylene, polyterpene, and other thermoplastic resins.

monthly reports, and 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 March 15, 1968, which contained year-end cumulative monthly totals for 1967. The end use breakdowns shown were developed with the advice of representatives of the plastics industry, and the data reported are the producers' determination of the use categories for their materials.

Total U.S. production of synthetic plastics and resin materials in 1967 amounted to 13,793 million pounds--slightly more than the 13,585 million pounds reported for 1966. Sales in 1967 were 11,977 million pounds, valued at $2,673 million. Production of benzenoid plastics and resin materials in 1967 amounted to 5,033 million pounds and that of nonbenzenoid materials to 8,759 million pounds. These figures compare with the benzenoid production in 1966 of 5,067 million pounds, and nonbenzenoid production of 8,518 million pounds.

The 1967 output of all types of thermosetting resins totaled 3,515 million pounds, compared with 3,647 million pounds in 1966. In 1967 phenolic and other tar acid resins were produced in the largest quantity in the thermosetting group. Output of phenolic resins amounted to 983 million pounds in 1967, compared with 1,047 million pounds in 1966. Production of urea and melamine resins in 1967 was 690 million pounds, and that of alkyd resins was 638 million pounds. Other thermosetting resins produced in significant amounts in 1967 were polyester resins (513 million pounds); coumarone-indene resins (284 million pounds); epoxy resins (131 million pounds); and polyurethane resins (89 million pounds).

The total output of thermoplastic resins in 1967 amounted to 10,278 million pounds, compared with 9,938 million pounds in 1966. In 1967, as in previous years, polyethylene, polystyrene, and polyvinyl chloride were the resins produced in the largest volume. The output of high-pressure polyethylene in 1967 was 2,716 million pounds, which corresponds to the output of 2,648 million pounds reported for 1966. Production of low-pressure polyethylene in 1967 was 1,082 million pounds, corresponding to the 910 million pounds produced in 1966.

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 1967 are given in table 16A.[8]

Production of rubber-processing chemicals as a group in 1967 amounted to 264 million pounds, or 6.8 percent less than the 283 million pounds reported for 1966. The decreased output of rubber-processing chemicals in 1967 is attributable principally to a lengthy strike in the rubber industry during the year. Sales of rubber-processing chemicals in 1967 amounted to 201 million pounds, valued at $132 million, compared with 209 million pounds, valued at $138 million, in 1966.

The output of cyclic rubber-processing chemicals in 1967 amounted to 220 million pounds, 8.8 percent less than the 241 million pounds reported for 1966. Sales in 1967 were 170 million pounds, valued at $116 million, compared with 183 million pounds, valued at $124 million, in 1966. Of the total output of cyclic rubber-processing chemicals in 1967, accelerators accounted for 31.4 percent and antioxidants for 63.2 percent. Production of antioxidants, which amounted to 139.1 million pounds in 1967, included 108.0 million pounds of amino compounds and 31.1 million pounds of phenolic and phosphite compounds. Sales of amino antioxidants in 1967

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

TABLE 16A.--*Rubber-processing chemicals: U.S. production and sales, 1967*

[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	264,133	200,848	131,795	$0.66
RUBBER-PROCESSING CHEMICALS, CYCLIC				
Total	220,139	169,970	116,318	.68
Accelerators, activators, and vulcanizing agents, total	69,161	55,619	34,035	.61
Aldehyde-amine reaction products	1,217	1,014	919	.91
Dithiocarbamic acid derivatives	238	199	455	2.29
Thiazole derivatives, total	56,674	43,427	24,100	.55
N-Cyclohexyl-2-benzothiazolesulfenamide	4,686	3,446	2,134	.62
2,2'-Dithiobis(benzothiazole)	21,934	10,571	5,967	.56
2-Mercaptobenzothiazole	4,665	...	...	...
All other thiazole derivatives	25,389	29,410	15,999	.54
All other accelerators	11,032	10,979	8,561	.78
Antioxidants, antiozonants, and stabilizers, total	139,083	103,374	72,461	.70
Amino compounds, total	108,017	80,351	55,613	.69
Octyldiphenylamine	2,844	2,775	1,463	.53
N-Phenyl-2-naphthylamine	5,478	...	...	...
Substituted p-phenylenediamines, total	47,711	33,794	30,944	.92
N,N'-Diphenyl-p-phenylenediamine	3,151	1,308	1,413	1.08
All other substituted p-phenylenediamines	44,560	32,486	29,531	.91
All other amino antioxidants, antiozonants, and stabilizers	51,984	43,782	23,206	.53
Phenolic and phosphite antioxidants and stabilizers, total	31,066	23,023	16,848	.73
Phenol, alkylated	9,953	6,282	3,402	.54
Polyphenolics (including bisphenols)	8,188	7,095	8,273	1.17
All other phenolic and phosphite antioxidants and stabilizers	12,925	9,646	5,173	.54
Blowing agents	3,237	3,364	5,156	1.53
Peptizers	5,731	5,309	3,236	.61
All other cyclic rubber-processing chemicals[2]	2,927	2,304	1,430	.62
RUBBER-PROCESSING CHEMICALS, ACYCLIC				
Total	43,994	30,878	15,477	.50
Accelerators, activators, and vulcanizing agents, total	21,493	15,316	9,285	.61
Dithiocarbamic acid derivatives, total[3]	6,796	5,880	4,508	.77
Dibutyldithiocarbamic acid, sodium salt	919	...	...	...
Dibutyldithiocarbamic acid, zinc salt	1,555	1,417	1,392	.98
Diethyldithiocarbamic acid, zinc salt	1,135	913	537	.59
Dimethyldithiocarbamic acid, zinc salt	1,644	1,588	752	.47
All other dithiocarbamic acid derivatives	1,543	1,962	1,827	.93
Thiurams, total[4]	14,310	9,184	4,474	.49
Bis(diethylthiocarbamoyl) disulfide	3,157	685	405	.59
Bis(dimethylthiocarbamoyl) disulfide	8,681	6,704	2,736	.41
Bis(dimethylthiocarbamoyl) sulfide	2,251	1,571	1,220	.78
All other thiurams	221	224	113	.50
All other accelerators, activators, and vulcanizing agents	387	252	303	1.20
Dimethyldithiocarbamic acid, sodium salt	5,483	1,651	784	.47
Dodecyl mercaptans	12,659	11,248	4,205	.37
All other acyclic rubber-processing chemicals[5]	4,359	2,663	1,203	.45

[1] Calculated from rounded figures.

[2] Includes retarders, 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 included 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.

were 80.4 million pounds, valued at $55.6 million; sales of phenolic and phosphite antioxidants were 23.0 million pounds, valued at $16.8 million.

Production of acyclic rubber-processing chemicals in 1967 amounted to 44.0 million pounds, an increase of 4.5 percent over the 42.1 million pounds reported for 1966. Sales in 1967 totaled 30.9 million pounds, valued at $15.5 million, compared with 26.5 million pounds, valued at $14.6 million, in 1966. Accelerators, principally dithiocarbamic acid derivatives and tetramethylthiuram sulfides, accounted for 48.9 percent of the output of acyclic rubber-processing chemicals for 1967. Dodecyl mercaptans accounted for 28.8 percent. Blowing agents, 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 1967 was 3,823, million pounds, compared with 3,929 million pounds reported for 1966. Sales of these elastomers amounted to 3,262 million pounds, valued at $874 million, in 1967, compared with 3,411 million pounds, valued at $918 million, in 1966.

Production of cyclic elastomers in 1967 amounted to 2,298 million pounds, compared with 2,482 million pounds in 1966. Sales of cyclic elastomers in 1967 were 1,940 million pounds, valued at $440 million, compared with 2,108 million pounds, valued at $463 million, in the

TABLE 17A.--*Elastomers (synthetic rubbers):*[1] *U.S. production and sales, 1967*

[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	3,822,545	3,262,044	874,237	$0.27
ELASTOMERS, CYCLIC				
Total	2,297,637	1,940,099	439,580	.23
Polybutadiene-styrene type (S-type)[3]	2,263,337	[4]1,918,267	422,065	.22
Polybutadiene-styrene-vinylpyridine type	21,185	10,353	6,040	.58
Polyurethane type	13,115	11,479	11,475	1.00
ELASTOMERS, ACYCLIC				
Total	1,524,908	1,321,945	434,657	.33
Polybutadiene-acrylonitrile type (N-type)	138,290	128,953	59,789	.46
Polyisobutylene-isoprene type (Butyl)	255,117	...	...	...
Silicone elastomers	9,518	8,447	28,384	3.36
Stereo elastomers, total	688,609	533,004	109,535	.21
Stereo polybutadiene	451,503	354,544	68,067	.19
All other stereo elastomers	237,106	178,460	41,468	.23
All other acyclic elastomers[5]	* 433,374	651,541	236,949	.36

[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 and other 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.

previous year. Of the total U.S. production of cyclic elastomers in 1967, the polybutadiene-styrene type (including vinylpyridine) accounted for 2,285 million pounds, and the polyurethane type for 13 million pounds.

The U.S. production of acyclic elastomers in 1967 was 1,525 million pounds, compared with 1,447 million pounds in 1966. Sales of these products in 1967 amounted to 1,322 million pounds, valued at $435 million. Of the 1967 production of acyclic elastomers, stereo elastomers were produced in the largest amount (689 million pounds), followed by the polyisobutylene-isoprene type (255 million pounds), and the polybutadiene-acrylonitrile type (N-type) (138 million pounds). The stereo elastomers are composed principally of polybutadiene, polyisoprene, and ethylene-propylene rubber. Production of silicone elastomers in 1967 was 9.5 million pounds and of other acyclic elastomers was 433 million pounds. The latter figure includes polyacrylate, polyalkalene sulfide, polychloroprene, polyisobutylene, and types of other 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

TABLE 18A.--*Plasticizers:*[1] *U.S. production and sales, 1967*

[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	1,262,779	1,161,851	260,969	$0.22
PLASTICIZERS, CYCLIC				
Total	929,871	865,084	167,827	.19
Phosphoric acid esters:				
Cresyl diphenyl phosphate	18,229	18,483	5,190	.28
Tricresyl phosphate	42,885	40,335	12,679	.31
Triphenyl phosphate	8,741	...	...	...
Phthalic anhydride esters, total	783,876	733,620	125,240	.17
Butyl octyl phthalates (including butyl 2-ethylhexyl phthalate)	16,482	15,678	2,761	.18
Dibutyl phthalate	25,238	22,801	4,310	.19
Dicyclohexyl phthalate	4,981	...	...	...
Diethyl phthalate	20,830	16,262	3,033	.19
Diisodecyl phthalate	123,133	109,852	18,011	.16
Di(2-methoxyethyl) phthalate	6,754	5,504	1,495	.27
Dimethyl phthalate	4,549	4,059	829	.20
Dioctyl phthalates, total	405,414	387,059	60,843	.16
Di(2-ethylhexyl) phthalate	293,243	277,741	43,107	.16
Diiso-octyl phthalate	98,066	97,308	15,646	.16
Mixed dioctyl phthalates (including dicapryl phthalate and dioctyl isophthalates)	14,105	12,010	2,090	.17
Di-tridecyl phthalate	18,209	18,399	4,333	.24
Glycolate phthalate esters	4,939	4,637	1,819	.39
n-Octyl n-decyl phthalate	40,721	33,229	6,190	.19
All other phthalic anhydride esters	112,626	116,140	21,616	.19
Trimellitic acid esters, total	6,252	5,693	2,544	.45
Trioctyl trimellitate	2,180	2,050	860	.42
All other trimellitic acid esters	4,072	3,643	1,684	.46
All other cyclic plasticizers[3]	69,888	66,953	22,174	.33

See footnotes at end of table.

TABLE 18A.--*Plasticizers:*[1] *U.S. production and sales, 1967*--Continued

Chemical	Production	Sales		
		Quantity	Value	Unit value[2]
PLASTICIZERS, ACYCLIC	*1,000 pounds*	*1,000 pounds*	*1,000 dollars*	*Per pound*
Total	332,908	296,767	93,142	$0.31
Adipic acid esters, total	65,694	57,628	15,812	.27
Di(2-(2-butoxyethoxy)ethyl) adipate	1,610	1,554	734	.47
Di(2-ethylhexyl) adipate	31,496	24,834	6,054	.24
Diisodecyl adipate	10,871	9,879	2,670	.27
n-Octyl n-decyl adipate	8,911	9,002	2,193	.24
All other	12,806	12,359	4,161	.34
Azelaic acid esters	17,543	17,419	4,966	.29
Complex linear polyesters and polymeric plasticizer[4]	44,954	43,256	16,386	.38
Epoxidized esters, total	91,517	83,247	22,261	.27
Epoxidized soya oils	62,164	56,422	14,960	.26
2-Ethylhexyl epoxytallates	...	9,666	2,369	.24
Octyl epoxytallates	15,074	14,010	3,631	.26
All other	14,279	3,149	1,301	.41
Isopropyl myristate	1,051	1,400	606	.43
Isopropyl palmitate	720	811	305	.38
Oleic acid esters, total	11,008	8,414	2,063	.25
Butyl oleate	2,716	1,801	389	.22
Glyceryl trioleate (Triolein)	...	2,797	668	.24
Methyl oleate	2,410	...	...	...
Propyl oleates (including normal and iso)	1,189	852	183	.21
All other	4,693	2,964	823	.28
Phosphoric acid esters	18,069	15,446	6,558	.42
Ricinoleic acid esters:				
Butyl ricinoleate	987	...	...	...
Glyceryl monoricinoleate	214	209	84	.40
Sebacic acid esters:				
Dibutyl sebacate	4,684	3,306	1,959	.59
Di(2-ethylhexyl) sebacate	6,914	6,299	3,124	.50
Stearic acid esters, total	7,313	6,603	1,662	.25
n-Butyl stearate	3,893	3,337	793	.24
All other	3,420	3,266	869	.27
Triethylene glycol di(caprylate-caprate)	1,144	1,149	415	.36
All other acyclic plasticizers[5]	61,096	51,580	16,941	.33

[1] Does not include data for clearly defined extenders or secondary plasticizers.
[2] Calculated from rounded figures.
[3] Includes data for alkylated naphthalene, glycol dibenzoates, hydrogenated terphenyls, phosphate esters (including sales of triphenyl phosphate), toluenesulfonamides, tetrahydrofurfuryl oleate, and other cyclic plasticizers.
[4] Adipic acid polyesters account for most of the production of complex linear polyesters and polymeric plasticizers.
[5] Includes data for citric and acetylcitric, lauric, myristic, palmitic, pelargonic, ricinoleic, sebacic, and tartaric acid esters, glyceryl 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.

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 1967 amounted to 1,263 million pounds--representing an increase of 4.4 percent over the output of 1,209 million pounds reported for 1966. Sales in 1967 of the plasticizers covered by this report amounted to 1,162 million pounds, valued at $261 million, compared with 1,156 million pounds, valued at $246 million in 1966--increases of 0.5 percent in quantity and 6.1 percent in value.

Production of cyclic plasticizers in 1967, which consisted chiefly of the esters of phthalic anhydride and phosphoric acid, amounted to 930 million pounds, compared with 897 million pounds in 1966.

Sales of cyclic plasticizers in 1967 amounted to 865 million pounds, valued at $168 million, compared with 873 million pounds, valued at $157 million, in the previous year. This represents a decrease in sales quantity of 0.9 percent, and an increase in sales value of 7.0 percent.

Production of acyclic plasticizers in 1967 amounted 333 million pounds, compared with 312 million pounds in 1966. Sales of acyclic plasticizers in 1967 amounted to 297 million pounds, valued at $93 million, compared with 283 million pounds, valued at $89 million, in 1966. Production of complex linear polyesters in 1967 amounted to 45 million pounds, and that of epoxidized esters, to 92 million pounds. Among the 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.--*Surface-active agents: U.S. production and sales, 1967*

[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	3,479,295	1,750,024	316,687	$0.18
Benzenoid[4]	964,779	414,179	79,144	.19
Nonbenzenoid[5]	2,514,516	1,335,845	237,543	.18
Amphoteric Surface-Active Agents	6,639	6,510	4,014	.62
Anionic Surface-Active Agents				
Total	2,614,456	1,087,783	148,950	.14
Carboxylic acids (and salts thereof), total	1,044,035	...	...	...
Amine salts of fatty, rosin, and tall oil acids	923	346	147	.42
Carboxylic acids having amide, ester, or ether linkages, total	22,476	6,283	4,006	.64
N-Lauroylsarcosine, sodium salt	3,079	...	...	...
All other	19,397	6,283	4,006	.64
Potassium and sodium salts of fatty, rosin, and tall oil acids, total	1,020,636	...	...	...
Coconut oil acids, potassium and sodium salts	127,098	2,804	1,146	.41
Corn oil acids, potassium salt	452	456	151	.33
Corn oil acids, sodium salt	725	720	214	.30
Mixed vegetable fatty acids, potassium salt	2,859	2,702	2,077	.77
Oleic acid, potassium salt	1,149	476	110	.23
Oleic acid, sodium salt	1,806	1,535	303	.20
Stearic acid, potassium and sodium salts	3,183	681	245	.36
Tall oil acids, potassium and sodium salts, total	21,700	13,327	2,754	.21
Potassium salt	11,734	...	...	...
Sodium salt	9,966	...	...	...
Tallow acids, potassium salt	45,174	...	...	...
Tallow acids, sodium salt	533,126	27,095	3,606	.13
All other	283,364	...	...	...

See footnotes at end of table.

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

TABLE 19A. --*Surface-active agents: U.S. production and sales, 1967*--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*
Phosphoric and polyphosphoric acid esters (and salts thereof), total	15,110	12,306	6,446	$0.52
Alcohols and phenols, ethoxylated and phosphated, total	9,183	7,854	3,725	.47
Mixed linear alcohols, ethoxylated and phosphated	449	386	116	.30
Nonylphenol, ethoxylated and phosphated	3,418	2,442	850	.35
Tridecyl alcohol, ethoxylated and phosphated	392	368	157	.43
All other	4,924	4,658	2,602	.56
Alcohols, phosphated or polyphosphated, total	5,927	4,452	2,721	.61
2-Ethylhexyl phosphate, sodium salt	164	124	37	.30
Octyl phosphates	2,720	2,607	1,494	.57
All other	3,043	1,721	1,190	.69
Sulfonic acids (and salts thereof), total	...	664,117	63,174	.10
Alkylbenzenesulfonates, total	651,492	139,229	23,809	.17
Dodecylbenzenesulfonates, total	537,541	128,218	22,229	.17
Dodecylbenzenesulfonic acid	101,877	31,994	4,426	.14
Dodecylbenzenesulfonic acid, calcium salt	9,724	6,840	2,572	.38
Dodecylbenzenesulfonic acid, isopropanolamine salt	423	...	...	...
Dodecylbenzenesulfonic acid, isopropylamine salt	2,507	2,985	901	.30
Dodecylbenzenesulfonic acid, sodium salt	416,982	81,781	13,044	.16
Dodecylbenzenesulfonic acid, triethanolamine salt	3,568	3,038	825	.27
All other	2,460	1,580	461	.29
Other alkylbenzenesulfonates, total	113,951	11,011	1,580	.14
Tridecylbenzenesulfonic acid	703	444	56	.13
All other	113,248	10,567	1,524	.14
Benzene-, cumene-, toluene-, and xylenesulfonates, total	59,096	53,462	4,765	.09
Xylenesulfonic acid, ammonium salt	11,325	13,277	1,017	.08
Xylenesulfonic acid, sodium salt	26,841	15,522	1,512	.10
All other	20,930	24,663	2,236	.09
Ligninsulfonates, total	453,665	438,059	16,666	.04
Ligninsulfonic acid, calcium salt	284,246	268,713	6,661	.02
Ligninsulfonic acid, chromium salt	19,975	20,267	1,850	.09
Ligninsulfonic acid, sodium salt	45,378	45,417	3,604	.08
All other	104,066	103,662	4,551	.04
Naphthalenesulfonates, total	10,615	7,027	2,729	.39
Butylnaphthalenesulfonic acid, sodium salt	201	176	43	.24
Diisopropylnaphthalenesulfonic acid and sodium salt	482	441	256	.58
All other	9,932	6,410	2,430	.38
Sulfonic acids having amide linkages, total	4,762	3,953	2,393	.61
N-Methyl-N-oleoyltaurine, sodium salt	2,587	2,675	1,449	.54
Sulfosuccinamic acid derivatives	1,030	775	642	.83
All other	1,145	503	302	.60
Sulfosuccinic acid esters, total	8,035	7,641	4,092	.54
Sulfosuccinic acid, bis(2-ethylhexyl) ester, sodium salt	5,350	5,124	2,845	.56
All other	2,685	2,517	1,247	.50
All other sulfonic acids	...	14,746	8,720	.59
Sulfuric acid esters (and salts thereof):				
Acids, amides, and esters, sulfated, total	23,469	15,768	4,347	.28
Coconut oil acids - ethanolamine condensate, sulfated, potassium salt	...	20	23	1.15
Esters of sulfated oleic acid, total	7,861	4,960	1,394	.28
Butyl oleate, sulfated, sodium salt	4,164	2,658	646	.24
Isopropyl oleate, sulfated, sodium salt	391	348	125	.36
Propyl oleate, sulfated, sodium salt	538	524	188	.36
All other	2,768	1,430	435	.30
Oleic acid, sulfated, disodium salt	9,712	...	...	...
Tall oil, sulfated, sodium salt	841	772	183	.24
All other	5,055	10,016	2,747	.27

See footnotes at end of table.

TABLE 19A. --*Surface-active agents: U.S. production and sales, 1967*--Continued

Chemical	Production[1]	Sales[2]		
		Quantity[1]	Value	Unit value[3]
Anionic Surface-Active Agents--Continued	*1,000 pounds*	*1,000 pounds*	*Per pound*	*1,000 dollars*
Sulfuric acid esters (and salts thereof)--Continued				
Alcohols and phenols, sulfated, total	...	29,990	12,981	$0.43
Coconut and sperm oil alkyl sulfate, sodium salt	908	821	426	.52
Dodecyl sulfate salts, total	42,048	...	...	...
Dodecyl sulfate, ammonium salt	2,407	...	...	...
Dodecyl sulfate, magnesium salt	246	...	...	...
Dodecyl sulfate, sodium salt	16,410	...	...	...
Dodecyl sulfate, triethanolamine salt	8,931	...	...	...
All other	14,054	...	...	...
Hexadecyl sulfate, sodium salt	117	122	68	.56
Mixed linear alcohol sulfate salts	967	986	189	.19
Octadecyl sulfate salts	...	264	173	.66
All other	...	27,797	12,125	.44
Ethers, sulfated, total	132,758	...	...	...
Alkylphenols, ethoxylated and sulfated	3,696	3,416	1,133	.33
Dodecyl alcohol, ethoxylated and sulfated, ammonium salt	1,139	...	...	...
Dodecyl alcohol, ethoxylated and sulfated, sodium salt	3,423	1,304	669	.51
Mixed linear alcohols, ethoxylated and sulfated, sodium salt	2,770	2,407	504	.21
Tridecyl alcohol, ethoxylated and sulfated, sodium salt	832	832	287	.34
All other	120,898	...	...	...
Natural fats and oils, sulfated, total	32,296	19,928	3,857	.19
Animal (including fish) oils, sulfated, total	20,669	14,678	2,186	.15
Cod oil, sulfated, sodium salt	1,940	1,592	215	.14
Neat's-foot oil, sulfated, sodium salt	1,172	473	97	.20
Sperm oil, sulfated, sodium salt	6,510	4,065	672	.17
Tallow, sulfated, sodium salt	10,004	7,566	990	.13
All other	1,043	982	212	.22
Vegetable oils, sulfated, total	11,627	5,250	1,671	.32
Castor oil, sulfated, sodium salt	6,998	4,079	1,351	.33
Coconut oil, sulfated, sodium salt	2,350	708	167	.24
Ricebran oil, sulfated, sodium salt	151	...	...	...
Soybean oil, sulfated, sodium salt	257	136	49	.36
All other	1,871	327	104	.32
Other anionic surface-active agents[6]	135,083	281,290	40,793	.15
Cationic Surface-Active Agents				
Total	154,021	122,672	48,017	.39
Amine oxides and oxygen-containing amines (except those having amide linkages), total	39,445	17,690	7,445	.42
Acyclic, total	32,700	12,571	5,391	.43
(Coconut oil alkyl)amine, ethoxylated	2,734	2,720	932	.34
(Mixed alkyl)amine, ethoxylated	3,741	...	...	...
(Soybean oil alkyl)amine, ethoxylated	936	989	366	.37
(Tallow alkyl)amine, ethoxylated	1,342	1,415	785	.55
All other	23,947	7,447	3,308	.44
Imidazoline and oxazoline derivatives, total	4,040	3,091	1,513	.49
2-(8-Heptadecenyl)-1-(2-hydroxyethyl)-2-imidazoline	175	...	...	...
2-Heptadecyl-1-(2-hydroxyethyl)-2-imidazoline	155	...	...	...
All other	3,700	3,091	1,513	.49
Cyclic products (except imidazoline and oxazoline derivatives), total	2,705	2,028	541	.27
Rosin amine, ethoxylated	1,037	...	...	...
All other	1,668	2,028	541	.27

See footnotes at end of table.

TABLE 19A. --*Surface-active agents: U.S. production and sales, 1967* --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*
Amines and amine oxides having amide linkages, total	13,975	12,776	5,912	$0.46
Carboxylic acid - diamine and polyamine condensates, total	8,092	9,211	3,079	.33
Coconut oil acids - diethylenetriamine condensate	...	95	50	.53
Coconut oil acids - N,N-dimethyltrimethylenediamine condensate	92	78	35	.45
Stearic acid - diethylenetriamine condensate	394	...	...	...
All other	7,606	9,038	2,994	.33
Stearic acid - ethylenediamine condensate, monoethoxylated	2,081	1,112	1,004	.90
Other amines and amine oxides having amide linkages	3,802	2,453	1,829	.75
Amines, not containing oxygen (and salts thereof), total	48,509	42,422	14,418	.34
Amine salts	2,907	2,959	1,192	.40
Diamines and polyamines, total	11,689	10,241	3,069	.30
N-(Coconut oil alkyl)trimethylenediamine	1,105	1,134	525	.46
N-(9-Octadecenyl)trimethylenediamine	1,611	1,525	569	.37
N-(Tallow alkyl)trimethylenediamine	3,625	3,324	1,010	.30
All other	5,348	4,258	965	.23
Primary monoamines, total	21,633	19,601	6,443	.33
(Coconut oil alkyl)amine	1,687	1,432	667	.47
(Hydrogenated tallow alkyl)amine[7]	2,583	2,727	766	.28
9-Octadecenylamine	1,588	...	...	...
Octadecylamine	695	731	319	.44
(Tall oil alkyl)amine	...	47	19	.40
(Tallow alkyl)amine	5,165	4,625	1,127	.24
All other	9,915	10,039	3,545	.35
Secondary and tertiary monoamines, total	12,280	9,621	3,714	.39
N,N-Dimethyl(coconut oil alkyl)amine	2,045	2,072	835	.40
N,N-Dimethyloctadecylamine	300	301	157	.52
N-Methylbis(hydrogenated tallow alkyl)amine	...	2,762	743	.27
All other	9,935	4,486	1,979	.44
Oxygen-containing quaternary ammonium salts (except those having amide linkages), total	2,792	2,172	1,992	.92
Acyclic	1,196	947	571	.60
Cyclic	1,596	1,225	1,421	1.16
Quaternary ammonium salts having amide linkages	4,726	4,383	1,939	.44
Quaternary ammonium salts, not containing oxygen, total	44,574	43,229	16,311	.38
Acyclic, total	34,885	34,565	10,347	.30
Bis(coconut oil alkyl)dimethylammonium chloride	1,149	1,178	414	.35
Bis(hydrogenated tallow alkyl)dimethylammonium chloride	20,675	20,577	4,879	.24
(Coconut oil alkyl)trimethylammonium chloride	...	96	64	.67
Hexadecyltrimethylammonium salts	668	554	380	.69
All other	12,393	12,160	4,610	.38
Benzenoid, total	9,689	8,664	5,964	.69
Benzyl(coconut oil alkyl)dimethylammonium chloride	288	290	254	.88
Benzyldimethyl(mixed alkyl)ammonium chloride	4,078	4,040	2,939	.73
Benzyldodecyldimethylammonium chloride	568	546	366	.67
(3,4-Dichlorobenzyl)dodecyldimethylammonium chloride	42	29	21	.72
All other	4,713	3,759	2,384	.63
Nonionic Surface-Active Agents				
Total	704,179	533,059	115,706	.22
Carboxylic acid amides, total[8]	91,545	58,036	14,843	.26
Carboxylic acid - alkanolamine condensates, total	91,151	57,669	14,663	.25
Diethanolamine condensates (amine/acid ratio=2/1), total	26,945	19,199	5,522	.29
Capric acid	106	...	...	...
Coconut oil acids	12,821	9,905	3,056	.31

See footnotes at end of table.

TABLE 19A. --*Surface-active agents: U.S. production and sales, 1967*--Continued

Chemical	Production[1]	Sales[2]		
		Quantity[1]	Value	Unit value[3]
Nonionic Surface-Active Agents--Continued				
Carboxylic acid amides--Continued				
Carboxylic acid - alkanolamine condensates--Continued				
Diethanolamine condensates (amine/acid ratio = 2/1)--Continued	*1,000 pounds*	*1,000 pounds*	*1,000 dollars*	*Per pound*
Coconut oil and tallow acids	...	1,622	195	$0.12
Lauric acid	6,926	4,340	1,205	.28
Oleic acid	1,465	1,237	372	.30
Stearic acid	692	509	200	.39
Tall oil acids	423	...	...	...
All other	4,512	1,586	494	.31
Diethanolamine condensates (other amine/acid ratios), total	38,116	...	...	...
Coconut oil acids (amine/acid ratio=1/1)	18,384	17,015	4,240	.25
Lauric acid (amine/acid ratio=1/1)	15,315	...	...	...
Oleic acid (amine/acid ratio=1/1)	525	455	294	.65
Stearic acid (amine/acid ratio=1/1)	788	763	325	.43
All other	3,104	...	...	...
Ethanolamine condensates, total	21,838	...	...	...
Lauric acid (amine/acid ratio=2/1)	37	23	9	.39
All other	21,801	...	...	...
Isopropanolamine condensates, total	4,252	...	...	...
Lauric acid	...	194	64	.33
All other	4,252	...	...	...
Groups listed above for which separate sales data may not be shown	...	20,020	4,209	.21
Carboxylic acid - alkanolamine condensates, ethoxylated	394	367	180	.49
Carboxylic acid esters, total	163,863	126,498	40,232	.32
Anhydrosorbitol esters, total	15,892	10,594	3,950	.37
Anhydrosorbitol monoester of tall oil acids	562	...	...	...
Anhydrosorbitol mono-oleate	...	3,848	1,465	.38
Anhydrosorbitol monostearate	3,798	2,713	918	.34
Anhydrosorbitol trioleate	...	596	234	.39
Anhydrosorbitol tristearate	...	111	39	.35
All other	11,532	3,326	1,294	.39
Ethoxylated anhydrosorbitol esters, total	17,688	14,365	5,928	.41
Ethoxylated anhydrosorbitol monolaurate	...	3,380	1,412	.42
Ethoxylated anhydrosorbitol mono-oleate	6,679	...	...	...
Ethoxylated anhydrosorbitol monopalmitate	...	382	171	.45
Ethoxylated anhydrosorbitol monostearate	3,689	3,033	1,261	.42
Ethoxylated anhydrosorbitol trioleate	...	578	239	.41
Ethoxylated anhydrosorbitol tristearate	814	1,278	522	.41
All other	6,506	5,714	2,323	.41
Ethylene glycol and diethylene glycol esters, total	4,780	4,477	1,379	.31
Diethylene glycol monolaurate	289	310	107	.35
Diethylene glycol mono-oleate	109	108	31	.29
Diethylene glycol monostearate	756	579	161	.28
Ethylene glycol monostearate	965	853	329	.39
All other	2,661	2,627	751	.29
Glycerol esters, total	73,750	59,543	17,209	.29
Complex glycerol esters	4,306	3,273	1,360	.42
Glycerol esters of chemically defined acids, total	17,013	12,092	4,689	.39
Glycerol monolaurate	66	62	21	.34
Glycerol mono-oleate	2,523	2,319	842	.36
Glycerol monostearate[9]	13,287	8,713	3,341	.38
All other	1,137	998	485	.49
Glycerol esters of mixed acids, total	52,431	44,178	11,160	.25
Glycerol monoester of hydrogenated soybean oil acids	7,644	5,977	1,521	.25
All other	44,787	38,201	9,639	.25
Natural fats and oils, ethoxylated, total	4,836	3,775	1,291	.34
Castor oil, ethoxylated	4,319	3,498	1,169	.33
Lanolin, ethoxylated	207	...	...	...
All other	310	277	122	.44

See footnotes at end of table.

TABLE 19A. -- *Surface-active agents: U.S. production and sales, 1967* --Continued

Chemical	Production[1]	Sales[2]		
		Quantity[1]	Value	Unit value[3]
Nonionic Surface-Active Agents--Continued	*1,000 pounds*	*1,000 pounds*	*1,000 dollars*	*Per pound*
Carboxylic acid esters--Continued				
Polyethylene glycol esters, total	32,980	22,238	6,659	$0.30
Polyethylene glycol esters of chemically defined acids, total	23,039	13,002	4,845	.37
Polyethylene glycol dilaurate	752	692	231	.33
Polyethylene glycol dioleate	3,104	819	273	.33
Polyethylene glycol distearate	300	292	102	.35
Polyethylene glycol monolaurate	5,134	2,373	931	.39
Polyethylene glycol mono-oleate	3,713	2,906	1,010	.35
Polyethylene glycol monostearate	9,308	5,801	2,246	.39
All other	728	119	52	.44
Polyethylene glycol esters of rosin and tall oil acids, total	8,517	8,073	1,362	.17
Polyethylene glycol sesquiester of tall oil acids	8,107	7,681	1,229	.16
All other	410	392	133	.34
Polyethylene glycol esters of other mixed acids, total	1,424	1,163	452	.39
Polyethylene glycol sesquiester of coconut oil acids	474	407	86	.21
All other	950	756	366	.48
Polyglycerol esters	631	312	149	.48
Propanediol esters, total	5,039	3,474	951	.27
1,2-Propanediol monostearate	3,836	2,280	549	.24
All other	1,203	1,194	402	.34
Other carboxylic acid esters	8,267	7,720	2,716	.35
Ethers, total	443,741	343,767	58,432	.17
Benzenoid ethers, total	210,912	185,759	31,631	.17
Dodecylphenol, ethoxylated	13,609	13,320	1,943	.15
Iso-octylphenol, ethoxylated	1,584	1,001	241	.24
Nonylphenol, ethoxylated	111,680	99,337	14,579	.15
Phenol, ethoxylated	8,042	...	...	...
All other	75,997	72,101	14,868	.21
Nonbenzenoid ethers, total	232,829	158,008	26,801	.17
Linear alcohols, alkoxylated, total	186,887	118,684	17,235	.15
Decyl alcohol, ethoxylated	1,046	...	...	...
Dodecyl alcohol, ethoxylated	...	2,041	883	.43
Hexadecyl alcohol, ethoxylated	378	389	219	.56
Mixed linear alcohols, ethoxylated	124,281	109,051	13,325	.12
Mixed linear alcohols, ethoxylated and propoxylated	...	2,494	453	.18
9-Octadecenyl alcohol, ethoxylated	3,607	2,560	1,336	.52
Octadecyl alcohol, ethoxylated	431	207	194	.94
All other	57,144	1,942	825	.42
Other ethers and thioethers, total	45,942	39,324	9,566	.24
Tridecyl alcohol, ethoxylated	6,851	5,943	1,354	.23
All other	39,091	33,381	8,212	.25
Other nonionic surface-active agents	5,030	4,758	2,199	.46

[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 carbocylic 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 1965 and earlier 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.
[7] Production and sales of (hydrogenated tallow alkyl)amine were overstated in 1965 and 1966 because of erroneous reporting by one producer.
[8] The nonionic carboxylic acid - diamine and polyamine condensates, formerly reported under this heading, have been transferred to the section on Miscellaneous Chemicals.
[9] Some products previously reported as glycerol monostearate are now reported as glycerol esters of mixed acids.

Table 19A shows statistics for production and sales of surface-active agents grouped by ionic class and by chemical class and subclass.[11] All quantities are reported in terms of 100-percent organic surface-active ingredient and thus exclude all inorganic salts, water, and other diluents. Sales statistics reflect sales of bulk surface-active agents only; sales of formulated products are excluded.

Total U.S. production of surface-active agents in 1967 amounted to 3,479 million pounds, or 4.8 percent more than the 3,321 million pounds reported for 1966 and 9.7 percent more than the 3,170 million pounds reported for 1965. Sales of bulk surface-active agents in 1967 amounted to 1,750 million pounds, valued at $317 million, compared with sales in 1966 of 1,766 million pounds, valued at $315 million. Sales in 1967 were thus 0.9 percent smaller than in 1966 in terms of quantity but were 0.6 percent larger in terms of value.

Production of anionic surface-active agents in 1967 amounted to 2,614 million pounds, or 75.1 percent of the total reported for 1967 and 5.9 percent more than the anionic output reported for 1966. Sales of anionics in 1967 amounted to 1,088 million pounds, valued at $149 million. Of the total anionic output, 1,021 million pounds consisted of potassium and sodium salts of fatty, rosin, and tall oil acids, of which 533 million pounds was the sodium salt of tallow acids; 651 million pounds consisted of alkylbenzenesulfonates, of which 417 million pounds was the sodium salt of dodecylbenzenesulfonic acid and 102 million pounds was the free acid; and 454 million pounds consisted of ligninsulfonic acid salts, of which 284 million pounds was the calcium salt and 45 million pounds was the sodium salt.

Production of nonionic surface-active agents in 1967 amounted to 704 million pounds, or 20.2 percent of the total reported for 1967 and 2.7 percent more than the nonionic output reported for 1966. Sales of nonionics in 1967 amounted to 533 million pounds, valued at $116 million. Of the total nonionic output, 211 million pounds consisted of alkylphenol ethoxylates and other benzenoid ethers, of which 112 million pounds was nonylphenol ethoxylate; 233 million pounds consisted of alcohol ethoxylates and other nonbenzenoid ethers, of which 124 million pounds was mixed linear alcohol ethoxylate; 91 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); 15 million pounds was lauric diethanolamide (1/1 ratio); and 13 million pounds was coco diethanolamide (2/1 ratio); and 74 million pounds consisted of glycerol esters, of which 13 million pounds was glycerol monostearate.

Production of cationic surface-active agents in 1967 amounted to 154 million pounds, or 4.4 percent of the total reported for 1967 and 4.8 percent less than the cationic output reported for 1966. Sales of cationics in 1967 amounted to 123 million pounds, valued at $48 million. Of the total output of cationics, 45 million pounds consisted of quaternary ammonium salts not containing oxygen, of which 21 million pounds was bis(hydrogenated tallow alkyl)dimethylammonium chloride; and 22 million pounds consisted of primary monoamines not containing oxygen.

Production of amphoteric surface-active agents in 1967 amounted to 6.6 million pounds, or approximately 0.2 percent of the total reported for 1967 and 31.4 percent more than the amphoteric output reported for 1966. Sales in 1967 amounted to 6.5 million pounds, valued at $4.0 million.

The difference between production and sales reflects inventory changes and 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 1967 are given in table 20A.[12]

[11] See also table 19B, pt. III, which lists these products and identifies the manufacturers.
[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, 1967*

[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 related products 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	1,049,663	897,363	787,043	$0.88
PESTICIDES AND RELATED PRODUCTS, CYCLIC				
Total	823,158	681,532	627,742	.92
Fungicides, total	103,891	80,885	29,651	.37
3,5-Dimethyl-1,3,5-2H-tetrahydrothiadiazine-2-thione (DMTT)	1,046	1,035	548	.53
Mercury fungicides, total	1,430	1,196	6,098	5.10
Phenylmercuric acetate (PMA)	518	341	2,477	7.26
Other mercury fungicides	912	855	3,621	4.24
Naphthenic acid, copper salt	3,473	3,385	996	.29
Pentachlorophenol (PCP)	44,239	37,959	6,430	.17
8-Quinolinol (8-Hydroxyquinoline), copper salt	193	194	472	2.43
2,4,5-Trichlorophenol and salts	25,254	...	...	...
All other cyclic fungicides[2]	28,256	37,116	15,107	.41
Herbicides and plant hormones, total	366,298	248,892	385,523	1.55
Dinitrobutylphenol, ammonium salt	58	66	119	1.80
1-Naphthaleneacetic acid and esters and salts	28	30	128	4.27
Phenoxyacetic acid derivatives:				
2,4-Dichlorophenoxyacetic acid (2,4-D)	77,139	34,021	10,854	.32
2,4-Dichlorophenoxyacetic acid esters and salts, total	83,750	64,595	28,824	.45
2,4-Dichlorophenoxyacetic acid, n-butyl ester	25,402	19,559	11,292	.58
2,4-Dichlorophenoxyacetic acid, dimethylamine salt	19,139	15,631	6,534	.42
2,4-Dichlorophenoxyacetic acid, iso-octyl ester	9,804	10,065	3,905	.39
2,4-Dichlorophenoxyacetic acid, isopropyl ester	3,836	3,070	1,098	.36
All other (2,4-D) esters and salts	25,569	16,270	5,995	.38
2,4,5-Trichlorophenoxyacetic acid (2,4,5-T)	14,552	1,670	2,095	1.25
2,4,5-Trichlorophenoxyacetic acid esters and salts, total	27,189	25,699	20,565	.80
2,4,5-Trichlorophenoxyacetic acid, n-butyl ester	19,422	19,021	12,937	.68
2,4,5-Trichlorophenoxyacetic acid, iso-octyl ester	4,653	4,759	5,532	1.16
All other (2,4,5-T) esters and salts	3,114	1,919	2,096	1.09
All other cyclic herbicides and plant hormones[3]	163,582	122,811	322,938	2.63
Insecticides and rodenticides, total	352,969	351,755	212,568	.60
Aldrin-toxaphene group[4]	120,183	134,318	71,492	.53
α-Bis(p-chlorophenyl)-β,β,β-trichloroethane (DDT)	103,411	88,701	13,696	.15
Hexachlorocyclohexane (Benzene hexachloride)	...	6,042	1,148	.19
Organophosphorus insecticides, total	63,924	62,730	71,190	1.13
0,0-Diethyl O-p-nitrophenyl phosphorothioate (Parathion)	11,361	14,573	8,217	.56
0,0-Dimethyl O-p-nitrophenyl phosphorothioate (Methyl parathion)	33,344	31,919	19,803	.62
All other organophosphorus insecticides[5]	19,219	16,238	43,170	2.66
All other insecticides and rodenticides[6]	65,451	59,964	55,042	.92
PESTICIDES AND RELATED PRODUCTS ACYCLIC				
Total	226,505	215,831	159,301	.74
Fungicides, total	40,521	39,528	26,682	.68
Dimethyldithiocarbamic acid, ferric salt (Ferbam)	2,331	2,002	882	.44
Ethylene bis(dithiocarbamic acid), disodium salt (Nabam)	1,361	2,196	921	.42
Ethylene bis(dithiocarbamic acid), zinc salt (Zineb)	3,055	3,528	1,527	.43
All other acyclic fungicides[7]	33,774	31,802	23,352	.73
Herbicides and plant hormones[8]	43,149	38,690	44,457	1.15

See footnotes at end of table.

TABLE 20A.--*Pesticides and related products: U.S. production and sales, 1967*--Continued

Product	Production	Sales		
		Quantity	Value	Unit value[1]
PESTICIDES AND RELATED PRODUCTS, ACYCLIC--Continued	*1,000 pounds*	*1,000 pounds*	*1,000 dollars*	*Per pound*
Insecticides, rodenticides, and soil conditioners and fumigants, total	142,835	137,613	88,162	$0.64
1,2-Dibromo-3-chloropropane (DBCP)	5,240	4,358	2,122	.49
Methyl bromide (Bromoethane)	19,665	17,206	6,766	.39
All other acyclic insecticides (including acyclic organophosphorus insecticides), rodenticides, and soil conditioners and fumigants[9] [10]	117,930	116,049	79,274	.68

[1] Calculated from rounded figures.
[2] Includes captan, dinocap, folpet, glyodin, pentachloronitrobenzene, sodium pentachlorophenate, tri- and tetrachlorophenols, and others.
[3] Includes barban, 2-chloro-N-isopropyl acetanilide, dicamba, dimethylurea compounds, dinitrophenol compounds, endothal, isopropyl phenylcarbamates (IPC and CIPC), maleic hydrazide, picloram, propanil, triazines, trifluralin, uracils, and others.
[4] Includes aldrin, chlordan, dieldrin, endrin, heptachlor, terpene polychlorinates, and toxaphene.
[5] Includes carbophenothion, coumaphos, diazinon, dioxathion, ronnel, and other phosphorothioates and phosphorodithioates, and others.
[6] Includes chlorobenzilate, DDD, dicofol, endosulfan, methoxychlor, and other chlorinated insecticides, carbaryl, insect attractants, DEET and other insect repellents, hexachlorocyclohexane (production only), lindane (production and sales), small amounts of rodenticides, synergists, and others.
[7] Includes dithiocarbamates, including dodine, maneb, mercury compounds, PETD, and others.
[8] Includes CDAA, dalapon, methanearsonic acid's disodium salt and sodium salt, thiocarbamate, thiolcarbamate, and organophosphorus herbicides, sodium TCA, and others.
[9] Includes DDVP, disulfoton, ethion, malathion, naled, phorate, TEPP, and other organophosphorus insecticides, soil conditioners and fumigants, metaldehyde (which is a mollusicide), small quantities of rodenticides, and others.
[10] Acyclic oranophosphorus insecticides are included with "All other acyclic insectides" in order to establish an all other acyclic insecticide total without disclosing the operations of individual companies.

Production of pesticides and related products in 1967 amounted to 1,050 million pounds--about 4 percent more than the 1,013 million pounds reported for 1966. Sales in 1967 were 897 million pounds, valued at $787 million, compared with 822 million pounds, valued at $584 million, in 1966.

The output of cyclic pesticides and related products included in the cyclic group amounted to 823 million pounds in 1967--about 6 percent more than the 777 million pounds produced in 1966. Sales in 1967 were 682 million pounds, valued at $628 million, compared with 605 million pounds, valued at $447 million, in 1966.

Production of acyclic pesticides and related products declined in 1967, amounting to 227 million pounds, compared with the 236 million pounds reported for 1966. Sales in 1967 were 216 million pounds, a slight decline as compared with 217 million pounds, in 1966; however, the value of sales increased to $159 million in 1967, compared with $137 million in 1966.

Miscellaneous Chemicals

The term miscellaneous chemicals comprises those synthetic organic products that are not included in the use groups covered in the preceding sections of the 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 1967 are given in table 21A.[13]

Production of miscellaneous cyclic and acyclic chemicals in 1967 totaled 59.7 billion pounds, or 4 percent more than the output of 57.3 billion pounds reported for 1966. Sales of miscellaneous chemicals in 1967 amounted to 26.0 billion pounds, valued at $3.5 billion, compared with 24.5 billion pounds, valued at $3.2 billion, in 1966.

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

Table 21A.--*Miscellaneous chemicals: U.S. production and sales, 1967*

[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	59,695,693	26,001,171	3,475,694	$0.13
MISCELLANEOUS CHEMICALS, CYCLIC				
Total	1,535,922	775,540	283,575	.37
Benzoic acid salts: Sodium benzoate, tech. and U.S.P.	15,923	12,649	3,869	.31
Benzoyl peroxide	5,929	5,700	5,726	1.00
Butyl benzoate	1,842	1,313	357	.27
4-tert-Butylpyrocatechol	...	539	958	1.78
Cyclohexanone peroxide	24	24	32	1.33
2,6-Di-tert-butyl-p-cresol:				
Food grade	4,152	4,961	3,032	.61
Tech	14,508	14,506	8,106	.56
p-Dimethoxybenzene (Dimethyl ether of hydroquinone)	545	547	673	1.23
Flotation reagents	5,282	...	...	...
Gasoline additives, total[2]	12,499	7,734	7,783	1.01
N,N'-Di-sec-butyl-p-phenylenediamine	1,902	1,489	1,372	.92
N,N'-Disalicylidene-1,2-propanediamine	1,218	...	...	...
All other	9,379	6,245	6,411	1.03
Hexamethylenetetramine, tech	84,255	69,150	11,470	.17
p-Hydroxybenzoic acid esters:				
Methyl p-hydroxybenzoate	693	620	1,000	1.61
Propyl p-hydroxybenzoate	202	200	425	2.12
Lubricating oil and grease additives, total	406,655	250,091	55,774	.22
Oil-soluble petroleum sulfonate, barium salt	25,335	...	...	...
Oil-soluble petroleum sulfonate, calcium salt	147,347	65,438	16,006	.24
Oil-soluble petroleum sulfonate, sodium salt	96,501	60,497	11,100	.18
All other	137,472	124,156	28,668	.23
Morpholine	22,913	17,641	7,546	.43
Naphthenic acid salts, total[3] [4]	21,085	18,967	6,498	.34
Calcium naphthenate	1,174	1,220	508	.42
Cobalt naphthenate	3,300	2,757	1,845	.67
Iron naphthenate	223	115	39	.34
Lead naphthenate	13,370	12,239	2,876	.23
Manganese naphthenate	1,357	1,146	415	.36
Zinc naphthenate	980	930	305	.33
All other	681	560	510	.91
Photographic chemicals:				
3-Chloro-4-diethylaminobenzenediazonium salts	...	7	36	5.14
2,5-Dibutoxy-4-morpholinobenzenediazonium salts	...	3	35	11.67
2,5-Diethoxy-4-morpholinobenzenediazonium salts	19	19	198	10.42
p-Diethylaminobenzenediazonium (p-Diazo-N,N-diethylaniline) salts	96	91	218	2.40
N,N-Diethyltoluene-2,5-diamine, monohydrochloride	307	254	667	2.63
Pinene (α- and β-)	114,157	55,896	6,492	.12
Propyl gallate	105	...	...	...
Rosin acid salts	452	...	...	...

See footnotes at end of table.

TABLE 21A.--*Miscellaneous chemicals: U.S. production and sales, 1967*--Continued

Chemicals	Production	Sales		
		Quantity	Value	Unit value[1]
MISCELLANEOUS CHEMICALS, CYCLIC--Continued	*1,000 pounds*	*1,000 pounds*	*1,000 dollars*	*Per pound*
Tall oil salts, total[3]	7,836	7,872	2,485	$0.32
Calcium tallate	709	678	220	.32
Cobalt tallate	2,268	2,251	1,080	.48
Lead tallate	3,583	3,545	825	.23
Manganese tallate	746	826	216	.26
All other	530	572	144	.25
Tanning materials, synthetic, total	33,820	33,673	7,544	.22
2-Naphthalenesulfonic acid, formaldehyde condensate and salts	30,469	30,228	5,806	.19
1-Phenol-2-sulfonic acid, formaldehyde condensate	...	2,168	721	.33
All other	3,351	1,277	1,017	.80
Textile chemicals, other than surface-active agents	1,810	768	888	1.16
All other miscellaneous cyclic chemicals	780,813	272,315	151,763	.56
MISCELLANEOUS CHEMICALS, ACYCLIC				
Total	58,159,771	25,225,631	3,192,119	.13
Cellulose Esters and Ethers				
Total	1,030,138	300,366	120,489	.40
Cellulose esters, total	926,222	207,879	69,087	.33
Cellulose acetate	743,160	...	...	...
All other	183,062	207,879	69,087	.33
Cellulose ethers, total	103,916	92,487	51,402	.56
Sodium carboxymethylcellulose, 100%	54,750	50,816	21,290	.42
All other	49,166	41,671	30,112	.72
Lubricating Oil Additives				
Total	417,514	160,848	33,550	.21
Phosphorodithioates (Dithiophosphates)	102,001	37,411	10,312	.28
Sulfurized lard oil	3,635	2,869	446	.16
All other	311,878	120,568	22,792	.19
Nitrogenous Compounds				
Total[5]	9,424,828	5,091,940	604,199	.12
Acrylonitrile	670,764	270,454	31,875	.12
Amines, total	785,135	226,140	61,213	.27
Butylamines:				
n-Butylamine, mono-	1,142	805	373	.46
Di-n-butylamine	2,785	2,038	845	.41
Ethylamines:				
Diethylamine	11,759	4,721	1,342	.28
Ethylamines, mono- and tri-	22,798	18,862	4,019	.21
1,6-Hexanediamine (Hexamethylenediamine)	497,900	...	...	...
Methylamines:				
Dimethylamine	71,259	35,894	4,763	.13
Monomethylamine	17,200	13,640	1,665	.12
Trimethylamine	20,407	12,784	1,427	.11
Propylamines:				
Diisopropylamine	1,968	1,074	286	.27
Di-n-propylamine	7,254	6,595	2,231	.34
Monoisopropylamine	17,837	17,170	2,880	.17
All other	112,826	112,557	41,382	.37

See footnotes at end of table.

TABLE 21A.--*Miscellaneous chemicals: U.S. production and sales, 1967*--Continued

Chemicals	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*
1,1'-Azobisformamide	3,505	2,584	2,973	$1.15
Caprolactam (2-Oxohexamethylenimine)	328,564	164,689	33,677	.20
2-Dimethylaminoethanol	1,789	1,771	1,109	.63
Erucamide	1,125	866	1,085	1.25
Ethanolamines, total	226,818	176,346	27,527	.16
2-Aminoethanol (Monoethanolamine)	74,585	59,259	9,903	.17
2,2'-Iminodiethanol (Diethanolamine)	85,878	57,978	7,517	.13
2,2',2''-Nitrilotriethanol (Triethanolamine)	66,355	59,109	10,107	.17
2-Methyllactonitrile (Acetone cyanohydrin)	364,137	...	...	...
Nitriloacids and salts, total	58,698	39,282	12,326	.31
(Ethylenedinitrilo)tetraacetic acid	...	1,581	795	.50
(Ethylenedinitrilo)tetraacetic acid, tetrasodium salt	27,529	14,541	4,739	.33
(Ethylenedinitrilo)tetraacetic acid, trisodium salt	652	600	253	.42
(N-Hydroxyethylethylenedinitrilo)triacetic acid, trisodium salt	3,960	3,669	1,410	.38
All other	26,557	18,891	5,129	.27
Nylon polymer for fiber	1,092,159	...	...	...
Pentaerythritol tetranitrate	...	3,025	2,341	.77
Sarcosine and salt	2,035	1,569	721	.46
Stearamide	821	...	...	...
Urea in compounds or mixtures (100% basis), total	[6] 4,182,447	3,792,606	[7] 138,282	.04
In feed compounds	461,807	465,725	16,237	.03
In liquid fertilizer	1,649,577	1,500,032	54,652	.04
In solid fertilizer	1,751,132	1,592,491	58,673	.04
All other	319,931	234,358	8,720	.04
All other nitrogenous compounds	1,706,831	412,608	291,070	.71
Acids, Acyl Halides and Anhydrides				
Total	5,209,604	1,028,648	157,051	.15
Acetic acid, synthetic, 100%	1,559,991	341,146	23,209	.07
Acetic anhydride, 100%	1,556,148	134,416	13,589	.10
Acrylic acid	64,710	14,035	3,771	.27
Adipic acid	970,927	93,530	17,545	.19
Butyric acid	...	935	228	.24
Chloroacetic acid, mono-	66,359	...	...	...
Decanoyl chloride	1,439	...	...	...
Formic acid, 90%	26,840	23,142	2,514	.11
Fumaric acid	48,015	36,984	4,690	.13
Gluconic acid, tech	4,641	4,083	1,214	.30
Lauroyl chloride	4,418	...	...	...
Maleic anhydride	168,207	114,117	15,116	.13
Palmitoyl chloride	360	...	...	...
Propionic acid	43,916	22,479	2,311	.10
All other acids, acyl halides and anhydrides	693,633	243,781	72,864	.30
Salts of Organic Acids				
Total	237,713	188,811	68,206	.36
Acetic acid salts, total	27,689	26,695	6,517	.24
Ammonium acetate	400	493	189	.38
Sodium acetate	14,476	13,695	2,280	.17
Zinc acetate	553	609	212	.35
Zirconium acetate	189	180	104	.58
All other	12,071	11,718	3,732	.32

See footnotes at end of table.

TABLE 21A.--*Miscellaneous chemicals: U.S. production and sales, 1967*--Continued

Chemicals	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*
2-Ethylhexanoic acid (α-Ethylcaproic acid) salts, total--	4,234	3,117	2,390	$0.77
Calcium 2-ethylhexanoate	...	396	164	.41
Cobalt 2-ethylhexanoate	858	735	733	1.00
Lead 2-ethylhexanoate	187	221	85	.38
Manganese 2-ethylhexanoate	99	69	32	.46
Zinc 2-ethylhexanoate	285	297	153	.52
All other	2,805	1,399	1,223	.87
Formic acid salts	22,508	21,980	1,160	.05
Gluconic acid, sodium salt, tech	12,603	13,249	3,488	.26
Linoleic acid salts: Cobalt linoleate	28	30	17	.57
Mercaptoacetic (Thioglycolic) acid, salts	2,469	2,259	3,139	1.39
Oleic acid salts[8]	464	435	338	.78
Palmitic acid, aluminum salt	101	...	...	...
Polyacrylic acid salts	2,379	3,324	3,851	1.16
Propionic acid salts:				
Calcium propionate	13,521	9,121	1,789	.20
Sodium propionate	7,463	...	...	...
Stearic acid salts, total[9]	43,902	37,716	11,926	.32
Aluminum stearates, total	5,123	4,478	1,637	.37
Aluminum distearate	3,793	3,300	1,192	.36
Aluminum monostearate	791	670	266	.40
Aluminum tristearate	539	508	179	.35
Calcium stearate	20,805	19,429	5,080	.26
Lithium stearate	...	482	235	.49
Magnesium stearate	2,519	2,212	829	.37
Zinc stearate	10,148	9,476	3,415	.36
All other	5,307	1,639	730	.45
All other salts of organic acids	100,352	70,885	33,591	.47
Aldehydes and Ketones				
Total	8,507,842	3,268,392	192,275	.59
Acetaldehyde	1,408,596	...	...	...
Acetone, total	1,283,978	827,739	42,858	.05
From isopropyl alcohol	792,168	414,598	22,491	.05
All other	491,810	413,141	20,367	.05
2-Butanone (Methyl ethyl ketone)	400,424	381,782	40,608	.11
Chloral (Trichloroacetaldehyde)	54,401	...	...	...
Formaldehyde (37% by weight)	3,707,093	1,289,720	33,633	.03
4-Hydroxy-4-methyl-2-pentanone (Diacetone alcohol)	...	31,643	3,970	.13
4-Methyl-2-pentanone (Methyl isobutyl ketone)	199,274	155,294	19,662	.13
All other aldehydes and ketones	1,454,076	582,214	51,544	.09
Alcohols, Monohydric, Unsubstituted				
Total	9,418,590	4,410,569	293,073	.07
Alcohols, C_9 or lower, unmixed, total	8,819,204	4,010,461	242,352	.06
Butyl alcohols:				
n-Butyl alcohol (n-Propylcarbinol)	424,644	257,522	27,225	.11
Isobutyl alcohol (Isopropylcarbinol)	93,078	73,718	5,455	.07
Ethyl alcohol, synthetic[10]	1,918,558	1,135,482	69,025	.06
2-Ethyl-1-hexanol	351,976	156,674	20,258	.13
Hexyl alcohol	15,612	3,728	527	.14
Hexynol	35	...	...	...
Iso-octyl alcohols	122,189	108,620	13,290	.12
Isopropyl alcohol	2,069,215	739,176	45,238	.06

See footnotes at end of table.

TABLE 21A.--*Miscellaneous chemicals: U.S. production and sales, 1967*--Continued

Chemicals	Production	Sales		
		Quantity	Value	Unit value[1]
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued				
Alcohols, Monohydric, Unsubstituted--Continued				
	1,000 pounds	*1,000 pounds*	*1,000 dollars*	*Per pound*
Alcohols, C_9 or lower, unmixed--Continued				
Methanol, synthetic	3,432,078	1,393,984	43,589	$0.03
1-(and 2-)Octanol	14,629	6,040	1,189	.20
All other	377,190	135,517	16,556	.12
Alcohols, C_{10} and higher, unmixed, total	205,358	123,017	19,560	.16
Decyl alcohols	137,411	77,354	9,456	.12
1-Hexadecanol (Cetyl alcohol)	1,414	1,696	438	.26
All other	66,533	43,967	9,666	.22
Mixtures of alcohols, total	394,028	277,091	31,161	.11
C_9 and lower, only	61,248	...	...	...
C_{10} and higher, only	230,953	...	...	...
C_6 to C_{12} and others	101,827	...	...	...
Polyhydric Alcohols and Their Esters and Ethers				
Total	4,313,541	3,105,423	399,387	.13
Polyhydric alcohols, total	2,889,029	2,037,761	224,607	.11
Ethylene glycol	1,988,769	1,305,151	98,345	.08
Pentaerythritol	85,717	70,950	15,964	.22
Propylene glycol (1,2-Propanediol)	302,528	276,143	26,529	.10
Sorbitol	74,642	63,295	12,567	.20
All other	437,373	322,222	71,202	.22
Polyhydric alcohol esters	154,903	155,181	33,037	.21
Polyhydric alcohol ethers, total	1,269,609	912,481	141,743	.16
2-Butoxyethanol (Ethylene glycol monobutyl ether)	79,062	71,923	12,245	.17
Diethylene glycol	180,353	121,713	11,496	.09
Dipropylene glycol	31,276	27,611	3,218	.12
2-Ethoxyethanol (Ethylene glycol monoethyl ether)	...	51,401	8,264	.16
2-(2-Ethoxyethoxy)ethanol (Diethylene glycol monoethyl ether)	39,216	24,399	4,167	.17
2-[2-(2-Ethoxyethoxy)ethoxy]ethanol (Triethylene glycol monoethyl ether)	...	4,271	508	.12
2-Methoxyethanol (Ethylene glycol monomethyl ether)	109,932	82,890	13,500	.16
2-(2-Methoxyethoxy)ethanol (Diethylene glycol monomethyl ether)	18,043	7,387	1,148	.16
Polyethylene glycol	38,401	35,477	8,636	.24
Polypropoxy ethers, total	328,517	242,414	36,659	.15
Glycerol tri(polyoxypropylene) ether	184,002	146,324	21,203	.14
All other	144,515	96,090	15,456	.16
Polypropylene glycol	135,060	118,475	17,924	.15
Triethylene glycol	65,121	53,232	9,362	.18
All other ethers of polyhydric alcohols	243,728	71,288	14,616	.20
Esters of Monohydric Alcohols				
Total	1,877,551	910,741	157,756	.17
Butyl acetates, total	119,559	115,329	12,126	.11
n-Butyl acetate, unmixed	64,647	66,158	7,344	.11
All other	54,912	49,171	4,782	.10
Butyl acrylate	31,945	21,820	4,721	.22
Dibutyl fumarate	4,327	3,716	702	.19
Dibutyl maleate	10,493	5,876	1,125	.19
Dilauryl 3,3'-thiodipropionate	1,160	1,167	1,145	.98
Dioctyl maleate	2,221	1,961	409	.21

See footnotes at end of table.

TABLE 21A.--*Miscellaneous chemicals: U.S. production and sales, 1967*--Continued

Chemicals	Production	Sales		
		Quantity	Value	Unit value[1]
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued				
Esters of Monohydric Alcohols —Continued	*1,000 pounds*	*1,000 pounds*	*1,000 dollars*	*Per pound*
Distearyl 3,3'-thiodipropionate	405	438	490	$1.12
Ethyl acetate, 85%	137,026	131,393	12,527	.10
Ethyl acrylate	140,937	49,761	10,494	.21
Ethyl chloroacetate	...	163	71	.44
Isobutyl acrylate	2,229	...	...	...
Iso-octyl mercaptoacetate	2,608	2,331	1,492	.64
Isopropyl acetate	41,929	41,433	4,538	.11
Methyl esters of tallow	627	623	80	.13
Methyl methacrylate	302,277	...	...	...
Phosphorus acid esters, not elsewhere specified	52,437	35,391	13,948	.39
Vinyl acetate	602,765	230,827	25,776	.11
All other	424,606	268,512	68,112	.25
Halogenated Hydrocarbons				
Total	12,019,632	4,748,895	555,600	.12
2-Bromopentane (1-Methylbutyl bromide)	259	...	...	...
Carbon tetrachloride	713,599	605,563	37,256	.06
Chlorinated paraffins	56,693	54,596	6,787	.12
Chlorodifluoromethane	...	58,506	35,989	.62
Chloroethane (Ethyl chloride)	618,183	284,644	19,166	.07
Chloroform	190,886	135,771	10,108	.07
Chloromethane (Methyl chloride)	275,617	118,031	7,970	.07
Dichlorodifluoromethane	309,668	289,905	78,901	.27
1,2-Dichloroethane (Ethylene dichloride)	3,970,756	324,031	12,636	.04
Dichloromethane (Methylene chloride)	262,285	226,913	20,037	.09
1,2-Dichloropropane (Propylene dichloride)	86,275	28,843	740	.03
Dichlorotetrafluoroethane	...	21,965	11,981	.55
Iodomethane (Methyl iodide)	11	9	30	3.33
Tetrachloroethylene (Perchloroethylene)	532,980	468,663	35,864	.08
1,1,1-Trichloroethane (Methylchloroform)	...	269,702	30,614	.11
Trichloroethylene	489,964	472,723	38,762	.08
Trichlorofluoromethane	182,216	155,233	29,433	.19
Vinyl chloride, monomer (Chloroethylene)	2,423,572	951,695	50,172	.05
All other halogenated hydrocarbons	1,906,668	282,102	129,154	.46
All Other Miscellaneous Acyclic Chemicals				
Total	5,702,818	2,010,998	610,533	.30
2-Butanone peroxide	1,921	1,860	2,746	1.48
tert-Butyl peroxide (Di-tert-butyl peroxide)	1,436	1,270	1,427	1.12
Carbon disulfide	693,638	519,974	20,414	.04
Decanoyl peroxide	928	940	1,208	1.29
Epoxides, ethers, and acetals:				
Ethylene oxide	2,307,831	301,705	26,931	.09
Ethyl ether, all grades	90,081	75,967	5,901	.08
Isopropyl ether	...	5,411	468	.09
Methyl ether (Dimethyl ether)	12,714	...	...	...
Propylene oxide	813,967	75,847	7,247	.10
Lauroyl peroxide	2,195	2,375	2,317	.98
Organo-silicon polymers	32,329	28,818	63,271	2.20
Phosgene (Carbonyl chloride)	372,043	12,357	1,387	.11
Sodium formaldehyde sulfoxylate	4,277	4,397	1,052	.24
Sodium methoxide (Sodium methylate)	4,917	4,304	1,321	.31
Tetraethyllead	554,759	528,568	278,671	.53
Tetramethyllead[11]	94,971	97,587	44,420	.46
Tetra(methyl-ethyl)leads	203,706	197,923	103,270	.52
Zinc formaldehyde sulfoxylate	1,166	1,170	577	.49
All other	509,939	150,525	47,905	.32

See footnotes on following page.

Footnotes for table 21A

[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 naphthenate. 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 4,359,500 thousand pounds.
[7] Includes estimated values for sales of urea in nitrogen compounds.
[8] Statistics exclude production and sales of potassium and sodium oleate. Statistics on these oleates are included in the section "Surface-Active Agents."
[9] Statistics exclude production and sales of potassium and sodium stearates. Statistics on these stearates are included in the section "Surface-Active Agents."
[10] Statistics on production of ethyl alcohol from natural sources by fermentation are issued by the Alcohol Tax Unit, U.S. Internal Revenue Service.
[11] Includes production and sales for use in synthesis of tetra(methyl-ethyl)leads.

The total output of miscellaneous cyclic chemicals in 1967 was 1.5 billion pounds, or 12 percent more than the output of 1.4 billion pounds reported for 1966. Sales in 1967 totaled 776 million pounds, valued at $284 million, compared with 739 million pounds, valued at $271 million, in 1966. In 1967 the most important groups of cyclic compounds were the lubricating oil additives, the output of which was 407 million pounds, and synthetic tanning materials, the output of which was 34 million pounds.

Total production of miscellaneous acyclic chemicals in 1967 was 58.2 billion pounds, or 4 percent more than the output of 55.9 billion pounds reported for 1966. Sales in 1967 totaled 25.2 billion pounds, valued at $3.2 billion, compared with 23.8 billion pounds, valued at $2.9 billion, in 1966. The statistics for acyclic chemicals were regrouped in 1966 primarily by chemical function. The order of precedence of these functional groups is generally that used in naming and indexing chemical compounds 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 1967, as such groupings are difficult to maintain due to the variety of uses and frequent shifts in principal usage for many important items.

In 1967, 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 12.0 billion pounds. The most important chemicals in this group were dichloroethane (production of 4.0 billion pounds in 1967 compared with 3.6 billion pounds in 1966) and vinyl chloride (2.4 billion pounds compared with 2.5 billion pounds). Output of nitrogenous compounds totaled 9.4 billion pounds. The most important chemical in this group was urea (used principally in fertilizers and as a feed additive), production of which was 4.2 billion pounds in 1967 compared with 3.4 billion pounds in 1966.

Monohydric alcohols, which are used largely as solvents and intermediates, were the third largest group in 1967, with production of 9.4 billion pounds. The most important items in this group, in terms of production were synthetic methanol (3.4 billion pounds in 1967 compared with 3.3 billion pounds in 1966), synthetic ethyl alcohol (1.9 billion pounds in 1967, the same as in 1966), and isopropyl alcohol (2.1 billion pounds in 1967, compared with 1.7 billion pounds in 1966). Aldehydes and ketones, which are also used largely as solvents and intermediates, were the next largest group, with production of 8.5 billion pounds. The most important items in this group in 1967 were formaldehyde (3.7 billion pounds), acetaldehyde (1.4 billion pounds), and acetone (1.3 billion pounds).

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 1967. The tables include data on only those chemicals for which the volume of production or sales in 1967 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, 1967*

[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)
*Crude light oil[1]	CBT.[2]
Light-oil distillates:	
*Benzene, specification and industrial grades [1 3]	ACY, KPP.
*Toluene, specification and other grades[1 3]	ACY, KPP.
*Xylene, all grades[1 3]	ACY, KPP.
*Solvent naphtha[1]	ACY, NEV, PAI.
*All other light-oil distillates[1]	ACP, PAI.
Pyridine crude bases[1]	ACP, KPT.
*Naphthalene, crude, solidifying at--	
*Less than 74° C[1]	COP.
*74° C. to less than 79° C:[1]	
74° C. to less than 76° C	KPT.
76° C. to less than 79° C	ACP, KPT, PRD, RIL.
*Crude tar-acid oils:[1]	
Tar-acid content 5% to less than 24%[3]	ACP, COP, KPT, RIL.
Tar-acid content 24% to 51%[3]	ACP, RIL.
Cresylic acid, crude	ACP, KPT, PRD.
*Creosote oil (Dead oil):	
*Distillate as such[1]	ACP, CBT, COP, HUS, KPT, RIL, WTC.
*Creosote in coal-tar solution[1]	ACP, JEN, KPT, RIL.
*All other distillate products[1]	ACP, KPT, PAI.
*Tar, road	ACP, KPT, RIL, WTC.
*Tar for other uses:	
Crude	KPT, RIL.
Refined	ACP, KPT, RIL.
Pitch of tar:	
Soft and medium (water softening points less than 110° F., and 110° F. to 160° F.).[1]	ACP, CBT, COP, KPT, RIL.
*Hard (water softening point above 160° F.)[1]	ACP, 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, February 4, 1969, entitled "Coke Producers in the U.S. in 1967."

[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.

[3] Statistics on production or sales of these items by tar distillers could not be published separately or in any meaningful combination without disclosing the operations of individual companies.

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, 1967*

[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, CO, COR, CSD, CSP, DLH, DXS, ENJ, GOC, GRS, MOC, MON, PLC, SHO, SKO, SM, SNT, SOG, SUN, TOC, TX, UOC, VEL, VPT.
*Benzene, 2°	ACC, DOW, SHO, SOC, UCC.
Cresylic acid, crude	PRD, SHO.
*Naphthalene, all grades	ASH, COL, MON, SUN, TID.
*Naphthenic acids:	
Acid number lower than 150	ATR, SUN.
*Acid number 150-199	ATR, PRD, SOC, SUN.
Acid number 200-224	ATR, PRD, SOC.
Acid number 225-249	PRD, SOC, TX.
Sodium carbolate and phenate, crude	ATR, GOC, SIN.
*Toluene:	
*Nitration grade, 1°	ASH, ATR, COR, CSD, DLH, DXS, ENJ, GOC, MOC, MON, PLC, SHO, SIN, SNT, SOG, SUN, TOC, TX, UCC, UOC, VEL, VPT.
*Pure commercial grade, 2°	ATR, CSP, DOW, ENJ, LEN, MON.
*Solvent grade, 90%	CO, FG, SKO.
All other	ACC, ATR, COR, CSO, DXS, ELP, GRS, PLC, SHO, SM, SOC, TOC, TX, VPT.
*Xylenes, mixed:	
Aviation grade	CSD, CSO, SOG.
*3° grade	ATR, COR, DLH, ENJ, MOC, MON, SNT, UOC.
5° grade	ASH, SIN, TX.
All other	ATR, CCP, CSD, CSO, CSP, ENJ, GRS, LEN, MON, SHO, SM, SOC, SUN, TOC.
*All other aromatics, naphthenes, distillates and solvents.	ACC, DUP, ELP, ENJ, FG, GOC, JCC, LEN, MOC, MON, PLC, SHC, SOC, SOI, TX, USI, VPT.
ALIPHATIC HYDROCARBONS	
C_1 hydrocarbon: Methane	CCP, MON, UCC.
*C_2 hydrocarbons:	
*Acetylene	DOW, DUP, MNO, MON, UCC, x.
*Ethane	ACU, CCP, ENJ, MON, PAN, PLC, SHO, SM, SOI, TX, UCC, USI.
*Ethylene	ATR, BFG, CBN, CCP, DOW, DUP, EKX, ELP, ENJ, GOC, JCC, KPP, MON, OMC, PLC, SHC, SM, SNO, TX, UCC, USI.
C_2 and C_3 hydrocarbons, mixed	COR, CSO, GYR, MON, PLC, SM.
*C_3 hydrocarbons:	
*Propane	AMO, APR, ASH, CCP, CSD, CSO, DXS, ENJ, GOC, GRS, MOC, OMC, PAN, PLC, SHO, SIN, SM, SNT, SOG, SOI, SPI, UCC, UOC, USI.
*Propane-propylene mixture	GOC, MOC, TX.
*Propylene	AMO, ASH, ATR, BFG, CBN, CCP, CSO, DOW, EKX, ELP, ENJ, GOC, JCC, KPP, MOC, MON, PLC, 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, DUP, ELP, ENJ, FRS, GGC, ILC, MON, PLC, PTT, SHC, SHO, SM, SOC, SPI, TID, TUS, UCC.
*Butadiene and butylene fractions	DOW, GOC, GYR, KPP, MOC, PLC, PTT, SHO, SIN, SM, SOC, SPI

TABLE 5B.--*Crude products from petroleum and natural gas for chemical conversion for which U.S. production or sales were reported, identified by manufacturer, 1967*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
ALIPHATIC HYDROCARBONS--Continued	
*C_4 hydrocarbons--Continued	
*n-Butane	COR, CSD, DXS, GRS, OMC, PAN, PLC, SHO, SM, SNT, SOC, SOG, 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	DXS, ELP, GRS, OMC, PAN, PLC, SHO, SOI, UCC, USI, x.
*Isobutylene	ENJ, PTT, SHC, SIN, UOC.
All other	APR, BFG, JCC, MON, PLC, UCC, USI.
*C_5 hydrocarbons:	
Isopentane (2-Methylbutane)	PAN, PLC, SHO, SM.
*Isoprene (2-Methyl-1,3-butadiene)	ENJ, GYR, MON, SHC.
*n-Pentane	APR, ASH, MOC, PLC.
All other	ENJ, GYR, MON, PLC, SHC, UCC, USI.
C_6 hydrocarbons:	
*Hexane	ATR, ENJ, PLC, SOG, UOC.
Neohexane (2,2-Dimethylbutane)	PLC.
All other	APR, PLC.
C_7 hydrocarbons:	
n-Heptane	EKX, PLC, UOC.
*Heptenes, mixed	CSD, ENJ, GOC, HOU, SIN, SOI, TID.
All other	PLC.
C_8 hydrocarbons:	
*Diisobutylene (Diisobutene)	ATR, PTT, TX.
n-Octane	PLC.
2,2,4-Trimethylpentane (Iso-octane)	ENJ, GRS, PLC.
All other	PLC.
Hydrocarbons, C_9 and above:	
*Nonene (Tripropylene)	ATR, ENJ, GOC, UOC.
*Polybutene	ACC, CSD, SOC, SOI.
*Tetrapropylene	ATR, CO, DXS, ENJ, GOC, MOC, SOC, SUN, TX, UOC.
Tridecene concentrate	ENJ.
Triisobutylene	ATR.
All other	CO, COR, ENJ, GOC, HOU, KEN, PLC, SHC, SOC, SPI, SUN, TID, UCC, 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, KPP, SOC.
*Hydrocarbon derivatives:	
1-Butanethiol	PAS.
tert-Butyl-mercaptan (2-Methyl-2-propanethiol)	PAS, PLC.
Di-tert-butyl disulfide	PAS, PLC.
Ethyl mercaptan (Ethanethiol)	PAS, SOC.
Isopropyl mercaptan	PAS, SOC.
Methyl mercaptan (Methanethiol)	ACC, PAS.
tert-Octyl mercaptan	PAS.
n-Propyl mercaptan (1-Propanethiol)	PAS.
All other	EKX, PAS, PLC, SOC.

Cyclic Intermediates

TABLE 7B.--*Cyclic intermediates for which U.S. production or sales were reported, identified by manufacturer, 1967*

[Cyclic intermediates for which separate statistics are given in table 7A are marked 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.
1-Acetamido-4-bromoanthraquinone	AAP.
2-Acetamido-3-chloroanthraquinone	ICI.
α-Acetamido-p-toluenesulfonamide	SDW.
2,2′-[(5-Acetamido-2-ethoxyphenyl)imino] diethanol	AAP.
*Acetanilide, tech	CTN, EKT, MRK, SAL, SW.
Acetic acid, phenyl ester	UCC.
Acetoacetanilide	FMP, UCC.
*o-Acetoacetanisidide	FMP, SDH, UCC.
o-Acetoacetotoluidide	FMP, UCC.
2′,4′-Acetoacetoxylidide	FMP, UCC.
1′-Acetonaphthone	GIV.
Acetone phenylhydrazone	DUP.
*Acetophenone, tech	ACP, SKO, UCC, UOP.
p-Acetotoluidide	ACY.
N-Acetylanthranilic acid	DUP.
p-Acetylbenzenesulfonamide	LIL.
p-Acetylbenzenesulfonic acid, sodium salt	LIL.
p-Acetylbenzenesulfonylurethane	LIL.
N-Acetylsulfanilic acid, sodium salt	ALL.
N-Acetylsulfanilyl chloride	ACY, CTN, MRK, SAL.
Adenine	KF.
Adrenostrone	UPJ.
*Alkylbenzenes:	
Dodecylbenzene (including tridecylbenzene):	
Straight chain	ACS, ATR, CO, MON, PLC, UCC, WCC.
Other	ACS, CO, SOC.
Other alkylbenzenes: Straight chain	SOC.
Alkylphenols, mixed	GAF, ORO.
Alkylpiperazines, mixed	HOU.
Alkylpyridine	UCC.
[o-(Allylcarbamoyl)phenoxy]acetic acid	SDW.
6-Allyl-o-cresol	ICO.
α-dl-5-Allyl-6-imino-1-methyl-5-(1-methyl-2-pentynyl)-barbituric acid.	LIL.
Aminoaceanthryleno[2,1-a]aceanthrylene-5,13-dione	ICI.
3′-Aminoacetanilide	AAP.
*4′-Aminoacetanilide (Acetyl-p-phenylenediamine)	AAP, ACS, DUP, GAF, TRC.
3′-Aminoacetophenone	CTN, SDH.
*5-Amino-2-(p-aminoanilino)benzenesulfonic acid	CMG, GAF, 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.
*2-(p-Aminoanilino)-5-nitrobenzenesulfonic acid	ACS, CMG, TRC.
3-Amino-p-anisanilide	PCW.
*1-Aminoanthraquinone and salt	AAP, ACS, ACY, DUP, GAF, ICI, MAY, TRC.
*2-Aminoanthraquinone and salt	ACS, ACY, DUP, GAF, TRC.
5(and 8)-Amino-1-anthraquinonesulfonic acid	ICI.
N-(4-Amino-1-anthraquinonyl)anthranilic acid	GAF.
N-(5-Amino-1-anthraquinonyl)anthranilic acid	DUP.
N-(8-Amino-1-anthraquinonyl)anthranilic acid	DUP.
4-Aminoantipyrine	SDW.
*6-Amino-3,4′-azodibenzenesulfonic acid (C.I. Acid Yellow 9).	ACS, ACY, CMG, TRC.
p-Aminobenzamide	SDH.
*1-Amino-4-benzamidoanthraquinone	ACY, MAY, TRC.
*1-Amino-5-benzamidoanthraquinone	ACS, GAF, ICI, TRC.
7-[p-(p-Aminobenzamido)benzamido]-4-hydroxy-2-naphthalenesulfonic acid.	DUP.

TABLE 7B.--*Cyclic intermediates for which U.S. production or sales were reported, identified by manufacturer, 1967*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
7-(m-Aminobenzamido)-4-hydroxy-2-naphthalenesulfonic acid---	TRC.
7-(p-Aminobenzamido)-4-hydroxy-2-naphthalenesulfonic acid---	CMG, DUP, GAF.
7-(p-Aminobenzamido)-5-hydroxy-3-naphthalenesulfonic acid---	VPC.
3'-Aminobenzanilide-4'-sulfonic acid----------	TRC.
*2-Amino-p-benzenedisulfonic acid [SO_3H=1]----------	ACS, DUP, ICC, TRC.
o-Aminobenzenesulfonic acid----------	DUP.
o-Aminobenzenethiol----------	FIS.
2-Aminobenzimidazole----------	EK.
5-Amino-2-benzimidazolinone----------	DUP.
p-Aminobenzoic acid, tech----------	DUP, LEM.
p-Aminobenzoic acid, 2-(dimethylamino)ethyl ester----------	SDW.
2-Amino-6-benzothiazolecarboxylic acid----------	DUP.
p-Amino-N-benzyl-N-ethylbenzenediazonium chlorostannate-----	ESA.
p-Amino-N-benzyl-N-ethylbenzenediazonium chlorozincate------	ESA.
N-(4-Amino-3-bromo-1-anthraquinonyl)anthranilic acid--------	TRC.
N-(4-Amino-3-bromo-1-anthraquinonyl)-p-toluidine sulfonic acid.	TRC.
2-Amino-1-bromo-3-chloroanthraquinone----------	ICI.
*1-Amino-4-bromo-9,10-dihydro-9,10-dioxo-2-anthracenesulfonic acid and sodium salt.	DUP, ICI, TRC.
*1-Amino-2-bromo-4-hydroxyanthraquinone----------	AAP, DUP, GAF, ICC, TRC.
1-Amino-4-bromo-2-methylanthraquinone----------	ICI.
6-Amino-7-bromonaphth[2,3-c]acridan-5,8,14-trione----------	TRC.
*1-Amino-2-bromo-4-p-toluidinoanthraquinone----------	GAF, ICI, TRC.
*1-Amino-5-chloroanthraquinone----------	ACS, ACY, ICI, MAY, TRC.
1-Amino-8-chloroanthraquinone----------	DUP.
2-Amino-1-chloroanthraquinone----------	DUP.
2-Amino-3-chloroanthraquinone----------	GAF, ICI.
4-Amino-6-chloro-m-benzenedisulfonamide----------	ABB.
4-Amino-6-chloro-m-benzenedisulfonamide hydrochloride-------	ABB.
2-Amino-5-chlorobenzophenone----------	LIL.
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.
3-Amino-5-chloro-2-hydroxybenzenesulfonic acid----------	CMG, TRC.
2-Amino-4-chlorophenol----------	ACS, GAF, MEE.
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, SDH, SW.
2-Amino-p-cresol----------	TRC.
*1-Amino-2,4-dibromoanthraquinone----------	AAP, ACS, DUP, GAF, ICC, ICI, 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.
4'-Amino-2',5'-diethoxybenzanilide----------	GAF.
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.	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.
3-Amino-4-ethoxyacetanilide----------	AAP.
3-Amino-9-ethylcarbazole----------	SDC.
3-Amino-α-ethylhydrocinnamic acid----------	SDW.
p-Amino-N-ethyl-N-hydroxyethyl benzenediazonium chlorozincate.	ESA.
p-Amino-N-ethyl-N-1-naphthylbenzamide----------	GAF.
1-Amino-4-hydroxyanthraquinone----------	DUP, GAF.
2-Amino-3-hydroxyanthraquinone----------	ACS, GAF.
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.	ACS, DUP.
4-Amino-5-hydroxy-1,3-naphthalenedisulfonic acid (Chicago acid), monosodium salt.	ACS, DUP.
4-Amino-5-hydroxy-2,7-naphthalenedisulfonic acid (H acid), monosodium salt.	ACS, DUP, MON.
*4-Amino-3-hydroxy-1-naphthalenesulfonic acid (1,2,4 acid)---	ACS, ACY, GAF, TRC, VPC.

TABLE 7B.--*Cyclic intermediates for which U.S. production or sales were reported, identified by manufacturer, 1967*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
4-Amino-5-hydroxy-1-naphthalenesulfonic acid (S acid), sodium salt.	ACS.
*6-Amino-4-hydroxy-2-naphthalenesulfonic acid (Gamma acid), sodium salt.	ACS, DUP, TRC.
*7-Amino-4-hydroxy-2-naphthalenesulfonic acid (J acid), sodium salt.	ACS, BKS, DUP, TRC.
3'-Amino-2'-hydroxy-5'-nitroacetanilide	TRC.
6-Amino-5-[(2-hydroxy-4-nitrophenyl)azo]-2-naphthalenesulfonic acid.	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.
1-Amino-4-methoxyanthraquinone	DUP.
*N-(4-Amino-3-methoxy-1-anthraquinonyl)-p-toluenesulfonamide.	AAP, DUP, GAF.
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	ACS, CMG, GAF.
1-Amino-2-methylanthraquinone	DUP, ICI.
4-Amino-4'-(3-methyl-5-oxo-2-pyrazolin-1-yl)-2,2'-stilbenedisulfonic acid.	TRC.
2-Amino-3-methylpyridine	RIL.
2-Amino-5-methylpyridine	RIL.
2-Amino-6-methylpyridine	NEP, RIL.
2-Amino-4-methylpyrimidine (2-Amino-4-methyl-1,3-diazine)	ACY.
2-Amino-4-(methylsulfonyl)phenol	ACS, 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.
6-Aminonaphth[2,3-c]acridan-5,8,14-trione	GAF.
2-Amino-1,5-naphthalenedisulfonic acid	ACY, SDH.
3-Amino-1,5-naphthalenedisulfonic acid (C acid)	GAF, TRC.
3-Amino-2,7-naphthalenedisulfonic acid	TRC.
4-Amino-1,5-naphthalenedisulfonic acid	ACS.
4-Amino-1,6-naphthalenedisulfonic acid	DUP.
*6-Amino-1,3-naphthalenedisulfonic acid (Amino I acid)	ACS, ACY, BKS, DUP, TRC.
*7-Amino-1,3-naphthalenedisulfonic acid (Amino G acid)	ACS, DUP, TRC.
6-Amino-1-naphthalenesulfonamide	VPC.
1-Amino-2-naphthalenesulfonic acid (o-Naphthionic acid)	DUP.
2-Amino-1-naphthalenesulfonic acid (Tobias acid)	ACY, SW.
*4-Amino-1-naphthalenesulfonic acid (Naphthionic acid)	ACS, ACY, DUP.
4-Amino-1-naphthalenesulfonic acid, sodium salt	ACS, DUP.
4(and 5)-Amino-1-naphthalenesulfonic acid	ACY, TRC.
5-Amino-1-naphthalenesulfonic acid (Laurent's acid)	ACS, DUP.
*5-Amino-2-naphthalenesulfonic acid (1,6-Cleve's acid)	ACS, ALL, DUP, TRC.
*5(and 8)-Amino-2-naphthalenesulfonic acid (Cleve's acid, mixed).	ACS, ALL, TRC.
*6-Amino-2-naphthalenesulfonic acid (Broenner's acid)	ACS, SNA, TRC.
*8-Amino-1-naphthalenesulfonic acid (Peri acid)	ACS, DUP, SDC, TRC.
*8-Amino-2-naphthalenesulfonic acid (1,7-Cleve's acid)	ACS, ALL, DUP, TRC.
7-Amino-1,3,6-naphthalenetrisulfonic acid	DUP.
8-Amino-1,3,6-naphthalenetrisulfonic acid (Koch's acid)	ACS, DUP.
5(and 8)-Amino-2-naphthol	GAF.
8-Amino-2-naphthol	CMG, TRC, VPC.
3-Amino-5-(m-nitrobenzamide)-p-toluenesulfonic acid	GAF.
*2-Amino-5-nitrobenzenesulfonic acid [SO_3H=1]	ACS, DUP, GAF, TRC.
*2-Amino-4-nitrophenol	ACS, DUP, TRC.
2-Amino-5-nitrophenol	MED.
4-Amino-2-nitrophenol	ACY.
d-2-Amino-1-(p-nitrophenyl)-1,3-propanediol	PD.
l-2-Amino-1-(p-nitrophenyl)-1,3-propanediol	PD.
*4-Amino-4'-nitro-2,2'-stilbenedisulfonic acid	ACS, GAF, ICI, TRC.

TABLE 7B.--*Cyclic intermediates for which U.S. production or sales were reported, identified by manufacturer, 1967*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
2-Amino-5-nitrothiazole	ACY.
3′-Aminooxanilic acid	CMG.
4′-Aminooxanilic acid	DUP.
5-Amino-2-[(2-oxo-5-benzimidazolinyl)amino]benzenesulfonic acid.	DUP.
p-Aminophenethyl alcohol	EKT.
5-Amino-2-o-phenetidinobenzenesulfonic acid	ACS.
o-Aminophenol	SDC.
p-Aminophenol	DUP, SDC.
m-[(p-Aminophenyl)azo]benzenesulfonic acid	DUP, TRC.
*p-[(p-Aminophenyl)azo]benzenesulfonic acid	ACS, ACY, CMG, DUP, GAF, TRC.
7-[(4-Aminophenyl)azo]-1,3-naphthalenedisulfonic acid	TRC.
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	ACS, DUP.
2-(p-Aminophenyl)-6-methyl-7-benzothiazolesulfonic acid and salt.	DUP, TRC.
1-(m-Aminophenyl)-5-oxo-2-pyrazoline-3-carboxylic acid	TRC, VPC.
l-2-Amino-1-phenyl-1,3-propanediol	PD.
3-Aminopyrazole-4-carboxamide sulfate	x.
2-Aminopyridine	NEP, RIL.
3-Aminopyridine	RIL.
4-Aminopyridine	NEP, RIL.
2-Aminopyrimidine	ACY.
3-Aminoquinoline	EK.
5-Aminosalicyclic acid	AAP.
N-(4-Amino-3-sulfo-1-anthraquinonyl)anthranilic acid	GAF.
3′-(3-Amino-4-sulfophenylsulfamoyl)-3′′-sulfamoyl-3-phthalocyaninesulfonic acid, copper derivative.	DUP.
1-Amino-2,3,6,7-tetrahydro-4,5,8-trihydroxyanthraquinone	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, SNA, SW.
5-Amino-2-p-toluidinobenzenesulfonic acid	DUP, 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	GAF.
2-Amino-3,5-xylenesulfonic acid [SO_3H=1]	SDH.
5-Amino-2,4-xylenesulfonic acid	DUP.
t-Amylcyclopentadienylcyclopentadienyliron	ARA.
*Aniline (Aniline oil)	ACS, ACY, DUP, FST, MOB, RUC.
Aniline hydrochloride	ACY.
1-Anilino-9,10-dihydro-9,10-dioxo-2-anthroic acid	ACS.
1-Anilino-4-hydroxyanthraquinone	AAP.
6-Anilino-4-hydroxy-2-naphthalenesulfonic acid (Phenyl gamma acid).	DUP.
*7-Anilino-4-hydroxy-2-naphthalenesulfonic acid (Phenyl J acid).	ACS, ALT, CMG, DUP, GAF, TRC.
*Anilinomethanesulfonic acid and salt	AAP, ACS, ACY, ATL, DUP, TRC, VPC.
*8-Anilino-1-naphthalenesulfonic acid (Phenyl peri acid)	ACS, CMG, DUP, SDC.
m-Anilinophenol	GAF.
p-Anilinophenol	SDC.
3-Anilinopropionitrile	GAF.
*o-Anisidine	AAP, DUP, MON.
p-Anisidine	DUP, MON.
1-p-Anisidino-4-hydroxyanthraquinone	AAP.
*o-Anisidinomethanesulfonic acid	ACS, ATL, DUP, GAF, TRC, VPC.
Anisole, tech	DUP, LIL.
p-Anisoyl chloride	ICO.
4-(o-Anisylazo)-o-anisidine	AAP.
Anthracene, refined	ACP.
Anthranilic acid (o-Aminobenzoic acid)[1]	ACS, DUP, LEM, MEE.
*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	GAF, ICI, TRC.

See footnotes at end of table.

TABLE 7B.--*Cyclic intermediates for which U.S. production or sales were reported, identified by manufacturer, 1967*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
N,N'-(1,5-Anthraquinonylene)dioxamic acid	GAF, MEE.
(1-Anthraquinonyl)-1,2-hydrazinedisulfonic acid, disodium salt.	DUP, GAF.
Arsanilic acid and salt, tech	ABB, FIM.
Aryldiamines, mixed	DA.
4',4'''-Azobis[4-biphenylcarboxylic acid]	DUP, GAF, TRC.
3,3'-Azoxydianiline	VPC.
Barbituric acid	ABB, LIL.
Barbituric acid, sodium derivative	ABB, KF.
*Benzaldehyde, tech	BPC, HN, VEL.
N-(5-Benzamido-1-anthraquinonyl)-p-toluenesulfonamide	ACS, ICI.
1-Benzamido-4-bromoanthraquinone	AAP.
1-Benzamido-4-chloroanthraquinone	DUP, GAF, TRC.
*1-Benzamido-5-chloroanthraquinone	ACS, ACY, DUP, GAF, ICI, MAY, 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-(melthylazo)glycine	GAF.
Benzanilide	DUP.
*7H-Benz[de]anthracen-7-one (Benzanthrone)	AAP, ACS, ACY, ATL, CMG, DUP, GAF, ICI, MAY, SDC, TRC.
m-Benzenedisulfonic acid	KPT, UPF.
Benzenesulfonamide	NES.
Benzenesulfonic acid	NES, UPF.
Benzenesulfonyl chloride	NES.
1,2,4,5-Benzenetetracarboxylic acid	DUP, x.
*1,2,4,5-Benzenetetracarboxylic-1,2:4,5-dianhydride	DUP, PCR, x.
1,3,5-Benzenetricarboxylic acid	ACC.
1,2,4-Benzenetricarboxylic acid, 1,2-anhydride (Trimellitic anhydride).	ACC.
1,2,4-Benzenetricarboxylic acid, 1,2-anhydride-4-acid chloride.	ICO.
Benzhydrol (Diphenylmethanol)	PD, UOP.
Benzidine hydrochloride and sulfate	ACS, LAK, x.
Benzil (Bibenzoyl)	LEM.
Benzilic acid	BPC, LEM.
2-Benzofuranacetonitrile	EK.
*Benzoic acid, tech[1]	HK, HN, MON, PFZ, VEL.
Benzoic acid, hydrazide	UPJ.
Benzoic anhydride	EK.
Benzoin	BPC, LEM.
Benzonitrile	VEL.
Benzophenonetetracarboxylic dianhydride	GOC.
*2-Benzothiazolethiol (2-Mercaptobenzothiazole), sodium salt.	ACY, GYR, MON, USR.
1H-Benzotriazole	MEE.
2H-3,1-Benzoxazine-2,4(1H)-dione	MEE.
2-Benzoxazolinone	SDC.
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.
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.
Benzyl ether (Dibenzyl ether)	BPC, UOP.
5-(Benzylethylamino)-o-toluenesulfonic acid	ACS.
N-Benzyl-N-ethyl-m-toluidine	ACS, DUP.
3-Benzyl-1,2,3,4,5,6-hexahydro-8-hydroxy-cis-6,11-dimethyl-2,6-methano-3-benzazocine hydrobromide.	SDW.
Benzylidene phthalide	LIL.
p-(Benzyloxy)phenol	EK.
1-Benzyl-4-phenylisonipecotic acid	SDW.

TABLE 7B.--*Cyclic intermediates for which U.S. production or sales were reported, identified by manufacturer, 1967*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
1-Benzyl-4-phenylisonipecotonitrile	SDW.
Benzyl polysulfide	HK.
Benzyl sulfide	BPC.
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.
*[4,4'-Bi-7H-benz[de]anthracene]-7,7'-dione	ACS, ACY, DUP, GAF, ICI, MAY.
[1,1'-Binaphthalene]-8,8'-dicarboxylic acid	ACS, GAF.
Biphenyl	DOW, MON.
2-Biphenylamine	NES.
3,3',4,4'-Biphenyltetramine	AAP.
2,2'-Biquinoline	EK.
*1,4-Bis[1-anthraquinonylamino]anthraquinone	ACY, DUP, GAF, 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.
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, 2,6-naphthalenedisulfonate.	GAF.
4,4'-Bis[diethylamino]benzophenone (Ethyl ketone base)	DSC.
4-Bis[(p-diethylaminophenyl)methyl]-2,7-naphthalenedisulfonic acid, leuco form.	TRC.
4,4'-Bis[dimethylamino]benzhydrol (Michler's hydrol)	SDH.
*4,4'-Bis[dimethylamino]benzophenone (Michler's ketone)	ACS, DSC, DUP, SDH.
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.
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-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(o-nitrophenyl)sulfide	x.
1,4-Bis[2-(5-phenyloxazolyl)]benzene (POPOP)	ARA.
2-Bromoacetophenone	EK.
m-Bromoaniline	EK.
o-Bromoaniline	EK, PIC.
p-Bromoaniline	EK.
m-Bromoanisole	PIC.
p-Bromoanisole	EK, OPC.
*3-Bromo-7H-benz[de]anthracen-7-one (3-Bromobenzanthrone)	ACY, ATL, DUP, GAF, ICI, MAY, TRC.
Bromobenzene, mono-	DOW.
p-Bromobenzenesulfonyl chloride	EK.
4-Bromobenzophenone	ICO.
Bromochlorobenzene	DOW.
2-Bromo-6-chloro-4-nitroaniline	MEE.
Bromocyclopentane	LIL.
2-Bromo-4,6-dinitroaniline	AAP, SDC, TRC.
Bromoethylbenzene	DOW.
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, ICI.
3-(Bromomethyl)thiophene	SDW.
1-Bromonaphthalene	EK, RSA.
2-Bromo-4'-nitroacetophenone	GAF.
N-(4-Bromopentyl)phthalimide	SDW.
o-Bromophenol	EK.
p-Bromophenol	EK.
(p-Bromophenyl)acetonitrile	BPC.
p-Bromophenylhydrazine hydrochloride	EK.

TABLE 7B.--*Cyclic intermediates for which U.S. production or sales were reported, identified by manufacturer, 1967*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
2-Bromopyridine	NEP.
α-Bromoresorcylic acid	ALL.
α-Bromotoluene	EK.
o-Bromotoluene	EK.
p-Bromotoluene	BPC, EK.
2-Bromo-1,3,5-triethylbenzene	DUP.
p-Butoxyphenol	ABB.
4-[3-(p-Butoxyphenoxy)propyl]morpholine	ABB.
4'-Butoxy-3-piperidinopropiophenone	ICO.
N-Butylacetanilide	UCC.
1-(Butylamino)anthraquinone	AAP.
p-Butylaniline	DUP, UCC.
2-tert-Butylanthraquinone	DUP.
p-tert-Butylbenzaldehyde	GIV.
n-Butylbenzene	PLC.
sec-Butylbenzene	PLC.
tert-Butylbenzene	CTA, 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.
(n-Butylcyclopentadienyl)cyclopentadienyliron	ARA.
2'-tert-Butyl-4',6'-dimethylacetophenone	GIV.
4-Butyl-α-(dimethylamino)-o-cresol	RH.
2-tert-Butyl-4-ethylphenol	ACY.
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.
4-Butyl-o-phenylenediamine hemisulfate	WAY.
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	x.
Camphoric acid	FIN.
Camphoric anhydride	FIN.
d-10-Camphorsulfonic acid	OTC.
Camphosulfonic acid	LIL.
Carbazole, refined	SDC.
5'-(o-Carboxybenzoyl)-2'-chlorooxanilic acid	GAF.
N-[(3-Carboxy-4-chlorophenyl)-sulfonyl]anthranilic acid	TRC.
3-Carboxy-2(and 4)-hydroxybenzenediazonium sulfate	ACS, GAF.
[(o-Carboxyphenyl)thio]ethylmercury	LIL.
3-(2-Carboxy-4-sulfophenyl)-3-ethyl-1-(5-nitro-o-anisyl)-triazine.	GAF.
α-Carboxy-o-toluic acid	DUP.
Cedrene	GIV.
2'-Chloroacetoacetanilide	FMP, UCC.
2'-Chloroacetophenone	EK.
3'-Chloroacetophenone	EK.
4'-Chloroacetophenone	LIL.
2-Chloro-2',6'-acetoxylidide	SDW.
4'-(Chloroacetyl)acetanilide	DUP.
m-Chloroaniline	DUP, GAF.
o-Chloroaniline	DUP, MON.
p-Chloroaniline	DUP, MON.
2-(o-Chloroanilino)ethanol	EKT.
3-(o-Chloroanilino)propionitrile	DUP, ICC.
5-Chloro-o-anisidine [NH_2=1] (4-Chloro-o-anisidine [OCH_3=1]).	BUC.
5-Chloro-o-anisidine hydrochloride	BUC.
4-Chloroanthranilic acid	DUP.
*1-Chloroanthraquinone	ACY, DUP, GAF, ICI, MAY, TRC.
*2-Chloroanthraquinone	ACS, ACY, GAF, TRC.
N-(5-Chloro-1-anthraquinonyl)-p-toluenesulfonamide	ICI.
o-Chlorobenzaldehyde	HN.
p-Chlorobenzaldehyde	HN.
Chloro-7H-benz[de]anthracen-7-one (Chlorobenzanthrone)	ACY, SCC, TRC.
*Chlorobenzene, mono-	ACS, DOW, DVC, HK, HKD, MON, MTO, NEV, OMC, PPG.
p-Chlorobenzenesulfinic acid	TRC.

TABLE 7B.--*Cyclic intermediates for which U.S. production or sales were reported, identified by manufacturer, 1967*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
p-Chlorobenzenesulfonamide	ACY.
p-Chlorobenzenesulfonic acid	GAF.
o-Chlorobenzoic acid	HN.
5-Chloro-2-benzoxazolinone	x.
*o-(p-Chlorobenzoyl)benzoic acid	ACS, ACY, DUP, GAF, HN, ICI.
p-Chlorobenzoyl chloride	HN.
4,4'-(o-Chlorobenzylidene)di-2,5-xylidine	GAF.
α-(p-Chlorobenzyl)-α-phenyl-1-pyrrolidinepropanol hydrochloride.	LIL.
Chloro(p-chlorophenyl)phenylmethane	OPC.
Chlorocyclohexane	ACY.
1-Chloro-2,5-diethoxy-4-nitrobenzene	ALL, GAF.
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	PCW.
5-Chloro-4,7-dimethylbenzo[b]thiophen-3(2H)-one	ACS.
4-Chloro-N,N-dimethyl-3-nitrobenzenesulfonamide	EKT, GAF.
2-Chloro-4,6-dinitroaniline	GAF.
*1-Chloro-2,4-dinitrobenzene (Dinitrochlorobenzene)	AAP, ACS, DUP, 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.
2-Chloroethanol, p-toluenesulfonate	GAF.
N-(2-Chloroethyl)-4-(2-Chloro-4-nitrophenylazo)-N-ethylaniline.	GAF.
4-[(2-Chloroethyl)ethylamino]-o-tolualdehyde	GAF.
N-(2-Chloroethyl)-N-ethylaniline	GAF.
p-[(2-Chloroethyl)methylamino]benzaldehyde	ACS, GAF.
Chloroformic acid, benzyl ester	PIC, RSA.
Chloroformic acid, phenyl ester	EK.
4-Chloro-5-hydroxy-2,7-naphthalene disulfonic acid	GAF.
5'-Chloro-3-hydroxy-2-naphth-o-anisidide	PCW.
3-Chloro-4-hydroxyquinoline-3,4-carbonic acid	SDH.
6-Chloroisatoic anhydride	MEE.
4-Chlorometanilic acid	DUP.
5-Chlorometanilic acid	ACS.
*6-Chlorometanilic acid	AAP, DUP, GAF, SW.
5-Chloro-2-methoxybenzenediazonium chloride	GAF.
N-[(5-Chloro-2-methoxyphenyl)azo]sarcosine	ATL.
p-(Chloromethyl)anisole	SDW.
*1-Chloro-2-methylanthraquinone	ACS, ACY, CMG, DUP, GAF, ICI, TRC.
6-Chloro-4-methyl-1,3,2-benzothiazathiolium chloride	AAP.
6-Chloro-4-methylbenzo[b]thiophene-2-ol	ACY.
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)benzenesulfonic acid.	DUP.
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.
*2-Chloro-4-nitroaniline (o-Chloro-p-nitroaniline)	DOW, DUP, SDC.
*4-Chloro-2-nitroaniline (p-Chloro-o-nitroaniline)	DOW, DUP, SDC, VPC.
*1-Chloro-5-nitroanthraquinone	ACS, ACY, DUP, MAY, TRC.
1-Chloro-8-nitroanthraquinone	DUP.
*1-Chloro-2-nitrobenzene (Chloro-o-nitrobenzene)	AAP, DUP, MON, UPM.
1-Chloro-3-nitrobenzene (Chloro-m-nitrobenzene)	DUP, GAF.
*1-Chloro-4-nitrobenzene (Chloro-p-nitrobenzene)	AAP, DUP, MON, UPM.
2-Chloro-5-nitrobenzenesulfinic acid	TRC.
2-Chloro-5-nitrobenzenesulfonamide	AAP.
*4-Chloro-3-nitrobenzenesulfonamide	AAP, CMG, DUP, EKT, GAF, ICC, TRC.
4-Chloro-3-nitrobenzenesulfonanilide	TRC.
*2-Chloro-5-nitrobenzenesulfonic acid	AAP, ACS, CMG, TRC.
*2-Chloro-5-nitrobenzenesulfonic acid, sodium salt	DUP, GAF.
4-Chloro-3-nitrobenzenesulfonic acid	ACS, TRC.
2-Chloro-5-nitrobenzenesulfonyl chloride	TRC.

TABLE 7B.--*Cyclic intermediates for which U.S. production or sales were reported, identified by manufacturer, 1967*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
*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, ACS, 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	DUP.
4-Chloro-3-nitrotoluene	AAP, DUP.
α-Chloro-m-nitrotoluene	EK.
m-Chlorophenol	EK.
o-Chlorophenol	DOW, MON.
p-Chlorophenol	DOW, MON.
2-Chlorophenothiazine	SK.
4-(p-Chlorophenoxy)aniline	NES.
4-(p-Chlorophenoxy)nitrobenzene	NES.
(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-(m-Chlorophenyl)-3-methyl-2-pyrazolin-5-one	TRC.
1-(p-Chlorophenyl)-3-methyl-2-pyrazolin-5-one	DUP.
p-Chlorophenyl methyl sulfone	TRC.
2-Chloro-4-phenylphenol	DOW.
1-[4-(p-Chlorophenyl)-3-phenyl-2-butenyl] pyrrolidine hydrobromide.	LIL.
[(o-Chlorophenyl)thio]acetic acid	PCW.
4-Chlorophthalic acid and sodium salt	DUP, HK, MEE, SW.
(3-Chloropropenyl)benzene (Cinnamyl chloride)	SDW.
1-(3-Chloropropyl)-4-methylpiperazine	SK.
N^1-(6-Chloro-3-pyridazinly)sulfanilamide	ACY.
2-Chloropyridine	FMT.
6-Chloroquinaldine	DUP.
7-Chloro-4-quinolinol	SDW.
2-(6-Chloro-2-quinonyl)-1,3-indandione	DUP.
4-Chlororesorcinol	AAP, GAF.
2-Chloro-5-sulfamoylbenzoic acid	TRC.
2-Chlorothiophene	FIS.
m-Chlorotoluene	HK.
o-Chlorotoluene	HN.
p-Chlorotoluene	HN.
*α-Chlorotoluene (Benzyl chloride)	BPC, GRH, HK, HN, MON, VEL.
3-Chloro-o-toluidine [NH_2=1]	DUP.
3-Chloro-p-toluidine [NH_2=1]	BUC, DUP.
4-Chloro-o-toluidine [NH_2=1] and hydrochloride	ACY, BUC, PCW.
5-Chloro-o-toluidine [NH_2=1] (4-Chloro-o-toluidine [CH_3=1])	DUP, SDH.
5-Chloro-o-toluidine hydrochloride [NH_2=1]	ATL, SDH.
N-[(5-Chloro-o-tolyl)azo]sarcosine	ALL, ATL.
1-(6-Chloro-o-tolyl)-3-methyl-2-pyrazolin-5-one	TRC.
1-(5-Chloro-o-tolyl)-1-tetrazene	GAF.
*[(4-Chloro-o-tolyl)thio]acetic acid	ACS, ACY, GAF, PCW.
4-Chloro-α,α,α-trifluoro-3-nitrotoluene	AAP, GAF, MEE.
5-Chloro-α,α,α-trifluoro-2-nitrotoluene	MEE.
p-Chloro-α,α,α-trifluorotoluene	HK.
4-Chloro-α,α,α-trifluoro-o-toluidine	MEE.
6-Chloro-α,α,α-trifluoro-m-toluidine	AAP.
Chlorotriphenylmethane	EK.
α-Chloro-p-xylene	BPC.
2-Chloro-p-xylene	DUP.
4-Chloro-2,5-xylenesulfonyl chloride	ACS.
4-Chloro-3,5-xylenol	OTA.
[(4-Chloro-2,5-xylyl)thio]acetic acid	ACS.
Cholic acid	WIL.
*Cinnamoyl chloride	ICO, UOP, x.
*Cresols:[2]	
m-Cresol	KPT, PRD.
*o-Cresol:	
From coal tar	KPT, PRD.
From petroleum	KPT, MER, NPC, PRD, SW.
p-Cresol	ACY, HPC, SW.

See footnotes at end of table.

TABLE 7B.--*Cyclic intermediates for which U.S. production or sales were reported, identified by manufacturer, 1967*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
Cresols, mixed:[2]	
*(m,p)-Cresol:	
From coal tar	ACP, KPT, PRD.
From petroleum	MER, NPC, PIT, PRD.
(o,m,p)-Cresol	ACP, KPT, NPC.
*Cresylic acid, refined:[2]	
From coal tar	ACP, KPT.
From petroleum	MER, NPC, PIT, SHO.
*Cumene	CLK, CSP, DOW, GOC, HPC, MOC, MON, SHC, SKO, SNT, SOC, TX.
2-[p-(Cyanoacetamido)phenyl]-6-methyl-7-benzothiazolesulfonic acid.	DUP.
α-Cyano-d^1,α-cyclohexaneacetic acid, ethyl ester	SDW.
α-Cyano-1-cyclohexene-1-acetic acid, ethyl ester	SDW.
N-β-Cyanoethyl-N-(β-acetoxyethyl)aniline	EKT.
4-[(2-Cyanoethyl)ethylamino]-o-tolualdehyde	DUP, GAF.
p-[(2-Cyanoethyl)methylamino]benzaldehyde	DUP, GAF.
Cycloaliphatic epoxides	UCC.
*Cyclohexane	ASH, ATR, CO, COR, CSD, DUP, EKX, ENJ, GOC, GRS, PLC, SOG, TX, UOC.
1,2-Cyclohexanedicarboxylic anhydride	ACS.
1,3-Cyclohexanedione	PD.
*Cyclohexanol	ACS, DBC, DUP, MON.
*Cyclohexanone	ACS, CEL, DBC, DUP, MON.
Cyclohexanone oxime	ACS, x.
Cyclohexene	PLC.
4-Cyclohexene-1-carboxaldehyde	UCC.
4-Cyclohexene-1,2-dicarboximide	CHO.
4-Cyclohexene-1,2-dicarboxylic anhydride	ACS, PTT.
*Cyclohexylamine	ABB, MON, VGC, x.
Cyclohexyl-2-propanone	GIV.
N-Cyclohexyltaurine, sodium salt	GAF.
Cyclopentamine base	LIL.
Cyclopentanepropionic acid	ARA.
Cyclopentanol	LIL.
Cyclopentanonecarboxylic acid	ARA.
Cyclopentene	ARA, PLC.
Cyclopropanecarboxylic acid	HEX.
p-Cymene	ACS, HNW, HPC.
Decachlorodicyclopentadiene	NES.
Deoxycholic acid	WIL.
1,5(and 1,8)-Diacetamidoanthraquinone	AAP.
3,5-Diacetamido-2,4,6-triiodobenzoic acid	SDW.
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, TRC.
1,5-Diaminoanthraquinone	DUP, GAF, TRC.
1,5(and 1,8)-Diaminoanthraquinone	AAP, ICI, TRC.
*2,6-Diaminoanthraquinone	AAP, ACS, ACY, GAF, ICI, TRC, VPC.
3,4-Diaminobenzanilide	TRC.
3',4-Diaminobenzanilide	VPC.
2,4-Diaminobenzenesulfonic acid [$SO_3H=1$]	DUP, TRC.
2,5-Diaminobenzenesulfonic acid [$SO_3H=1$]	TRC.
4,4'-Diamino-2,2'-biphenyldisulfonic acid	AAP, ACS, ACY.
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, 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, ICC, VPC.
1,5(and 1,8)-Diamino-4,8(and 4,5)-dihydroxyanthraquinone	DUP.
4,5-Diamino-1,8-dihydroxyanthraquinone	ICI.
4,4'-Diamino-5,5'-dimethyl-2,2'-biphenyldisulfonic acid	AAP.
1,4-Diamino-5-nitroanthraquinone	GAF.
2,4-Diamino-6-phenyl-s-triazine	RH, VEL.
2,6-Diaminopyridine	NEP, RIL.

See footnotes at end of table.

TABLE 7B.--*Cyclic intermediates for which U.S. production or sales were reported, identified by manufacturer, 1967*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
6,7-Diamino-2,3-quinoxalinediol hydrochloride	BJL.
*4,4′-Diamino-2,2′-stilbenedisulfonic acid	ACS, ACY, DUP, GAF, GGY, SDH, TRC, VPC.
1,5-Diamino-2,4,6,8-tetrabromoanthraquinone	ICI.
4,6-Diamino-m-toluenesulfonic acid [SO_3H=1]	ACS.
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.	ACS.
2,4-Dianilino-1-hydroxyanthraquinone	GAF.
6,8-Dianilino-1-naphthalenesulfonic acid	ACS.
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-α,2′,3′-i]-carbazole-5,10,15,17-tetrone.	ICI.
*4,5′-Dibenzamido-1,1′-iminodianthraquinone	ACS, ACY, DUP, GAF, ICI, MAY, TRC.
Dibenzo[b,def]chrysene-7,14-dione	ATL, ICI, TRC.
Dibenzothiophene	EVN.
*1,5-Dibenzoylnaphthalene	ACY, CMG, DUP, GAF, PCW, 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, GAF, MAY, TRC.
ar-Dibromobenzene	DOW.
p-Dibromobenzene	DOW.
ar-Dibromodibenzo[b,def]chrysene-7,14-dione	ICI.
2,6-Dibromo-1,5-naphthalenediol	EK.
2,6-Dibromo-4-nitroaniline	SDC.
2,6-Dibromo-4-nitrophenol	MEE.
5,13-Dibromo-8,16-pyranthrenedione	DUP, ICI.
Dibromoviolanthrone	GAF.
2,5-Dibutoxyaniline	BJL.
p-Dibutoxybenzene	ALL.
1,4-Dibutoxy-2-chloro-5-nitrobenzene	ALL, BJL.
2,5-Dibutoxy-4-morpholinobenzene sulfate diazoniumsulfate salt.	ALL.
4-(2,5-Dibutoxy-4-nitrophenyl)morpholine	ALL.
1,1′-Di-n-butyldicyclopentadienyliron	ARA.
2,4-Di-tert-butylphenol	DOW.
Dibutyltin bis(cyclohexyl maleate)	x.
3,4-Dichloroaniline	DUP, MON.
2,5-Dichloroaniline and hydrochloride [NH_2=1]	ACS, BUC, DUP.
3-(2,4-Dichloroanilino)-1-(2,4,6-trichlorophenol)	EK.
*1,5-Dichloroanthraquinone	ACS, DUP, GAF, ICI, TRC.
1,8-Dichloroanthraquinone	GAF, ICI, TRC.
2,6-Dichlorobenzaldehyde	DUP.
3-(3,4-Dichlorobenzamido)-1-phenyl-2-pyrazolin-5-one	EK.
Dichlorobenzanthrone	ACY.
m-Dichlorobenzene	EK, OMC.
*o-Dichlorobenzene	ACS, CPD, DOW, DUP, DVC, MON, NEV, PPG, SCC, SVT.
o(and p)-Dichlorobenzene	HKD, MTO.
*p-Dichlorobenzene	ACS, CPD, DOW, DVC, MON, NEV, PPG, SCC, SVT.
4,6-Dichloro-m-benzenedisulfonamide	ABB.
4,6-Dichloro-m-benzenedisulfonyl chloride	ABB.
*3,3′-Dichlorobenzidine base and salts	ACS, ALL, CWN, LAK.
Dichlorobenzil	MTO.
2,4-Dichlorobenzoic acid	HN.
2,6-Dichlorobenzonitrile	x.
2,4-Dichlorobenzoyl chloride	HN.
Dichlorobenzyl alcohol	UCC.
Dichlorobenzyl chloride	UCC.
2,4-Dichloro-m-cresol	EKT.
7,16-Dichloro-6,15-dihydro-5,9,14,18-anthrazinetetrone	ICI.
4,5-Dichloro-3,6-dioxo-1,4-cyclohexadiene-1,2-dicarbonitrile.	ARA.
Dichlorodiphenylsilane	DCC.

TABLE 7B.--*Cyclic intermediates for which U.S. production or sales were reported, identified by manufacturer, 1967*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
2′,7′-Dichlorofluorescein	EK.
1,2-Dichlorohexafluorocyclopentene	PIC.
2,5-Dichloro-4-hydrazinobenzenesulfonic acid	GAF.
N-(6,8-Dichloro-5-hydroxy-1-naphthyl)-p-toluenesulfonamide	EK.
5,14-Dichloroisoviolanthrone	ICI.
*2,5-Dichloro-4-(3-methyl-5-oxo-2-pyrazolin-1-yl)benzenesulfonic acid.	ACY, CMG, DUP, GAF, PCW, TRC, VPC.
Dichloromethylphenylsilane	DCC.
2,4-Dichloro-1-naphthol	AAP.
2,6-Dichloro-4-nitroaniline	AAP, CWN, DUP, HSH, PCW.
1,2-Dichloro-4-nitrobenzene	DUP, MON, SDC.
*1,4-Dichloro-2-nitrobenzene (Nitro-p-dichlorobenzene)	ACS, ALL, DUP, PCW, SDC, VPC.
2,4-Dichlorophenol	DOW, MON.
2,4-Dichlorophenol, benzene sulfonate	NES.
3-(2′,6′-Dichlorophenyl)-5-methyl-4-isoxazolecarbonyl chloride.	ICO, KF, OTC.
3-(2′,6′-Dichlorophenyl)-5-methyl-4-isoxazolecarboxylic acid.	ICO.
1-(2,5-Dichlorophenyl)-3-triazenecarbonitrile	GAF.
2,6-Dichloropyrazine	ACY.
3,6-Dichloropyridazine	ACY.
4,7-Dichloroquinoline	PD, SDW.
2,3-Dichloro-6-quinoxalinecarbonyl chloride	DUP.
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)	ACS, HK.
2,6-Dichlorotoluene	DUP.
Dichloroxylene	BPC.
2,4-Dichloro-3,5-xylenol	OTA.
Dicyclohexylamine	ABB, MON, VGC.
*Dicyclopentadiene (includes cyclopentadiene)	ENJ, GOC, UCC, VEL.
Dicyclopentadiene dioxide	VEL.
Didodecylbenzene	CO.
2,5-Diethoxyaniline	ALL.
2′,5′-Diethoxybenzanilide	ALL.
p-Diethoxybenzene	ALL, GAF.
3,4-Diethoxybenzoic acid	SDW.
2,5-Diethoxy-4-morpholinobenzenediazonium chloride, zinc chloride.	ALL.
2′,5′-Diethoxy-4′-nitrobenzanilide	ALL.
1,4-Diethoxy-2-nitrobenzene	ALL.
4-(2,5-Diethoxy-4-nitrophenyl)morpholine	ALL.
*p-(Diethylamino)benzaldehyde	ACS, DUP, GAF.
3′-[2-(Diethylamino)ethyl]-4′-hydroxyacetanilide	PD.
α-[2-(Diethylamino)ethyl]-α-phenylcyclohexanemethanol hydrochloride.	ACY.
m-(Diethylamino)phenol (N,N-Diethyl-3-aminophenol)	ACY, DUP.
3-[(4-N,N-Diethylamino)phenylazo]-1H-1,2,4-triazole	TRC.
3-(Diethylamino)propiophenone	ACY.
4-(Diethylamino)-o-tolualdehyde	DUP.
*N,N-Diethylaniline	ACS, ACY, DSC, DUP, SDH.
N,N-Diethyl-m-anisidine	DUP.
Diethylbenzene	DOW, KPP.
1,1′-Diethyl-4,4′-carbocyanine iodide (Cryptocyanine)	EK.
N,N-Diethylcyclohexylamine	DUP.
α,α′-Diethyl-4,4′-dimethoxystilbene	LIL.
N^1,N^1-Diethyl-4-methoxymetanilamide	PCW.
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-toluidine	DUP.
2,4-Difluoroaniline	PIC.
6,15-Dihydro-5,9,14,18-anthrazinetetrone	TRC.
10,11-Dihydro-5H-dibenzo[a,d]cyclohepten-5-one	LIL.
9,10-Dihydro-1,8-dihydroxy-4,5-dinitro-9,10-dioxo-2,6-anthracenedisulfonic acid.	DUP.
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.	ACS, ICI.

TABLE 7B.--*Cyclic intermediates for which U.S. production or sales were reported, identified by manufacturer, 1967*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
9,10-Dihydro-9,10-dioxo-1,5-anthracenedisulfonic acid	ACY, TRC.
9,10-Dihydro-9,10-dioxo-1,5-anthracenedisulfonic acid, disodium salt.	GAF, ICI, TRC.
9,10-Dihydro-9,10-dioxo-1,5(and 1,8)-anthracenedisulfonic acid and salt.	TRC.
*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, ACS, ACY, GAF, ICI, TRC, VPC.
*9,10-Dihydro-9,10-dioxo-1-anthracenesulfonic acid and salt (Gold salt).	AAP, ACS, ACY, DUP, GAF, ICI, MAY, TRC.
9,10-Dihydro-9,10-dioxo-2-anthracenesulfonic acid and salt (Silver salt).	DUP.
9,10-Dihydro-9,10-dioxo-2-anthroic acid	ACS.
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]-cyclohepten-5-ol.	LIL.
*9,10-Dihydro-5-nitro-9,10-dioxo-1-anthracenesulfonic acid	ACS, DUP, MAY, TRC.
9,10-Dihydro-5(and 8)-nitro-9,10-dioxo-1-anthracenesulfonic acid.	ICI.
9,10-Dihydro-1-nitro-9,10-dioxo-2-anthroic acid	DUP, GAF, TRC.
*1,4-Dihydroxyanthraquinone (Quinizarin)	AAP, ACS, ACY, CMG, DUP, EKT, GAF, HSH, ICC, ICI, JTC, MAY, TRC.
*1,5-Dihydroxyanthraquinone (Anthrarufin)	ACS, ACY, DUP, GAF, TRC.
1,5(and 1,8)-Dihydroxyanthraquinone	CMG, TRC.
1,8-Dihydroxyanthraquinone (Chrysazin)	GAF, ICI, TRC.
*2,6-Dihydroxyanthraquinone (Anthraflavic acid)	ACS, DUP, GAF, TRC.
4,5-Dihydroxy-m-benzenedisulfonic acid, disodium salt	SDC, SDW.
2,5-Dihydroxybenzenesulfonic acid, potassium salt	NES.
2,4-Dihydroxybenzophenone	DUP, DVC, GAF.
*1,5-Dihydroxy-4,8-dinitroanthraquinone	ICC, ICI, TRC, VPC.
*1,8-Dihydroxy-4,5-dini troanthraquinone (4,5-Dinitro-chrysazin).	DUP, EKT, GAF, ICC, TRC.
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.
10,10′-(Dihydroxyethanediylidene)dianthrone	ICI.
3,4-Dihydroxyhydrocinnamic acid (Hydrocaffeic acid)	BJL.
4,5-Dihydroxy-2,7-naphthalenedisulfonic acid (Chromotropic acid).	ACS, HSH.
6,7-Dihydroxy-2-naphthalenesulfonic acid	GAF, IDC.
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-naphthalenedisulfonic acid, trisodium salt.	EK.
*16,17-Dihydroxyviolanthrone (Dihydroxydibenzanthrone)	ACS, ACY, DUP, GAF, ICI, MAY.
m-Diiodobenzene	EK.
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, DUP, 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	ALL, CWN.
2,4-Dimethoxybenzoic acid	ACY.
3,5-Dimethoxybenzoic acid	ALD, ICO.
N,N′-[(3,3′-Dimethoxy-4,4′-biphenylylene)bis-(azo)] bis-(N-methyltaurine).	ALL, GAF.
2,5-Dimethoxy-β-methyl-β-nitrostyrene	x.
2,5-Dimethoxy-α-methylphenethylamine hydrobromide	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.
N-(3,4-Dimethoxyphenethyl)-2-(3,4-dimethoxyphenyl)acetamide	LIL.
(3,4-Dimethoxyphenyl)acetonitrile	LIL.
1-(3′,4′-Dimethoxyphenyl)-2-aminopropane	LIL.

TABLE 7B.--*Cyclic intermediates for which U.S. production or sales were reported, identified by manufacturer, 1967*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
2,5-Dimethoxytetrahydrofuran	HEX.
16,17-Dimethoxyviolanthrone	GAF, ICI, MAY.
p-Dimethylaminobenzanilide	GAF.
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	ACS.
*N,N-Dimethylaniline	ACS, ACY, DSC, DUP, SDH.
7,12-Dimethylbenz[a]anthracene	EK.
3,3′-Dimethylbenzidine (o-Tolidine)	ALL, CWN, DUP.
3,3′-Dimethylbenzidine hydrochloride	CWN, DUP, EK.
*N,N-Dimethylbenzylamine	ICO, MLS, RH.
α,α-Dimethylbenzylhydroperoxide	ACP, CLK.
4-(α,α-Dimethylbenzyl)-2-phenylazophenol	TRC.
2,2′-Dimethyl-1,1′-bianthraquinone	AAP, ACS, ACY, CMG, DUP, GAF, ICI, TRC.
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-p-nitrosoaniline	ACY, ESA.
N,N-Dimethyl-3-nitro-p-toluenesulfonamide	GAF.
6,6-Dimethyl-2-norpinene-2-ethanol	RDA.
N,N-Dimethyl-p-phenylenediamine	EKT.
N,N-Dimethyl-p-phenylenediamine hydrochloride	EK.
1,4-Dimethylpiperazine	JCC, SEL.
N-[[4-(Dimethylsulfamoyl)-o-tolyl]azo]-N-methyl-5-sulfoanthranilic acid.	GAF.
N,N-Dimethylsulfanilic acid	GAF.
N,N-Dimethyl-p-toluidine	EK, RSA, SEL.
*2,4-Dinitroaniline	AAP, ACY, SDC.
p-(2,4-Dinitroanilino)phenol	DUP, GAF.
1,5(and 1,8)-Dinitroanthraquinone	AAP, ICC, ICI, TRC.
N,N′-(2,4-Dinitro-1,5-anthraquinonylene)dioxamic acid	TRC.
3′,4-Dinitrobenzanilide	AAP, TRC.
m-Dinitrobenzene	ACS, DUP.
2,4-Dinitrobenzenesulfonic acid	EK, TRC.
3,5-Dinitrobenzoic acid	FIS, SAL.
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.
3′,5′-Dinitro-2′-hydroxyacetanilide	TRC.
1-(3,5-Dinitro-2-hydroxyphenylazo)-2-naphthol	TRC.
*2,4-Dinitrophenol, tech	AAP, ACS, SDC.
(2,4-Dinitrophenyl)hydrazine	EK.
3,5-Dinitrosalicylic acid	EK.
*4,4′-Dinitrostilbene-2,2′-disulfonic acid	ACS, ACY, DUP, GAF, GGY, SDH, TRC.
2,4-Dinitrotoluene	ACS, DUP, RUC.
2,4(and 2,6)-Dinitrotoluene	DUP, MOB.
3,5-Dinitro-p-toluenesulfonic acid	GAF.
2,4-Di-tert-pentylphenol	PAS.
2,4-Di-tert-pentylphenoxyacetyl chloride	x.
1,5-Diphenoxyanthraquinone	GAF, VPC.
1,5(and 1,8)-Diphenoxyanthraquinone	DUP, ICC.
1,8-Diphenoxyanthraquinone	EKT.
Diphenylacetic acid	ARA.
*Diphenylamine	ACY, DOW, DUP, FST, ORO, RUC.
2,8-Diphenylanthra[1,2-d:6,5-d′]bisthiazole-6,12-dione	ICI.
Diphenylcarbamyl chloride	EK.
α-d-1,2-Diphenyl-4-dimethylamino-2-hydroxy-3-methylbutane, camphor sulfonate.	LIL.
1,1-Diphenylethylene	EK.
N,N′-Diphenylethylenediamine	DOW, RPC.
2,5-Diphenyloxazole	ARA.

TABLE 7B.--*Cyclic intermediates for which U.S. production or sales were reported, identified by manufacturer, 1967*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
1,3-Diphenyl-1,3-propanedione	ALD, EK.
Diphenyl-2-propanone	BPC.
2,2′-Dithiodibenzoic acid	LIL, MEE.
*1,4-Di-p-toluidinoanthraquinone	ACS, ATL, GAF, ICI, TRC, VPC.
1,8-Di-p-toluidinoanthraquinone	ICI.
1,4-Di(p-toluidino)-5,8-dihydroxyanthraquinone	ICI.
*Divinylbenzene	DOW, FG, KPP.
Dodecylbenzene. (See Alkylbenzenes.)	
Dodecylbenzyl chloride	CO.
Dodecylmethylbenzyl chloride	x.
*p-Dodecylphenol	GAF, MON, UCC, x.
Eosin (2′,4′,5′,7′-Tetrabromofluorescein)	ICC.
1,2-Epoxy-3-(2-biphenylyl)propane	NES.
(Epoxyethyl)benzene	UCC.
o-Ethoxybenzoic acid	ACY.
6-Ethoxy-2-benzothiazolethiol	FMT.
4-Ethoxy-3-methoxybenzyl alcohol	LIL.
1-(4-Ethoxy-3-methoxybenzyl)-6,7-dimethoxy-3-methylisoquinone.	LIL.
(4-Ethoxy-3-methoxyphenyl)acetic acid	LIL.
2-Ethoxy-1-naphthoic acid	ICO.
2-Ethoxy-1-naphthoyl chloride	ICO, WYT.
4-Ethoxy-3-nitroacetanilide	AAP.
(p-Ethoxyphenol)urea (Dulcin)	RSA.
3-(Ethylamino)-p-cresol	DUP.
3-(Ethylamino)-p-toluenesulfonic acid [SO_3H=1]	DUP.
*N-Ethylaniline, refined	ACS, ACY, DUP, SDH.
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	ACS, TRC, WJ.
N-Ethyl-p-anisidine	EKT.
N-Ethylanthranilic acid	SDH.
2-Ethylanthraquinone	ACS, DUP.
*Ethylbenzene	CSD, DOW, ENJ, FG, KPP, KPT, MON, SHC, SIN, SKC, SNT, TOC, UCC.
o-(p-Ethylbenzoyl)benzoic acid	DUP.
Ethylbenzyl chloride	BPC.
9-Ethylcarbazole	SDC.
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.
2-[N-Ethyl-p-[(6-methoxy-2-benzothiazolyl)azo]anilino]-ethanol.	TRC.
N-Ethyl-N-(2-methylsulfonamidoethyl)-m-toluidine	WAY.
N-Ethyl-1-naphthylamine	DSC, DUP.
α-Ethyl-3-nitrocinnamic acid	SDW.
p-Ethylphenol	ACY.
*N-Ethyl-N-phenylbenzylamine	ACS, DUP, 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.
6-Ethyl-1,2,3,4-tetrahydro-1,1,4,4-tetramethylnaphthalene	GIV.
N-Ethyl-m-toluidine	DUP.
N-Ethyl-o-toluidine	DUP.
3-(N-Ethyl-m-toluidino)-1,2-propanediol	EKT.
*3-(N-Ethyl-m-toluidino)propionitrile	DUP, EKT, GAF, ICC.
1-Ethynyl-1-cyclohexanol	ACS, CUC, EKT.
Fluoren-9-one	EK.
Fluorescein (3′,6′-Dihydroxyfluoran)	ICC.
1-Fluoro-2,4-dinitrobenzene	EK, PIC.
4-Formyl-m-benzenedisulfonic acid	GAF, SDH.
o-Formylbenzenesulfonic acid (o-Sulfobenzaldehyde)	GAF, SDH.
Furan	DUP, QKO.
Furfuryl alcohol	QKO.
Furfurylamine	MLS.

TABLE 7B.--*Cyclic intermediates for which U.S. production or sales were reported, identified by manufacturer, 1967*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
2-Furylmethylketone	EK.
N-Glycoloylarsanilic acid, sodium salt	SDW.
Hexachlorocyclopentadiene	HK, VEL.
1,4,5,6,7,7-Hexachloro-5-norbornene-2,3-dicarboxylic acid	HK, VEL.
Hexadecachlorophthalocyanine	ICC.
Hexafluorobenzene	WHC.
1,2,3,4,5,6-Hexahydro-8-hydroxy-cis-6,11-dimethyl-2,6-methano-2-benzazocine.	SDW.
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.
4-Hydrazino-m-toluenesulfonic acid	GAF.
Hydrazobenzene	HEX.
*Hydroquinone, tech	CRS, EKT, MAN.
4'-Hydroxyacetaniline	TRC.
3'-Hydroxyacetophenone	SDH.
3'-Hydroxyacetophenone benzoate	SDH.
p-Hydroxybenzaldehyde	DOW.
*p-Hydroxybenzenesulfonic acid	DOW, MON, UPF.
p-Hydroxybenzoic acid	HN, WSN.
6'-Hydroxy-m-benzotoluidide	TRC.
o-(p-Hydroxybenzoyl)benzoic acid	LIL.
3'-Hydroxy-2(N-benzyl-N-methylamino)acetophenone	SDW.
4-Hydroxycoumarin	ABB.
3-[N-(2-Hydroxyethyl)anilino]propionitrile	DUP, ICC.
3-[N-(2-Hydroxyethyl)anilino]propionitrile, benzoate ester	DUP.
N-(2-Hydroxyethyl)cyclohexylamine	ABB.
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-aceto-toluidide.	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.
2-Hydroxy-α^1,α^3-mesitylenediol	ACY.
*4-Hydroxymetanilamide	ACS, CMG, DUP, TRC, VPC.
*4-Hydroxymetanilic acid	AAP, ACS, CWN, DUP, TRC.
N-(4-Hydroxymetanilyl)anthranilic acid	TRC.
4-Hydroxy-1-methylcarbostyril	ICC.
3-Hydroxy-2-methylcinchoninic acid	DUP, ICC.
4-Hydroxy-N^1-methylmetanilamide	TRC.
N-(Hydroxymethyl)phthalimide	ACY.
3-Hydroxy-N-(3-N-morpholinopropyl)-2-naphthamide	IDC.
3-Hydroxy-2,7-naphthalenedisulfonic acid	ATL.
*3-Hydroxy-2,7-naphthalenedisulfonic acid, disodium salt	ACS, ACY, GAF, TRC, WJ.
7-Hydroxy-1,3-naphthalenedisulfonic acid	DUP, TRC.
7-Hydroxy-1,3-naphthalenedisulfonic acid, disodium salt	ACS, ACY.
4-Hydroxy-2-naphthalenesulfonamide	GAF.
1-Hydroxy-2-naphthalenesulfonic acid, potassium salt	EK.
4-Hydroxy-1-naphthalenesulfonic acid	ACS, DUP.
5-Hydroxy-1-naphthalenesulfonic acid	ACS.
*6-Hydroxy-2-naphthalenesulfonic acid	ACS, 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.
4-Hydroxy-2-naphthalenesulfonic acid, benzene sulfonate, sodium salt.	GAF.
3-Hydroxy-2-naphthanilide (Naphthol AS)	ATL, BUC, PCW.
1-Hydroxy-2-naphthoic acid	ACS.
3-Hydroxy-2-naphthoic acid (B.O.N.)	BUC, DUP, GAF, HN, PCW.
3-Hydroxy-2-naphthoic acid, methyl ester	PCW.
1-Hydroxy-2-naphthoic acid, phenyl ester	EK.
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.

TABLE 7B.--*Cyclic intermediates for which U.S. production or sales were reported, identified by manufacturer, 1967*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
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.
1-(2-Hydroxy-4-nitrophenylazo)-2-naphthol	TRC.
2-(m-Hydroxyphenoxy)ethanol	BJL.
o-[(p-Hydroxyphenyl)azo]benzoic acid	PIC.
3-[4-(4′-Hydroxyphenylazo)-2,5-dimethoxyphenylazo]-benzenesulfonic 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.
1-Hydroxy-4-p-toluidinoanthraquinone	ICI.
2-Imidazolidinone modifications	RH.
*1,1′-Iminobis[4-aminoanthraquinone]	ACS, ACY, CMG, DUP, GAF, ICI, MAY, TRC.
1,1′-Iminobis[4-benzamidoanthraquinone]	ACY, MAY.
*1,1′-Iminobis[5-benzamidoanthraquinone]	GAF, ICI, TRC.
*7,7′-Iminobis[4-hydroxy-2-naphthalenesulfonic acid]	ATL, DUP, TRC.
*1,1′-Iminobis[4-nitroanthraquinone]	ACY, DUP, ICI, MAY, TRC.
*1,1′-Iminodianthraquinone (1,1′-Dianthrimide)	ACY, GAF, ICI, MAY, TRC.
1,3-Indandione	PIC.
Indanone	EK.
Indole-2,3-dione	ACS.
5-Iodoanthranilic acid	SDW.
Isobutylbenzene	PLC.
*Isocyanic acid derivatives:	
Bitolylene diisocyanate (TODI)	UPJ.
p-Chlorophenyl isocyanate	MOB.
Cyclohexyl isocyanate	CWN, OTC.
Dianisidine diisocyanate (DADI)	CWN, UPJ.
3,4-Dichlorophenyl ester	DUP.
Dicyclohexylmethane 4,4′-diisocyanate	DUP.
*Diphenylmethane 4,4′-diisocyanate (MDI)	ACS, DUP, MOB, UPJ.
Phenylisocyanate	CWN, 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)	ACS, DUP, MOB, OMC, RUC, UCC.
p-Tolyl ester	EK.
Other	DUP, EK, MOB, OTC.
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.
Isophthaloyl chloride	DUP.
N-Isopropylaniline	ACY, EKT.
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, GE, MON, SHC, UCC.
4,4′-Isopropylidenediphenol, ethoxylated	APD.
4,4′-Isopropylidenediphenol, propoxylated	APD.
o-Isopropylphenol	TNA.
4-Isopropyl-m-phenylenediamine	DUP.
1,3-Isoquinolinediol	DUP.
Isothiocyanic acid, phenyl ester	CFC.
*Isoviolanthrone (Isodibenzanthrone)	ACY, DUP, GAF, ICI, MAY, TRC.
*Leuco quinizarin (1,4,9,10-Anthratetrol)	AAP, ACS, ACY, EKT, HSH, ICC, TRC.
2,4-Lutidine	ACP, KPT.
3,4-Lutidine	RIL.

TABLE 7B.--*Cyclic intermediates for which U.S. production or sales were reported, identified by manufacturer, 1967*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
Malondianilide	KF.
Mandelonitrile	KF.
*Melamine	ACP, ACY, FIS, RCI.
*dl-p-Mentha-1,8-diene (Limonene)	ARZ, GIV, HNW, NCI.
p-Mentha-1,4(8)-diene	GIV.
*O-Mercaptobenzoic acid (Thiosalicylic acid)	EVN, LIL, MED.
Metanilamide	CMG, VPC.
Metanilanilide	GAF.
*Metanilic acid (m-Aminobenzenesulfonic acid)	ACY, DUP, TRC.
1-Methoxyanthraquinone	DUP, GAF.
4-Methoxymetanilic acid	ACY, CMG, GAF.
1-Methoxy-4-nitroanthraquinone	DUP.
6-Methoxy-8-nitroquinoline	SDW.
(m-Methoxyphenyl)acetic acid	SDW.
(p-Methoxyphenyl)acetic acid	CTN, UOP.
4-Methoxy-m-phenylenediamine sulfate	WAY.
4'-Methoxypropiophenone	LIL.
*1-(Methylamino)anthraquinone	AAP, ACS, ACY, DUP, GAF, ICI.
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	ACS, ACY.
3-Methylbenzo[f]quinoline	ACY.
2-Methylbenzo[f]quinoline-8,10-disulfonic acid	DUP.
2-Methylbenzothiazole	FMT.
α-Methylbenzyl alcohol	UCC.
N-Methylbenzylamine	ABB, MLS, SDW.
Methyl benzyl ether	UCC.
5-(1-Methylbutyl)barbituric acid	LIL.
3-Methylcholanthrene	EK.
Methylcyclohexane	PLC.
Methylcyclohexenecarboxaldehyde	UCC.
Methylcyclohexene-1,2-dicarboxylic anhydride	UCC.
Methylcyclohexene methanol	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, TRC.
*4,4'-Methylenebis[N,N-dimethylaniline] (Methane base)	ACS, ACY, DSC, DUP, GAF, SDH, x.
4,4'-Methylenebis[N,N-dimethyl-3-nitroaniline]	GAF.
4,4'-Methylenebis[3-hydroxy-2-naphthoic acid], disodium salt.	PD.
2,2'-Methylenebis(6-nonyl-p-cresol)	ACY.
4,4'-Methylenedianiline	ACS, DOW, DUP, MOB.
5,5'-Methylenedisalicylic acid	HN.
5-Methylene-2-norbornene	DOW.
N-Methylformanilide	MLS.
Methylhydroquinone	EKT.
2-Methylindole-3-carboxaldehyde	GAF.
6-Methyl-2-(2-methyl-6-quinolyl)-7-benzothiazolesulfonic acid.	DUP.
Methylnaphthalene, crude	KPT.
N-Methyl-4'-nitroacetanilide	ACS, GAF.
N-Methyl-p-nitroaniline	ACY, GAF.
5-Methyl-4-nitro-o-anisidine	PCW.
*2-Methyl-1-nitroanthraquinone	ACS, DUP, GAF, ICI.
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	ACS.
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, VPC.
m-(3-Methyl-5-oxo-2-pyrazolin-1-yl)benzenesulfonic acid	TRC.
*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.
*4-(3-Methyl-5-oxo-2-pyrazolin-1-yl)-m-toluenesulfonic acid [SO_3H=1].	CMG, GAF, TRC, VPC.

TABLE 7B.--*Cyclic intermediates for which U.S. production or sales were reported, identified by manufacturer, 1967*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
2-Methyl-5-phenylbenzoxazole	EK.
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)	ACS, ACY, DUP, GAF, SDH, SDW, VPC.
Methylphenylsiloxane tetramer	DCC.
Methyl phenyl sulfide (Thioanisole)	PIT.
1-Methylpiperazine	WTC.
4-Methyl-1-piperazineacetic acid, methyl ester	ABB.
2-Methyl-1-piperidinepropanol	LIL.
3-Methyl-2-pyrazolin-5-one	DUP.
*α-Methylstyrene	ACP, CLK, DOW, HPC, SKO, WTC.
ar-Methylstyrene (Vinyltoluene)	DOW.
N-Methyl-5-sulfoanthranilic acid	GAF.
2-(Methylsulfonyl)-4-nitroaniline	EKT, TRC.
4-(Methylthio)-m-cresol	CRZ.
3-Methylthiophene	SDW.
p-(Methylthio)phenol	CRZ.
3-Methyl-6-p-toluidino-7H-dibenz[f,ij]isoquinoline-2,7(3H)-dione.	DUP, GAF, ICI.
3-Methyl-1-p-tolyl-2-pyrazolin-5-one	VPC.
*Naphthalene, solidifying at 79° C. or above (refined flake) (from domestic crude).	ACS, KPT, RIL.
2,6-Naphthalenedicarboxylic acid	NEP.
1,5-Naphthalenedisulfonic acid	ACS, TRC.
*2,7-Naphthalenedisulfonic acid	ACS, DUP, TRC.
1-Naphthalenesulfonic acid	TRC.
1-Naphthalenesulfonic acid, sodium salt	TRC.
2-Naphthalenesulfonic acid	ACS, ACY.
2-Naphthalenesulfonic acid, sodium salt	ACY.
2-Naphthalenesulfonyl chloride	DUP.
*1,4,5,8-Naphthalenetetracarboxylic acid	GAF, HST, TRC.
1,3,6-Naphthalenetrisulfonic acid	GAF.
Naphthalic anhydride	DUP.
Naphthalimide	ACS, DUP, GAF.
2H-Naphth[1,8-cd]isothiazole-3,5-disulfonic acid, 1,1-dioxide, trisodium salt.	DUP.
1-Naphthol (α-Naphthol)	ACS, DUP, UCC.
2-Naphthol, tech. (β-Naphthol)[1]	ACS, ACY, SW.
p-Naphtholbenzein	EK.
Naphthostyril	ACS, GAF.
*Naphth[1,2-d][1,2,3]oxadiazole-5-sulfonic acid	ACS, CMG, GAF, TRC, VPC.
1-Naphthylamine (α-Naphthylamine)	ACS, DUP.
1-Naphthylamine hydrochloride	GAF.
p-(2-Naphthylamino)phenol (N-(p-Hydroxyphenol)-2-naphthylamine).	ACS, GAF, SDC.
2-(Naphthylthio)acetic acid	ACY.
Nicotinonitrile (3-Cyanopyridine)	NEP, RIL.
Nitro-aceanthra[2,1-a]aceanthrylene-5,13-dione	ICI.
3'-Nitroacetanilide	AAP.
4'-Nitroacetanilide	AAP, GAF, TRC.
2'-Nitro-p-acetanisidide	DUP, SDH.
4'-Nitro-o-acetanisidide	DUP.
3'-Nitroacetophenone	CTN, SDH.
5'-Nitro-o-acetotoluidide	DUP.
m-Nitroaniline	ACY, x.
o-Nitroaniline	AAP, MON.
*p-Nitroaniline	AAP, MON, UPM.
2-Nitro-p-anisidine [NH_2=1]	DUP, SDH.
4-Nitro-o-anisidine [NH_2=1]	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, ICC.
2-(4-Nitro-2-anthraquinonyl)anthra[2,3-d]-oxazole-5,10-dione.	ACS, GAF.
m-Nitrobenzaldehyde	ACS, SDH.
4'-Nitrobenzanilide	GAF.
*Nitrobenzene	ACS, ACY, DUP, FST, MOB, MON, RUC.

See footnotes at end of table.

TABLE 7B.--*Cyclic intermediates for which U.S. production or sales were reported, identified by manufacturer, 1967*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
3′-Nitrobenzenesulfonanilide	GAF.
*m-Nitrobenzenesulfonic acid	ACS, ACY, DUP, TRC.
*m-Nitrobenzenesulfonic acid, sodium salt	GAF, MON, MRA.
m-Nitrobenzenesulfonyl chloride	GAF.
p-Nitrobenzenesulfonyl chloride	EK.
5-Nitro-2-benzimidazolinone	DUP.
m-Nitrobenzoic acid	SDH, WAY.
m-Nitrobenzoic acid, sodium salt	WAY.
p-Nitrobenzoic acid	DUP.
m-Nitrobenzoyl chloride	HK.
p-Nitrobenzoyl chloride	HK.
p-Nitrobenzyl alcohol	EK.
4′-Nitro-4-biphenylcarboxylic acid	TRC.
4-Nitro-sec-butylbenzene	WAY.
2-Nitro-p-cresol	SW.
Nitrocyclohexane	x.
Nitrodiphenylamine	ACY, MON.
5-Nitrofuraldehyde diacetate	NOR.
5-Nitro-2-furfuraldehyde diacetate	NOR.
5-Nitroisophthalic acid	FIS, GAF.
1-Nitronaphthalene	ACS, DUP.
3-Nitro-1,5-naphthalenedisulfonic acid	GAF, TRC.
4-Nitronaphthalic anhydride	ACS, GAF.
*7(and 8)-Nitronaphth[1,2-d][1,2,3]oxadiazole-5-sulfonic acid.	ACS, GAF, TRC, VPC.
o-Nitrophenol	DUP.
*p-Nitrophenol	DUP, MON, SDC, UPM.
*p-Nitrophenol, sodium salt	MON, UPM.
(p-Nitrophenyl)acetic acid	BPC.
4′-(p-Nitrophenyl)acetophenone	DUP.
4-[(p-Nitrophenyl)azo]-o-anisidine	AAP.
2-Nitro-p-phenylenediamine	FIS, 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.
1-(m-Nitrophenyl)-5-oxo-2-pyrazoline-3-carboxylic acid	DUP, VPC.
3-Nitrophthalic acid	EK.
3-Nitrophthalic anhydride	EK.
5-Nitrosalicylaldehyde	EK.
3(and 5)-Nitrosalicylic acid	GAF.
p-Nitrosophenol	ACS, ACY, DUP, SDC.
4-Nitrostilbene	GAF.
β-Nitrostyrene	CWN.
4-Nitro-4′-(5-sulfo-2H-naphthol[1,2-d]triazol-2-yl)-2,2′-stilbenedisulfonic acid.	TRC.
m-Nitrotoluene	ACS, DUP.
o-Nitrotoluene	ACS, DUP, FST.
p-Nitrotoluene	ACS, DUP, FST.
Nitrotoluene mixtures	ACS, DUP, FST.
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]	ACS, ACY, DUP, GAF, SDH, TRC.
4′-Nitro-p-toluenesulfono-o-toluidide	GAF.
3-Nitro-p-toluic acid, methyl ester	SDH.
*2-Nitro-p-toluidine [NH_2=1]	ABB, ACY, DUP, SDH, 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	ATL, GAF, ICI.
4-Nitro-m-xylene	DUP.
Nitroxylenes, mixed	ACS.
Nonyl-dinonylphenol, mixture	JCC.
*Nonylphenol	GAF, JCC, MON, PRD, RH, STP.
5-Norbornene-2,3-dicarboxylic anhydride	VEL.
Octylphenol	RH.
Octylphenyl acid phosphate	SM.
7-Oxabicyclo[4.1.0]heptane (Cyclohexene oxide)	ARA.

TABLE 7B.--*Cyclic intermediates for which U.S. production or sales were reported, identified by manufacturer, 1967*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
Oxalacetic acid, diethyl ester, (p-sulfophenyl)hydrazone-	TRC.
Oxanilide	WSN.
*1-[(7-Oxo-7H-benz[de]anthracen-3-yl)aminc]anthraquinone	ACY, DUP, GAF, ICI, MAY, TRC.
*1,1'-[(7-Oxo-7H-benz[de]anthracen-3,9-ylene)diimino]di-anthraquinone.	ACY, DUP, GAF, ICI, MAY, TRC.
5-Oxo-1-phenyl-2-pyrazoline-3-carboxylic acid	ACS.
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, VPC.
5-Oxo-1-(p-sulfotolyl)-2-pyrazoline-3-carboxylic acid	VPC.
4,4'-Oxydianiline	x, x.
4,4'-Oxydiphenol	EK.
Penicillin, N-ethylpiperidine salt	MRK.
1,1,3,3,5-Pentamethylindan	GIV.
Pentylnaphthalenes (Amylnaphthalenes)	PAS.
o-Pentylphenol (o-Amylphenol)	PAS.
p-tert-Pentylphenol	x.
3,4,9,10-Perylenetetracarboxylic acid	ACS, GAF.
*3,4,9,10-Perylenetetracarboxylic-3,4:9,10-diimide	ACS, DUP, GAF.
Phenethylamine	MLS.
Phenethylamine sulfate	MLS.
o-Phenethylbenzoic acid	LIL.
o-Phenetidine	MON.
p-Phenetidine	MON.
*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, UCC.
Phenolsulfonaphthalein	EK.
Phenolsulfonaphthalein, sodium salt	EK.
Phenothiazin-2-yl-1-propanone	WYT.
Phenoxyacetic acid, sodium salt	BPC.
2-Phenoxypropanol	ICO.
2-Phenoxypropionyl chloride	ICO, OPC.
Phenylacetic acid (α-Toluic acid)	BPC, GIV, MAL.
Phenylacetic acid, ethyl ester, tech	BPC, UOP.
Phenylacetic acid, methyl ester	BPC.
Phenylacetic acid, potassium salt	BPC, OPC, UOP.
Phenylacetic acid, sodium salt	BPC, OPC, UOP.
*Phenylacetonitrile (α-Tolunitrile)	BPC, OPC, SDW, UOP.
4'-Phenylacetophenone	DUP.
N-Phenylanthranilic acid	SDW.
2-Phenylanthra[2,3-d]oxazole-5,10-dione	GAF.
*p-Phenylazoaniline (C.I. Solvent Yellow 1) and hydrochloride.	ACS, ACY, DUP, GAF.
4-(Phenylazo)diphenylamine	EK.
4-(Phenylazo)-1-naphthylamine	DUP.
4-(Phenylazo)-m-phenylenediamine (C.I. Basic Orange 2)	DUP.
1-Phenyl-1,3-butanedione	EK.
2-Phenylbutyric acid	BPC.
α-Phenyl-o-cresol	RBC.
1-Phenylcyclopentanecarboxylic acid	SK.
1-Phenyldecane (Decylbenzene)	ACS.
N'N'-p-Phenylenebis[acetamide]	ACY.
m-Phenylenediamine	ACS, ACY, DUP, GAF.
o-Phenylenediamine	AAP, DUP, FMT, MEE.
*p-Phenylenediamine	ACY, BFG, SDC.
d-Phenylephrine base	SDW.
dl-Phenylephrine base	SDW.
Phenyl-1,2-ethanediol	ARA.
2-Phenylethenesulfonic acid, sodium salt (β-Styrenesulfonic acid, sodium salt).	DUP, SHL.
Phenyl ether (Diphenyloxide)	DOW.
d-Phenylglycine	OTC.

See footnotes at end of table.

TABLE 7B.--*Cyclic intermediates for which U.S. production or sales were reported, identified by manufacturer, 1967*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
d-(-)-2-Phenylglycine and derivatives	KF.
d-(-)Phenylglycine, N-carboxy anhydride	OTC.
dl-2-Phenylglycine (racemic)	KF.
Phenylglycine, sodium salt	ACS.
Phenylglycol ethers	UCC.
d-(-)Phenylglycyl hydrochloride	OTC.
5-Phenylhydantoin	ABB.
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, RSA.
o-Phenylphenol, chlorinated	DOW.
o-Phenylphenol, sodium salt	DOW.
p-Phenylphenol	DOW.
N-Phenyl-p-phenylenediamine	DUP, USR.
Phenylphosphinic acid	SFI.
Phenylphosphonic dichloride	SFI.
Phenylphosphonothioic dichloride	SFI.
Phenylphosphonous acid	SFI.
Phenylphosphonous acid, sodium salt	SFI.
Phenylphosphorous dichloride	SFI.
1-Phenylpiperazine	RSA.
*1-Phenyl-1,2-propanedione, 2-oxime	ICO, NEP, ORT.
Phenyl-2-propanone	ORT, SK.
Phenylsiloxane tetramer	DCC.
Phenylsuccinic acid	PD.
Phenyl sulfone	NES.
1-Phenyl-2-thiourea	EK.
Phenylundecanoic acid	EK.
Phenylurea	RSA.
Phloroglucinol	MRT.
1(2H)-Phthalazinone	ACS, x.
Phthalic acid	EK, FMP, KF, MEE.
Phthalic acid, disodium salt	CFC.
*Phthalic anhydride	ACP, GRH, KPS, MON, PCC, PTO, RCI, SOC, STP, SW, THC, UCC, WTC.
Phthalide	ACS, FMT.
Phthalimide	DUP, MEE.
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.
3-Picoline-N-oxide	RIL.
*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)	ACS, SDC.
2-Pipecoline	LIL.
2,5-Piperazinedione	EK.
Piperazine mixture, crude[1]	FLM, JCC, x.
*Piperidine	ABB, DUP, MRK, RIL.
3-Piperidinopropiophenone hydrochloride	ACY.
Polychlorobiphenyl	MON.
Poly (Methylenephenylene) polyamine	KAI.
*Primuline base	ACS, ATL, DUP.
Primulinesulfonic acid	ATL.
*Propiophenone	LIL, OPC, ORT, UOP.
n-Propylbenzene	EK, HMY.
*8,16-Pyranthrenedione	CMG, ICI, TRC.
Pyrazole	LIL.
Pyridine, refined:[2]	
*2° Pyridine	ACP, KPT, NEP, RIL.
Other grades	KPT.

See footnotes at end of table.

TABLE 7B.--*Cyclic intermediates for which U.S. production or sales were reported, identified by manufacturer, 1967*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
Pyridine hydrochloride	EK.
3-Pyridinemethanol	RIL.
Pyridine-N-oxide	RIL.
3-Pyridinol	NEP.
2(1H)-Pyridone	FMT.
2-Pyrimidinol	GGY.
2-Pyrrolidinone	GAF.
3-(1-Pyrrolidinyl)propiophenone hydrochloride	LIL.
Quinaldine	ACS, ACY.
Quinoline:	
1° and 2° Quinoline	ACP, KPT.
Other grades	EK.
2,4-Quinolinediol	DUP, GAF.
8-Quinolinol (8-Hydroxyquinoline, tech.)	FIS.
Quinophthalone (Quinoline yellow, base)	ACS, DUP.
2-Quinoxalinol	EK.
Resorcinol, monoacetate (nonmedicinal grade)[1]	AAP.
Resorcinol, tech[1]	KPT, UPF.
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, SDH.
Salicylideneaminoguanidine oleate	DUP.
Sodium phenoxide	CFC, 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	ACS, ACY, CTN, DUP.
Sulfapyridine, tech[1]	AAC.
4-Sulfoanthranilic acid	CMG, TRC.
5-Sulfoanthranilic acid	ICI.
α,α-[(p-Sulfobenzylidene)bis[(3-methyl-p-phenylene)-(ethylimino)]] di-m-toluenesulfonic acid.	TRC.
5-Sulfoisophthalic acid, 1,3-dimethyl ester	x.
4,4′-Sulfonyldianiline	RSA.
N,5′-Sulfonyldianthranilic acid	TRC.
4,4′-Sulfonyldiphenol (4,4′-Dihydroxydiphenylsulfone)	MON, UPF.
*Terephthalic acid	ACC, DUP, EKT.
*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	ACS.
1,3,6,8-Tetrabromopyrene	GAF.
*1,4,5,8-Tetrachloroanthraquinone	ACS, DUP, GAF.
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.
Tetrahydrofurfuryl methacrylate	SAR.
*1,4,5,8-Tetrahydroxyanthraquinone, leuco derivative	AAP, ACS, GAF, ICC, TRC.
1,4,5,8-Tetrakis(1-anthraquinonylamino)anthraquinone (Pentanthrimide).	ACS, ICI.
p-(1,1,3,3-Tetramethylbutyl)phenol	GAF.
3,3′,5,5′-Tetramethyldiphenoquinone	DUP.
N,N,N′,N′-Tetramethyl-p-phenylenediamine	EK.
[4,4′,4″,4‴-Tetranitrophthalocyaninato(2)]copper	DUP.
2-(2-Thenylamino)pyridine	ABB.
2,4-Thiazolidinedione	EK.
*3,3′-Thiobis[7H-benz[de]anthracen-7-one]	ACY, DUP, GAF, ICI, MAY, TRC.
1,1′-Thiobis(2-naphthol)	ACY.
2,2′-Thiobis[5-nitrobenzenesulfonic acid]	GAF.
4,4′-Thiodianiline	ACS, ACY.
6,6′-Thiodimetanilic acid	ACS, GAF.
2-Thiohydantoin	BPC.
Thiopheneacetic acid	BPC.

See footnotes at end of table.

TABLE 7B.--*Cyclic intermediates for which U.S. production or sales were reported, identified by manufacturer, 1967*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
2-Thiopheneacetyl chloride	LIL.
2-Thiophenecarboxaldehyde	ABB.
sym-Thymol	GIV.
*Toluene-2,4-diamine (4-m-Tolylenediamine)	ACS, ACY, DUP, GAF, RUC, TRC, UCC.
Toluene-2,5-diamine sulfate	EK, WAY.
Toluene-2,4-disulfonic acid	GAF, SDH.
o-Toluenesulfonamide	MON.
p-Toluenesulfonamide	MON.
o(and p)-Toluenesulfonic acid	ACS, MON, SW, UPF.
p-Toluenesulfonic acid	NES, TEN, UPF.
p-Toluenesulfonic acid, ethyl ester	ACS, ACY, ATL.
p-Toluenesulfonic acid, methyl ester	ICI.
p-Toluenesulfono-o-toluidide	GAF.
p-Toluenesulfonyl chloride	MON.
m-Toluic acid	CWL.
o-Toluic acid	CWL.
p-Toluic acid	CWL.
m-Toluidine	ACS, DUP.
o-Toluidine	ACS, DUP, FST.
o-Toluidine hydrochloride	AAP, ACY.
p-Toluidine	ACS, DUP.
p-Toluidine hydrochloride	EK.
Toluidines, mixed	DUP.
2-o-Toluidinoethanol	EKT.
m-Toluidinomethanesulfonic acid	VPC.
o-Toluidinomethanesulfonic acid	TRC.
8-p-Toluidino-1-naphthalenesulfonic acid	ACS.
*o-(p-Toluoyl)benzoic acid	ACS, ACY, DUP.
N-(p-Tolyazo)sarcosine	BUC, GAF.
*4-(o-Tolylazo)-o-toluidine (C.I. Solvent Yellow 3)	ACS, ACY, BUC, DUP, 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	MLS.
1,2,3(and 1,2,4)-Trichlorobenzene	DVC, PPG.
1,2,4-Trichlorobenzene	DOW, HK, SVT.
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.
*2,4,6-Trichloro-s-triazine (Cyanuric chloride)	ACY, GGY, NIL.
1,3,5-Triethylbenzene	DUP.
2-(Trifluoromethyl)phenothiazine	SK.
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.
2,3,5-Triiodobenzoic acid	GAF.
2,4,5-Trimethylaniline (Pseudocumidine)	ACS.
2,3,3-Trimethyl-3H-indole	GAF.
*1,3,3-Trimethyl-$\Delta^{2,\alpha}$-indolineacetaldehyde	DUP, GAF, VPC.
*1,3,3-Trimethyl-2-methyleneindoline (Trimethyl base)	ACS, DUP, GAF, VPC.
Trimethylphenylammonium chloride	BKL.
Trimethylphenylammonium iodide	EK.
α,α',2-Trimethyl-1,4-piperazinediethanol	WYN.
2,4,6-Trimethylpyridine	KPT.
1,3,5-Trinitrobenzene	EK.
2,4,6-Trinitrobenzenesulfonic acid	EK.
2,4,7-Trinitrofluoren-9-one	EK.
Triphenylamine	EK.
Triphenylmethanol	EK.
Triphenylsulfonium chloride	FIS.
α,α',α''-Tris(dimethylamino)mesitol	RH, TKL.
Tris(2-methyl-1-aziridinyl)phosphine oxide	ICO.
Tris(2-methyl-1-aziridinyl)phosphine sulfide	ICO.
m-Ureidoaniline	ICI.

TABLE 7B.--*Cyclic intermediates for which U.S. production or sales were reported, identified by manufacturer, 1967*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
*7,7'-Ureylenebis[4-hydroxy-2-naphthalenesulfonic acid] (J acid urea).	ACS, ACY, ATL, BKS, CMG, GAF, TRC, VPC.
Veratraldehyde (3,4-Dimethoxybenzaldehyde)	LIL, SLV.
Veratryl alcohol (3,4-Dimethoxybenzyl alcohol)	LIL.
2-Vinylcyclohexene	UCC.
4-Vinylcyclohexene	PLC.
2,2'-Vinylenebis[benzimidazole]	TRC.
5-Vinyl-2-picoline (MVP)	PLC.
2-Vinylpyridine	NEP, RIL.
4-Vinylpyridine	RIL.
*Violanthrone (Dibenzanthrone)	ATL, DUP, GAF, ICI, MAY, SDC, TRC.
Xanthene-9-carboxylic acid	MAL.
m-Xylene	SNT, SOC.
*o-Xylene	ASH, CCP, COR, CSD, CSO, CSP, DLH, ENJ, GRS, MON, 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	KPT.
Xylenol crystals	ACP.
Xylenols:	
Low b.p	NPC, PIT.
Medium b.p	NPC, PIT, PRD.
Not classified as to b.p	GE, PRD.
Xylidines:	
2,4-Xylidine (m-4-Xylidine)	ACS, DUP.
2,5-Xylidine (p-Xylidine)	ACS, DUP.
2,6-Xylidine	DUP.
Original mixture	ACS, DUP.
4-(2,4-Xylylazo)-o-toluidine	ACS.
4-(2,5-Xylylazo)-o-toluidine	ACY.
4-(Xylylazo)xylidine	GAF.
4-(2,4-Xylylazo)-2,5-xylidine	ACS.
All other cyclic intermediates	ARA, CWN, DUP, EK, FG, FIS, HPC, ICC, LIL, MON, NRS, PAS, PCW, SW, 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 1967*, Feb. 4, 1969.

Dyes

TABLE 8B. ***--Benzenoid dyes for which U.S. production or sales were reported, identified by manufacturer, 1967***

[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	ACS, ACY, DUP.
Acid Yellow 4	SDH.
*Acid Yellow 11	CMG, DUP, VPC.
Acid Yellow 14	BDO, TMC.
*Acid Yellow 17	ACS, ACY, ATL, BDO, BKS, CMG, DUP, GAF, PDC, SDH, TRC, VPC.
*Acid Yellow 23	AAP, ACS, ACY, GAF, MRX, SDH, TRC, VPC.
Acid Yellow 25	GAF.
Acid Yellow 29	GAF, TRC.
Acid Yellow 34	ACS.
*Acid Yellow 36	ACS, DUP, TRC.
Acid Yellow 38	ACS, GAF.
*Acid Yellow 40	ACS, ALT, ATL, DUP, GAF, TRC, VPC.
*Acid Yellow 42	AAP, ACY, GAF, VPC.
*Acid Yellow 44	AAP, ACS, GAF, VPC.
Acid Yellow 49	VPC.
*Acid Yellow 54	ACS, ACY, BKS, CMG, GAF, TRC, VPC.
Acid Yellow 59	VPC.
Acid Yellow 63	AAP.
Acid Yellow 65	ALT, TRC.
*Acid Yellow 73	ACS, GAF, NYC, SDH.
Acid Yellow 76	TRC.
Acid Yellow 79	VPC.
Acid Yellow 95	CMG.
*Acid Yellow 99	ACS, CMG, GAF, TRC, VPC.
Acid Yellow 114	CMG, TRC.
Acid Yellow 121	GAF.
*Acid Yellow 124	ACS, BKS, DUP.
Acid Yellow 127	TRC.
Acid Yellow 128	TRC.
Acid Yellow 129	TRC.
*Acid Yellow 151	ACY, BKS, DUP, TRC, VPC.
Acid Yellow 152	ACY.
Acid Yellow 159	ALT, TRC.
Acid Yellow 174	DUP.
Acid Yellow 175	DUP.
Other acid yellow dyes	ACY, ALT, ATL, CMG, DUP, GAF, TRC, VPC.
*Acid orange dyes:	
*Acid Orange 1	ACS, ATL, BKS, GAF.
Acid Orange 2	ACS, TRC.
Acid Orange 5	ACY.
Acid Orange 6	ACS.
*Acid Orange 7	AAP, ACS, ACY, ATL, BKS, CPC, GAF, PDC, TRC, YAW.
*Acid Orange 8	ACS, ACY, ATL, BKS, DUP, GAF, TRC.
*Acid Orange 10	ACS, ACY, DUP, GAF, PDC, TRC, VPC, YAW.
Acid Orange 12	ACS.
Acid Orange 19	GAF.
*Acid Orange 24	ACS, ACY, DUP, GAF, TRC, YAW.
Acid Orange 28	ACS.
Acid Orange 31	AAP.
Acid Orange 34	ACY.
Acid Orange 45	ACS, TRC.
Acid Orange 50	AAP.
Acid Orange 51	CMG, TRC.
Acid Orange 52	ACS.
Acid Orange 56	GAF.
*Acid Orange 60	BKS, CMG, DUP, GAF, TRC.
Acid Orange 62	TRC.
Acid Orange 63	GAF, TRC.
Acid Orange 64	ACS, ACY, DUP.
Acid Orange 69	ACY.

TABLE 8B. -- *Benzenoid dyes for which U.S. production or sales were reported, identified by manufacturer, 1967* --Continued

Dye	Manufacturers' identification codes (according to list in table 22)
ACID DYES--Continued	
*Acid orange dyes--Continued	
Acid Orange 72	GAF.
*Acid Orange 74	ACS, CMG, GAF, TRC.
Acid Orange 76	ACS, TRC.
Acid Orange 85	ACS.
Acid Orange 86	ACS, TRC.
Acid Orange 114	ACY.
*Acid Orange 116	ALT, BKS, GAF, TRC.
Acid Orange 119	TRC.
Acid Orange 128	DUP.
Other acid orange dyes	ALT, ATL, TRC, VPC.
*Acid red dyes:	
*Acid Red 1	AAP, ACS, ACY, BDO, BKS, BL, DUP, GAF, SDH, TRC, VPC, YAW.
*Acid Red 4	ATL, BDO, CMG, DUP, GAF, PDC, TRC, VPC, YAW.
*Acid Red 14	ACS, DUP, GAF, PDC, YAW.
Acid Red 17	ACS, TRC, YAW.
*Acid Red 18	ACS, ACY, ATL, BDO, DUP, GAF, TRC.
*Acid Red 26	ACS, ACY, ATL, CPC, GAF.
Acid Red 27	ACS.
Acid Red 32	GAF.
Acid Red 33	ACS, YAW.
Acid Red 34	ACS.
Acid Red 35	AAP, GAF.
*Acid Red 37	ACS, BKS, CMG, DUP, GAF, TRC.
Acid Red 42	GAF.
Acid Red 52	GAF.
Acid Red 57	TRC.
Acid Red 60	BKS.
Acid Red 66	AAP, YAW.
*Acid Red 73	ACS, ACY, ATL, DUP, GAF, PSC, TRC.
Acid Red 76	ACS.
Acid Red 80	GAF, ICI.
*Acid Red 85	ACS, ACY, ALT, ATL, BKS, CMG, DUP, GAF, PDC, TRC, VPC, YAW.
*Acid Red 87	AMS, NYC, SDH.
*Acid Red 88	ACS, ACY, ATL, DUP, GAF, SDH, TRC, YAW.
*Acid Red 89	AAP, BDO, GAF, VPC.
Acid Red 94	NYC.
Acid Red 97	GAF.
*Acid Red 99	ATL, BKS, CMG, TRC, VPC, YAW.
Acid Red 100	VPC.
Acid Red 106	YAW.
Acid Red 113	DUP.
*Acid Red 114	ACS, ATL, DUP, GAF, PDC, TRC.
Acid Red 115	ACS, GAF.
Acid Red 119	ACS, ALT.
Acid Red 133	GAF.
Acid Red 134	TRC.
*Acid Red 137	ACS, ATL, DUP, GAF, TRC.
Acid Red 138	ALT.
*Acid Red 151	AAP, ACY, ATL, BKS, DUP, TRC, YAW.
Acid Red 167	ACS, TRC.
Acid Red 175	DUP.
Acid Red 178	DUP.
Acid Red 179	CMG.
*Acid Red 182	ACS, ACY, BKS, CMG, DUP, GAF.
Acid Red 183	CMG, TRC.
*Acid Red 186	BKS, CMG, GAF, VPC.
Acid Red 190	ACY.
Acid Red 191	TRC.
Acid Red 194	TRC.
Acid Red 201	TRC.
Acid Red 207	ACS.
Acid Red 212	TRC.
Acid Red 213	TRC.
Acid Red 292	ACY.
Acid Red 299	ALT, GAF, TRC.
Acid Red 309	TRC.

TABLE 8B. -- *Benzenoid dyes for which U.S. production or sales were reported, identified by manufacturer, 1967* --Continued

Dye	Manufacturers' identification codes (according to list in table 22)
ACID DYES--Continued	
*Acid red dyes--Continued	
Acid Red 337	DUP.
Other acid red dyes	ACY, ALT, ATL, BKS, DUP, GAF, TRC, VPC.
*Acid violet dyes:	
*Acid Violet 1	ACS, BDO, CMG, GAF.
*Acid Violet 3	ACS, ACY, DUP, TRC, YAW.
Acid Violet 6	ACS.
*Acid Violet 7	AAP, ACS, BDO, CMG, DUP, GAF, TRC, VPC.
Acid Violet 11	GAF.
*Acid Violet 12	BDO, CMG, DUP, GAF.
Acid Violet 17	DUP, GAF, SDH.
Acid Violet 29	HSH.
Acid Violet 34	ICI.
Acid Violet 41	CMG.
Acid Violet 43	HSH, ICI.
*Acid Violet 49	ACS, ACY, TRC.
Acid Violet 56	CMG, GAF.
Acid Violet 58	GAF.
Acid Violet 76	ACS.
Other acid violet dyes	DUP, GAF, TRC.
*Acid blue dyes:	
Acid Blue 1	ACS, GAF, SDH.
*Acid Blue 7	ACS, ACY, GAF, SDH.
*Acid Blue 9	ACS, GAF, SDH, VPC.
Acid Blue 10	ACS.
Acid Blue 15	DUP, GAF.
Acid Blue 20	ACS, ACY.
Acid Blue 22	NYC.
Acid Blue 23	ACS, TRC.
*Acid Blue 25	ACS, ATL, BDO, CMG, DUP, GAF, TRC, VPC.
Acid Blue 27	CMG, GAF.
Acid Blue 29	YAW.
Acid Blue 34	ACS.
*Acid Blue 40	ACS, ALT, ATL, GAF, ICI, TRC.
*Acid Blue 41	ACS, BDO, CMG, GAF.
*Acid Blue 43	ACS, ACY, GAF, TRC.
*Acid Blue 45	ACS, ACY, CMG, DUP, GAF, TRC, VPC.
Acid Blue 47	ICI.
Acid Blue 48	HSC.
Acid Blue 55	ACS.
Acid Blue 58	DUP.
Acid Blue 59	ACS.
*Acid Blue 62	ACS, ALT, BDO, GAF, VPC.
Acid Blue 63	ACS, CMG.
Acid Blue 67	CMG.
Acid Blue 69	DUP, GAF.
Acid Blue 74	ACS, DUP.
*Acid Blue 78	ACS, DUP, GAF, ICI, TRC.
Acid Blue 80	ACS, TRC.
Acid Blue 81	ICI.
Acid Blue 83	GAF.
Acid Blue 89	ACS.
*Acid Blue 90	ACS, GAF, TRC.
Acid Blue 92	ACS, YAW.
Acid Blue 93	ACY, HSC.
Acid Blue 102	ACS, TRC.
Acid Blue 104	ACS, GAF.
*Acid Blue 113	ACS, ALT, ATL, BDO, BKS, CMG, DUP, GAF, TRC.
Acid Blue 118	ACS, BKS, GAF.
Acid Blue 120	ACS, GAF.
Acid Blue 122	DUP.
Acid Blue 145	ACS, DUP.
*Acid Blue 158 and 158A	ACS, ACY, BDO, BKS, GAF, TRC, VPC.
Acid Blue 165	DUP.
Acid Blue 179	GAF.
Acid Blue 198	VPC.
Acid Blue 203	VPC.
Acid Blue 230	DUP, TRC.
Acid Blue 231	TRC.

TABLE 8B. -- *Benzenoid dyes for which U.S. production or sales were reported, identified by manufacturer, 1967*-- Continued

Dye	Manufacturers' identification codes (according to list in table 22)
ACID DYES--Continued	
*Acid blue dyes--Continued	
Acid Blue 255	DUP.
Other acid blue dyes	ACY, ALT, ATL, CMG, DUP, GAF, TRC, VPC.
*Acid green dyes:	
Acid Green 1	ACS, ACY.
*Acid Green 3	ACS, ACY, DUP, GAF, TRC.
Acid Green 5	GAF.
*Acid Green 9	ACS, ACY, DUP, GAF.
Acid Green 12	ACS, GAF, TRC.
*Acid Green 16	ACS, DUP, GAF, SDH, TRC.
*Acid Green 20	ACS, ATL, BDO, DUP, GAF, PDC, TRC.
Acid Green 22	GAF.
*Acid Green 25	ACS, ATL, CMG, GAF, HSH, ICI, 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, VPC.
*Acid brown dyes:	
Acid Brown 1	GAF.
Acid Brown 6	GAF.
*Acid Brown 14	AAP, ACS, ACY, DUP, GAF, 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, VPC.
*Acid black dyes:	
*Acid Black 1	AAP, ACS, ACY, ATL, BDO, BKS, DUP, FAB, GAF, HSH, PDC, TRC, YAW.
Acid Black 2	ACS, ACY.
Acid Black 12	ACS.
Acid Black 16	ACS.
*Acid Black 24	ACS, CMG, DUP, GAF.
Acid Black 26, 26A, and 26B	ACS, DUP, TRC.
Acid Black 29	ACS, GAF.
Acid Black 41	ACS.
*Acid Black 48	ACY, CMG, DUP, GAF, ICI, TRC.
*Acid Black 52	ACS, BKS, GAF, TRC.
Acid Black 53	ACS.
Acid Black 58	TRC.
*Acid Black 60	BDO, CMG, TRC.
Acid Black 92	ACY.
*Acid Black 107	ACS, ALT, GAF, TRC.
Acid Black 108	GAF.
Acid Black 138	VPC.
Other acid black dyes	DUP, GAF, PDC.
AZOIC DYES AND COMPONENTS	
Azoic Compositions	
Azoic yellow dyes:	
*Azoic Yellow 1	ALL, ATL, BUC.
Azoic Yellow 2	BUC, GAF, x.
Azoic orange dyes:	
*Azoic Orange 3	ALL, ATL, BUC, GAF, x.
Azoic Orange 4	GAF.
Other azoic orange dyes	VPC.

TABLE 8B. -- *Benzenoid dyes for which U.S. production or sales were reported, identified by manufacturer, 1967* --Continued

Dye	Manufacturers' identification codes (according to list in table 22)
AZOIC DYES AND COMPONENTS--Continued	
Azoic Compositions--Continued	
*Azoic red dyes:	
*Azoic Red 1	ALL, ATL, BUC, GAF, HST, x.
*Azoic Red 2	ALL, ATL, BUC, GAF, x.
*Azoic Red 6	ALL, ATL, BUC, GAF, x.
Azoic Red 13	GAF.
Azoic Red 15	GAF.
Azoic Red 16	ATL.
Azoic Red 73	GAF.
Azoic Red 74	GAF.
Other azoic red dyes	ALL.
Azoic violet dyes: Azoic Violet 1	ATL, BUC, GAF.
Azoic blue dyes:	
Azoic Blue 2	ATL, 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, VPC.
Other azoic green dyes	VPC.
Azoic brown dyes:	
*Azoic Brown 9	ALL, BUC, GAF, HST, VPC, x.
Azoic Brown 26	GAF.
Other azoic brown dyes	ATL, GAF, VPC.
*Azoic black dyes:	
Azoic Black 1	GAF, HST.
Azoic Black 4	ATL, BUC, GAF.
Azoic Black 15	GAF.
Other azoic black dyes	ALL, GAF, PCW, 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	DUP, GAF, SDH.
Azoic Diazo Component 8, base	DUP, SDH.
Azoic Diazo Component 9, base	AAP, DUP.
*Azoic Diazo Component 10, base	ALL, BUC, GAF.
Azoic Diazo Component 11, base	PCW.
*Azoic Diazo Component 12, base	BUC, PCW, SDH.
Azoic Diazo Component 13, base	ALL, BUC, SDH.
Azoic Diazo Component 14, base	AAP.
Azoic Diazo Component 20, base	ALL, GAF.
Azoic Diazo Component 27, base	ALL.
Azoic Diazo Component 28, base	ALL, BUC.
*Azoic Diazo Component 32, base	AAP, ATL, BUC, DUP, PCW, SDH.
Azoic Diazo Component 34, base	GAF.
Azoic Diazo Component 41, base	GAF.
Azoic Diazo Component 42, base	ALL, PCW.
Azoic Diazo Component 44, base	AAP, BUC.
Azoic Diazo Component 48, base	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	GAF.
*Azoic Diazo Component 3, salt	AAP, ALL, BUC, GAF, SDH.
Azoic Diazo Component 4, salt	ALL.
*Azoic Diazo Component 5, salt	AAP, ALL, BUC, GAF, SDH.
*Azoic Diazo Component 6, salt	AAP, BUC, GAF, SDH.
*Azoic Diazo Component 8, salt	AAP, ALL, BUC, GAF.
*Azoic Diazo Component 9, salt	AAP, ALL, BUC, GAF, SDH, VPC.

TABLE 8B. -- *Benzenoid dyes for which U.S. production or sales were reported, identified by manufacturer, 1967* --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 10, salt	ALL, BUC, GAF, SDH.
*Azoic Diazo Component 11, salt	AAP, ALL, GAF.
*Azoic Diazo Component 12, salt	AAP, ALL, BUC, GAF, SDH.
*Azoic Diazo Component 13, salt	AAP, ALL, BUC, GAF, SDH, VPC.
Azoic Diazo Component 14, salt	AAP.
Azoic Diazo Component 20, salt	ALL, GAF.
*Azoic Diazo Component 28, salt	ALL, BUC, GAF, SDH, VPC.
Azoic Diazo Component 32, salt	ALL, SDH.
Azoic Diazo Component 34, salt	ALL, GAF.
Azoic Diazo Component 35, salt	GAF.
Azoic Diazo Component 36, salt	AAP, GAF.
Azoic Diazo Component 37, salt	GAF.
Azoic Diazo Component 41, salt	GAF.
Azoic Diazo Component 42, salt	ALL, GAF.
*Azoic Diazo Component 44, salt	ALL, BUC, GAF.
*Azoic Diazo Component 48, salt	AAP, GAF, SDH.
*Azoic Diazo Component 49, salt	AAP, ALL, BUC, GAF, SDH.
Azoic Diazo Component 51, salt	GAF.
Other azoic diazo components, salts	ALL, GAF, SDH.
Azoic Coupling Components (Naphthol AS and Derivatives)	
*Azoic Coupling Component 2	ACY, ATL, BUC, DUP, GAF, PCW.
*Azoic Coupling Component 3	BUC, GAF, PCW.
*Azoic Coupling Component 4	ATL, BUC, GAF, PCW.
*Azoic Coupling Component 5	AAP, GAF, PCW, SDH.
*Azoic Coupling Component 7	AAP, BUC, PCW.
Azoic Coupling Component 8	ATL, BUC, GAF, PCW.
Azoic Coupling Component 10	ATL, PCW.
Azoic Coupling Component 11	BUC, GAF, PCW.
Azoic Coupling Component 12	ATL, BUC, GAF, PCW.
Azoic Coupling Component 13	GAF.
*Azoic Coupling Component 14	ACS, ATL, BUC, GAF, PCW.
Azoic Coupling Component 15	BUC, GAF.
Azoic Coupling Component 16	BUC, GAF.
*Azoic Coupling Component 17	ACY, ATL, BUC, PCW.
*Azoic Coupling Component 18	ACY, ATL, BUC, GAF, PCW.
*Azoic Coupling Component 19	BUC, GAF, PCW.
*Azoic Coupling Component 20	ATL, BUC, DUP, GAF, PCW.
*Azoic Coupling Component 21	ATL, BUC, PCW.
Azoic Coupling Component 23	GAF, PCW.
Azoic Coupling Component 24	GAF, PCW.
*Azoic Coupling Component 29	BUC, GAF, PCW.
Azoic Coupling Component 34	ATL, 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.
BASIC DYES	
*Basic yellow dyes:	
Basic Yellow 1	DUP.
*Basic Yellow 2	ACS, ACY, DUP.
*Basic Yellow 11	ACS, ACY, DUP, GAF, VPC.
*Basic Yellow 13	ACS, DUP, GAF, VPC.
Basic Yellow 15	DUP.
Basic Yellow 21	VPC.
Basic Yellow 24	BAS.
Basic Yellow 25	BAS.
Basic Yellow 26	ACY.
Basic Yellow 28	VPC.
Basic Yellow 29	VPC.
Basic Yellow 31	DUP.
Basic Yellow 37	ACY, DUP.
Basic Yellow 41	ACY.
Other basic yellow dyes	DUP, VPC.

TABLE 8B. -- *Benzenoid dyes for which U.S. production or sales were reported, identified by manufacturer, 1967*--Continued

Dye	Manufacturers' identification codes (according to list in table 22)
BASIC DYES--Continued	
*Basic orange dyes:	
*Basic Orange 1	ACS, ACY, DUP, GAF, TRC.
*Basic Orange 2	ACS, ACY, DSC, DUP, GAF, PSC, TRC.
Basic Orange 10	VPC.
Basic Orange 14	GAF.
Basic Orange 17	ACS.
*Basic Orange 21	ACS, DUP, GAF, VPC.
Basic Orange 22	ACS, GAF.
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	BAS, DUP, GAF.
Basic Red 2	ACS, DUP.
*Basic Red 9	ACY, DSC, HSC.
Basic Red 12	ACY, DUP.
Basic Red 13	ACS, GAF.
*Basic Red 14	ACS, ACY, DUP, GAF, 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 22	ACY, TRC.
Basic Red 29	BAS.
Basic Red 30	ACY.
Other basic red dyes	DUP, GAF, VPC.
*Basic violet dyes:	
*Basic Violet 1	ACS, ACY, DSC.
Basic Violet 2	BKS, DSC, NYC.
Basic Violet 3	ACS, DSC, DUP, GAF, SDH.
*Basic Violet 4	ACS, DSC, DUP, GAF.
Basic Violet 7	GAF.
*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.
Basic Violet 24	DUP.
*Basic blue dyes:	
*Basic Blue 1	DSC, GAF, SDH, VPC.
Basic Blue 2	DSC.
Basic Blue 3	GAF.
Basic Blue 4	DUP.
*Basic Blue 5	DSC, GAF, SDH, VPC.
Basic Blue 6	ACS, ACY.
Basic Blue 7	DSC, DUP, SDH.
*Basic Blue 9	ACS, ACY, SDH.
Basic Blue 11	DSC, SDH.
Basic Blue 21	DUP.
Basic Blue 22	ACS, DUP.
*Basic Blue 26	ACS, DSC, DUP, SDH.
Basic Blue 35	DUP.
Basic Blue 38	ACY, DUP.
Basic Blue 39	DUP.
Basic Blue 41	TRC.
Basic Blue 45	VPC.
Basic Blue 47	VPC.
Basic Blue 54	ACY, BAS.
Basic Blue 76	ACY.
Other basic blue dyes	DUP, CAF, VPC.
Basic green dyes:	
*Basic Green 1	ACS, ACY, DSC, DUP, SDH.
Basic Green 3	DUP.
*Basic Green 4	ACS, ACY, DSC, DUP, SDH.
Basic Green 5	ACY.
Basic Green 7	DSC.

TABLE 8B. -- *Benzenoid dyes for which U.S. production or sales were reported, identified by manufacturer, 1967* --Continued

Dye	Manufacturers' identification codes (according to list in table 22)
BASIC DYES--Continued	
Basic brown dyes:	
*Basic Brown 1	ACS, ACY, DUP, GAF, TRC.
Basic Brown 2	GAF.
*Basic Brown 4	ACS, ACY, DSC, DUP, GAF, TRC.
Basic Black dyes:	
Basic Black 3	GAF.
Other basic black dyes	DSC, DUP, VPC.
DIRECT DYES	
*Direct yellow dyes:	
*Direct Yellow 4	ACS, ACY, DUP, GAF, TRC.
*Direct Yellow 5	ACS, ACY, GAF.
*Direct Yellow 6	ACS, ACY, ATL, DUP, GAF, TRC.
Direct Yellow 7	ATL.
Direct Yellow 8	ACS, GAF.
Direct Yellow 9	DUP.
*Direct Yellow 11	ACS, ACY, BKS, DUP, GAF, TRC.
*Direct Yellow 12	ACS, ATL, BKS, DUP, FAB, GAF, TRC
Direct Yellow 20	TRC.
Direct Yellow 23	DUP.
*Direct Yellow 26	ALT, BKS, DUP.
Direct Yellow 27	GAF.
*Direct Yellow 28	ACS, ATL, DUP, GAF, TRC.
Direct Yellow 29	ATL, DUP, GAF.
Direct Yellow 39	TRC.
*Direct Yellow 44	ACS, ATL, BKS, DUP, FAB, GAF, TRC, VPC.
Direct Yellow 49	VPC.
*Direct Yellow 50	ACS, ATL, BKS, DUP, FAB, GAF, TRC, VPC.
Direct Yellow 59	ACS, ATL, DUP.
Direct Yellow 84	BKS, TRC.
Direct Yellow 103	ACS.
*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 119	DUP.
Direct Yellow 120	BKS.
Direct Yellow 121	TRC.
Direct Yellow 123	DUP.
Direct Yellow 125	ACY.
Direct Yellow 128	DUP.
Other direct yellow dyes	AAP, ALT, ATL, DUP, GAF, TRC, VPC.
*Direct orange dyes:	
*Direct Orange 1	AAP, ATL, BDO, CMG, VPC.
Direct Orange 6	ACS.
*Direct Orange 8	ACS, ATL, DUP, GAF, TRC.
Direct Orange 10	AAP, ACS.
Direct Orange 11	GAF.
*Direct Orange 15	ACS, ACY, DUP, GAF, TRC.
*Direct Orange 26	ACS, ATL, DUP, GAF, TRC.
*Direct Orange 29	ATL, BKS, FAB, TRC.
*Direct Orange 34	ACS, ATL, CMG, DUP, GAF.
*Direct Orange 37	ACY, CMG, DUP, GAF, TRC.
*Direct Orange 39	ACY, ALT, ATL, BKS, DUP, GAF.
Direct Orange 42	ATL.
Direct Orange 48	DUP.
Direct Orange 55	DUP.
Direct Orange 59	DUP, GAF.
Direct Orange 61	TRC.
Direct Orange 67	ACS, VPC.
Direct Orange 70	TRC.
*Direct Orange 72	ACS, ALT, ATL, BKS, FAB, TRC, VPC.
*Direct Orange 73	DUP, GAF, TRC, VPC.
Direct Orange 74	DUP.
Direct Orange 76	DUP.
Direct Orange 78	VPC.
Direct Orange 79	DUP.

TABLE 8B. --*Benzenoid dyes for which U.S. production or sales were reported, identified by manufacturer, 1967*--Continued

Dye	Manufacturers' identification codes (according to list in table 22)
DIRECT DYES--Continued	
*Direct orange dyes--Continued	
Direct Orange 80	DUP, VPC.
*Direct Orange 81	ACS, DUP, GAF, VPC.
Direct Orange 83	GAF.
Direct Orange 88	DUP.
*Direct Orange 102	ACS, ACY, DUP, GAF.
Direct Orange 110	TRC.
Other direct orange dyes	ALT, ATL, DUP, VPC.
*Direct red dyes:	
*Direct Red 1	AAP, ACS, ATL, DUP, GAF, TRC, YAW.
*Direct Red 2	ACS, ATL, BKS, DUP, TRC.
*Direct Red 4	ACS, ATL, TRC, VPC.
Direct Red 5	ACS.
Direct Red 7	ATL.
*Direct Red 10	AAP, ACS, ACY, ATL.
*Direct Red 13	AAP, ACS, ATL, DUP, GAF, TRC, YAW.
*Direct Red 16	ACS, ATL, GAF, TRC.
Direct Red 20	ACS, GAF.
*Direct Red 23	ACS, ATL, BKS, CMG, DUP, GAF, TRC.
*Direct Red 24	ATL, BKS, FAB, TRC, VPC.
*Direct Red 26	AAP, ACS, ATL, BKS, DUP, GAF, TRC, VPC.
*Direct Red 28	ACS, ATL, DUP, TRC.
*Direct Red 31	ACS, ATL, DUP, GAF.
Direct Red 32	ACS, DUP.
*Direct Red 37	ACS, ACY, ATL, GAF, TRC, YAW.
*Direct Red 39	ACS, ATL, GAF, TRC, YAW.
Direct Red 45	ATL.
Direct Red 46	ATL.
Direct Red 62	ATL, TRC.
*Direct Red 72	ACS, GAF, TRC.
Direct Red 73	ACS, DUP.
*Direct Red 75	ACS, CMG, DUP, GAF.
Direct Red 76	ACS, GAF.
*Direct Red 79	ATL, BKS, CMG, TRC, VPC.
*Direct Red 80	AAP, ACS, ATL, BDO, BKS, BL, CMG, DUP, FAB, SDH, TRC, VPC.
*Direct Red 81	AAP, ACS, ACY, ATL, BDO, BKS, BL, DUP, GAF, TRC, VPC, YAW.
*Direct Red 83	ACS, ALT, ATL, BKS, BL, CMG, DUP, GAF, TRC, VPC.
Direct Red 84	BKS, GAF.
Direct Red 95	VPC.
Direct Red 111	GAF.
Direct Red 117	DUP.
*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.
Direct Red 155	GAF.
Direct Red 209	TRC.
Direct Red 212	VPC.
Other direct red dyes	ALT, ATL, BL, GAF, TRC.
*Direct violet dyes:	
Direct Violet 1	AAP, ACS, ATL, DUP.
Direct Violet 7	ACS, GAF.
*Direct Violet 9	ACS, ATL, BKS, DUP, GAF, TRC.
Direct Violet 14	ACS, ATL.
Direct Violet 22	DUP.
Direct Violet 47	DUP, GAF.
Direct Violet 48	ACS, DUP.
Direct Violet 49	ACS.
Direct Violet 51	ACS, DUP.
Direct Violet 62	ACY.
Direct Violet 66	ATL, TRC.
Direct Violet 67	DUP.
Other direct violet dyes	ALT.
*Direct blue dyes:	
*Direct Blue 1	AAP, ACS, ACY, ATL, BKS, BL, DUP, FAB, GAF, TRC, VPC, YAW.

TABLE 8B. -- *Benzenoid dyes for which U.S. production or sales were reported, identified by manufacturer, 1967*--Continued

Dye	Manufacturers' identification codes (according to list in table 22)
DIRECT DYES--Continued	
*Direct blue dyes--Continued	
*Direct Blue 2	AAP, ACS, ATL, BKS, BL, DUP, FAB, GAF, TRC, VPC, YAW.
*Direct Blue 6	AAP, ACS, ACY, ATL, BKS, BL, DUP, GAF, TRC, YAW.
*Direct Blue 8	AAP, ACS, ATL, DUP, GAF, YAW.
Direct Blue 14	ACS, ATL, BKS, TRC.
*Direct Blue 15	ACS, ATL, DUP.
Direct Blue 18	YAW.
*Direct Blue 22	ACS, ATL, CMG, DUP.
*Direct Blue 24	ACS, ATL, BKS, YAW.
*Direct Blue 25	ACS, ATL, DUP, GAF, TRC, YAW.
Direct Blue 26	ATL.
Direct Blue 27	DUP.
*Direct Blue 67	ACS, ATL, DUP, TRC.
*Direct Blue 71	ACS, DUP, GAF, TRC.
Direct Blue 74	DUP.
Direct Blue 75	TRC.
*Direct Blue 76	ACS, ALT, ATL, BKS, BL, DUP, FAB, GAF, TRC, VPC.
*Direct Blue 78	ACS, ATL, CMG, DUP, GAF, TRC.
*Direct Blue 80	ACS, ALT, ATL, BKS, BL, DUP, FAB, GAF, TRC.
*Direct Blue 86	AAP, ACS, ACY, ALT, ATL, BKS, DUP, FAB, GAF, ICC, ICI, SDH, TMS, TRC, VPC.
Direct Blue 87	ICI.
Direct Blue 91	TRC.
*Direct Blue 98	ALT, ATL, TRC, VPC.
Direct Blue 100	ALT, BKS.
Direct Blue 104	DUP.
*Direct Blue 120 and 120A	BKS, DUP, GAF, TRC.
*Direct Blue 126	ACS, BL, DUP, GAF, TRC, VPC.
Direct Blue 133	GAF.
Direct Blue 136	GAF.
Direct Blue 143	DUP.
*Direct Blue 151	ACS, ATL, TRC.
Direct Blue 160	TRC.
Direct Blue 189	BKS, TRC.
Direct Blue 191	AAP, ALT, GAF.
Direct Blue 199	GAF.
*Direct Blue 218	ACS, BKS, DUP, GAF, TRC.
Direct Blue 224	ALT, ATL.
Direct Blue 238	ACY.
Other direct blue dyes	ALT, BL, DUP, GAF.
*Direct green dyes:	
*Direct Green 1	AAP, ACS, ACY, ATL, BKS, DUP, GAF, TRC, YAW.
*Direct Green 6	AAP, ACS, BKS, DUP, GAF, TRC, YAW.
*Direct Green 8	ACS, ATL, TRC.
Direct Green 12	ACS, DUP, TRC.
Direct Green 15	DUP.
Direct Green 26	TRC.
Direct Green 27	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, DUP.
*Direct Brown 1A	GAF, TRC, YAW.
*Direct Brown 2	AAP, ACS, ACY, ATL, BKS, BL, DUP, GAF, TRC, YAW.
*Direct Brown 6	ACS, DUP, FAB, GAF, TRC.
Direct Brown 25	DUP.
Direct Brown 27	GAF.
*Direct Brown 31	AAP, ACS, ATL, DUP, GAF, TRC, YAW.
Direct Brown 32	GAF.
Direct Brown 33	DUP.
Direct Brown 40	AAP.
Direct Brown 44	GAF, YAW.
Direct Brown 48	AAP.

TABLE 8B. -- *Benzenoid dyes for which U.S. production or sales were reported, identified by manufacturer, 1967*--Continued

Dye	Manufacturers' identification codes (according to list in table 22)
DIRECT DYES--Continued	
*Direct brown dyes--Continued	
Direct Brown 59	ACY.
*Direct Brown 74	AAP, ACS, DUP.
*Direct Brown 95	AAP, ACS, ALT, ATL, BKS, DUP, GAF, TRC, YAW.
Direct Brown 105	DUP.
Direct Brown 106	ACS, GAF.
*Direct Brown 111	DUP, GAF, TRC, VPC.
Direct Brown 112	ATL.
Direct Brown 125	GAF.
*Direct Brown 154	ACS, DUP, FAB, GAF, TRC, YAW.
Other direct brown dyes	ACS, ALT, ATL, DUP, VPC.
*Direct black dyes:	
*Direct Black 4	ACS, ATL, BKS, DUP, GAF, TRC, YAW.
Direct Black 8	TRC, YAW.
*Direct Black 9	ACS, BKS, DUP, GAF.
Direct Black 17	GAF.
*Direct Black 19	ATL, BKS, GAF, TRC.
*Direct Black 22	AAP, ACS, ALT, ATL, BKS, CMG, DUP, GAF, TRC, VPC, YAW.
Direct Black 36	AAP, ATL.
Direct Black 37	AAP, DUP.
*Direct Black 38	AAP, ACS, ACY, ATL, BKS, BL, DUP, FAB, GAF, TRC, YAW.
Direct Black 44	TRC.
Direct Black 45	TRC.
*Direct Black 51	AAP, ACS, ATL, DUP, GAF.
Direct Black 55	DUP.
Direct Black 56	ACS, TRC.
Direct Black 61	TRC.
Direct Black 67	DUP.
Direct Black 71	ATL, VPC.
Direct Black 75	GAF.
Direct Black 78	ACS, BKS, DUP.
*Direct Black 80	AAP, ACS, ATL, BKS, BL, FAB, TRC, VPC, YAW.
Direct Black 109	GAF.
Direct Black 131	ACS.
Direct Black 190	BKS.
Other direct black dyes	ACY, ALT, ATL, BL, YAW.
DISPERSE DYES	
*Disperse yellow dyes:	
Disperse Yellow 1	DUP, GAF.
Disperse Yellow 2	DUP.
*Disperse Yellow 3	AAP, ACS, BKS, BL, DUP, EKT, GAF, HSH, ICC, TRC.
*Disperse Yellow 5	AAP, BKS, EKT, GAF, ICC.
*Disperse Yellow 8	DUP, EKT, TRC.
*Disperse Yellow 23	AAP, DUP, EKT, GAF, ICC.
Disperse Yellow 31	GAF.
Disperse Yellow 32	DUP.
*Disperse Yellow 33	AAP, EKT, GAF, ICC, TRC.
*Disperse Yellow 34	AAP, EKT, GAF, ICC.
Disperse Yellow 37	ICC.
*Disperse Yellow 42	AAP, DUP, EKT, GAF, SDC, TRC.
Disperse Yellow 50	TRC.
*Disperse Yellow 54	AAP, DUP, GAF, ICC, TRC.
Disperse Yellow 67	DUP.
Other disperse yellow dyes	BKS, DUP, EKT, GAF, ICC, MAY, TRC, VPC.
*Disperse orange dyes:	
*Disperse Orange 3	AAP, BKS, DUP, EKT, GAF, HSH, ICC, TRC.
*Disperse Orange 5	AAP, EKT, GAF.
Disperse Orange 16	AAP.
*Disperse Orange 17	AAP, ACS, BKS, EKT, GAF, HSH, ICC.
Disperse Orange 21	TRC.
*Disperse Orange 25	DUP, EKT, TRC.
Disperse Orange 26	DUP.
Disperse Orange 28	AAP.
Disperse Orange 29	AAP.
Disperse Orange 30	TRC.
Disperse Orange 38	TRC.
Disperse Orange 41	DUP.

TABLE 8B. -- *Benzenoid dyes for which U.S. production or sales were reported, identified by manufacturer, 1967* --Continued

Dye	Manufacturers' identification codes (according to list in table 22)
DISPERSE DYES--Continued	
*Disperse orange dyes--Continued	
Disperse Orange 44	DUP.
Disperse Orange 62	DUP.
Other disperse orange dyes	AAP, EKT, GAF, ICC, MAY.
*Disperse red dyes:	
*Disperse Red 1	AAP, ACS, BKS, DUP, EKT, GAF, HSH, ICC, TRC.
Disperse Red 4	GAF, TRC.
*Disperse Red 5	AAP, EKT, GAF, HSH, ICC.
Disperse Red 7	AAP.
*Disperse Red 11	AAP, DUP, GAF, TRC.
*Disperse Red 13	AAP, DUP, GAF, ICC.
*Disperse Red 15	AAP, GAF, HSH, ICC.
*Disperse Red 17	AAP, BKS, DUP, EKT, GAF, HSH, ICC, TRC.
Disperse Red 20	ACS.
Disperse Red 21	EKT.
Disperse Red 30	EKT, TRC.
Disperse Red 31	ICC.
Disperse Red 35	EKT.
Disperse Red 55	AAP, DUP, TRC.
Disperse Red 56	DUP.
Disperse Red 59	ACY, DUP, GAF.
*Disperse Red 60	AAP, DUP, EKT, VPC.
Disperse Red 61	DUP.
Disperse Red 62	DUP.
*Disperse Red 65	DUP, EKT, ICC, TRC.
Disperse Red 66	AAP.
Disperse Red 73	TRC.
Disperse Red 78	TRC.
Disperse Red 96	ACY.
Disperse Red 140	DUP.
Other disperse red dyes	AAP, BKS, DUP, EKT, GAF, ICC, MAY, SDC, TRC.
*Disperse violet dyes:	
*Disperse Violet 1	AAP, EKT, GAF, HSH, ICC, TRC.
*Disperse Violet 4	AAP, GAF, ICC.
Disperse Violet 8	GAF.
Disperse Violet 14	DUP.
Disperse Violet 18	DUP, TRC.
Disperse Violet 26	DUP.
*Disperse Violet 27	AAP, ACY, BL, DUP, EKT, GAF, ICC.
Other disperse violet dyes	EKT, GAF.
*Disperse blue dyes:	
*Disperse Blue 1	AAP, GAF, TRC.
*Disperse Blue 3	AAP, ACS, BKS, EKT, GAF, HSH, ICC, TRC.
*Disperse Blue 7	AAP, BDO, BKS, DUP, EKT, GAF, ICC, TRC.
Disperse Blue 9	ACS, 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, EKT.
Disperse Blue 63	DUP.
*Disperse Blue 64	DUP, EKT, GAF, TRC.
Disperse Blue 70	AAP.
Disperse Blue 71	VPC.
Disperse Blue 73	TRC.
Disperse Blue 79	AAP, TRC.
Disperse Blue 109	DUP.
Disperse Blue 116	ACY.
Disperse Blue 133	DUP.
Other disperse blue dyes	BKS, DUP, EKT, GAF, HSH, ICC, MAY, VPC.
Disperse green dyes	GAF, ICC, TRC.
Disperse brown dyes:	
Disperse Brown 1	TRC.
Disperse Brown 2	DUP, GAF.
Other disperse brown dyes	EKT, GAF, ICC, SDC.
*Disperse black dyes:	
*Disperse Black 1	AAP, DUP, GAF, TRC.
Disperse Black 2	DUP, TRC.

TABLE 8B. -- *Benzenoid dyes for which U.S. production or sales were reported, identified by manufacturer, 1967*--Continued

Dye	Manufacturers' identification codes (according to list in table 22)
DISPERSE DYES--Continued	
*Disperse black dyes--Continued	
Disperse Black 6	AAP, DUP.
Disperse Black 7	YAW.
Disperse Black 9	AAP, BL, DUP, EKT, GAF.
Other disperse black dyes	BKS, 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 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.
Reactive Yellow 37	HST.
Other reactive yellow dyes	ACY, DUP, HST, VPC.
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	ACY, 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.
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	ACY, DUP, GAF, HST.

TABLE 8B. -- *Benzenoid dyes for which U.S. production or sales were reported, identified by manufacturer, 1967*--Continued

Dye	Manufacturers' identification codes (according to list in table 22)
FIBER-REACTIVE DYES--Continued	
Reactive green dyes	HST, ICI.
Reactive brown dyes:	
Reactive Brown 1	TRC.
Reactive Brown 10	ICI.
Reactive black dyes:	
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, GAF.
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, VPC.
Fluorescent Brightening Agent 108	GAF.
Fluorescent Brightening Agent 109	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	WIM.
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, TRC.
FOOD, DRUG, AND COSMETIC COLORS	
Food, Drug, and Cosmetic Dyes	
*FD&C Blue No. 1	ACS, KON, SDH, WJ.
*FD&C Blue No. 2	ACS, KON, SDH.
FD&C Green No. 3	WJ.
*FD&C Red No. 2	ACS, ALT, KON, SDH, STG, WJ.
*FD&C Red No. 3	ACS, ALT, KON, SDH, STG.
FD&C Red No. 4	ACS, ALT, KON, SDH, WJ.
FD&C Violet No. 1	ACS.
*FD&C Yellow No. 5	ACS, ALT, KON, SDH, STG, WJ.
*FD&C Yellow No. 6	ACS, ALT, KON, SDH, STG, WJ.
Other food, drug, and cosmetic dyes	STG, WJ.
Drug and Cosmetic Dyes	
D&C Blue No. 6	ACS.
D&C Blue No. 9	ACS.

TABLE 8B. -- *Benzenoid dyes for which U.S. production or sales were reported, identified by manufacturer, 1967*--Continued

Dye	Manufacturers' identification codes (according to list in table 22)
FOOD, DRUG, AND COSMETIC COLORS--Continued	
Drug and Cosmetic Dyes--Continued	
D&C Brown No. 1	ACS.
D&C Green No. 5	ACS, KON.
D&C Green No. 6	ACS, KON.
D&C Green No. 8	KON, SDH.
*D&C Orange No. 4	ACS, KON, SNA, TMS.
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, TMS.
D&C Red No. 6	SNA, TMS.
*D&C Red No. 7	KON, SNA, TMS.
D&C Red No. 8	KON, SNA.
D&C Red No. 9	KON, SNA, TMS.
D&C Red No. 10	KON, SNA.
D&C Red No. 11	SNA.
D&C Red No. 12	SNA, TMS.
D&C Red No. 13	SNA.
D&C Red No. 17	ACS, KON.
*D&C Red No. 19	ACS, KON, 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	ACS.
D&C Red No. 30	KON.
D&C Red No. 31	KON.
D&C Red No. 33	ACS.
D&C Red No. 34	KON.
*D&C Red No. 36	ALT, KON, SNA, TMS.
D&C Red No. 37	ACS.
D&C Violet No. 2	ACS.
*D&C Yellow No. 5	KON, SNA, TMS.
D&C Yellow No. 6	KON.
D&C Yellow No. 7	KON.
D&C Yellow No. 8	KON, TMS.
D&C Yellow No. 10	ACS, KON.
D&C Yellow No. 11	ACS, KON.
Drug and Cosmetic Dyes, External	
Ext. D&C Green No. 1	ACS, KON.
Ext. D&C Orange No. 3	ACS.
Ext. D&C Violet No. 2	KON.
Ext. D&C Yellow No. 1	ACS, KON.
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	ATL, GAF, PDC, TRC.
Mordant Yellow 3	ACS, ATL.
Mordant Yellow 5	TRC.
*Mordant Yellow 8	ACS, DUP, VPC.
Mordant Yellow 10	DUP.
Mordant Yellow 14	ACS.
Mordant Yellow 16	ACS, ACY.
Mordant Yellow 20	ACS.
Mordant Yellow 26	VPC.
Mordant Yellow 29	GAF.
Mordant Yellow 30	TRC, VPC.
Mordant Yellow 36	PDC.

TABLE 8B. -- *Benzenoid dyes for which U.S. production or sales were reported, identified by manufacturer, 1967*--Continued

Dye	Manufacturers' identification codes (according to list in table 22)
MORDANT DYES--Continued	
*Mordant orange dyes:	
*Mordant Orange 1	ACY, GAF, PDC, TRC.
Mordant Orange 4	GAF, VPC.
*Mordant Orange 6	ATL, GAF, PDC, TRC.
Mordant Orange 8	TRC.
Mordant Orange 30	ACS.
*Mordant red dyes:	
Mordant Red 3	ACS, ACY.
Mordant Red 5	PDC.
Mordant Red 6	GAF.
Mordant Red 7	ACS, ACY, BDO, CMG, GAF, PDC, TRC, VPC.
Mordant Red 9	ACS, GAF, MRX.
Mordant Red 11	ACY.
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	ACS, DUP, GAF, TRC.
Mordant Blue 3	GAF.
Mordant Blue 7	TRC.
Mordant Blue 9	ACS, GAF.
Mordant Blue 13	ACS, HSH.
Mordant Blue 19	CMG.
Mordant green dyes:	
Mordant Green 11	ACY.
Mordant Green 36	PDC.
*Mordant brown dyes:	
*Mordant Brown 1	ACS, CMG, DUP, GAF, TRC, YAW.
Mordant Brown 12	PDC.
Mordant Brown 13	ACS.
Mordant Brown 15	GAF.
Mordant Brown 18	ACS, DUP.
Mordant Brown 19	GAF.
Mordant Brown 21	GAF, VPC.
*Mordant Brown 33	ACS, DUP, GAF, TRC.
*Mordant Brown 40	ACS, CMG, GAF, YAW.
Mordant Brown 50	TRC.
Mordant Brown 63	TRC.
Mordant Brown 70	DUP, PDC.
*Mordant black dyes:	
Mordant Black 1	ACS.
*Mordant Black 3	ACS, GAF, TRC.
Mordant Black 5	ACS, TRC.
Mordant Black 7	GAF.
Mordant Black 8	VPC.
Mordant Black 9	ACS, VPC.
*Mordant Black 11	ACS, GAF, TRC, VPC.
*Mordant Black 13	ACS, GAF, HSH.
*Mordant Black 17	ACS, ACY, DUP, GAF, TRC.
Mordant Black 19	PDC.
Mordant Black 26	TRC.
*Mordant Black 38	ACS, CMG.
Other mordant black dyes	PDC.
OXIDATION BASES	
Oxidation Base 8 and 8A	ACY.
Oxidation Base 21	PDC.
Oxidation Base 22	ACY.
Oxidation Base 25	ACY.
Other oxidation bases	ACY, CMG.
SOLVENT DYES	
*Solvent yellow dyes:	
Solvent Yellow 1	AAP, ACY.
*Solvent Yellow 2	AAP, DUP, FH, GAF, PAT, PSC.
*Solvent Yellow 3	ACS, DUP, GAF, PSC.
Solvent Yellow 13	ACY, GAF, TRC.

TABLE 8B. -- *Benzenoid dyes for which U.S. production or sales were reported, identified by manufacturer, 1967*--Continued

Dye	Manufacturers' identification codes (according to list in table 22)
SOLVENT DYES--Continued	
*Solvent yellow dyes--Continued	
*Solvent Yellow 14	AAP, ACS, ACY, DUP, FH, GAF, PAT, PSC, SDH.
Solvent Yellow 16	PAT.
Solvent Yellow 19	GAF.
Solvent Yellow 29	GAF.
Solvent Yellow 30	ACS, PSC.
Solvent Yellow 33	ACS, ACY.
Solvent Yellow 34	DUP.
Solvent Yellow 40	ACS.
Solvent Yellow 42	ACS.
Solvent Yellow 44	ACS, GAF.
Solvent Yellow 45	ACS, DUP.
Solvent Yellow 47	ACS, ACY, DUP, GAF.
Solvent Yellow 53	ACS.
Solvent Yellow 56	ACY.
Solvent Yellow 71	ACY.
Solvent Yellow 72	ACY.
Solvent Yellow 87	ACY.
Other solvent yellow dyes	AAP, DSC, PAT, x.
*Solvent orange dyes:	
Solvent Orange 2	AAP, PSC.
*Solvent Orange 3	ACS, ACY, DSC, GAF, PSC.
Solvent Orange 5	GAF, TRC.
*Solvent Orange 7	ACS, ACY, FH, GAF.
Solvent Orange 20	ACY, GAF.
Solvent Orange 23	ACS.
Solvent Orange 24	DUP.
Solvent Orange 25	ACY, DUP.
Solvent Orange 31	ACS.
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, FH, GAF, PAT, SDH.
*Solvent Red 26	AAP, ACS, ACY, PSC.
Solvent Red 27	ACS.
*Solvent Red 33	ACS, DUP, GAF.
Solvent Red 34	DUP.
Solvent Red 35	GAF.
Solvent Red 40	GAF.
Solvent Red 41	DSC.
*Solvent Red 49	ACY, DSC, DUP, GAF.
Solvent Red 52	GAF, ICI.
Solvent Red 65	ACS.
Solvent Red 68	ACS.
Solvent Red 69	DSC, DUP.
Solvent Red 74	ACS.
Solvent Red 75	ACS.
Solvent Red 76	ACS.
Solvent Red 80	ACS, ACY.
Solvent Red 105	ACY.
Solvent Red 108	ACY.
Solvent Red 111	ACY.
Solvent Red 115	ACY.
Solvent Red 126	ACY.
Other solvent red dyes	AAP, ACY, DSC, DUP, GAF, ICI, PAT.
*Solvent violet dyes:	
*Solvent Violet 8	ACS, ACY, DSC, DUP, NYC.
Solvent Violet 9	DSC.
Solvent Violet 13	AAP, HSH, ICI.
Solvent Violet 14	ICI.
Solvent Violet 17	ACS.
Other solvent violet dyes	AAP, ACY, DSC, NYC, PAT.
Solvent blue dyes:	
Solvent Blue 3	ACY, SW.
Solvent Blue 4	DSC, DUP, SDH.
Solvent Blue 5	DSC.
Solvent Blue 6	DSC.

TABLE 8B. -- *Benzenoid dyes for which U.S. production or sales were reported, identified by manufacturer, 1967*--Continued

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

TABLE 8B. -- *Benzenoid dyes for which U.S. production or sales were reported, identified by manufacturer, 1967*--Continued

Dye	Manufacturers' identification codes (according to list in table 22)
SULFUR DYES--Continued	
Sulfur green dyes--Continued	
Sulfur Green 2	SDC.
Leuco Sulfur Green 2	SDC.
Sulfur Green 3	ACS.
Leuco Sulfur Green 3	SDC.
Sulfur Green 14	DUP.
Leuco Sulfur Green 16	SDC.
Solubilized Sulfur Green 16	SDC.
Sulfur Green 28	ACY.
Other sulfur green dyes	ACY, SDC.
Sulfur brown dyes:	
Sulfur Brown 3	SDC.
Leuco Sulfur Brown 3	SDC, SDH.
Solubilized Sulfur Brown 3	SDC.
Sulfur Brown 10	ACS, DUP, SDC.
Leuco Sulfur Brown 10	SDC.
Solubilized Sulfur Brown 10	SDC.
Sulfur Brown 14	SDC.
Leuco Sulfur Brown 14	ACY, SDC.
Solubilized Sulfur Brown 14	SDC.
Sulfur Brown 20	DUP.
Sulfur Brown 21	DUP.
Sulfur Brown 26	ACY.
Sulfur Brown 30	ACY.
Sulfur Brown 33	ACY.
Sulfur Brown 37	SDC.
Leuco Sulfur Brown 37	SDC.
Sulfur Brown 44	ACS.
Sulfur Brown 45	ACS.
Sulfur Brown 50	ACS.
Leuco Sulfur Brown 82	ACY.
Other sulfur brown dyes	ACY, SDC.
Sulfur black dyes:	
Sulfur Black 1	ACS, ACY, DUP, SDC.
Leuco Sulfur Black 1	ACS, ACY, SDC.
Solubilized Sulfur Black 1	SDC.
Sulfur Black 2	ACS, ACY, DUP, SDC.
Leuco Sulfur Black 2	ACS, ACY, SDC.
Solubilized Sulfur Black 2	SDC.
Leuco Sulfur Black 6	ACS.
Sulfur Black 10	ACY, DUP.
Leuco Sulfur Black 10	ACS, ACY.
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%	ACS.
*Vat Yellow 2, 8-1/2%	AAP, ACS, ATL, GAF, ICI, 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, VPC.
*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 21, 9-1/2%	ATL.
Vat Yellow 22, 10%	DUP, GAF.
Vat Yellow 27	VPC.
Vat Yellow 33, 15%	TRC.
Vat Yellow 41, 9%	ACY.
Other vat yellow dyes	ACS, GAF, MAY, VPC.
*Vat orange dyes:	
*Vat Orange 1, 20%	ACS, CMG, GAF, HST, ICI, TRC, VPC.
*Solubilized Vat Orange 1, 26%	GAF, HST, ICI.
*Vat Orange 2, 12%	AAP, ACS, ACY, CMG, DUP, GAF, ICI, TRC.
*Vat Orange 3, 13-1/2%	CMG, DUP, GAF, HST.

TABLE 8B. -- *Benzenoid dyes for which U.S. production or sales were reported, identified by manufacturer, 1967* --Continued

Dye	Manufacturers' identification codes (according to list in table 22)
VAT DYES--Continued	
*Vat orange dyes--Continued	
*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%	AAP, ACS, ACY, CMG, DUP, GAF, ICI, TRC.
Vat Orange 11, 6%	ACS, DUP.
*Vat Orange 15, 10%	AAP, ACS, GAF, ICI, TRC, VPC.
Vat Orange 23, 17-1/2%	ACY, DUP.
Vat Orange 24	DUP.
Other vat orange dyes	GAF, SDC.
*Vat red dyes:	
*Vat Red 1, 13%	AAP, ACY, HST, ICI.
*Solubilized Vat Red 1, 37%	GAF, HST, ICI.
Vat Red 10, 18%	ACS, GAF.
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.
*Vat Red 32, 20%	ACS, DUP, GAF.
Vat Red 35, 12-1/2%	ACS, TRC.
Vat Red 44, 17%	TRC.
Vat Red 52, 10%	DUP.
Vat Red 53, 12%	DUP.
Vat Red 56, 15-1/2%	ACY.
Vat Red 62	DUP.
Other vat red dyes	GAF, TRC, VPC.
*Vat violet dyes:	
*Vat Violet 1, 11%	ACS, ACY, DUP, GAF, ICI, MAY, TRC.
Solubilized Vat Violet 1, 26%	GAF, ICI.
*Vat Violet 2, 20%	ACY, GAF, HST, VPC.
Vat Violet 3, 15%	GAF, HST.
Solubilized Vat Violet 3, 43%	GAF.
*Vat Violet 9, 12%	DUP, GAF, ICI, TRC.
*Vat Violet 13, 6-1/4%	ACS, DUP, GAF, ICI, TRC.
Vat Violet 14, 12-1/2%	ACS.
Vat Violet 17, 12-1/2%	DUP, GAF.
Vat Violet 21	VPC.
Other vat violet dyes	GAF, MAY.
*Vat blue dyes:	
Vat Blue 1, 20%	ACS.
Solubilized Vat Blue 1, 25%	GAF.
Vat Blue 4, 10%	ACY, DUP, GAF.
Vat Blue 5, 16%	ATL, DUP, HST.
Solubilized Vat Blue 5, 38%	GAF, HST.
*Vat Blue 6, 8-1/3%	AAP, ACS, ACY, DUP, GAF, ICI, MAY, TRC.
Solubilized Vat Blue 6, 17-1/2%	GAF, HST, ICI.
Vat Blue 7, 12-1/2%	ACS.
Solubilized Vat Blue 9, 35%	GAF.
Vat Blue 12, 6-1/2%	DUP.
Vat Blue 14, 8-1/3%	ACS, DUP, GAF, TRC.
Vat Blue 16, 16-1/2%	ACS, ACY, DUP.
Vat Blue 18, 13%	AAP, ACS, ACY, ATL, DUP, GAF, ICI, MAY, TRC.
*Vat Blue 20, 14%	AAP, ACY, ATL, DUP, GAF, ICI, MAY, SDC, TRC.
Vat Blue 26, 24%	GAF.
Vat Blue 29	GAF.
Vat Blue 35, 20%	HST.
Vat Blue 39, 12%	GAF.
Vat Blue 42, 20%	SDC.
Vat Blue 43	DUP, SDC.
Vat Blue 53, 20-1/2%	GAF.
Vat Blue 60	DUP.
Other vat blue dyes	GAF, VPC, x.
*Vat green dyes:	
*Vat Green 1, 6%	AAP, ACY, ATL, DUP, GAF, ICI, MAY.
Solubilized Vat Green 1, 12-1/2%	GAF, HST, ICI.

TABLE 8B. -- *Benzenoid dyes for which U.S. production or sales were reported, identified by manufacturer, 1967*--Continued

Dye	Manufacturers' identification codes (according to list in table 22)
VAT DYES--Continued	
*Vat green dyes--Continued	
*Vat Green 3, 10%	AAP, ACS, ACY, ATL, DUP, GAF, ICI, MAY, TRC.
Solubilized Vat Green 3, 26%	GAF, HST, ICI.
*Vat Green 8, 8-1/2%	ACS, ATL, DUP, GAF, ICI.
*Vat Green 9, 12-1/2%	ACS, ACY, ATL, DUP, GAF, MAY, SDC, TRC.
Vat Green 15, 17%	ACS.
Vat Green 18, 8%	DUP.
Vat Green 20, 6%	DUP.
Other vat green dyes	GAF, MAY, SDC.
*Vat brown dyes:	
*Vat Brown 1, 11%	ACS, ACY, DUP, GAF, ICI, MAY, TRC.
Solubilized Vat Brown 1, 17%	GAF, ICI.
*Vat Brown 3, 11%	AAP, ACS, ACY, DUP, GAF, ICI, MAY, TRC, VPC.
*Vat Brown 5, 13%	AAP, ACY, GAF, HST, VPC.
Vat Brown 11, 12%	DUP, MAY, TRC.
Vat Brown 12, 12-1/2%	ACS, DUP.
Vat Brown 13, 17%	MAY.
Vat Brown 20, 10-1/2%	ACS, GAF.
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	ACS, GAF, SDC, VPC.
*Vat black dyes:	
*Solubilized Vat Black 1, 27-1/2%	GAF, HST, ICI.
*Vat Black 9, 16%	ACS, ATL, GAF, MAY, TRC.
Vat Black 11, 17-1/2%	ACY.
Vat Black 13, 14%	ACS, DUP.
Vat Black 14, 11-1/2%	DUP.
Vat Black 15	AAP.
Vat Black 18, 15-1/2%	ACS, GAF.
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, TRC.
*Vat Black 27, 12-1/2%	AAP, ACS, ACY, BDO, DUP, GAF, ICI, MAY, TRC.
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, DUP, PAT, SDC.

Pigments

TABLE 11B.--*Benzenoid pigments for which U.S. production or sales were reported, identified by manufacturer, 1967*

[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	ACS, ACY, AMS, CPC, DUP, FCL, GAF, HSC, HSH, ICI, IMP, KON, PPG, S, SDH, SNA, SW.
*Pigment Yellow 3, C.I. 11 710	ACS, HSC, HSH, HST, IMP, KCW, PPG, S, SW.
Pigment Yellow 4, C.I. 11 665	ACS, 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	ACS, SNA, SW, x.
*Pigment Yellow 74, C.I. 11 741	DUP, SDH, SW.
All other Hansa yellows	HSC, KCW.
*Benzidine yellows:	
*Pigment Yellow 12, C.I. 21 090	ACS, ACY, AMS, CIK, DUP, FCL, GAF, HSC, HSH, HST, ICC, IMP, KON, LVY, S, SDH, SNA, SW.
*Pigment Yellow 13, C.I. 21 100	ACS, BUC, FCL, GAF, HSH, HST, ICC, IMP, ROM, SDH, SNA, SW.
*Pigment Yellow 14, C.I. 21 095	ACS, ACY, AMS, BUC, CIK, CPC, DUP, FCL, GAF, HSC, HSH, HST, ICC, IMP, KON, ROM, S, SDH, SNA, SW, x.
*Pigment Yellow 17, C.I. 21 105	ACY, AMS, BUC, FCL, HSC, HSH, HST, ICC, IMP, SDH, SNA, SW.
Pigment Yellow 83	HST.
All other benzidine yellows	HSH, ICC, IMP, ROM, SW.
Pigment Yellow 10, C.I. 12 710	SW.
Pigment Yellow 18, C.I. 49 005	IMP.
Pigment Yellow 19	GAF.
Pigment Yellow 60, C.I. 12 705	SW.
(Basic Yellow 2), C.I. 41 000, fugitive	MRX.
(Vat Yellow 1), C.I. 70 600	ACS, TRC.
All other	ACY, ICC, IMP, S, SW.
*Orange toners:	
Pigment Orange 1, C.I. 11 725	ACS, KCW.
*Pigment Orange 2, C.I. 12 060	FCL, IMP, SDH, SW, UHL.
*Pigment Orange 5, C.I. 12 075	ACY, HSC, IMP, SNA, SW.
*Pigment Orange 13, C.I. 21 110	ACS, ACY, AMS, DUP, HSC, IMP, KON, S, SNA, SW.
Pigment Orange 15, C.I. 21 130	ACS, GAF.
*Pigment Orange 16, C.I. 21 160	ACS, BUC, DUP, FCL, HSH, HST, ICC, IMP, ROM, SDH, SNA, SW.
Pigment Orange 30	SNA.
Pigment Orange 34, C.I. 21 115	BUC, ICC.
(Vat Orange 1), C.I. 59 105	HST.
(Vat Orange 2), C.I. 59 705	GAF.
(Vat Orange 3), C.I. 59 300	ACS, TRC.
(Vat Orange 4), C.I. 59 710	ACS.
(Vat Orange 7), C.I. 71 105	GAF, HST.
(Vat Orange 15), C.I. 69 025	ACS, TRC.
All other	ICC, KON, ROM, SDH.
*Red toners:	
*Naphthol reds:	
*Pigment Red 2, C.I. 12 310	ACS, GAF, HSC, HSH, IMP, KCW, KON, MRX, SDH, SW.
*Pigment Red 5, C.I. 12 490	DUP, GAF, HSH, HST, ICC, ICI, IMP, 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	ACS, IMP, KCW, SW.
Pigment Red 14, C.I. 12 380	DUP.
Pigment Red 15, C.I. 12 465	DUP.

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, 1967*--Continued

Pigment	Manufacturers' identification codes (according to list in table 22)
TONERS--Continued	
*Red toners--Continued	
*Naphthol reds--Continued	
*Pigment Red 17, C.I. 12 390	ACY, FCL, ICC, IMP, SNA, SW, UHL.
*Pigment Red 18, C.I. 12 350	ACS, IMP, SW.
Pigment Red 19, C.I. 12 400	ACS.
*Pigment Red 22, C.I. 12 315	ACY, DUP, FCL, GAF, IMP, MRX, SNA, SW.
*Pigment Red 23, C.I. 12 355	ACY, BUC, DUP, FCL, ICC, IMP, ROM, SDH, SNA, SW.
Pigment Red 31, C.I. 12 360	SNA.
All other naphthol reds	ICC, IMP, KCW, S, SDH, SW.
*Pigment Red 1, C.I. 12 070, dark	ACY, AMS, HSC, HSH, IMP, KON, LVY, SDH, SW.
*Pigment Red 1, C.I. 12 070, light	ACY, HSC, HSH, IMP, KON, PPG, SDH, SNA, SW.
*Pigment Red 3, C.I. 12 120	ACS, ACY, CIK, DUP, FCL, HSC, HSH, IMP, KCW, KON, 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, KCW, KON, SW.
*Pigment Red 38, C.I. 21 120	ACS, DUP, GAF, ICC, SNA, SW.
Pigment Red 41, C.I. 21 200	ACS, GAF.
*Pigment Red 48, C.I. 15 865	ACS, ACY, AMS, DUP, FCL, GAF, HSC, HSH, ICC, IMP, KON, LVY, MRX, S, SNA, SW.
Pigment Red 49, C.I. 15 630:	
*Barium toner	ACY, AMS, CIK, FCL, HSC, IMP, KON, LVY, PPG, SDH, SW, UHL.
*Calcium toner	ACY, AMS, CIK, FCL, HSC, IMP, LVY, PPG, SDH, SW.
*Sodium toner	ACY, AMS, FCL, HSC, 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	ACS, DUP.
*Pigment Red 57, C.I. 15 850, calcium toner	ACS, AMS, CIK, DUP, FCL, HSC, HSH, IMP, KON, LVY, MGR, SDH, SNA, SW.
Pigment Red 58, C.I. 15 825	DUP, GAF, IMP.
*Pigment Red 63, C.I. 15 880	ACS, FCL, HSH, IMP, KON, SNA, SW.
Pigment Red 64, C.I. 15 800	ACS.
Pigment Red 77, C.I. 15 826	SW.
Pigment Red 79, PMA	GAF.
Pigment Red 81, C.I. 45 160, fugitive	KCW, MGR.
*Pigment Red 81, C.I. 45 160, PMA	CPC, DUP, FCL, GAF, IMP, KON, LVR, LVY, MGR, MRX, S, SNA.
*Pigment Red 81, C.I. 45 160, PTA	ACY, AMS, DUP, FCL, GAF, HSC, IMP, KCW, KON, MGR, MRX, S, SDH, SNA.
Pigment Red 87, C.I. 73 310	ACS.
Pigment Red 88	ACS, 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	ACS.
Pigment Red 123	ACS.
(Vat Red 1), C.I. 73 360	HST.
(Vat Red 23), C.I. 71 130	ACS.
*(Vat Red 29), C.I. 71 140	ACS, GAF, HSC.
All other	ACY, DUP, GAF, HAM, HSC, SW, TRC.
*Violet toners:	
Pigment Violet 1, C.I. 45 170, fugitive	UHL.
*Pigment Violet 1, C.I. 45 170, PMA	GAF, IMP, LVR, MGR, MRX, S, SNA.
*Pigment Violet 1, C.I. 45 170, PTA	ACY, AMS, DUP, FCL, GAF, HSC, IMP, MGR, MRX, SNA.
*Pigment Violet 3, C.I. 42 535, fugitive	ACY, AMS, HAM, HSC, IMP, KON, LVY, MGR, NYC, UHL.
*Pigment Violet 3, C.I. 42 535, PMA	AMS, CIK, DUP, GAF, HSC, IMP, KON, LVR, LVY, MGR, MRX, PPG, SDH, SNA, SW, UHL.
*Pigment Violet 3, C.I. 42 535, PTA	ACY, AMS, GAF, HSC, IMP, KON, MRX, SNA, SW.
Pigment Violet 19, C.I. 46 500	ACS, DUP, SNA.
*Pigment Violet 23	ACS, ACY, GAF, HST.
(Vat Violet 1), C.I. 60 010	ACS, DUP.
(Vat Violet 2), C.I. 73 385	ACS.
(Vat Violet 3), C.I. 73 395	ACS.
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, 1967*--Continued

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

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, 1967*--Continued

Pigment	Manufacturers' identification codes (according to list in table 22)
LAKES--Continued	
Red Lakes--Continued	
(Natural Red 24), C.I. 75 280	IMP.
All other	HAM, IMP, SNA.
Violet lakes:	
*Pigment Violet 5, C.I. 58 055	ACS, DUP, HSH, IMP, KON, MRX, S, UHL.
Pigment Violet 20, C.I. 58 225	SW.
All other	HAM.
Blue lakes:	
Pigment Blue 17, C.I. 74 180	CPC.
Pigment Blue 24, C.I. 42 090	AMS, ICC, KON, LVY, SDH.
(Acid Blue 93), C.I. 42 780	LVR.
(Acid Blue 104), C.I. 42 735	CPC, KCW.
Brown lakes	HAM, KON.
Black lakes:	
(Natural Black 3), C.I. 75 291	CPC, KON.
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, 1967*

[Medicinal chemicals for which separate statistics are given in table 13A 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.
*Penicillin G, potassium	LIL, MRK, OMS, PFZ, WYT.
*Other antibiotics for medicinal use:	
Cephaloridine	LIL.
Cephalothin	LIL.
Chloramphenicol	PD.
Erythromycin	ABB, LIL.
Fumagillin	ABB.
Gentamycin	SCH.
Gramicidin	PEN.
Kanamycin	BRS.
Lincomycin	x.
Neomycin	OMS, PEN, PFZ, UPJ.
Novobiocin	MRK, UPJ.
Oleandomycin	PFZ.
Paromomycin	MRK.
Penicillins:	
Ampicillin	BRS, WYT.
Cloxacillin, sodium	BRS.
Dicloxacillin, sodium	BRS.
Hetacillin	BRS.
Methicillin, sodium	BRS.
Nafcillin, sodium	WYT.
Oxacillin, sodium	BRS.
Penicillin G, benzathine	WYT.
Penicillin G, procaine	LIL, MRK, OMS, PRZ, WYT.
Penicillin G, sodium	OMS.
Phenethicillin	PFZ.
Phenethicillin, potassium	BRS.
Phenoxymethylpenicillin (Penicillin V)	LIL.
Phenoxymethylpenicillin, benzathine	WYT.
Phenoxymethylpenicillin, hydrabamine	ABB.
Phenoxymethylpenicillin, potassium	ABB, LIL.
Polymyxin B	PFZ.
Spectinomycin	ABB.
Tetracyclines:	
Chlortetracycline	ACY, RLS.
Demethylchlortetracycline	ACY.
Doxycycline	PFZ.
Methacycline	PFZ.
Oxytetracycline	PFZ.
Tetracycline	ACY, BRS, PFZ, RLS.
Thiostrepton	OMS.
Troleandomycin	PFZ.
Tyrothricin	PEN.
Vancomycin	LIL.
*For other uses:	
*Bacitracin	COM, DLI, GPR, PEN, PMP.
Chlortetracycline	ACY.
Cycloheximide	UPJ.
Hygromycin B	LIL.
Neomycin	PEN, PFZ.
Novobiocin	UPJ.

TABLE 13B.--*Medicinal chemicals for which U.S. production or sales were reported, identified by manufacturer, 1967*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
*Antibiotics--Continued	
*For other uses--Continued	
Oxytetracycline	PFZ.
Penicillin G, benzathine	WYT.
Penicillin G, procaine	LIL, MRK, OMS.
Streptomycin	LIL, MRK, PFZ.
Tylosin	LIL.
*Anticoagulants:	
Ammonium heparin	ABB, WIL.
Anisindione	SCH.
Bishydroxycoumarin	ABB, FIN.
Phenindione	GAN.
*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.
Carbinoxamine D-tartrate	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	GAN, PD, RLS.
Doxylamine succinate	BKC.
Methapyrilene fumarate	ABB.
Methapyrilene hydrochloride	ABB.
Methapyrilene hybenzate	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, RLS.
Triprolidine hydrochloride	BUR.
*Anti-infective agents (except antibiotics):	
*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.
Roxarsone sodium	SAL.
Sodium arsanilate[1]	PYL, SAL.
*Caprylates and undecylenates:	
Calcium undecylenate	WIL.
Sodium caprylate	CFC, LEM.
Sodium undecylenate	BAC.
Undecylenic acid	BAC.
Zinc undecylenate	BAC, CFC, LEM, WIL.
*Mercury compounds:	
Merbromin	HYN.
Mercuric salicylate	MRK.
Nitromersol	ABB.

See footnotes at end of table.

TABLE 13B.--*Medicinal chemicals for which U.S. production or sales were reported, identified by manufacturer, 1967*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
*Anti-infective agents (except antibiotics)—Continued	
*Mercury compounds—Continued	
Phenylmercuric acetate	WRC.
Phenylmercuric benzoate	MRK, WRC.
Phenylmercuric borate	MRK, WRC.
Phenylmercuric chloride	MRK.
Phenylmercuric nitrate	MRK, WRC.
*Thimerosal	LIL, MED, PYL, SEL.
*Phenolic antiseptics and disinfectants:	
Betanaphthol[1]	ACY, FIN.
Bithionol	SDH.
Chlorothymol	OPC.
Resorcinol[1]	LEM.
Resorcinol monoacetate[1]	KPT.
Thymol	GIV.
Thymol iodide	MAL.
*Piperazine base and salts:	
*Piperazine[1]	DOW, FLM, JCC, UCC.
Piperazine adipate	JCC, PYL.
Piperazine citrate	BUR, JCC.
Piperazine dihydrochloride	DOW, FLM, JCC, SEL, WHL.
Piperazine dithiocarbamate	SEL.
Piperazine hexahydrate	JCC.
Piperazine hydrochloride	DOW, JCC.
Piperazine phosphate	BUR, JCC, PYL.
Piperazine sulfate	JCC.
Piperazine tartrate	PYL, SEL.
*Quinoline derivatives:	
Amodiaquin	PD.
Amodiaquin hydrochloride	PD.
Buquinolate	UOP.
Chloroquine phosphate	SDW.
*Diiodohydroxyquin	LEM, PYL, RSA, SRL.
Hydroxychloroquine sulfate	SDW.
8-Hydroxy-5-quinolinesulfonic acid	MRK.
Iodochlorhydroxyquin	CBP, PYL.
Oxolinic acid	NEP.
Oxyquinoline	LEM, MRK.
Oxyquinoline benzoate	FIS, LEM, MRK.
Oxyquinoline citrate	FIS.
*Oxyquinoline sulfate	FIS, LEM, MRK, PYL.
Primaquine phosphate	PD, SDW.
*Sulfonamides:	
Acetyl sulfamethoxypyridazine	ACY.
Acetyl sulfisoxazole	HOF.
Azosulfamide	SDW.
Dinsed	SAL.
Mafenide acetate	SDW.
Mafenide hydrochloride	SDW.
Phthalylsulfacetamide	LEM, PYL.
Phthalylsulfathiazole	LEM, MRK, PYL.
Succinylsulfathiazole	LEM, MRK.
Sulfabenzamide	ACY.
Sulfabenzamide, sodium	ACY.
Sulfabromomethazine, sodium	MRK.
Sulfacetamide	LEM.
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.
Sulfamethazine, sodium	ACY.
Sulfamethizole	ACY.
Sulfamethoxazole	HOF.
Sulfamethoxypyridazine	ACY.

See footnotes at end of table.

TABLE 13B. --*Medicinal chemicals for which U.S. production or sales were reported, identified by manufacturer, 1967*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
*Anti-infective agents (except antibiotics)--Continued	
*Sulfonamides--Continued	
Sulfanilamide	MRK.
Sulfanilanilide	LEM.
Sulfanitran	SAL.
Sulfapyridine	ACY, MRK.
Sulfapyridine, sodium	ACY.
Sulfaquinoxaline	MRK.
Sulfathiazole	ACY, LEM, MRK.
Sulfathiazole, sodium	ACY, MRK.
Sulfisoxazole	HOF.
Sulfisoxazole, sodium	HOF.
*Other anti-infective agents:	
*Anthelmintic and antifungal agents:	
Anthelmintic agents:	
Cadmium anthranilate	MAL.
Diethylcarbamazine citrate	ACY.
Gentian violet	ACS, SDH.
Hexylresorcinol	HEX, MRK.
Phenothiazine	CLV.
Pyrvinium pamoate	x.
Thiabendazole	MRK.
Antifungal agents:	
Benzoic acid[1]	MON, PFZ.
Fuchsin, basic	ACS.
Salicylanilide[2]	LEM.
*Antiprotozoan and antiviral agents:	
Antiprotozoan agents:	
Aklomide	SAL.
Aminitrozole	ACY.
2-Amino-5-nitrothiazole	ACY.
Amprolium	MRK.
Chlorbetamide	SDW.
Cycloguanil pamoate	PD.
Furazolidone	NOR.
Metronidazole	RDA.
Nihydrazone	NOR.
Nithiazide	MRK.
Nitrophenide	ACY.
Pyrimethamine	BUR.
Antiviral agent: Amantadine hydrochloride	x.
*Urinary antiseptics:	
Ammonium benzoate	PEN.
Calcium mandelate	MAL.
Ethoxazene hydrochloride	KON.
Mandelic acid	MAL.
Methenamine	HN.
Methenamine hippurate	RIK.
Methenamine mandelate	ARN, LEM, NEP, PYL, RSA.
Methylene blue	ACS, ACY.
Nitrofurantoin	NOR.
Phenazopyridine hydrochloride	HOF, KON, NEP.
*All other:	
Acriflavine	ACS.
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.
Benzalkonium chloride	SDH.
Bromoform	DOW.
Camphor, monobromated	MAL, PEN.
Cetalkonium chloride	FIN, SDW.
Cetylpyridinium chloride	FIN, HEX, NEP.

See footnotes at end of table.

TABLE 13B.--*Medicinal chemicals for which U.S. production or sales were reported, identified by manufacturer, 1967*--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	
Chloramine T	MON.
Chlorobutanol	BPC, PD.
Iodoform[2]	MAL, PEN.
Nalidixic acid	SDH.
Nifuraldezone	NOR.
Nitrofurathiazide	SCH.
Nitrofurazone	NOR.
Nitromide	SAL.
Povidone - iodine complex	GAF.
*Antineoplastic agents and local anesthetics:	
Antineoplastic agents:	
Mercaptopurine	BUR.
Urethane	FMP.
Vinblastine sulfate	LIL.
Local anesthetics:	
Butacaine	ABB.
Butacaine hydrochloride	ABB.
Butacaine sulfate	ABB.
Butamben picrate	ABB.
Butyl aminobenzoate (Butamben)	ABB, ICO.
Dibucaine	CBP.
Dibucaine hydrochloride	CBP, RSA.
Ethyl aminobenzoate (Benzocaine)	ABB, LEM.
Isobutyl aminobenzoate	ICO.
*Lidocaine	AST, LEM, RLS, SDW.
Oxethazine	WYT.
Phenacaine hydrochloride	GAN, SDW.
Piperocaine hydrochloride	LIL.
Pramoxine hydrochloride	ABB.
Procaine	ABB.
Procaine hydrochloride	ABB, LEM, PFZ.
Proparacaine hydrochloride	OMS.
Propoxycaine	SDW.
Tetracaine	SDW.
Tetracaine hydrochloride	RSA, SDW.
*Autonomic drugs:	
*Parasympatholytic (anticholinergic) agents (except tropane derivatives):	
*Quaternary ammonium compounds:	
Ambutonium bromide	ICO.
Diphemanil methylsulfate	SCH.
Hexocyclium methylsulfate	ABB.
Isopropamide iodide	SK.
Mepenzolate bromide	LKL.
Methantheline bromide	SRL.
Pipenzolate bromide	LKL.
Pralidoxime chloride	NEP.
Propantheline bromide	SRL.
Thihexinol methylbromide	SCH.
Tridihexethyl iodide	ACY.
*Tertiary amines:	
Adiphenine hydrochloride	CBP.
Caramiphen edisylate	SK.
Dicyclomine hydrochloride	BJL, BKC.
Orphenadrine citrate	RIK.
Orphenadrine hydrochloride	RIK.
Oxyphencyclimine hydrochloride	PFZ.
Piperidolate hydrochloride	LKL.
Thiphenamil hydrochloride	BJL, x.
Trihexyphenidyl hydrochloride	ACY, SDW.
*Sympathomimetic (adrenergic) agents:	
dl-Arterenal hydrochloride	SDW.
Cinnamedrine hydrochloride (Cinnamylephedrine hydrochloride).	SDW.
Cyclopentamine hydrochloride	LIL.
Epinephrine bitartrate (levo)	SDW.

See footnotes at end of table.

TABLE 13B.--*Medicinal chemicals for which U.S. production or sales were reported, identified by manufacturer, 1967*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
*Autonomic drugs--Continued	
*Sympathomimetic (adrenergic) agents--Continued	
*Isoproterenol salts:	
Isoproterenol hydrochloride	GAN, SDW.
Isoproterenol sulfate	ABB.
Levarterenol bitartrate	SDW.
dl-Metanephrine hydrochloride	SDW.
Methoxyphenamine hydrochloride	x.
Naphazoline hydrochloride	CBP.
Nordefrin hydrochloride	SDW.
dl-Normetanephrine hydrochloride	SDW.
Nylidrin hydrochloride	BKL.
Phenylephrine	GAN, SDW.
Phenylephrine hydrochloride	CTN, GAN, HEX, ORT, SDW.
*Phenylpropanolamine hydrochloride	BKL, GAN, ICO, NEP, ORT.
Propylhexedrine	HEX, SK.
Protokylol hydrochloride	LKL.
Pseudoephedrine hydrochloride	BUR, GAN.
Pseudoephedrine sulfate	GAN.
Tetrahydrozoline hydrochloride	PFZ.
*Other autonomic drugs:	
Ganglionic blocking agent: Hexemethonium chloride.	RSA.
Parasympatholytic (anticholinergic) tropane derivatives:	
Anisotropine methylbromide	EN, x.
Benztropine mesylate	x.
Homatropine	CTN.
Homatropine hydrobromide	CTN.
Homatropine methylbromide	CTN, 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.
*Cardiovascular agents:	
*Cardiac drugs:	
Calcium camphorsulfonate	FIN.
Gitalin	PEN.
Procainamide hydrochloride	LEM, OMS.
Quinidine gluconate	HEX.
Quinidine sulfate	HEX.
*Rauwolfia and veratrum alkaloids:	
Alkavervir	PEN, RIK.
Alseroxylon	RIK.
Reserpine	PEN.
Raunormine	PEN.
Syrosingopine	CBP.
*Vasodilators:	
Dioxyline phosphate	LIL.
Ethyl nitrite	MAL.
Glyceryl trinitrate	APD.
Isosorbide dinitrate	APD.
Mannitol hexanitrate	APD.
Nicotinyl alcohol tartrate	HOF.
Pentaerythritol tetranitrate	APD.
*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.
Sclerosing agent: Sodium morrhuate	MED.

TABLE 13B.--*Medicinal chemicals for which U.S. production or sales were reported, identified by manufacturer, 1967*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
*Central depressants and stimulants:	
*Amphetamines:	
*Amphetamine base and sulfate (racemic):	
Amphetamine (racemic)	HEX, ORT.
Amphetamine sulfate (racemic)	ARN, HEX, SK.
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 (dextro)	HEX.
Methamphetamine (levo)	ABB.
Methamphetamine (racemic)	HEX.
Methamphetamine hydrochloride (dextro)	ABB, ARN, GAN, HEX.
Methamphetamine hydrochloride (racemic)	ARN, HEX.
*Analgesics and antipyretics:	
Acetaminophen	ATP, MLS, NEP, PEN.
p-Aminobenzoic acid and salts:	
Aminobenzoic acid	LEM.
Calcium aminobenzoate	GAN.
Magnesium aminobenzoate	LEM.
Potassium aminobenzoate	GAN, LEM.
Sodium aminobenzoate	GAN, LEM.
Anileridine hydrochloride	MRK.
Calcium succinate	LEM.
Colchicine	PEN.
Ethoheptazine citrate	WYT.
Indomethacin	MRK.
Mefenamic acid	PD.
Meperidine hydrochloride	SDW, WYT.
Methadone hydrochloride	LIL.
Oxycodone hydrochloride	EN.
Oxymorphone hydrochloride	EN.
Oxyphenbutazone	GGY.
Pentazocine	SDW.
Phenacetin	MON.
Phenylbutazone	GGY.
Phenyramidol hydrochloride	OTC.
Propoxyphene hydrochloride	LIL.
*Salicylates:	
Aluminum aspirin	ABB, SCH.
*Aspirin	DOW, MLS, MON, NOR, SDG.
Ethyl salicylate carbonate	PD.
Magnesium salicylate	MAL.
Phenyl salicylate	DOW, MAL.
Potassium salicylate	HN, PEN.
Salicylamide	CFC, PEN.
Salicylsalicylic acid	CFC.
Sodium salicylate	DOW, HN.
Strontium salicylate	HFC.
*Antidepressants:	
Amitriptyline	MRK.
Desipramine hydrochloride	GGY, LKL.
Imipramine hydrochloride	GGY.
Nialamide	PFZ.
Nortriptyline	LIL.
Phenelzine sulfate	NEP.
Protriptyline	MRK.
*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.
Cyclobarbital	SDW.
Cyclobarbital, calcium	SDW.

TABLE 13B.--*Medicinal chemicals for which U.S. production or sales were reported, identified by manufacturer, 1967*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
*Central depressants and stimulants--Continued	
*Barbiturates--Continued	
Hexobarbital	GAN, SDW.
Hexobarbital, sodium	SDW.
Mephobarbital	SDW.
Metharbital	ABB.
Methohexital, sodium	LIL.
Pentobarbital	ABB, GAN.
Pentobarbital, sodium	ABB, GAN, PD.
Phenobarbital	GAN, MAL.
*Phenobarbital, sodium	GAN, MAL, SDW.
Secobarbital	GAN.
Secobarbital, sodium	GAN, LIL.
Talbutal	SDW.
Thiamylal, sodium	PD.
Thiopental, sodium	ABB.
Vinbarbital	x.
*Hypnotics and sedatives (except barbiturates):	
Carbromal	PD.
Ethchlorvynol	ABB.
Ethinamate	LIL.
Glutethimide	CBP.
Mecloqualone	NEP.
Methyprylon	HOF.
*Skeletal muscle relaxants:	
Carisoprodol	BKL.
Chlorphenesin carbamate	UPJ.
Mephenesin	BKL, HEX.
Mephenesin carbamate	OMS.
Phenaglycodol	LIL.
Styramate	ARP.
*Succinylcholine chloride	ABB, BUR, SDW.
Tubocurarine	ABB, OMS.
*Tranquilizers:	
Azacyclonol hydrochloride	BKC.
Buclizine hydrochloride	PFZ.
Chlordiazepoxide hydrochloride	HOF.
Chlormezanone	SDW.
Chlorprothixene	HOF.
Diazepam	HOF.
Ectylurea	x.
Hydroxyphenamate	ARP.
Hydroxyzine hydrochloride	PFZ.
Hydroxyzine pamoate	PFZ.
Mebutamate	BKL.
*Meprobamate	ABB, BKL, PEN.
Methaqualone	HEX.
Oxazepam	WYT.
Phenothiazine derivatives:	
Acetophenazine maleate	SCH.
Carphenazine maleate	WYT.
Chlorpromazine hydrochloride	SK.
Fluphenazine enanthate	OMS.
Fluphenazine hydrochloride	OMS, SCH.
Perphenazine	SCH.
Prochlorperazine maleate	SK.
Promazine hydrochloride	WYT.
Promethazine hydrochloride	WYT.
Trifluoperazine hydrochloride	SK.
Triflupromazine hydrochloride	OMS.
Tybamate	BKL.
*Other central depressants and stimulants:	
Anticonvulsants:	
Diphenylhydantoin	PD.
Diphenylhydantoin, sodium	PD.
Ethosuximide	PD.
Ethotoin	ABB.
Methsuximide	PD.
Paramethadione	ABB.
Phenacemide	ABB.
Phensuximide	PD.

TABLE 13B.--*Medicinal chemicals for which U.S. production or sales were reported, identified by manufacturer, 1967*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
*Central depressants and stimulants--Continued	
*Other central depressants and stimulants--Continued	
Antitussives:	
Benzonatate	CBP.
Carbetapentane citrate	PFZ.
Dextromethorphan hydrobromide	HOF.
Dimethoxanate hydrochloride	BKL.
Ethylmorphine hydrochloride	MAL, MRK, PEN.
Hydrocodone bitartrate	EN, MAL, MRK.
General anesthetics:	
Tribromoethanol	SDW.
Vinyl ether	MRK.
Stimulants:	
Benzphetamine hydrochloride	x.
Caffeine:	
Natural	GNF, MYW.
Synthetic	PFZ.
Caffeine, citrated	MAL.
Caffeine sodium benzoate	MAL.
Chlorphentermine hydrochloride	NEP.
Deanol acetamidobenzoate	RIK.
Diethylpropion hydrochloride	BKC, GAN.
Nikethamide	CBP.
Phendimetrazine tartrate	x.
Phentermine	HEX.
Sodium succinate	LEM.
*Dermatological agents:	
Allantoin	FIN, HFT.
Aluminum phenolsulfonate	MAL.
Ammonium phenolsulfonate	SAL.
*Bismuth subgallate	BKC, MAL, PEN.
Dipropylene glycol salicylate	SBC.
Glycol salicylate	RDA.
Homomenthyl salicylate	ICO.
p-Methoxycinnamic acid, 2-ethoxyethyl ester	GIV.
*Salicylic acid[1]	DOW, HN, MON, SDH.
Scarlet red	ACS.
Sodium phenolsulfonate	MAL, SAL.
Zinc phenolsulfonate	MAL.
*Expectorants and mucolytic agents:	
Ethylenediamine dihydriodide	CLV, WHL.
*Guaiacol and its derivatives:	
Glyceryl guaiacolate	GAN, PEN.
Guaiacol	MON.
Potassium guaiacolsulfonate	HN.
Iodinated glycerol	x, x.
Iodobrassid	CBP.
Lobeline sulfate	ABB.
Terpin hydrate	LEM, PEN.
Thonzonium bromide	NEP.
*Gastrointestinal agents:	
*Betaine base, hydrate, and hydrochloride:	
Betaine base	HFT, MAL.
Betaine hydrate	HFT.
Betaine hydrochloride	CFC, HFT, LEM.
*Choleretics and hydrocholeretics:	
Bile acids, oxidized	SRL, WIL.
Dehydrocholic acid	WIL.
Florantyrone	SRL.
Iron bile salts	LIL.
Ox bile extract	ABB.
Sodium dehydrocholate	WIL.
Tocamphyl	x.
*Choline chloride (all grades):	
Feed grade	COM, DA, DLI, HFT, TMH.
Medicinal grade	HFT.
Technical grade	GAF, RH.
*Methionine and its hydroxy analogue:	
Methionine (feed grade)	DOW.
Methionine (medicinal grade)	DOW, LEM.

See footnotes at end of table.

TABLE 13B.--*Medicinal chemicals for which U.S. production or sales were reported, identified by manufacturer, 1967*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
*Gastrointestinal agents--Continued	
*Methionine and its hydroxy analogue--Continued	
Methionine, hydroxy analogue, calcium salt	DUP, MON.
*Other gastrointestinal agents:	
Choline bicarbonate	COM.
Choline bitartrate	ACY, HFT.
Choline citrate (Tricholine citrate)	ACY, HFT.
Choline dihydrogen citrate	ACY, HFT.
Dihydroxy aluminum aminoacetate	CHT.
Magnesium citrate	MAL.
Pectin	SKG.
Phenolphthalein	MON.
Phenolphthalein, yellow	WLI.
Podophyllum	ABB.
Polycarbophil	WLI.
Sitosterols	UPJ.
Sodium carboxymethylcellulose	CBP.
Sodium tartrate	MAL.
*Hormones and synthetic substitutes:	
Anabolic agents and androgens:	
Fluoxymesterone	UPJ.
Testosterone cypionate	UPJ.
Testosterone phenylacetate	CBP.
Antithyroid agents:	
Iothiouracil, sodium	CBP.
Methimazole	LIL.
Thiouracil	ACY.
Corticosteroids:	
Betamethasone	SCH.
Betamethasone acetate	SCH.
Betamethasone phosphate	SCH.
Betamethasone valerate	SCH.
Cortisone	UPJ.
Cortisone acetate	MRK, SCH, UPJ.
Dexamethasone	MRK, SCH.
Dexamethasone acetate	SCH.
Dexamethasone phosphate	MRK.
Dichlorisone acetate	SCH.
Fludrocortisone acetate	UPJ.
Fluorometholone	UPJ.
9-Fluoroprednisolone acetate	UPJ.
Fluprednisolone	UPJ.
Hydrocortisone	MRK, UPJ.
Hydrocortisone acetate	MRK, UPJ.
Hydrocortisone phosphate	MRK.
Methylprednisolone	UPJ.
Prednisolone	MRK, UPJ.
Prednisolone acetate	SCH, UPJ.
Presdnisolone pivalate	CBP.
Prednisone	MRK, SCH, UPJ.
Triamcinolone	ACY, OMS.
Estrogens:	
Chlorotrianisene	BKC.
Dienestrol diacetate	SCH.
Diethylstilbestrol	CTN, LIL.
Diethylstilbestrol dipropionate	CTN.
Natural estrogenic substances	ORG.
Piperazine estrone sulfate	ABB.
Progestogens:	
11β-Hydroxy-6α-methyl progesterone	UPJ.
Medroxyprogesterone acetate	x.
Progesterone	x.
*Synthetic hypoglycemic agents:	
Acetohexamide	LIL.
Chlorpropamide	PFZ.
Phenformin hydrochloride	BKL.
Tolazamide	x.
Tolbutamide	HST, x.
*Other hormones:	
Corticotropin (ACTH) (pituitary)	ARP, ORG, WIL.
Insulin (pancreas)	ARP, LIL.

TABLE 13B.--*Medicinal chemicals for which U.S. production or sales were reported, identified by manufacturer, 1967*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
*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, LEM.
*Aminophylline	GAN, LEM, SRL.
Aminophylline sodium biphosphate	GAN.
Oxtriphylline	NEP.
Theobromine sodium salicylate	GLY.
Theophylline monoethanolamine	LIL.
Theophylline sodium glycinate	CHT.
*Other renal-acting and edema-reducing agents:	
Acetazolamide	ACY.
Benzothiadiazine derivatives:	
Bendroflumethiazide	OMS.
Benzthiazide	PFZ.
Chlorothiazide	MRK.
Flumethiazide	OMS.
Hydrochlorothiazide	ABB, CBP, MRK.
Methyclothiazide	ABB.
Polythiazide	PFZ.
Trichlormethiazide	SCH.
Chlorthalidone	GGY.
Dichlorphenamide	MRK.
Ethacrynic acid	MRK.
Probenecid	MRK.
Spironolactone	SRL.
Triamterene	SK.
*Therapeutic nutrients:	
*Amino acids and salts:	
Aminoacetic acid (glycine)[2]	BPC.
Amino acid mixtures	ABB, CUT, STA.
Arginine glutamate	ABB.
Aspartic acid and salts:	
Aspartic acid	ACS, HEX.
Magnesium aspartate	WYT.
Potassium aspartate	WYT.
Beta-alanine	DA.
Glutamic acid and salts:	
Ammonium glutamate	IMC.
Calcium glutamate	LEM.
Glutamic acid	IMC, LEM.
Glutamic acid hydrochloride	IMC, LEM.
Potassium glutamate	IMC, LEM.
Lysine (feed grade)	MRK.
Lysine hydrochloride	MRK.
Phenylalanine	SDW.
*Calcium gluconate	MAL, PFZ, WHL.
*Other therapeutic nutrients:	
Calcium glucoheptonate	PFN.
Calcium lactophosphate	MAL.
Calcium levulinate	PYL.
Calcium phytate	STA.
Copper gluconate	PFZ.
Ferrous gluconate	PFZ, SDW.
Fructose	DLI.
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.

See footnotes at end of table.

TABLE 13B.--*Medicinal chemicals for which U.S. production or sales were reported, identified by manufacturer, 1967*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
*Vitamins—Continued	
*Vitamin A alcohol and esters--Continued	
Vitamin A natural esters	CW.
*Vitamin A palmitate (feed grade)	EK, HOF, PFZ.
Vitamin A palmitate (medicinal grade)	EK, HOF, PFZ.
*Vitamin B-complex:	
*Niacin:	
Feed grade	CKL, MRK, NEP, RIL.
Medicinal grade	DA, MRK, RIL, SCR.
*Niacinamide	MRK, NEP, PD, RIL, SCR.
*Pantothenic acid and derivatives:	
Calcium pantothenate (dextro)	x.
*Calcium pantothenate (racemic) (feed grade)	CKL, DA, DLI, HFT.
Calcium pantothenate (racemic) (medicinal grade).	DA.
Calcium pantothenate (racemic) - calcium chloride complex.	CKL, DA, HFT.
Dexpanthenol	HOF.
Panthenol (racemic)	HOF, PD.
Sodium pantothenate	PD.
*Riboflavin:	
Feed grade	COM, GPR, HOF, MRK, PMP.
Medicinal grade	HOF, MRK.
*Other B-complex vitamins:	
Biotin	HOF.
Cyanocobalamin:	
Feed grade	GPR, MRK, PMP.
Medicinal grade	IMC, MRK.
U.S.P. crystalline	MRK.
Cyanocobalamin with intrinsic factor concentrate	WIL.
Folic acid	ACY.
Inositol	STA.
Magnesium nicotinate	NEP.
Niacinamide hydrochloride	NEP.
Pyridoxine hydrochloride	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,
Calcium ascorbate	PFZ.
Sodium ascorbate	HOF, MRK, PFZ.
*Vitamin D_2 (Ergocalciferol)	DLI, PHF, SCR, VTM,
*Vitamin E:	
d-Alpha tocopherol	CW, EK.
dl-Alpha tocopherol	HOF.
d-Alpha tocopheryl acetate	CW, EK.
dl-Alpha tocopheryl acetate	HOF.
dl-Alpha tocopheryl acetate (feed 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, DLI, HET, HFT, WHL.
*Other vitamins:	
Beta-carotene (Provitamin A)	EK, HOF.
Cholecalciferol (Vitamin D_3)	DA, DLI, PHF.
Phytonadione (Vitamin K_1)	MRK.
*Miscellaneous medicinal chemicals:	
Diagnostic agents:	
Roentgenographic contrast media:	
Acetrizoate, sodium	MAL.
Diatrizoate, meglumine	SDW.
Diatrizoate, sodium	SDW.
Diprotrizoate, sodium	MAL.
Iodohippurate, sodium	MAL.
Iodopyracet	SDW.
Iopanoic acid	SDW.
Iophendylate	x.
Iothalamate, meglumine	MAL.

TABLE 13B.--*Medicinal chemicals for which U.S. production or sales were reported, identified by manufacturer, 1967*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
*Miscellaneous medicinal chemicals--Continued	
Diagnostic agents--Continued	
Roentgenographic contrast media--Continued	
Iothalamate, sodium	MAL.
Methiodal, sodium	SDW.
Other diagnostic agents:	
Evans blue (Blood volume determination)	NEP.
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:	
Allopurinol	BUR.
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, 1967*

[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	GIV, UOP.
Acetophenone	GIV.
5-Acetyl-1,1,2,3,3,6-hexamethylindan	PFW.
p-Allylanisole	GIV.
4-Allyl-1,2-dimethoxybenzene (4-Allylveratrole)	GIV, ICO.
*4-Allyl-2-methoxyphenol (Eugenol)	FB, GIV, ICO, IFF, LUE, PEN, RT, UNG, UOP, VLY.
4-Allyl-2-methoxyphenol acetate (Eugenyl acetate)	GIV.
*4-Allyl-1,2-(methylenedioxy)-benzene (Safrole)	FB, GIV, OPC.
Allyl phenoxyacetate	GIV.
*p-Anisaldehyde	GIV, OPC, UNG, UOP.
Anisole (Methyl phenyl ether)	GIV.
*Anisyl acetate	GIV, RT, UOP.
Anisyl butyrate	RT.
Anisyl formate	RT.
Other anisyl esters	RT.
*Benzophenone	GAF, GIV, NEO, PD, UOP.
*Benzyl acetate	GIV, OPC, SHL, UOP.
Benzly acetoacetate	RT.
*Benzyl alcohol	BPC, OPC, SHL, UOP, VEL.
Benzyl benzoate	MON, OPC, PFZ, UOP, VEL.
*Benzyl butyrate	FB, GIV, UOP.
Benzyl cinnamate	GIV, UOP.
Benzyl ether	OPC, SHL.
Benzyl formate	GIV, RT, UOP.
*Benzyl glyceryl acetal	GIV, RT, VLY.
Benzyl isopentyl ether	GIV.
1-(Benzyloxy)-2-methoxy-4-propenylbenzene (Benzyl isoeugenyl ether).	GIV, UOP.
*Benzyl phenylacetate	GIV, MYW, RT, UOP.
*Benzyl propionate	FB, GIV, UOP.
*Benzyl salicylate	GIV, OPC, RT, UNG, UOP.
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-methyl hydrocinnamaldehyde	GIV.
1-tert-Butyl-3,4,5-trimethyl-2,6-dinitrobenzene	GIV.
5-tert-Butyl-2,4,6-trinitro-m-xylene (Musk xylol)	GIV.
Carvacrol	GIV.
Cinnamaldehyde	FB, OPC, UOP.
Cinnamic acid	BPC.
*Cinnamyl acetate	GIV, RT, UOP.
*Cinnamyl alcohol	FB, GIV, NEO, UOP.
*Cinnamyl anthranilate	FEL, GIV, RT.
*Cinnamyl propionate	GIV, RT, UOP.
*Coumarin	DOW, RDA, UOP.
Dihydronordicyclopentadienyl acetate	GIV.
p-Dimethoxybenzene (Dimethylhydroquinone)	ICO.
1,2-Dimethoxy-4-propenylbenzene (4-Propenylveratrole)	GIV, ICO.
p-α-Dimethylbenzyl alcohol	GIV, UOP.
3,7-Dimethyl-1,6-octadien-3-yl benzoate (Linalyl benzoate)	HOF.
3,7-Dimethyl-2,6-octadienylphenylacetate (Geranyl phenylacetate).	GIV.
α,α-Dimethylphenethyl acetate	GIV, IFF.
α,α-Dimethylphenethyl alcohol	GIV, IFF.
Diphenylmethane (Benzylbenzene)	ARA.
1,3-Diphenyl-2-propanone (Dibenzyl ketone)	GIV.
6-Ethoxy-m-anol (Propenylguaethol)	ICO, SHL.
3-Ethoxy-4-hydroxybenzaldehyde (Ethylvanillin)	MON, RDA.
2-Ethoxynaphthalene	GIV, UOP.

TABLE 14B. *--Flavor and perfume materials for which U.S. production or sales were reported, identified by manufacturer, 1967*--Continued

Material	Manufacturers' identification codes (according to list in table 22)
FLAVOR AND PERFUME MATERIALS, CYCLIC--Continued	
Benzenoid and Naphthalenoid--Continued	
Ethyl anisate (Ethyl p-methoxybenzoate)	ICO.
Ethyl anthranilate	FB.
Ethyl cinnamate	GIV, UOP.
Ethyl α,β-epoxy-β-methylhydrocinnamate	GIV, PFW, RT.
2-Ethylhexyl salicylate	FEL, ICO.
*Ethyl phenylglycidate	GIV, RT, UOP.
Ethyl salicylate	FB, UOP.
3'-Ethyl-5',6',7',8'-tetrahydro-5',5',8',8',-tetramethyl-2'-acetonaphthone.	GIV, UOP.
α-Hexylcinnamaldehyde	GIV, IFF, UOP.
Hydratropaldehyde	GIV, IFF, UOP.
*Hydratropaldehyde, dimethyl acetal	GIV, IFF, RT, UOP.
*Hydrocoumarin	GIV, ICO, UOP.
Hydroxycitronellalmethyl anthranilate	GIV.
Indole	GIV.
Isoamyl phenylacetate	GIV.
Isobutyl cinnamate	RT.
*Isobutyl phenylacetate	FB, GIV, OPC, RT, UOP.
2-Isobutylquinoline	FMT.
*Isobutyl salicylate	FB, GIV, UOP.
*Isopentyl salicylate	FB, GIV, OPC, UOP.
p-Isopropylbenzaldehyde (Cumaldehyde)	GIV.
p-Isopropylbenzyl alcohol	GIV.
p-Isopropyl-α-methylhydrocinnamaldehyde(Cyclamen aldehyde)	GIV, RDA.
6-Isopropylquinoline	FMT.
p-Mentha-1, 8-diene (Limonene)	RT, SKG.
Menthyl anthranilate	PFW.
*4'-Methoxyacetophenone (Acetanisole)	GIV, ICO, OPC, UOP.
p-Methoxybenzyl alcohol (Anisyl alcohol)	GIV, UOP.
o-Methoxycinnamaldehyde	x.
2-Methoxynaphthalene	GIV, UOP, VLY.
1-(p-Methoxyphenyl)-1-pentene-3-one	GIV.
*2-Methoxy-4-propenylphenol (Isoeugenol)	GIV, SHL, UOP, VLY.
4'-Methylacetophenone	UOP.
Methyl anisate (Methyl p-methoxybenzoate)	ICO.
p-Methylanisole	GIV, UOP.
*Methyl anthranilate	FB, GIV, MEE, OPC, SHL, UNG.
Methyl anthranilydene-p-isopropylmethyl hydrocinnamaldehyde.	RDA.
Methyl benzoate	HN, VLY.
*α-Methylbenzyl acetate (Styralyl acetate)	GIV, UNG, UOP.
*α-Methylcinnamaldehyde	FB, GIV, UOP, VLY.
Methyl cinnamate	FB, ICO, UOP.
6-Methylcoumarin	GIV.
1,2-(Methylenedioxy)-4-propenylbenzene (Isosafrole)	GIV.
p-Methylhydratropaldehyde	GIV.
Methyl N-methylanthranilate	GIV, OPC.
Methyl phenylacetate	GIV, UOP.
*Methyl salicylate	CFC, DOW, HN, MON, PEN.
1,1,3,3,5-Pentamethyl-4,6-dinitroindan	GIV.
*α-Pentylcinnamaldehyde	GIV, IFF, RDA, UOP, VLY.
*Phenethyl acetate	GIV, IFF, NEO.
Phenethylacetoacetate	RT.
Phenethyl alcohol	IFF.
Phenethyl benzoate	IFF.
Phenethyl butyrate	GIV.
Phenethyl formate	IFF, RT, UOP.
*Phenethyl isobutyrate	GIV, IFF, RT, UOP.
Phenethyl isovalerate	GIV, RT, UOP.
*2-Phenethyl phenylacetate	GIV, IFF, RT, UOP.
Phenethyl propionate	GIV, UOP.
Phenethyl salicylate	GIV, UOP.
*2-Phenoxyethyl isobutyrate	GIV, IFF, UOP.
2-Phenoxyethyl propionate	IFF.
Phenylacetaldehyde	GIV, UOP.
Phenylacetaldehyde, dimethyl acetal	GIV, UOP.
o-Phenylanisole (2-Methoxybiphenyl)	GIV.
4-Phenyl-3-buten-2-one (Methyl styryl ketone)	FB, RT, UOP.

TABLE 14B. --*Flavor and perfume materials for which U.S. production or sales were reported, identified by manufacturer, 1967*--Continued

Material	Manufacturers' identification codes (according to list in table 22)
FLAVOR AND PERFUME MATERIALS, CYCLIC--Continued	
Benzenoid and Naphthalenoid--Continued	
*3-Phenyl-1-propanol (Hydrocinnamic alcohol)	FB, GIV, UOP.
3-Phenylpropyl acetate	GIV, UOP.
3-Phenylpropyl cinnamate	FB.
*Piperonal (Heliotropin)	GIV, SHL, UOP.
*p-Propenylanisole (Anethole)	ARZ, GLD, HNW, HPC, NCI.
p-Propylanisole (Dihydroanethole)	FB, GIV.
α-Propylphenylethyl alcohol	GIV.
*Sweeteners, synthetic:	
Cyclohexanesulfamic acid	ABB.
Cyclohexanesulfamic acid, calcium salt	ABB, DRW, MON, NRS, PBY, PFZ, UNS.
Cyclohexanesulfamic acid, sodium salt	ABB, MON, NRS, PBY, PFZ, UNS.
Saccharin (1,2-Benzisothiazolin-3-one,-1,1-dioxide	MEE, MON.
Saccharin, calcium salt	MEE, MON, PBY.
Saccharin, sodium salt	MEE, MON.
p-Tolualdehyde	GIV, HN.
p-Tolylacetaldehyde	GIV.
*p-Tolyl acetate	FB, GIV, ICO, UOP.
p-Tolyl phenylacetate	GIV.
α-(Trichloromethyl)benzyl acetate (Rosetone)	ICO, UOP.
Vanillin (4-Hydroxy-3-methoxybenzaldehyde)	MON, SLV.
Verdyl propionate	GIV.
Terpenoid, Heterocyclic, and Alicyclic	
Allyl cyclohexyl propionate	GIV.
Amyris acetate	GIV.
Bornyl acetate	FEL.
p-tert-Butylcyclohexanone	DOW, IFF.
p-tert-Butylcyclohexyl acetate	IFF, VLY.
β-Caryophyllene	FB, GIV.
Cedrenol	GIV.
Cedrol	GIV, IFF, UOP.
*Cedryl acetate	GIV, IFF, NEO, UNG, UOP.
2-Cyclohexylcyclohexanone	GIV.
Cyclopentanone	ARA.
Dihydroterpinyl acetate	GIV.
Essential oils, chemically modified:	
Acetyl cedrene	IFF.
Cedarwood acetate	FB.
Clove leaf oil terpenes	SHL.
Clove stem oil, acetylated	FB.
trans-Decahydro-β-naphthol	IFF.
Ethyl oxyhydrate	FEL, FLO, LUE, PFW, RT, VND.
Geranonitrile	IFF.
Guaiacwood acetate	FB, GIV.
4-(4-Hydroxy-4-methylpentyl)-3-cyclohexene-10-carboxaldehyde.	IFF.
Lavandin, acetylated	GIV, UNG.
Myrcenyl acetate	IFF.
Ocimenyl acetate	IFF.
Omega decenol	IFF
Piperonal terpenes	SHL.
Rosemary oil, acetylated	FEL.
Sassafrass oil, hydrogenated	GIV.
Tetrahydro alloocimenol	IFF.
Ethylene brassylate	RDA, VLY.
Ethylene glycol tridecandiote	RDA.
α-Furfural mercaptan	EVN, RT.
2-Heptylcyclopentanone	IFF.
Hexadecen-8-olide (Ambrettolide)	IFF.
16-Hydroxyhexadecanoic acid, o-lactone (Hexadecanolide)	IFF.
2-Hydroxy-3-methyl-2-cyclopenten-1-one (Methyl cyclopentanolone).	DOW, RT.
2-Hydroxy-3-methyl-2-cyclopenten-1-one isovalerate	RT.
3-Hydroxy-2-ethyl-4-pyrone (Ethyl maltol)	PFZ.
3-Hydroxy-2-methyl-4-pyrone (Maltol)	DOW, PFZ.
4-Hydroxynonanoic acid, γ-lactone (γ-Nonalactone)	GIV.

TABLE 14B. --*Flavor and perfume materials for which U.S. production or sales were reported, identified by manufacturer, 1967*--Continued

Material	Manufacturers' identification codes (according to list in table 22)
FLAVOR AND PERFUME MATERIALS, CYCLIC--Continued	
Terpenoid, Heterocyclic, and Alicyclic--Continued	
4-Hydroxyoctanoic acid, γ-lactone (γ-Octalactone)	GIV, RT.
4-Hydroxyundecanoic acid, γ-lactone (γ-Undecalactone)	FB, GIV.
*Ionones:	
α-Ionone	GIV, HOF, IFF, MYW, UOP.
β-Ionone	HOF, MYW, UOP.
Ionone (α- and β-)	GIV, LUE, MYW, UNG, UOP.
Isoborneol	RDA.
*Isobornyl acetate	FB, GIV, OPC, RDA, UNG, UOP.
Isobornyl propionate	GIV.
Isomenthone	GIV, UOP.
2-Isopropylcyclohexanol	GIV.
Menthadiene-7-carbinol	RT.
p-Mentha-6,8-dien-2-ol (Carveol)	FB.
p-Mentha-6,8-dien-2-one (Carvone; Carvol)	FB, FRM, OPC.
*p-Menthan-3-one (Menthone)	GIV, HNW, NEO.
p-Menth-8-en-3-ol (Isopulegol)	GIV.
p-Menth-1-en-8-ol butyrate (Terpinyl butyrate)	RT.
p-Menth-4(8)-en-3-one (Pulegone)	GIV.
1,1-p-Menthen-6-yl-1-propanone	GIV.
*Menthol, synthetic:	
Tech	GIV, NEO.
U.S.P	GIV, GLD, HNW, NEO.
Menthyl acetate	GIV.
*Methylionones:	
6-Methyl-α-ionone	GIV, IFF, MYW.
Methylionone (α- and β-)	GIV, IFF, LUE, MYW, UNG, UOP.
2-(2-Methyl-1-propenyl)-4-methyl-tetrahydropyrane (Rose oxide).	GIV.
Neryl acetate prime	GIV.
Nopyl acetate	RT, SHL, VLY.
Santalol	GIV, IFF.
Santalyl acetate	GIV.
*Terpineols:	
α-Terpineol	GLD, HPC.
β-Terpineol	HNW.
Terpineol (α- and β-)	GIV, NEO.
Terpinol hydrate (terpin hydrate), tech	HPC.
*α-Terpinyl acetate	GIV, IFF, NEO, RDA, UNG, UOP.
α-Terpinyl propionate	GIV, UOP.
3,5,5-Trimethylcyclohexanol (m-Homomenthol)	ICO.
1-(2,6,6-Trimethyl-2-cyclohexen-1-yl)-1,6-heptadien-3-one (Allyl-α-ionone).	GIV, IFF.
4-(2,6-Trimethyl-1-cyclohexen-1-yl)-3-methyl-3-buten-2-one (β-Isomethylionone).	HOF.
Vernaldehyde	GIV.
Vetivenol	GIV, UOP.
*Vetivenyl acetate	FB, GIV, IFF, NEO, UOP.
FLAVOR AND PERFUME MATERIALS, ACYCLIC	
Acetylbutyryl (2,3-Hexanedione)	RT.
Acetylvaleryl (2,3-Heptanedione)	RT.
Allyl cinnamate	RT.
Allyl furoate	RT.
Allyl hexadienoate	RT.
*Allyl hexanoate	FB, GIV, PFW.
Allyl isothiocyanate (Synthetic mustard oil)	MRT.
Allylmercaptan	RT.
Allyl octanoate (Allyl caprylate)	RT.
Allyl sulfide	RT.
Amyl caprylate	VLY.
Amyl propionate	GIV.
Brazinol	RDA.
Butyl butyryl lactate	ICO, RT.

TABLE 14B. --*Flavor and perfume materials for which U.S. production or sales were reported, identified by manufacturer, 1967*--Continued

Material	Manufacturers' identification codes (according to list in table 22)
FLAVOR AND PERFUME MATERIALS, ACYCLIC--Continued	
Butyl 10-undecylenate	GIV.
*Citral (Geranial and Neral)	FB, FEL, GIV, HOF, IFF, LUE, RT, UNG, UOP, VLY.
*Citronellyl acetate	GIV, IFF, UOP, VLY.
Citronellyl butyrate	GIV, UOP.
*Citronellyl formate	GIV, RT, UOP, VLY.
*Citronellyl isobutyrate	GIV, RT, UOP.
Citronellyl propionate	IFF, VLY.
Decanal (Capraldehyde)	GIV, IFF.
Diethyl sebacate	FEL, UOP.
Diethyl succinate	ICO, UCC, UOP.
1,1-Dimethoxy-3,7-dimethyl-2,6-octadiene	VLY.
2,6-Dimethyl-5-hepten-1-al	GIV.
3,7-Dimethyl-1,6-nonadien-3-ol	HOF.
3,7-Dimethyl-1,6-nonadien-3-ol, acetate	HOF.
3,7-Dimethyl-cis-2,6-octadien-1-ol (Nerol)	FB, GLD, IFF, UOP.
*3,7-Dimethyl-trans-2,6-octadien-1-ol (Geraniol)	FEL, GIV, GLD, IFF, NCI, NEO, UNG, UOP, VLY.
3,7-Dimethyl-1,6-octadien-3-ol (Linalyl alcohol)	FB, FEL, GIV, GLD, HOF, LUE, SHL, UNG, VLY.
3,7-Dimethyl-1,6-octadien-3-ol, acetate (Linalyl acetate)	FB, GIV, GLD, HOF, SHL, UNG.
3,7-Dimethyl-1,6-octadien-3-ol, cinnamate	HOF.
3,7-Dimethyl-1,6-octadien-3-yl anthranilate (Linalyl anthranilate).	FMT.
3,7-Dimethyl-1,6-octadien-3-yl isobutyrate (Linalyl isobutyrate).	HOF.
3,7-Dimethyl-1,6-octadien-3-yl propionate (Linalyl propionate).	GIV, HOF.
3,7-Dimethyloctan-1-al	HOF.
3,7-Dimethyl-1,7-octanediol (Hydroxycitronellol)	GIV.
3,7-Dimethyl-1-octanol (Dihydrocitronellol)	GIV, VLY.
3,7-Dimethyl-3-octanol (Tetrahydrolinalool)	GIV, HOF.
3,7-Dimethyl-6-octen-1-al (Citronellal)	FB, GIV, IFF, UOP.
*3,7-Dimethyl-6-octen-1-ol (Citronellol)	GIV, GLD, IFF, NEO, UOP, VLY.
3,7-Dimethyl-6-octen-1-yl formate (Rhodinyl formate)	GIV.
Dimethyl succinate	ICO.
1,1-Dipropoxyethane (Propylacetal)	GIV.
Dodecyl laurate	RT.
*Ethyl butyrate	FB, NW, RT, UOP.
Ethyl formate	FB, PFW.
Ethyl heptanoate	FEL, RT, UOP.
*Ethyl hexanoate (Ethyl caproate)	FB, NW, PFW, RT.
2-Ethyl-1-hexanol (3-Octanol)	GIV.
Ethyl isohexanoate	PFW.
Ethyl isovalerate	FB, PFW.
Ethyl laurate	RT, UOP.
Ethyl levulinate	FMT.
Ethyl myristate	PFW, RT.
*Ethyl nonanoate	FEL, RT, UOP.
Ethyl octanoate	RT.
Ethyl propionate	FB.
Ethyl valerate	PFW.
*Geranyl acetate	FEL, GIV, IFF, UOP, VLY.
Geranyl butyrate	GIV, UOP.
*Geranyl formate	GIV, RT, UOP, VLY.
Geranyl isobutyrate	IFF.
*Glutamic acid, monosodium salt (Monosodium glutamate)	COM, GRW, IMC, MRK.
Heptanal (Enanthaldehyde)	BAC.
Heptyl alcohol (1-Heptanol)	BAC, UCC, UOP.
2-Hexenal	GIV, RT.
cis-3-Hexen-1-ol	x.
cis-3-Hexen-1-ol lactate	RT.
3-Hydroxy-2-butanone (Acetoin)	FMT.
*7-Hydroxy-3,7-dimethyl-1-octanal (Hydroxycitronellal)	GIV, GLD, IFF, OPC, UOP, VLY.
*7-Hydroxy-3,7-dimethyl octanal, dimethyl acetal (Hydroxycitronellal, dimethyl acetal).	GIV, IFF, UOP.
Isobutyl acetate	FB, UOP.
Isobutyl hexanoate	GIV.

TABLE 14B. --*Flavor and perfume materials for which U.S. production or sales were reported, identified by manufacturer, 1967*--Continued

Material	Manufacturers' identification codes (according to list in table 22)
FLAVOR AND PERFUME MATERIALS, ACYCLIC--Continued	
Isodecanyl acetate	VLY.
*Isopentyl butyrate	FB, GIV, NW, PFW, RT, UOP.
*Isopentyl formate	FEL, GIV, RT, UOP.
Isopentyl heptoate	RT.
Isopentyl isovalerate	FB, PFW, UOP.
Lauraldehyde	GIV, IFF.
Methyl isobutyrate	PFW.
Methyl β-methylthiopropionate	RT.
Methyl 2-nonenoate	GIV, RT.
Methylol methyl hexyl ketone	GIV.
β-Methylthiopropionaldehyde	RT.
2-Methylundecanal	GIV, UOP.
Myristaldehyde	GIV, IFF.
Nonamethylene glycol diacetate	VLY.
Nonanal	GIV.
Nonane-1,3-diol monoacetate	GIV.
Nonanol	GIV.
Nonyl acetate	GIV.
Octanal	GIV, IFF, UOP.
3-Octanone (Ethyl amyl ketone)	GIV.
n-Octyl alcohol	GIV.
n-Octyl formate	RT.
2,3-Pentandione (Acetyl propinyl)	FB.
*Rhodinol	FB, FEL, GIV, IFF, LUE, NEO, SHL.
Rhodinyl acetate	GIV, IFF.
Tepyl acetate	IFF, UOP.
3,7,9-Trimethyl-1,6-decadien-3-ol	HOF.
Trimethyl hexanal, sodium bisulfite complex	SHL.
2,6,10-Trimethyl-9-undecen-1-al	GIV.
Undecanal	GIV, IFF.
9-Undecenal	GIV.
10-Undecen-1-ol	GIV.
γ-Valerolactone	GIV.
All other	GIV.

Plastics and Resin Materials

TABLE 15B.--*Plastics and resin materials for which U.S. production or sales were reported, identified by manufacturer, 1967*

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

TABLE 15B. --*Plastics and resin materials for which U.S. production or sales were reported, identified by manufacturer, 1967*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
THERMOSETTING RESINS--Continued	
*Phenolic and other tar acid resins--Continued	
*All other uses (including export)	ACP, ACR, AMR, ASH, BME, BOR, CBR, DSO, EW, GE, GEI, GRG, HER, HKD, HVG, IOC, IRC, IRI, KND, KPT, MCA, MMM, MON, MRB, NPI, PLS, PTP, PYR, PYZ, RAB, RCI, RGC, RH, RPC, SCN, SHA, SNC, TKL, UNO, USR, WCA.
*Polyurethane and diisocyanate resins	ACB, ARK, ASH, BFG, CBM, DA, DCC, DSO, DUP, GPM, HAP, IPI, JWL, KMC, MCC, PEL, PFP, PTP, PYR, QUN, RCT, SCN, SKT, UPJ.
*Rosin modifications:	
*Rosin and rosin esters, unmodified (ester gums)	ASH, CBY, DPP, FAR, FLW, FRP, KRM, MCC, NCI, OSB, PTP, RCI, SRR.
*All other	ASH, CBY, DPP, EW, FAR, FRP, HN, KRM, NCI, OSB, PTP, RCI, RH, SCF, SHA.
Silicone resins	ACP, ASH, DCC, GLD, RCI, SPD.
Styrene-alkyd polyesters	ASH, EW, FLW, MCC, PTP, USR.
*Urea and melamine resins:	
*Textile treating and coating resins	ACY, ASH, BRY, CBR, CIB, DAN, DEP, DUP, ECC, GAF, HNC, HRT, JSC, MON, MRA, ONX, PC, QCP, RCI, RH, RPC, S, SBC, SEY, SNW, STC, USO, VAL, WIC.
*Paper treating and coating resins	ACY, AMR, BME, BOR, CBC, CBD, CBR, DUP, HPC, MMM, MON, RCI, RH, SIM, TXT, x.
Molding materials	ACP, ACY, FMB, GDN, PMC, SFA.
Bonding and adhesive resins for:	
*Laminating	ACY, ASH, BOR, CBR, ENJ, FOM, GE, MON, NTC, OCF, PGU, PMC, PPL, RCI, STC.
*Plywood	ACP, ACY, ASH, BOR, CBC, CBD, HPC, MON, NTC, PGU, RCI, REN, RH, SAC, SIM, SOR, WRD.
*Fibrous and granulated wood	ACY, AMR, BOR, CBC, CBD, IPR, MON, PGU, RCI, SAC, SOR, SYV, UPL.
*Protective coatings	ACP, ACY, CEL, CMP, CPV, DSO, DUP, GLD, GRV, HAN, KPS, MID, MON, NON, PPG, RCI, REL, RH, SCN, SW, TV.
*All other uses (including export)	ACP, ACY, AMR, ASH, BOR, DUP, EFH, FMB, HPC, IRI, MON, RCI, RH, TV, UNO, VAL.
*All other thermosetting resins	ACP, ACY, HPC, HVG, MOB, MON, RPC, UNO, VSV, x.
THERMOPLASTIC RESINS	
Acrylic resins	ACY, ASH, CEL, CIB, CMG, DUP, FLH, GLC, GLX, HRT, JOB, JSC, ORO, PPG, QUN, RH, RPC, SAR, SED, SEY, VPC, WIC, x, 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, CEL, DUP, FG, GOC, POL.
Non-nylon type	AMR, BCM, EMR, GNM, HN, KRM, SM, SNW.
Polyolefin plastics materials:	
Ethylene polymers and copolymers:	
Production:	
*High-pressure polyethylene	ACP, CBN, DOW, DUP, EKX, GOC, KPP, MON, PLC, RCC, UCC, USI.
*Low-pressure polyethylene	ACP, CEL, DOW, DUP, HPC, KPP, MON, PLC, UCC, USI.
*Ethylene copolymers	DUP, EKX, ENJ, UCC, USI.
*Polyethylene, density 0.940 and below:	
*Sales and use:	
*Injection molding	ACP, CBN, CEL, DOW, DUP, EKX, ENJ, GOC, KPP, MON, PLC, RCC, SHC, UCC, USI.
*Blow molding	ACP, CBN, DOW, DUP, EKX, KPP, MON, PLC, RCC, SHC, UCC, USI.
*Film and sheet	ACP, CBN, CEL, DA, DOW, DUP, EKX, ENJ, GOC, KPP, MON, PLC, RCC, SHC, UCC, USI.
*Extrusion coating on paper and other substrates	CEL, DOW, DUP, EKX, GOC, MON, PLC, RCC, UCC, USI.
*Wire and cable	DOW, DUP, EKX, KPP, MON, PLC, UCC, USI.

TABLE 15B. --*Plastics and resin materials for which U.S. production or sales were reported, identified by manufacturer, 1967*--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	EKX, KPP, PLC, UCC, USI.
*Other extruded products	ACP, DOW, DUP, EKX, ENJ, KPP, PLC, UCC, USI.
*All other uses (including export)	ACP, CEL, DOW, DSO, DUP, EKX, ENJ, GOC, KPP, MON, PLC, RCC, UCC, USI.
*Polyethylene, density over 0.940:	
*Sales and use:	
*Injection molding	ACP, CEL, DOW, DUP, EKX, HPC, KPP, PLC, RCC, SHC, UCC, USI.
*Blow molding	ACP, CEL, DOW, DUP, EKX, HPC, KPP, MON, PLC, RCC, SHC, UCC, USI.
*Film and sheet	ACP, CEL, DOW, DUP, EKX, HPC, KPP, PLC, SHC, UCC, USI.
*Extrusion coating on paper and other substrates	DUP, EKX, PLC, UCC, USI.
*Wire and cable	ACP, CEL, DUP, EKX, HPC, MON, PLC, SHC, UCC, USI.
*Pipe and conduit	ACP, CEL, DUP, EKX, HPC, KPP, PLC, SHC, UCC, USI.
*Other extruded products	ACP, CEL, DOW, DUP, EKX, HPC, KPP, PLC, UCC, USI.
*All other uses (including export)	ACP, CEL, DOW, DSO, DUP, EKX, HPC, KPP, MON, PLC, UCC, USI.
*Polypropylene:	
*Production	AVS, DA, DOW, EKX, ENJ, HPC, NVT, RCC, SHC.
*Sales and use:	
*Injection and blow molding	ACP, DOW, EKX, ENJ, HPC, NVT, PLC, RCC, SHC, UCC, USI, x.
*Film and sheet	ACP, AVS, DA, EKX, ENJ, HPC, RCC, SHC, UCC.
*Fibers and filaments	DA, EKX, ENJ, HPC, PLC, SHC, x.
*Other extruded products	EKX, ENJ, HPC, PLC, RCC, SHC, UCC.
*All other uses (including export)	ACP, AVS, DA, DOW, EKX, ENJ, HPC, NVT, PLC, RCC, SHC, UCC, USI.
*Styrene type plastics materials:	
ABS and SAN resins:	
*Production	BFG, DOW, FBF, FIR, GRD, KPP, MCB, MON, RCC, SW, UCC, USR.
*Sales and use:	
*Molding	BFG, DOW, FBF, KPP, MCB, MON, UCC, USR.
*Extrusion	BFG, DOW, MCB, MON, RCC, UCC, USR.
*All other uses (including export)	BFG, DOW, FIR, GRD, KPP, MCB, MON, SW, UCC, USR.
Styrene and styrene copolymer resins:	
*Production:	
*Straight polystyrene	BPL, CBN, CSD, DOW, FBF, FG, KPP, MON, ONX, PLA, POL, PRX, RCC, SEK, SOL, SW, TIC, UBS, UCC.
Rubber-modified polystyrene	BOR, BPL, CSD, DOW, FG, GOR, KPP, MON, PLA, RCC, SHC, UCC.
Styrene-butadiene copolymer	BFG, BOR, DOW, FIR, GNT, GRD, GYR, ILC, KPP, USR, WIC.
All other	ACC, BAS, BCN, BKC, DOW, DSO, DUP, GAF, GLD, GRD, IOC, JSC, KEL, MON, MRT, NLC, ORO, PAI, POL, PRX, PVI, RCC, RH, SEK, SM, SPT.
*Sales and use:	
*Molding	BFG, BKC, BPL, CSD, DOW, FBF, FG, FIR, GOR, GYR, KPP, MON, PLA, RCC, SHC, SOL, TIC, UCC, USR.
*Textile and paper treating and coating	BFG, BOR, DOW, FIR, GNT, GRD, GYR, ILC, JSC, KPP, MON, MRT, ONX, PRX, USR, WIC.
*Emulsion paint	BOR, DOW, DSO, FIR, GLD, GNT, GRD, GYR, KPP, MON, USR.
*Extrusion	BFG, CBN, CSD, DOW, KPP, MON, RCC, SHC, UCC.
Foam and foamable materials	BAS, CSD, DOW, FG, GYR, KPP, MON, RCC, SEK, SHC, USR.
*All other uses (including export)	ACC, BAS, BCN, BFG, BOR, CSD, DOW, DSO, DUP, FG, GAF, GNT, GRD, GYR, IOC, JSC, KPP, MON, MRT, PAI, PRX, PVI, RCC, RH, SEK, SHC, SM, UBS, UCC, USR, x.
Vinyl resins:	
Polyvinylchloride and copolymers:	
*Production:	
Suspension homopolymers	ACP, AME, ATU, BFG, BOR, CRY, CUC, DA, DOW, ESC, FIR, GNT, GRA, GYR, MON, PNT, SFA, UCC, USR.
Suspension copolymers	ACP, AME, BFG, BOR, CRY, CUC, DA, FIR, GNT, GYR, KYS, MON, NSC, ONX, PNT, SFA, THC, UCC.
Dispersions (paste)	ACP, BFG, BOR, CRY, DA, FIR, GYR, MON, SFA, UCC, USR.

TABLE 15B. --*Plastics and resin materials for which U.S. production or sales were reported, identified by manufacturer, 1967*--Continued

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

Rubber-Processing Chemicals

TABLE 16B. -- *Rubber-processing chemicals for which U.S. production or sales were reported, identified by manufacturer, 1967*

[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.
Heptaldehyde-aniline condensate	USR.
Triethyltrimethylenetriamine	USR.
*Dithiocarbamic acid derivatives:	
Dibenzyldithiocarbamic acid, sodium salt	USR.
Dibenzyldithiocarbamic acid, zinc salt	USR.
Dibutyldithiocarbamic acid, N,N-dimethylcyclohexylamine salt.	MON.
Dibutyldithiocarbamic acid, diphenylguanidine salt	CCO.
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	ACS.
*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, BFG, DUP, GYR, USR.
4-Morpholinyl-2-benzothiazyl disulfide	GYR.
N-Oxydiethylene-2-benzothiazolesulfenamide	ACY, BFG, 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.
*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, 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-	MON, UPM.

TABLE 16B.--*Rubber-processing chemicals for which U.S. production or sales were reported, identified by manufacturer, 1967*--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, 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-(1,3-Dimethylbutyl)-N'-phenyl-p-phenylenediamine	GYR.
N,N'-Di-2-naphthyl-p-phenylenediamine	BFG.
*N,N'-Diphenyl-p-phenylenediamine	BFG, DUP, USR.
N-Isopropyl-N'-phenyl-p-phenylenediamine	MON, USR.
Nitroso-N-phenyl-p-phenylenediamine	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'-Dinonyldiphenylamine	ACY.
4,4'-Dioctyldiphenylamine	BFG.
N,N'-Diphenylethylenediamine	CCO, DA, 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, UCC.
*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, ASH.
2,2'-Methylenebis(6-tert-butyl-4-ethylphenol)	ACY.
2,2'-Methylenebis(6-tert-octyl-p-cresol)	ACY.
4,4'-Thiobis(6-tert-butyl-m-cresol)	MON.
2,2'-Thiobis(4,6-di-sec-amylphenol)	MON.
1,1,3-Tri(2-methyl-4-hydroxy-5-tert-butylphenyl) butane.	ICI.
Other phenolic antioxidants and stabilizers:	
p-Benzyloxyphenol	BFG.
o-Cresol, alkylated	PIT.
N-Lauroyl-p-aminophenol	MLS.
*Phenol, alkylated	ACY, BFG, CCO, GYR, 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.

TABLE 16B.--*Rubber-processing chemicals for which U.S. production or sales were reported, identified by manufacturer, 1967*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
RUBBER-PROCESSING CHEMICALS, CYCLIC--Continued	
*Peptizers--Continued	
Pentachlorobenzenethiol	DUP.
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	ALC, DUP, PAS, USR, VNC.
*Dibutyldithiocarbamic acid, zinc salt	ALC, DUP, 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, GYR, PAS, VNC.
Bis(dimethylthiocarbamoyl) disulfide and 2-mercaptobenzothiazole, mixed.	VNC.
*Bis(dimethylthiocarbamoyl) sulfide	DUP, GYR, USR.
Bis(ethylmethylthiocarbamoyl) sulfide	PAS, 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.
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.
Polymerization regulators:	
Alkyl mercaptans, mixed	PAS, PLC.
*Dodecyl mercaptans	HK, PAS, PLC.
Tetradecyl mercaptan	PAS, PLC.
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, 1967*

[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, USR.
*Polyurethane type	ACY, DUP, GNT, MOB, PRC, RUB, TKL, USR.
ELASTOMERS, ACYCLIC	
Polyacrylate ester type	ACY, BFG, TKL.
Polyalkalene sulfide type	PRC, TKL.
Polybutadiene type	BFG, FRS, GYR, TKL, TUS.
*Polybutadiene-acrylonitrile type (N-type)	BFG, FRS, GYR, ILC, USR.
Polychloroprene type (Neoprene)	DUP.
*Polyisobutylene-isoprene type (Butyl)	CBN, ENJ.
Reaction products of natural rubber	GYR, HPC, ICI.
*Silicone elastomers	DCC, SFA, SPD, UCC.
*Stereo elastomers	ASY, BAR, DUP, ENJ, FRS, GGC, GYR, PLC, SHC, TUS, USR.
All other	DUP, ENJ, x.

Plasticizers

TABLE 18B.--*Plasticizers for which U.S. production or sales were reported, identified by manufacturer, 1967*

[Plasticizers for which separate statistics are given in table 18A are marked 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. 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)
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, SM.
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, MTR, 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, UCC.
Butyl cyclohexyl phthalate	ACP.
n-Butyl n-decyl phthalate	PCC.
*Butyl 2-ethylhexyl phthalate	MON, UCC.
*Butyl octyl phthalate	GRH, PCC, RCI, RUB.
Di(2-butoxyethyl) phthalate	ARC, FMP, WM, WTH.
*Dibutyl phthalate	ACP, COM, DUP, EKT, ENJ, GRH, MON, PCC, PFZ, RCI, RUB, SW, UCC.
*Dicyclohexyl phthalate	ACP, DUP, FMP, MON, PFZ.
Diethyl isophthalate	PFZ.
*Diethyl phthalate	DUP, EKT, KF, MON, PFZ.
Dihexyl phthalate	ACP, ENJ, GRH, TEK.
Di(isodecyl)-4,5-epoxy phthalate	UCC.
Diisodecyl hydrophthalate	UCC.
*Diisodecyl phthalate	ACP, BFG, EKT, ENJ, GRH, MON, PCC, RCI, RUB, TEK, UCC.
*Di(2-methoxyethyl) phthalate	DUP, EKT, FMP, RCI, SFA, WTH.
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, TEK, UCC.
*Diiso-octyl phthalate	ACP, ENJ, GRH, MON, PCC, RCI, RUB, TEK, UCC.
*Di-n-octyl phthalate	ASH.
*Mixed dioctyl phthalate	BFG.
Diphenyl phthalate	MON.
*Ditridecyl phthalate	ACP, ENJ, GRH, MON, PCC, PFZ, RCI, RUB, TEK, UCC.
2-Ethylhexyl isodecyl phthalate	UCC.
*Glycolate phthalate esters:	
Butyl phthalyl butyl glycolate	DA, MON.
Ethyl (and methyl) phthalyl ethyl glycolate	MON.
All other glycolate phthalate esters	ARG, HPC.
n-Hexyl n-decyl phthalate	ACP, GRH, UCC.
Hydrogenated castor oil phthalate	DUP.
Isodecyl tridecyl phthalate	TEK.
Iso-octyl isodecyl phthalate	ACP, RUB.
*n-Octyl n-decyl phthalate	ACP, GRH, MON, PCC, RCI, RUB, TEK, UCC.
All other phthalic anhydride esters	FMP, TEK, UCC, x.

TABLE 18B. --*Plasticizers for which U.S. production or sales were reported, identified by manufacturer, 1967*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
PLASTICIZERS, CYCLIC--Continued	
Polyethylene glycol dibenzoate	VEL.
Tetrahydrofurfuryl oleate	CCW, EMR.
Toluenesulfonamide, o-, p- mixtures	ACY, MON.
*Trimellitic acid esters:	
n-Octyl n-decyl trimellitate	GRH, PCC, RCI, TEK.
Tri(2-ethylhexyl) trimellitate	PFZ, RCI.
Triisodecyl trimellitate	PFZ.
Triiso-octyl trimellitate	RCI, RUB.
*Trioctyl trimellitate	GRH, PCC, 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.
*Di(2-ethylhexyl) adipate	DA, EKT, GRH, MON, PCC, RCI, RH, RUB, TEK, UCC, WTH.
Di-n-hexyl adipate	ARC.
Diisobutyl adipate	FMP, GRH, HAL.
*Diisodecyl adipate	ACP, EKT, GRH, MON, PCC, PFZ, RCI, RH, RUB, TEK, UCC.
Diiso-octyl adipate	PCC, RCI, RH, RUB.
Diisopropyl adipate	SBC, VND.
Dinonyl adipate	TEK.
Di-n-octyl adipate	ACP.
Di-n-propyl adipate	ARC.
n-Hexyl n-decyl adipate	ACP, PCC.
Iso-octyl isodecyl adipate	GRH, RCI.
*n-Octyl n-decyl adipate	ACP, GRH, MON, PCC, RCI, RH, RUB, TEK, TKL.
Polyethylene glycol adipate	PFZ.
All other adipic acid esters	PFZ, RUB.
*Azelaic acid esters:	
Dicyclohexyl azelate	PFZ.
Di(2-ethylbutyl) azelate	EMR.
Di(2-ethylhexyl) azelate	EKT, EMR, PCS, PFZ, RCI, RH, RUB.
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	ASH, EKT, EMR, HAL, MON, PFZ, RCI, RH, RUB, TEK, UCC, WTH.
Di(butoxyethoxy-ethoxy)methane	TKL.
Di(2-(2-butoxyethoxy)ethyl)methane	GRD.
Dibutyl tartrate	ARC.
Diethylene glycol dipelargonate (d onanoate)	EMR.
Diiso-octyl diglycolate	CCA, FMP.
*Epoxidized esters:	
Butyl epoxydioleate	ASH.
Butyl epoxystearate	BAC.
Butyl epoxytallate	ASH, TEK.
Epoxidized linseed oils	ASH, SWT.
*Epoxidized soya oils	ARG, ASH, BAC, RCI, RH, SWT, TEK, UCC.
Epoxidized tall oils	RCI.
*2-Ethylhexyl epoxytallates	ASH, BAC, UCC.
Octyl epoxystearates	ARG.
*Octyl epoxytallates	ARG, RH, TEK, UCC.
All other epoxidized esters	EMR, RH.
Glyceryl 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, DA, DRW, ICI, PCS, PEN, SBC.
*Oleic acid esters:	
2-Butoxyethyl oleate	ARC, HAL.
*Butyl oleate	ARC, CHL, DA, HAL, ICI, SWT, WM, WTH.

TABLE 18B. *--Plasticizers for which U.S. production or sales were reported, identified by manufacturer, 1967*--Continued

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

Surface-Active Agents

TABLE 19B. --*Surface-active agents for which U.S. production or sales were reported, identified by manufacturer, 1967*

[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:	
Alkylbetaine	DUP.
(1-Carboxyheptadecyl)trimethylammonium hydroxide, inner salt.	DUP.
(Carboxymethyl)(coconut oil alkyl)dimethylammonium hydroxide, inner salt.	CUL.
(Carboxymethyl)[3-(coconut oil amido)propyl]dimethylammonium chloride, sodium salt.	JRG.
(Carboxymethyl)[3-(coconut oil amido)propyl]dimethylammonium hydroxide, inner salt.	UVC.
(Carboxymethyl)dimethyl(9-octadecenyl)ammonium hydroxide, inner salt.	DUP.
(Carboxymethyl)dodecyldimethylammonium hydroxide, inner salt.	TCC.
(1-Carboxyundecyl)trimethylammonium hydroxide, inner salt.	DUP.
N-(Coconut oil alkyl)-β-alanine, sodium salt	GNM.
3-[(Coconut oil alkyl)amino]butyric acid sodium salt	ARC.
N-(2-Coconut oil amidoethyl)-N-(2-hydroxyethyl)glycine, sodium salt.	TCC.
N-Dodecyl-3-iminodipropionic acid	GNM.
N-Dodecyl-3-iminodipropionic acid, disodium salt	GNM.
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.
All other acyclic	VAC.
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 hydroxide, sodium derivative, sodium salt.	MIR, PCS.
1-Carboxymethyl-1-(2-hydroxyethyl)-2-undecyl-2-imidazolinium hydroxide, sodium salt.	UVC.
Heptadecylmethylbenzimidazolinesulfonic acid, sodium salt.	CIB.
3-[2-(2-Mixed alkyl-2-imidazolin-1-yl)ethoxy] propionic acid salt.	MOA.
3-[2-(2-Undecyl-2-imidazolin-1-yl)ethoxy] propanesulfonic acid, sodium salt.	UVC.
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, diethanolamine salt	SEY.

TABLE 19B.--*Surface-active agents for which U.S. production or sales were reported, identified by manufacturer, 1967*--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	
Coconut oil acids, ethanolamine salt	SBP.
Coconut oil acids, triethanolamine salt	EMR, SCP.
Oleic acid, butylamine salt	DYS.
Oleic acid, triethanolamine salt	DOM, HAL.
Stearic acid, morpholine salt	CSB.
Stearic acid, N,N,N′,N′-tetrakis(2-hydroxyethyl)-ethylenediamine salt.	ICI.
Stearic acid, triethanolamine salt	GLY.
Tall oil acids, diethanolamine salt	SEY.
Tallow acids, ethanolamine salt	SBP.
Tallow acids, triethanolamine salt	SBP.
*Carboxylic acids having amide, ester, or ether linkages:	
Butoxyethoxypropionic acid	UVC.
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.
Diisobutylene-maleic anhydride copolymer, ammonium and sodium salts.	RH.
*N-Lauroylsarcosine, sodium salt	CP, GGY, HMP, ONX.
N-(Mixed alkylsulfonyl)glycine, sodium salt	GAF.
Mixed linear alcohols, ethoxylated and carboxyalkylated, sodium salt.	SEY.
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.
Tridecyloxypoly(ethyleneoxy)acetic acid, sodium salt	UVC.
N-(Undecenoylpolypeptide), potassium salt	MYW.
Unspecified sarcosine derivatives	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	HEW, MRV.
Cocoa butter acids, sodium salt	HSY.
*Coconut oil acids, potassium and sodium salts:	
Potassium salt	ACE, AES, CSB, DYS, GAF, GRC, GRL, HEW, HNT, JRG, LUR, MCP, NMC, PCH, PG, SWT.
Sodium salt	AGP, CON, CP, GRC, HEW, JRG, LEV, NPR, PG, PRX.
*Corn oil acids, potassium salt	GRC, HNT, NMC.
*Corn oil acids, sodium salt	GRC, LUR, NMC.
Lauric acid, potassium salt	DA, DRW, VAL.
*Mixed vegetable fatty acids, potassium salt	AES, AML, DYS, GRC, GRL, PCH, SWT.
Myristic acid, potassium salt	AES.
*Oleic acid, potassium salt	AES, AML, ARL, BSW, CCL, CPY, DA, DAN, GAF, GYR, HNT, QCP, S, SCP, SHP, USR, WBG.
*Oleic acid, sodium salt	BSW, DA, GYR, LAK, LEV, LUR, MRV, NMC, SEA, SNW, SWT, WBG, WTC.
Olive oil acids, sodium salt	HEW, HNT, LUR.
Palm kernel oil acids, sodium salt	HEW.
Palm oil acids, sodium salt	HEW, LUR.
Peanut oil acids, potassium salt	KAL, SLC.
Rosin acids, potassium salt	ASY, GYR, USR, x.
Rosin acids, sodium salt	ASY, CRT, MRA, PLC, PRX, QCP, x.
Soybean oil acids, potassium salt	CON, DYS, HEW.
Soybean oil acids, sodium salt	HEW.
*Stearic acid, potassium and sodium salts:	
Potassium salt	GYR, HEW, VAL.
Sodium salt	DA, HEW, LEV, MAL, WTC.
*Tall oil aeids, potassium and sodium salts:	
*Potassium salt	ACE, AES, CON, CSB, DRW, DSO, DYS, EFH, GAF, GRC, GYR, HNT, LUR, NMC, PNX, QCP, SOP, VAL, x.
*Sodium salt	CPY, GRC, GYR, MRV, PRX, SOP, UNP, x.

TABLE 19B.--*Surface-active agents for which U.S. production or sales were reported, identified by manufacturer, 1967*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
Anionic Surface-Active Agents--Continued	
*Carboxylic acids (and salts thereof)--Continued	
*Potassium and sodium salts of fatty, rosin, and tall oil acids--Continued	
*Tallow acids, potassium salt	ASY, CPY, NMC, PG, SWT.
*Tallow acids, sodium salt	AGP, ASY, BSW, CON, CP, DA, DYS, GRC, GYR, HEW, JRG, LEV, LUR, NMC, NPR, PG, PLC, PRX, QCP, SCP, SWT.
All other	NMC.
*Phosphoric and polyphosphoric acid esters (and salts thereof):	
*Alcohols and phenols, ethoxylated and phosphated:	
Butyl alcohol, ethoxylated and phosphated	GAF.
p-tert-Butylphenol, ethoxylated and phosphated	RTF.
Dinonylphenol, ethoxylated and phosphated	GAF.
Dodecyl alcohol, ethoxylated and phosphated	GAF, WIC.
Dodecyl alcohol, ethoxylated and phosphated, barium salt.	GAF.
2-Ethylhexanol, ethoxylated and phosphated	WAY.
*Mixed linear alcohols, ethoxylated and phosphated	CHP, CRT, CST, GAF, SEY, WAY.
*Nonylphenol, ethoxylated and phosphated	GAF, HDG, NLC, RTF, SCP, TCC, TXT, VAC, WAY.
9-Octadecenyl alcohol, ethoxylated and phosphated	GAF.
Octylphenol, ethoxylated and phosphated	RH.
Octylphenol, ethoxylated and phosphated, magnesium salt.	x.
Phenol, ethoxylated and phosphated	ARC, GAF.
Polyhydric alcohol, ethoxylated and phosphated	NLC.
*Tridecyl alcohol, ethoxylated and phosphated	ARC, GAF, LUR, NLC, TCC, WAY.
All other	GAF.
*Alcohols, phosphated or polyphosphated:	
Decyl, dodecyl, and octyl phosphate, morpholine salt	DUP.
Decyl polyphosphate, triethanolamine salt	RCD.
2-Ethylhexyl phosphate	WAY.
*2-Ethylhexyl phosphate, sodium salt	SEY, TCI, UCC, UVC.
2-Ethylhexyl polyphosphate	TCC, TCI, UVC.
Hexyl polyphosphate, potassium salt	DEX.
Mixed alkyl phosphate	CST, DUP, GAF, SFA, TCC.
Mixed alkyl phosphate, diethanolamine salt	DUP.
9-Octadecenyl phosphate	DUP.
Octadecyl phosphate, triethanolamine salt	RCD.
*Octyl phosphates:	
Octyl phosphate	DUP.
Octyl phosphate, alkylamine salt	DUP, TXT.
Octyl phosphate, potassium salt	DUP.
Octyl polyphosphate	DEX, TXT.
Octyl polyphosphate, potassium salt	x.
Octyl polyphosphate, sodium salt	SFA.
All other	NLC.
*Sulfonic acids (and salts thereof):	
*Alkylbenzenesulfonates:	
*Dodecylbenzenesulfonates:	
*Dodecylbenzenesulfonic acid	ACS, ARD, CO, CRT, CTL, EMK, HLI, LAK, LEV, MON, PIL, RCD, RTF, STP, TCI, TDC, TEN, TXT, WTC.
Dodecylbenzenesulfonic acid, ammonium salt	AKS, ARL, PLX.
Dodecylbenzenesulfonic acid, butylamine salt	SOP, 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.	VAL, WTC.
Dodecylbenzenesulfonic acid, potassium salt	RCD, SOP, VAL.
*Dodecylbenzenesulfonic acid, sodium salt	AAC, ACS, AKS, APX, ARD, ARL, ATR, BLA, CO, CP, CRT, CTL, DA, DEP, DSO, EFH, HLI, HRT, LEV, MON, PEK, PG, PIL, PLX, PRX, RCD, RTF, STP, TEN, TXT, UNP, VAC, WTC.
Dodecylbenzenesulfonic acid, strontium salt	RTF.
*Dodecylbenzenesulfonic acid, triethanolamine salt	ACC, ACS, AML, ARD, ARL, ATR, CRT, CTL, DSO, DYS, HLI, PCS, PIL, RCD, RTF, SOS, STP, VAC.

TABLE 19B.--*Surface-active agents for which U.S. production or sales were reported, identified by manufacturer, 1967*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
Anionic Surface-Active Agents--Continued	
*Sulfonic acids (and salts thereof)--Continued	
*Alkylbenzenesulfonates--Continued	
*Other alkylbenzenesulfonates:	
Decylbenzenesulfonic acid, sodium salt	MON.
Didodecylbenzenesulfonic acid	CO.
Didodecylbenzenesulfonic acid, sodium salt	CO.
(Mixed higher alkyl)benzenesulfonic acid	TXT.
(Mixed higher alkyl)benzenesulfonic acid, ammonium salt.	RTF.
Pentadecylbenzenesulfonic acid, potassium salt	STP.
Pentylbenzenesulfonic acid, sodium salt	MON.
*Tridecylbenzenesulfonic acid	KON, NPR, RCD, TXT.
Tridecylbenzenesulfonic acid, sodium salt	BLA, CP, NPR, RCD, WTC.
Tridecylbenzenesulfonic acid, triethanolamine salt	PCS.
Undecylbenzenesulfonic acid	TXT.
Undecylbenzenesulfonic acid, ammonium salt	TXT.
Undecylbenzenesulfonic acid, sodium salt	TXT.
Undecylbenzenesulfonic acid, triethanolamine salt	TXT.
All other	USR.
*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.
Toluenesulfonic acid, sodium salt	CO, NES, PIL, STP, WTC.
Toluene- and xylenesulfonic acids, sodium salt	CO.
*Xylenesulfonic acid, ammonium salt	ATR, CO, HLI, NEX, RCD, STP, 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	CPP, CRZ.
*Ligninsulfonic acid, calcium salt	CRZ, CWP, GLY, LKY, LPC, MAR, PSP.
*Ligninsulfonic acid, chromium salt	DCP, MAR, RAY.
Ligninsulfonic acid, iron salt	CRZ, WVA.
Ligninsulfonic acid, magnesium salt	LPC, MAR.
Ligninsulfonic acid, mixed salts	PSP.
*Ligninsulfonic acid, sodium salt	CRZ, CWP, MAR, RAY, SNC, WVA.
*Naphthalenesulfonates:	
*Butylnaphthalenesulfonic acid, sodium salt	CLD, CMG, GGY, PFZ.
Dibutylnaphthalenesulfonic acid	GAF, S.
Didodecylnaphthlenesulfonic acid, sodium salt	PFZ.
*Diisopropylnaphthalenesulfonic acid and sodium salt:	
Diisopropylnaphthalenesulfonic acid	DUP, GAF.
Diisopropylnaphthalenesulfonic acid, sodium salt	ACS, GAF, PFZ.
Dipentylnaphthalenesulfonic acid, ammonium salt	NLC.
Dipentylnaphthalenesulfonic acid, (mixed alkyl)amine salt.	NLC.
Dipentylnaphthalenesulfonic acid, sodium salt	GGY.
Isopropylnaphthalenesulfonic acid	DA, DUP, GRD, ONX.
Isopropylnaphthalenesulfonic acid, ammonium salt	NLC.
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.
*Sulfonic acids having amide linkages:	
N-(Coconut oil acyl)-N-methyltaurine, sodium salt	GAF, MCP, TNI.
N-Cyclohexyl-N-palmitoyltaurine, sodium salt	GAF.
*N-Methyl-N-oleoyltaurine, sodium salt	CRT, DA, DEP, DRW, GAF, HRT, MRA, PCI.
N-Methyl-N-palmitoyltaurine, sodium salt	GAF.
N-Methyl-N-(tall oil acyl)taurine, sodium salt	GAF, WTC.
N-Methyl-N-(tallow acyl)taurine, sodium salt	GAF.

TABLE 19B.---*Surface-active agents for which U.S. production or sales were reported, identified by manufacturer, 1967*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
Anionic Surface-Active Agents--Continued	
*Sulfonic acids (and salts thereof)--Continued	
*Sulfonic acids having amide linkages:	
*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, CTA.
N-(Oleoyloxyisopropyl)sulfosuccinamic acid, disodium salt.	WTC.
Sulfosuccinic acid, alkanolamide ester, sodium salt---	HDG.
Sulfosuccinic acid, 2-(Coconut oil amido)ethyl ester, disodium salt.	LAK.
*Sulfosuccinic acid esters:	
Sulfosuccinic acid, bis(2,6-dimethyl-4-heptyl) ester, sodium salt.	GAF, SCP.
*Sulfosuccinic acid, bis(2-ethylhexyl) ester, sodium salt.	ACY, AKS, CRT, CST, DAN, EFH, EMK, GGY, HDG, HRT, ICI, MCP, MOA, PC, SBC, SCP, TCI.
Sulfosuccinic acid, bis(tallow monoglyceride) ester, sodium salt.	ACY.
Sulfosuccinic acid, dihexyl ester, sodium salt--------	ACY, MCP, 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.
Coconut oil acids, 2-sulfoethyl ester, sodium salt----	GAF, LEV.
Dodecyldiphenyloxidedisulfonic acid, disodium salt----	DOW.
Dodecyl sulfoacetate----------	ACS.
2-Lauroyloxy-1-propanesulfonic acid----------	CUC, SDH.
Methyl 2-sulfostearate----------	ARC.
Mixed alkanesulfonic acid, sodium salt----------	DUP, VPC.
Octylphenol, ethoxylated and sulfonated, sodium salt--	CRT, RH.
Petroleumsulfonic acid, water soluble (acid layer), sodium salt.	SIN, VAL, WTC.
All other----------	STC.
Sulfuric acid esters (and salts thereof):	
*Acids, amides, and esters, sulfated:	
*Coconut oil acids - ethanolamine condensate, sulfated, potassium salt.	DEX, EMK, ONX.
*Esters of sulfated oleic acid:	
2-Butoxyethyl oleate, sulfated, sodium salt---------	S.
*Butyl oleate, sulfated, sodium salt----------	AKS, CHP, DA, ICI, MCP, ONX, PC.
Ethyl oleate, sulfated, sodium salt----------	GAF.
Glycerol trioleate, sulfated, sodium salt----------	LEA, MRV, SCP.
*Isopropyl oleate, sulfated, sodium salt----------	BRY, CRT, DEX, HRT, ICI, LEA, LUR, SCP.
Methyl oleate, sulfated, sodium salt----------	DA, ICI.
*Propyl oleate, sulfated, sodium salt----------	ACY, CHP, EFH, GAF, MCP, MRV.
*Oleic acid, sulfated, disodium salt----------	ACT, ACY, CHP, CRT, DA, DRW, GAF, ICI, LEA, MRV, PCI, SCO, SCP, TEN, WHI, WHW.
*Tall oil, sulfated, sodium salt----------	ACY, APX, BAO, DA, ICI, MRV, RTF, SEA, WHI.
*Other acids, amides, and esters, sulfated:	
Butyl ricinoleate, sulfated, disodium salt----------	DA.
Coconut oil acids - isopropanolamine condensate, sulfated, sodium salt.	APX.
Glycerol monoester of coconut oil acids, sulfated, sodium salt.	AAC, CP.
Neat's-foot oil acids - ethanolamine condensate, sulfated, ammonium salt.	APX.
9-Octadecenyl acetate, sulfated, sodium salt--------	DUP.
Oleic acid - ethanolamine condensate, sulfated, sodium salt.	SCP.
Oleostearin, sulfated, sodium salt----------	SEA.
Propyl ricinoleate, sulfated, disodium salt---------	AKS.
Ricinoleic acid, sulfated, disodium salt----------	DA.
All other----------	EMR.
*Alcohols and phenols, sulfated:	
*Coconut and sperm oil alkyl sulfate, sodium salt------	DEP, DUP, SCP.

TABLE 19B.--*Surface-active agents for which U.S. production or sales were reported, identified by manufacturer, 1967*--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	
*Dodecyl sulfate salts:	
2-Amino-2-methylpropanol salt	DUP.
*Ammonium salt	AAC, CTL, CUL, DUP, ONX, PCS, SCP, STP.
Diethanolamine salt	CUL, DUP, HLI, JRG, SCP, STP, WTC.
N,N-Diethylcyclohexylamine salt	DUP.
Isopropanolamine salt	JRG, PCS.
*Magnesium salt	AAC, HLI, SCP, STP.
Potassium salt	HLI, PG.
*Sodium salt	AAC, CTL, CUL, DUP, HLI, JRG, ONX, PCS, PG, RCD, STP.
*Triethanolamine salt	AAC, CTL, CUL, DUP, HLI, ONX, PCS, PG, RCD, SCP, STP, TXT.
*Hexadecyl sulfate, sodium salt	AAC, DUP, SCP.
*Mixed linear alcohol sulfate salts:	
Ammonium salt	LAK, S, TXT.
Polyamine salt	NLC.
Sodium salt	LAK, SCP, TXT.
*Octadecyl sulfate salts:	
Sodium salt	DUP, EMK, ONX, PG.
Triethanolamine salt	DUP.
*Other alcohols and phenols, sulfated:	
Linear alcohols, sulfated:	
Decyl and octyl sulfate, sodium salt	PCS.
Decyl sulfate, sodium salt	CTL, DUP, ONX, PCS.
Decyl sulfate, triethanolamine salt	DUP.
Hexadecyl and 9-octadecenyl sulfate, sodium salt	RCD.
Hexyl sulfate, potassium salt	DEX.
Hexyl sulfate, sodium salt	GAF.
Nonyl sulfate, sodium salt	TEN.
Octyl sulfate, sodium salt	AAC, DUP.
Phenols and nonlinear alcohols, sulfated:	
Branched hexadecyl sulfate, sodium salt	APX.
3-9-Diethyl-6-tridecyl sulfate, sodium salt	UCC.
2-Ethylhexyl sulfate, sodium salt	AAC, SCP, UCC, WTC.
7-Ethyl-2-methyl-4-undecyl sulfate, sodium salt	UCC.
Trichlorophenol sulfate, ethanolamine salt	GAF.
Tridecyl sulfate, sodium salt	ACC, DUP, SCP.
*Ethers, sulfated:	
*Alkylphenols, ethoxylated and sulfated:	
Dodecylphenol, ethoxylated and sulfated, ammonium salt.	GAF.
(Mixed alkyl)phenol, ethoxylated and sulfated, ammonium salt.	GAF.
Nonylphenol, ethoxylated and sulfated, ammonium salt.	CIB, GAF, STP, TXT.
Nonylphenol, ethoxylated and sulfated, sodium salt	CRT, GAF.
Nonylphenol, ethoxylated and sulfated, triethanolamine salt.	ARL.
Octylphenol, ethoxylated and sulfated, sodium salt	RH.
*Dodecyl alcohol, ethoxylated and sulfated, ammonium salt.	AAC, CTL, HLI, ONX, PG, SCP.
*Dodecyl alcohol, ethoxylated and sulfated, sodium salt	AAC, CTL, CUL, DUP, ONX, PCS, RCD, SCP, STP, TCI.
*Mixed linear alcohols, ethoxylated and sulfated, sodium salt.	CRT, GAF, LAK, NLC, RCD, RTF, SCP, TCI, TXT, UCC.
*Tridecyl alcohol, ethoxylated and sulfated, sodium salt.	AAC, ARL, ONX, RCD.
*Other sulfated ethers:	
Dodecyl and tetradecyl alcohols, ethoxylated and sulfated, ammonium salt.	LEV.
Hexyloxypropyl sulfated, sodium salt	S.
Mixed linear alcohols, ethoxylated and sulfated, ammonium salt.	CO, GAF, LAK, NLC, RCD, SCP, SHC, STP, TXT, UCC.
Mixed linear alcohols, ethoxylated and sulfated, potassium salt.	CO, SHC, STP, TXT.
Sperm oil alcohol, ethoxylated and sulfated, sodium salt.	DUP.
All other	APX, PG.

TABLE 19B. --*Surface-active agents for which U.S. production or sales were reported, identified by manufacturer, 1967*--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:	
*Animal (including fish) oils, sulfated:	
*Cod oil, sulfated, sodium salt	ACT, BAO, CRT, DRW, MRD, S, SEA, WAW, WHI, WHW.
Grease, other than wool, sulfated, sodium salt	DA, SEA, WHI, WHW.
Herring oil, sulfated, sodium salt	WHI.
Lard, sulfated, sodium salt	WAW.
Mixed fish oils, sulfated, sodium salt	AML, SCO, WHI.
*Neat's-foot oil, sulfated, sodium salt	ACT, BAO, CRT, DA, KAL, LUR, MRD, PC, SEA, WHW.
*Sperm oil, sulfated, sodium salt	ACT, AKS, BAO, CLD, CRT, DA, DRW, HRT, KAL, KNG, LEA, MRD, ONX, RTC, S, SEA, WHI, WHW.
*Tallow, sulfated, sodium salt	ACT, ACY, AKS, BRY, BSW, DA, DRW, EFH, ICI, KAL, LEA, LUR, MCP, MRA, MRD, ONX, PC, PCI, SCP, SEY, SID, SNW, SOS, WHI.
Whale oil, sulfated, sodium salt	KNG.
*Vegetable oils, sulfated:	
*Castor oil, sulfated, sodium salt	AAE, ACT, ACY, AKS, AML, APX, BAO, BRY, BSW, CRT, DA, DEX, DRW, GAF, HRT, ICI, KAL, KNG, LEA, LUR, MCP, MRA, MRD, MRV, ONX, PC, S, SCO, SCP, SEA, SLC, WHI, WHW.
*Coconut oil, sulfated, sodium salt	ACY, BAO, DA, KNG, MRD, SEA, WHW.
Cottonseed oil, sulfated, sodium salt	DA, RTC.
Mustard seed oil, sulfated, sodium salt	DA, LUR.
Peanut oil, sulfated, sodium salt	ACY, DA, ICI, LEA, LUR, SCP, SLC.
*Ricebran oil, sulfated, sodium salt	DA, EFH, KNG, LUR.
*Soybean oil, sulfated, sodium salt	CRT, DA, DRW, HRT, KAL, LEA, MRD, ONX.
Other anionic surface-active agents:	
Lignin (non-sulfonated) and salts thereof	WVA.
Mixed linear alcohols, ethoxylated and carbonated, sodium salt.	S.
Tridecyl alcohol, ethoxylated and carbonated sodium salt.	S.
Cationic Surface-Active Agents	
*Amine oxides and oxygen-containing amines (except those having amide linkages):	
*Acyclic:	
N,N-Bis(2-hydroxyethyl)(coconut oil alkyl)amine oxide	ARC.
N,N-Bis(2-hydroxyethyl)dodecylamine	CTL, FIN.
N,N-Bis(2-hydroxyethyl)octadecylamine	ARC, FIN.
N,N-Bis(2-hydroxyethyl)octadecylamine oxide	ARC.
N,N-Bis(2-hydroxyethyl)(tallow alkyl)amine	ARC.
N,N-Bis(2-hydroxyethyl)(tallow alkyl)amine acetate	PG.
N,N-Bis(2-hydroxyethyl)(tallow alkyl)amine oxide	ARC.
*(Coconut oil alkyl)amine, ethoxylated	AAC, APD, ARC, NLC, SDW, SNW, TCH, VAC.
(Coconut oil alkyl)amine, ethoxylated, acetate	RPC.
(Coconut oil alkyl)amine, ethoxylated, maleate	SDH.
(Coconut oil alkyl)amine, propoxylated	ARC.
5,8-Diethyl-7-hydroxydodecane-6-one oxime	GNM.
N,N-Dimethyl(coconut oil alkyl)amine oxide	ARC.
N,N-Dimethylhexadecylamine oxide	ARC, ONX.
(Hydrogenated tallow alkyl)amine, ethoxylated	CIB, TCH.
N-(2-Hydroxyethyl)-N,N′,N′-tris(2-hydroxypropyl) ethylenediamine.	NLC.
*(Mixed alkyl)amine, ethoxylated	APD, CIB, DA, GAF, RH.
Mixed substituted oximes	GNM.
(9-Octadecenyl)amine, ethoxylated	ARC.
Octadecylamine, ethoxylated	ARC, ICI, TCH.
Polyethylenepolyamine, alkoxylated	NLC.
*(Soybean oil alkyl)amine, ethoxylated	AAC, ARC, HDG, RTF, VAC.
*(Tallow alkyl)amine, ethoxylated	AAC, ARC, ASH, CIB, DUP.
N-(Tallow alkyl)trimethylenediamine, ethoxylated	ARC, RTF.
N,N,N′,N′-Tetrakis(2-hydroxyethyl)ethylenediamine	NLC.
N,N,N′,N′-Tetrakis(2-hydroxypropyl)ethylenediamine, propoxylated and ethoxylated.	WYN.
All other	GAF, x.

TABLE 19B.--*Surface-active agents for which U.S. production or sales were reported, identified by manufacturer, 1967*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
Cationic Surface-Active Agents--Continued	
*Amine oxides and oxygen-containing amines (except those having amide linkages)--Continued	
*Imidazoline and oxazoline derivatives:	
2-(8-Heptadecenyl)-4,4-bis(hydroxymethyl)-2-oxazoline.	COM, SWT, UVC.
*2-(8-Heptadecenyl)-1-(2-hydroxyethyl)-2-imidazoline---	NLC, ONX, UVC, VAC.
2-(8-Heptadecenyl)-4-hydroxymethyl-4-methyl-2-oxazoline.	COM, UVC.
*2-(Heptadecyl)-1-(2-hydroxyethyl)-2-imadazoline-------	GGY, MOA, PCS, UVC.
1-(2-Hydroxyethyl)-2-nonyl-2-imidazoline--------------	UVC.
1-(2-Hydroxyethyl)-2-nor(coconut oil alkyl)-2-imidazoline.	GGY, UVC.
1-(2-Hydroxyethyl)-2-nor(tall oil alkyl)-2-imidazoline.	CUL, NLC, UVC, VAC, x.
1-(2-Hydroxyethyl)-2-tridecyl-2-imidazoline hydrochloride.	UVC, WTC.
1-(2-Hydroxyethyl)-2-undecyl-2-imidazoline------------	MOA, UVC.
2-(11-Hydroxy-8-heptadecenyl)-2-imidazoline-----------	UVC.
*Cyclic products (except imidazoline and oxazoline derivatives):	
N-(Coconut oil alkyl)morpholine oxide-----------------	ARC.
N-Hexadecylmorpholine---------------------------------	APD.
N-(2-Hydroxyethyl)-1,2-diphenylethylenediamine--------	APX, HDG.
Lignin amine--	WVA.
Piperazine, ethoxylated------------------------------	GAF.
*Rosin amine, ethoxylated----------------------------	HPC, NLC, PCS, RTF.
N-(Soybean oil alkyl)morpholine----------------------	APD.
*Amines and amine oxides having amide linkages:	
*Carboxylic acid - diamine and polyamine condensates:	
Caprylic acid - tetraethylenepentamine condensate-----	ICI.
*Coconut oil acids - diethylenetriamine condensate-----	APX, DA, TXT.
*Coconut oil acids - N,N-dimethyltrimethylenediamine condensate.	JRG, PCS, RCD, TXT.
Mixed fatty acids - polyalkylenepolyamine condensate--	GRD, NLC.
Oleic acid - 1-(2-aminoethyl)piperazine condensate----	TXT.
Oleic acid - diethylenetriamine condensate------------	APD, PCS, TXT.
Oleic acid - N,N-dimethyltrimethylenediamine condensate.	CCW, CIB, SNW.
Pelargonic acid - tetraethylenepentamine condensate---	ICI.
*Stearic acid - diethylenetriamine condensate----------	APX, CST, HRT, ONX, PCS, S.
Stearic acid - N,N-diethylethylenediamine condensate--	CBP.
Stearic acid - dipropylenetriamine condensate---------	JOR.
Stearic acid - tetraethylenepentamine condensate------	ICI, ONX.
Tall oil acids - diethylenetriamine condensate--------	NCW, NLC, RTF.
Tall oil acids - polyalkylenepolyamine condensate-----	UVC.
All other---	TXT, VND.
*Stearic acid - ethylenediamine condensate, monoethoxylated.	AML, CLD, CMG, CST, DA, DEP, DEX, ICI, MRA, S, SNW.
*Other amines and amine oxides having amide linkages:	
N,N-Bis(2-hydroxyethyl)-2-(stearamidomethoxy)ethylamine.	CIB.
Coconut oil acids - diethylenetriamine condensate, polyethoxylated.	TCC.
Coconut oil acids - ethylenediamine condensate, monoethoxylated.	ARL, DA.
3-Lauramido-N,N,dimethylpropylamine oxide------------	SNW.
Oleic acid - ethylenediamine condensate, monoethoxylated.	CLD, DA, DEX, SOC, TNA.
Palm oil acids - ethylenediamine condensate, monoethoxylated.	APX.
Polypeptide, ethyl ester-----------------------------	MYW.
Stearic acid - N-(2-cyanoethyl)diethylenetriamine condensate (amine/acid ratio=1/2).	CIB.
Stearic acid - diethylenetriamine condensate, polyethoxylated.	TCC.
Stearic acid - ethylenediamine condensate; polyethoxylated.	APD.

TABLE 19B.--*Surface-active agents for which U.S. production or sales were reported, identified by manufacturer, 1967*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
Cationic Surface-Active Agents--Continued	
*Amines, not containing oxygen (and salts thereof):	
*Amine salts:	
(Coconut oil alkyl)amine acetate	ARC, ASH, FOR.
N-(Coconut oil alkyl)trimethylenediamine acetate	ARC.
N-(Coconut oil alkyl)trimethylenediamine adipate	ARC.
N-(Coconut oil alkyl)trimethylenediamine dicaprylate	ARC.
(Hydrogenated tallow alkyl)amine acetate	ARC, ASH, FOR.
(9-Octadecenyl)amine acetate	ARC, GNM.
Octadecylamine acetate	ACY, ARC.
Octylamine acetate	ARC.
(Soybean oil alkyl)amine acetate	ARC, ENO.
(Tallow alkyl)amine acetate	ARC, ASH, FOR.
N-(Tallow alkyl)trimethylenediamine acetate	ARC, FOR.
N-(Tallow alkyl)trimethylenediamine naphthenate	APD, ARC, FOR.
N-(Tallow alkyl)trimethylenediamine oleate	ARC, FOR.
N-(Tallow alkyl)trimethylenediamine tallate	ARC.
All other	ASH.
*Diamines and polyamines:	
1-(2-Aminoethyl)-2-(mixed alkyl)-2-imidazoline	RTF.
1-[3-(2-aminoethyl)naphth-1-yl]-2-(8-heptadecenyl) -2-imidazoline.	NLC.
1-(2-Aminoethyl)-2-nor(tall oil alkyl)-2-imidazoline	NLC, PCS, RTF, UVC.
*N-(Coconut oil alkyl)trimethylenediamine	ARC, ENO, FOR, GNM.
N-(Docosyl and eicosyl)trimethylenediamine	ENO.
N-Dodecyldiethylenetriamine	FIN.
2-Heptadecyl-2-imidazoline	SCO.
N-(Mixed alkyl)polyethylenepolyamine	CCW.
*N-(9-Octadecenyl)trimethylenediamine	ARC, FOR, GNM.
N-(Soybean oil alkyl)trimethylenediamine	ARC, ENO.
N-(Tall oil alkyl)trimethylenediamine	ARC.
N-(Tallow alkyl)dipropylenetriamine	GNM.
*N-(Tallow alkyl)trimethylenediamine	ARC, ENO, FOR, GNM.
*Primary monoamines:	
*(Coconut oil alkyl)amine	ARC, ASH, ENO, FOR, GNM.
(Cottonseed oil alkyl)amine	FOR.
Docosyl- and eicosylamine	ENO.
Dodecylamine	ARC, ASH, ENO, FOR, GNM.
Hexadecylamine	ARC, ASH, ENO, FOR.
*(Hydrogenated tallow alkyl)amine	ARC, ASH, ENO, FOR, GNM.
(Mixed alkyl)amine	ARC, GNM.
(Mixed tert-alkyl)amine	RH.
*9-Octadecenylamine	ARC, ENO, FOR, GNM.
*Octadecylamine	ARC, ENO, FOR, GNM.
Octylamine	ARC.
tert-Octylamine	RH.
(Soybean oil alkyl)amine	ARC, ENO.
*(Tall oil alkyl)amine	ARC, FOR, GNM.
*(Tallow alkyl)amine	ARC, ASH, ENO, FOR, GNM.
Tetradecylamine	GNM.
*Secondary and tertiary monoamines:	
Bis(coconut oil alkyl)amine	ARC, FOR.
Bis(hydrogenated tallow alkyl)amine	ARC, FOR, GNM.
*N,N-Dimethyl(coconut oil alkyl)amine	ARC, BRD, ENO, PG.
N,N-Dimethyldodecylamine	ARC, BRD, ENO.
N,N-Dimethylhexadecylamine	ARC, BRD.
N,N-Dimethyl(hydrogenated tallow alkyl)amine	ARC.
N,N-Dimethyl(mixed alkyl)amine	BRD, RH.
N,N-Dimethyl(9-octadecenyl)amine	ARC.
*N,N-Dimethyloctadecylamine	ARC, BRD, ENO, PG.
N,N-Dimethyl(soybean oil alkyl)amine	ARC.
N,N-Dimethyltetradecylamine	ARC, BRD, ENO.
N-Methylbis(coconut oil alkyl)amine	ENO, FOR, GNM.
*N-Methylbis(hydrogenated tallow alkyl)amine	ARC, ENO, FOR, GNM.
N-Methylbis(mixed alkyl)amine	PG.
N-Methyldioctadecylamine	FOR.
Tridodecylamine	GNM.

TABLE 19B.--*Surface-active agents for which U.S. production or sales were reported, identified by manufacturer, 1967*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
Cationic Surface-Active Agents--Continued	
*Amines, not containing oxygen (and salts thereof)--Continued	
*Secondary and tertiary monoamines--Continued	
Trioctylamine	GNM.
Tris(hydrogenated tallow alkyl)amine	GNM.
*Oxygen-containing quaternary ammonium salts (except those having amide linkages):	
*Acyclic:	
(2-Aminoethyl)ethyl(hydrogenated tallow alkyl)(2-hydroxyethyl)ammonium ethyl sulfate.	ARC.
Bis(hydrogenated tallow alkyl)(2-hydroxyethyl, ethoxylated)methylammonium chloride.	ARC.
Bis(2-hydroxyethyl, ethoxylated)methyl(9-octadecenyl) ammonium chloride.	ARC.
Bis(2-hydroxyethyl, ethoxylated)methyloctadecyl-ammonium chloride.	ARC.
(Coconut oil alkyl)bis(2-hydroxyethyl, ethoxylated) methylammonium chloride.	ARC, VAC.
(Coconut oil alkyl)(2-hydroxyethyl, ethoxylated) methyl(mixed alkyl)ammonium chloride.	ARC.
(Coconut oil alkyl)(2-hydroxyethyl, ethoxylated)methyl (mixed alkyl)ammonium methyl sulfate.	ARC.
2-Hydroxytrimethylenebis[(coconut oil alkyl) dimethylammonium chloride].	CIB.
Triethyl(octadecyloxymethyl)ammonium chloride	DAN.
All other	DUP, TCC.
*Cyclic:	
Benzyl(coconut oil alkyl)bis(2-hydroxyethyl)ammonium chloride.	CIB, NLC.
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.	HDG, NLC.
(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, UVC.
N-Ethyl-N-hexadecylmorpholinium ethyl sulfate	APD.
N-Ethyl-N-octadecylmorpholinium ethyl sulfate	GAF.
N-Ethyl-N-(soybean oil alkyl)morpholinium ethyl sulfate.	APD.
2(8-Heptadecenyl)-1,1-bis(2-hydroxyethyl)-2-imidazolinium chloride.	GGY.
(Tridecylbenzyl)diethyl(2-hydroxyethyl)ammonium chloride.	SNW.
*Quaternary ammonium salts having amide linkages:	
Benzylbis(2-hydroxyethyl)(2-stearamidomethoxyethyl) ammonium chloride.	ARC, CIB.
2-Heptadecyl-1-methyl-1-(2-stearamidoethyl)-2-imidazolinium methyl sulfate.	ARC, CUL.
(2-Hydroxyethyl)dimethyl(3-stearamidopropyl)ammonium dihydrogen phosphate.	ACY.
(2-Hydroxyethyl)dimethyl(3-stearamidopropyl)ammonium nitrate.	ACY.
(2-Hydroxyethyl)dimethyl(3-tallow acyl amidopropyl) ammonium chloride.	CUL.
(3-Lauramidopropyl)trimethylammonium methyl sulfate	ACY.
Trimethyl(3-oleamidopropyl)ammonium methyl sulfate	CIB, LUR.
All other	DUP, NLC.
*Quaternary ammonium salts, not containing oxygen:	
*Acyclic:	
*Bis(coconut oil alkyl)dimethylammonium chloride	ARC, ENO, FOR, GNM, VAC.
Bis(coconut oil alkyl)dimethylammonium nitrate	ARC.
*Bis(hydrogenated tallow alkyl)dimethylammonium chloride.	ARC, ASH, ENO, FOR, GNM, VAC.
*(Coconut oil alkyl)trimethylammonium chloride	ARC, FOR, GNM.
(Cottonseed oil alkyl)trimethylammonium chloride	FOR.

TABLE 19B.--*Surface-active agents for which U.S. production or sales were reported, identified by manufacturer, 1967*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
Cationic Surface-Active Agents--Continued	
*Quaternary ammonium salts, not containing oxygen--Continued	
*Acyclic--Continued	
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, ONX, PG.
Dimethyldioctadecylammonium methyl sulfate	ONX.
Dodecyltrimethylammonium bromide	DUP.
Dodecyltrimethylammonium chloride	ARC, FOR, GNM.
Ethyldimethyl(mixed alkyl)ammonium ethyl sulfate	JOR, TCC.
Ethyldimethyl(9-octadecenyl)ammonium bromide	ONX.
Ethyldimethyl(soybean oil alkyl)ammonium bromide	ARC.
Ethylhexadecyldimethylammonium bromide	FIN.
*Hexadecyltrimethylammonium salts:	
Hexadecyltrimethylammonium bromide	DUP, FIN, ICI.
Hexadecyltrimethylammonium chloride	ARC, BRD.
Hexadecyltrimethylammonium p-toluenesulfonate	FIN.
(Hydrogenated tallow alkyl)trimethylammonium chloride	ARC, FOR.
Methyltrioctylammonium chloride	GNM.
Methyltris(mixed alkyl)ammonium chloride	ASH, VAC.
N,N,N′,N′,N′-Pentamethyl-N-(tallow alkyl)trimethylenebis[ammonium chloride].	ARC, GNM, ORO.
Triethyloctadecylammonium ethyl sulfate	AKS.
Trimethyloctadecylammonium chloride	ARC.
Trimethyl(soybean oil alkyl)ammonium chloride	ARC, VAC.
Trimethyl(tallow alkyl)ammonium chloride	ARC, FOR, GNM.
Trimethyl(tallow alkyl)ammonium dimethyl phosphate	CUL.
All other	GNM, STC, VAC.
*Benzenoid:	
*Benzyl(coconut oil alkyl)dimethylammonium chloride	ARC, CRT, DEP, LUR, RTF, TXT.
*Benzyldimethyl(mixed alkyl)ammonium chloride	AAC, BRD, CUL, FIN, ONX, PG, RH, TXT, VAC, WSN.
Benzyldimethyloctadecylammonium chloride	APX, CUL, FIN, ONX, WSN.
Benzyldimethyl(tallow alkyl)ammonium chloride	ENO.
Benzyldimethyltetradecylammonium chloride	SNW, WSN.
Benzyldodecyldimethylammonium chloride	FIN, ONX, SDH, WSN.
Benzyhexadecyldimethylammonium chloride	ONX, RH.
Benzyl(hydrogenated tallow alkyl)dimethylammonium chloride.	ENO.
Benzyl(mixed alkyl)pyridinium chloride	RTF.
1-Benzylpyridinium chloride	DEP.
Benzyltrimethylammonium chloride	BRD, TCC.
*(3,4-Dichlorobenzyl)dodecyldimethylammonium chloride	CUL, ONX, VAC, WSN.
(Dodecylbenzyl)dimethyloctadecylammonium chloride	ARC.
(Dodecylbenzyl)triethylammonium chloride	PC.
(Dodecylbenzyl)trimethylammonium chloride	CUL, NLC, VAC, WTC.
2-Dodecylisoquinolinium bromide	CUL, ONX.
(Dodecylmethylbenzyl)trimethylammonium chloride	RH.
1-Dodecylpyridinium chloride	HK.
(Ethylbenzyl)dimethyl(mixed alkyl)ammonium chloride	ONX.
Nonionic Surface-Active Agents	
*Carboxylic acid amides:	
*Carboxylic acid - alkanolamine condensates:	
*Diethanolamine condensates (amine/acid ratio=2/1):	
*Capric acid	GGY, PCS, SCP, UVC.
Castor oil acids	BAC, PCS, VAL.
*Coconut oil acids	AKS, AML, ARD, BSW, CIB, CLI, CTL, DA, DEP, EFH, GAF, HLI, HRT, JOR, KNP, LUR, MCP, MOA, ONX, PC, PCS, PNX, PUR, RCD, SBC, SCP, SEY, SOP, SOS, STP, SWT, TXC, UNN, UVC, VAC, VND, WTC.
Coconut oil and tall oil acids	CSB.
*Coconut oil and tallow acids	CLI, CRT, GAF, PG.
*Lauric acid	CLI, DA, DRW, HLI, MCP, MOA, ONX, PG, RCD, WON, WTC.
Lauric and myristic acids	HLI.
Linoleic acid	VND.
Mixed vegetable oil acids	HLI.

TABLE 19B. *--Surface-active agents for which U.S. production or sales were reported, identified by manufacturer, 1967--*Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
Nonionic Surface-Active Agents--Continued	
*Carboxylic acid amides--Continued	
*Carboxylic acid - alkanolamine condensates--Continued	
*Diethanolamine condensates (amine/acid ratio= 2/1)--Continued	
*Oleic acid	CCW, CLI, SCP, SOS, STP, VAC, WTC.
Palmitic acid	CMG.
Palmitic and stearic acids	MCP.
Pelargonic acid	EMR.
*Stearic acid	AML, CLI, DA, EMR, JOR, ONX, SCO, SCP, TXC, VAL.
Tallow acids	MCP.
*Tall oil acids	EFH, MRA, WTC.
Unspecified mixed fatty acids	ROB.
*Diethanolamine condensates (other amine/acid ratios):	
*Coconut oil acids (1/1)	APX, ARD, CCL, CLI, CTL, DA, DRW, EMK, GGY, HLI, MOA, MRV, ONX, PCS, PEK, QCP, RCD, RTF, SBC, SCO, SEY, STP, TCC, TXT, VAC.
Coconut oil acids (1.4/1)	JRG.
Hydrogenated tallow acids (1/1)	DA.
*Lauric acid (1/1)	CTL, CUL, DRW, HLI, LEV, MOA, ONX, PCS, PG, SBC, STP, TXN, TXT, VAC.
Lauric and myristic acids (1/1)	CLI, TXT, RTF.
Myristic acid (1/1)	HDG.
*Oleic acid (1/1)	DA, GGY, PCS, SBC, SWT, TCC, TXT.
Palmitic and stearic acids (1/1)	GAF, MRA.
Pelargonic acid (1/1)	PCS.
*Stearic acid (1/1)	EMR, GAF, GGY, GLY, PCS, RPC, SEY, SWT, UVC.
Tall oil acids (1/1)	MRV.
Tallow acids (1/1)	RPC.
Unspecified mixed fatty acids (1/1)	STP.
*Ethanolamine condensates:	
Amine/acid ratio=2/1:	
Coconut oil acids	CTL, MOA, PCS, RTF, STP, VND, WTC.
Hydrogenated castor oil acids	BAC, GLY.
Hydrogenated tallow acids	GLY.
*Lauric acid	AES, ARC, CTL, WTC.
Lauric and myristic acids	TXN.
Stearic acid	ARC, CLI.
Amine/acid ratio=1/1:	
Coconut oil acids	APX, DSO, PG, STP, UVC.
Lauric and myristic acids	TXT.
Oleic acid	VPC.
Stearic acid	MOA, VND.
Amine/acid ratio= 1/2: Stearic acid	GLY, WTC.
*Isopropanolamine condensates:	
Coconut oil acids	MOA, STP, TXT.
*Lauric acid	CLI, MOA, PCS, WTC.
Lauric and myristic acids	LEV, TXT.
Oleic acid	WTC.
*Carboxylic acid - alkanolamine condensates, ethoxylated:	
Coconut oil acids - ethanolamine condensate, ethoxylated.	STP.
Hydrogenated tallow acids - ethanolamine condensate, ethoxylated.	ARC, DA.
Oleic acid - ethanolamine condensate, ethoxylated	ARC, GAF.
Tallow oil acids - ethanolamine condensate, ethoxylated (amine/acid ratio=1/2).	NLC.
*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, DRW, HDG, PCS, TCH.
*Anhydrosorbitol mono-oleate	AAC, APD, ARC, DRW, EMR, GLY, HDG, PCS, TCH.
Anhydrosorbitol monopalmitate	APD, GLY, HDG, PCS.
*Anhydrosorbitol monostearate	AAC, APD, ARC, DRW, GLY, HDG, PCS.
Anhydrosorbitol sesquioleate	AAC, GLY.
Anhydrosorbitol tetrastearate	APD.
Anhydrosorbitol triester of tall oil acids	TCH.

TABLE 19B.--*Surface-active agents for which U.S. production or sales were reported, identified by manufacturer, 1967*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
Nonionic Surface-Active Agents--Continued	
*Carboxylic acid esters--Continued	
*Anhydrosorbitol esters--Continued	
*Anhydrosorbitol trioleate	APD, GLY, PCS, TCH.
*Anhydrosorbitol tristearate	APD, DRW, GLY, HDG, PCS.
*Ethoxylated anhydrosorbitol esters:	
Ethoxylated anhydrosorbitol monoester of tall oil acids.	RTF, TCH.
*Ethoxylated anhydrosorbitol monolaurate	AAC, APD, ARC, DRW, GLY, HDG, PCS, TCH.
*Ethoxylated anhydrosorbitol mono-oleate	AAC, APD, ARC, DRW, GLD, GLY, HDG, PCS, TCH.
*Ethoxylated anhydrosorbitol monopalmitate	AAC, APD, GLY, HDG, PCS, TCH.
*Ethoxylated anhydrosorbitol monostearate	AAC, APD, ARC, DRW, GLY, HDG, PCS, TCH.
Ethoxylated anhydrosorbitol triester of castor oil acids.	APD.
Ethoxylated anhydrosorbitol triester of tall oil acids.	APD.
*Ethoxylated anhydrosorbitol trioleate	AAC, APD, GLY, HDG, TCH.
*Ethoxylated anhydrosorbitol tristearate	AAC, APD, DRW, GLY, HDG, 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 tallow acids	DRW.
*Diethylene glycol monolaurate	CCW, DA, GLY, HAL, HDG, WTC.
*Diethylene glycol mono-oleate	ARC, DA, HAL, WTC.
Diethylene glycol monoricinoleate	GLY.
*Diethylene glycol monostearate	AML, ARC, CCW, CLI, DA, HAL, HDG, PCS, QCP, SEY, UVC, VAL, VND, WTC.
Diethylene glycol sesquiester of tall oil acids	QCP, WTC.
Diethylene glycol sesquilaurate	ARC, GLY.
Diethylene glycol sesquistearate	MCP, WM.
Ethylene glycol distearate	ARC, EMR, HAL, HDG, HUM.
*Ethylene glycol monostearate	ARC, CCW, CLI, EFH, GLY, HAL, HDG, KNP, PCS, VND, WM.
Ethylene glycol sesquistearate	WM.
All other	EMR.
*Glycerol esters:	
*Complex glycerol esters:	
Glycerol diacetyltartrate monostearate	DRW, PCS.
Glycerol lactate palmitate	ARC, DRW, GLD.
Glycerol lactate stearate	APD, GLD.
Glycerol maleate mono-oleate	DA, WTC.
Glycerol monoester of mixed fatty acids, acetylated	EK, EFH.
Glycerol mono-oleate, acetylated	x.
Glycerol monostearate, succinylated	EK.
*Glycerol esters of chemically defined acids:	
Glycerol dioleate	ARC, HAL.
Glycerol distearate	APX, ARC.
Glycerol monocaprate	ARC.
Glycerol monocaprylate	ARC, DRW.
*Glycerol monolaurate	ARC, GLY, HAL.
*Glycerol mono-oleate	APD, ARC, CCW, DRW, EFH, EK, EMR, GLY, HAL, HDG, PCS, SWT, WM.
Glycerol monoricinoleate	CCW, HDG.
*Glycerol monostearate	ARC, CCW, CHL, CRT, DA, DRW, EK, GLY, GRO, HAL, HDG, JRG, LUR, MRA, NW, PCS, PG, SOS, SWT, TCC, VND, WM, WTC, x.
*Glycerol esters of mixed acids:	
Glycerol diester of lard acids	PCS.
Glycerol ester of tall oil acids	ARC.
Glycerol monoester of coconut oil acids	DRW, GLY, SWT, WM.
Glycerol monoester of corn oil acids	GLD.
Glycerol monoester of cottonseed oil acids	DRW, EK.
Glycerol monoester of hydrogenated cottonseed oil acids.	GLD, LEV, PCS.
*Glycerol monoester of hydrogenated soybean oil acids.	DRW, EK, GLD.
Glycerol monoester of lard acids	EK, GLD, PCS.
Glycerol monoester of peanut oil acids	DRW.
Glycerol monoester of tallow acids	PCS.
Glycerol sesquiester of castor oil acids	HDG.

TABLE 19B.--*Surface-active agents for which U.S. production or sales were reported, identified by manufacturer, 1967*--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 mixed acids--Continued	
Glycerol sesquiester of mixed fatty acids	APD.
All other	EK, LEV.
*Natural fats and oils, ethoxylated:	
*Castor oil, ethoxylated	APD, BAC, DA, DRW, EMR, GAF, GLY, ICI, NLC, PCS, RTF, TCH, TMH, WYN.
Hydrogenated castor oil, ethoxylated	APD, GAF, TCH, VAC.
*Lanolin, ethoxylated	APD, CRD, PCS.
Tallow, ethoxylated	DRW.
*Polyethylene glycol esters:	
*Polyethylene glycol esters of chemically defined acids:	
*Polyethylene glycol dilaurate	ARC, DA, DRW, EFH, GLY, HAL, HDG, JOR, PCS, UVC, WM.
*Polyethylene glycol dioleate	ARC, CLD, DA, EFH, GGY, GLY, HAL, HDG, NLC, PCS, SM, UVC.
*Polyethylene glycol distearate	ARC, GLY, HAL, HDG, PCS, QCP.
Polyethylene glycol methylcarbitol maleate	CCA.
*Polyethylene glycol monolaurate	AAC, ARC, CCA, DA, GAF, GGY, GLY, HAL, HDG, JOR, KNP, PCS, SYC, TCH, TXT, UVC.
*Polyethylene glycol mono-oleate	ARC, CCA, CLD, CRT, DA, DRW, EMR, GAF, GGY, GLY, HAL, HDG, ICI, ONX, PCS, SM, SOS, SWT, SYC, TCH, UVC, VAC, VND, VPC, WM, WTC.
Polyethylene glycol monopalmitate	APD.
Polyethylene glycol monopelargonate	EMR, PCS.
Polyethylene glycol monoricinoleate	BAC, DA, HAL, TCH.
*Polyethylene glycol monostearate	AAC, AKS, AML, APD, ARC, CHP, CRT, DA, DEP, DEX, DRW, GAF, GGY, GLY, HAL, HDG, ICI, KNP, ONX, PC, PCS, PD, RH, SCP, SEY, TCC, TCH, UVC, VND, WTC.
Polyethylene glycol pelargonate	SCP.
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, TMH, UVC.
Polyethylene glycol sesquiester of rosin acids	APD, HPC, QCP.
*Polyethylene glycol sesquiester of tall oil acids	AML, APD, APX, ARC, DA, DRW, MON, OMC, RTF, TCH, WTC.
*Polyethylene glycol esters of other mixed acids:	
Polyethylene glycol diester of trimerized castor oil acids.	GLY.
Polyethylene glycol monoester of coconut oil acids	EMR, GLY.
Polyethylene glycol monoester of soybean oil acids	SYC.
Polyethylene glycol sesquiester of castor oil acids	ARC, GGY, WTC.
*Polyethylene glycol sesquiester of coconut oil acids.	ARC, ARL, DA, DRW, MCP, ONX, PG, SCP, SOS, VAC, VND.
Polyethylene glycol sesquiester of tallow acids	ONX, SOS.
*Polyglycerol esters:	
Polyglycerol lactate oleate	DRW.
Polyglycerol mono-oleate	HDG, PCS, VND, WTC.
Polyglycerol monostearate	PCS.
*Propanediol esters:	
1,2-Propanediol distearate	HAL, PCS.
1,3-Propanediol monoester of coconut oil acids	DRW.
1,3-Propanediol monoester of tallow acids	PCS.
1,2-Propanediol monolaurate	ARC, HAL, SBC, WM.
1,2-Propanediol mono-oleate	HAL.
Propanediol monopalmitate	ARC, HDG.
*1,2-Propanediol monostearate	APD, ARC, CCW, EK, GLD, GLY, HAL, JRG, PCS, PG.
*Other carboxylic acid esters:	
Anhydrosorbitol glycerol monolaurate	APD.
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, RTF, TCH.
Ethoxylated sorbitol hexaoleate	APD, TCH.
Ethoxylated sorbitol lanolin ester	APD.
Ethoxylated sorbitol mono-oleate	APD, HAL.
Ethoxylated sorbitol monostearate	MCP, SNW.

TABLE 19B.--*Surface-active agents for which U.S. production or sales were reported, identified by manufacturer, 1967*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
Nonionic Surface-Active Agents--Continued	
*Carboxylic acid esters--Continued	
*Other carboxylic acid esters--Continued	
Ethoxylated sorbitol oleate, acetylated	APD.
Ethoxylated sorbitol pentaester of tall oil acids	APD, RTF.
Ethoxylated sorbitol pentalaurate	APD.
Ethoxylated sorbitol tetraester of lauric and oleic acids.	APD.
Ethoxylated sorbitol tetraester of tall oil acids	APD.
Methoxy polyethylene glycol mono-oleate	NLC.
Methylglucoside laurate	HDG.
Methylglucoside oleate	HDG.
Pentaerythritol distearate	GLY, VAL.
Polyalkylene glycol diglycolate	NLC, RTF.
Sucrose esters of fatty acids	SUG.
All other	CCW, STC, TCC, WM.
*Ethers:	
*Benzenoid ethers:	
Alkylphenol - formaldehyde condensates, alkoxylated:	
p-tert-Butylphenol - formaldehyde, alkoxylated	RTF.
(Mixed alkyl)phenol - formaldehyde, alkoxylated	NLC, RTF.
Nonylphenol - formaldehyde, alkoxylated	NLC, RTF.
tert-Octylphenol - formaldehyde, ethoxylated	SDW.
p-tert-Butylphenol, ethoxylated	RTF.
Diisobutylphenol, ethoxylated	GAF, RH.
Dinonylphenol, ethoxylated	GAF, PCS, RTF, STP, TMH.
*Dodecylphenol, ethoxylated	GAF, MON, PCS, TMH, UCC.
*Iso-octylphenol, ethoxylated	APX, DA, DRW, 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, HDG, HPC, JCC, MON, NLC, OMC, PCS, RH, RTF, STP, TCH, TMH, UCC.
Nonylphenol, ethoxylated and propoxylated	RTF.
Nonylphenoxypoly(ethyleneoxy)ethyl iodide	GAF.
*Phenol, ethoxylated	APD, DA, GAF, JCC, TCH, UCC.
Tetradecylphenol, ethoxylated	ORO, WTC.
Tridecylphenol, ethoxylated	PCS.
Xylenol, ethoxylated	NLC.
All other	RH.
*Nonbenzenoid ethers:	
*Linear alcohols, alkoxylated:	
Coconut oil alcohol, ethoxylated	PCS.
*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, HDG, JCC, OMC, UCC.
*Hexadecyl alcohol, ethoxylated	ACS, APD, ASH, CIB, GLY, ICI.
*Mixed linear alcohols, ethoxylated	AAC, ASH, CO, GAF, HDG, JCC, MON, NLC, RH, RTF, SHC, STP, TCH, UCC, VAC.
*Mixed linear alcohols, ethoxylated and propoxylated	GAF, JCC, STP, WYN.
*9-Octadecenyl alcohol, ethoxylated	AAC, APD, ASH, CIB, CRD, DA, DUP, GAF, GLY, ICI, TCH, VPC.
*Octadecyl alcohol, ethoxylated	APD, CIB, DUP, HDG, VAC.
Sperm oil alcohol, ethoxylated	DUP.
Tallow alcohol, ethoxylated	AAC, ASH.
Tridecyl alcohol, ethoxylated	DUP.
All other	RH, VPC.
*Other ethers and thioethers:	
tert-Dodecyl mercaptan, ethoxylated	AAC, MON, RTF, UCC.
Glucose, ethoxylated	RH.
Glycerol, alkoxylated	NLC.
Mixed alcohols, ethoxylated	DRW.
Poly(mixed ethylene, propylene)glycol	NLC, UCC.
Polypropylene glycol, ethoxylated	NLC, PCS, RTF, WYN.
Propoxylated thiourea	VAC.
Rosin alcohol, ethoxylated	CIB, HPC.
Sorbitol, ethoxylated	TCH.
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.

TABLE 19B.--Surface-active agents for which U.S. production or sales were reported, identified by manufacturer, 1967--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
Nonionic Surface-Active Agents--Continued	
*Ethers--Continued	
*Nonbenzenoid ethers--Continued	
*Other ethers and thioethers--Continued	
Tridecyl alcohol, propoxylated and ethoxylated------	JCC.
Trimethylnonyl alcohol, ethoxylated-----------------	UCC.
Trimethylolpropane, alkoxylated---------------------	JCC, RTF, WYN.
Woolwax alcohols, ethoxylated-----------------------	CRD.
All other---	SNW.
*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.
Glycerol sesquiester of hydrogenated castor oil acids, borated and ethoxylated.	GLY.
Octyl phosphate, ethoxylated------------------------	DUP, SFA.
Polyethylene - vinyl alcohol condensate, potassium salt-	NLC.
2,4,7,9-Tetramethyl-5-decyne-4,7-diol----------------	CUC.
Tri(castor oil alkyl) phosphate----------------------	GLY.
Tris(nonylphenyl)phosphite---------------------------	GAF.
All other---	CCW, CMG, SNW.

Pesticides and Related Products

TABLE 20B.--*Pesticides and related products for which U.S. production or sales were reported, identified by manufacturer, 1967*

[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, UPJ.
*3,5-Dimethyl-1,3,5,2H-tetrahydrothiadiazine-2-thione (DMTT)	MRK, OTC, SF, WRC.
Diphenylammonium propionate	MRK.
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.
*Phenylmercuric acetate (PMA)	BKM, CLY, MRK, TRO, WRC.
Phenylmercuric ammonium acetate	TRO.
Phenylmercuric hydroxide	MRK.
Phenylmercuric lactate	WRC.
Phenylmercuric naphthenate	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, SRR, TGL, TRO, WTC.
Pentachloronitrobenzene (PCNB)	OMC, OTC.
*Pentachlorophenol (PCP)	BXT, DOW, FRO, MON, RCI, SFD.
Pentachlorophenol, sodium salt	DOW, MON, RCI.
*8-Quinolinol (8-Hydroxyquinoline), copper salt	FIS, 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	GAF.
*2,4,5-Trichlorophenol, sodium salt	DOW.
2,4,6-Trichlorophenol	DOW, RBC.
*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)	GOC.
2-Chloro-4,6-bis(ethylamino)-s-triazine (Simazine)	GGY.
2-Chloro-4,6-bis(isopropylamino)-s-triazine (Propazine)	GGY.
2-Chloro-4-ethylamino-6-isopropylamino-s-triazine (Atrazine).	GGY.
2-Chloro-N-isopropyl acetanilide	MON.
3'-Chloro-2-methyl-p-valerotoluidide (Solan)	FMN.
N'-(4-Chlorophenoxy)phenyl N,N-dimethylurea (Chloroxuron)	CBA, NES.
3-(p-Chlorophenyl)-1,1-dimethylurea (Monuron)	DUP.
3-(p-Chlorophenyl)-1,1-dimethylurea trichloroacetate	ACN.

TABLE 20B.--*Pesticides and related products for which U.S. production or sales were reported, identified by manufacturer, 1967*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
PESTICIDES AND RELATED PRODUCTS, CYCLIC--Continued	
*Herbicides and plant hormones--Continued	
3-Cyclohexyl-5,6-trimethyleneuracil	DUP.
2,6-Di-tert-butyl-p-tolylmethylcarbamate	HPC.
2,5-Dichloro-3-aminobenzoic acid, ammonium salt	AMC, GAF.
3,6-Dichloro-o-anisic acid (Dicamba)	VEL.
2,4-Dichlorobenzyltributylphosphonium chloride	SM.
2-(2,4-Dichlorophenoxy)ethyl sulfate, sodium salt (Sesone).	GAF.
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 (Diphenamide)	ARA, CWN, UPJ.
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.
Dinitrobutylphenol, 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.
4-(Methylsulfonyl)-2,6-dinitro-N,N-dipropylaniline	SHC.
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 (Endothall).	PAS.
Phenoxyacetic acid derivatives:	
4-Chloro-2-methylphenoxyacetic acid (MCPA)	CHC, CLY, RIV.
4-Chloro-2-methylphenoxyacetic acid, potassium salt	GTH.
*2,4-Dichlorophenoxyacetic acid (2,4-D)	CHC, DA, DOW, HPC, MON, THM.
*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, CHC, DA, DOW, HPC, MON, PBI, RIV.
2,4-Dichlorophenoxyacetic acid, sec-butyl ester	CHC, DOW, MON.
2,4-Dichlorophenoxyacetic acid, dimethylamine salt	ALC, AMC, CHC, DA, DOW, HPC, PBI, 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, PBI, RIV.
*2,4-Dichlorophenoxyacetic acid, isopropyl ester	AMC, CHC, DA, DOW, HPC, MON.
2,4-Dichlorophenoxyacetic acid, lithium salt	GTH, RIV.
*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-Trichlorophenoxyyacetic acid, butoxypolypropy-leneglycol ester.	DOW.
*2,4,5-Trichlorophenoxyacetic acid, n-butyl ester	DA, DOW, HPC, MON, PBI, RIV.

TABLE 20B.--*Pesticides and related products for which U.S. production or sales were reported, identified by manufacturer, 1967*--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, 2-ethylhexyl ester.	DA, HPC.
*2,4,5-Trichlorophenoxyacetic acid, iso-octyl ester--	DA, DOW, MON, PBI, RIV, TMH.
2,4,5-Trichlorophenoxyacetic acid, triethylamine salt.	DOW, HPC.
Polychloro-tetrahydro-methanoindene (Polychlorodicyclopentadiene) isomers.	VEL.
N-m-Tolyl phthalamic acid----------	USR.
2-(2,4,5-Trichlorophenoxy)propionic acid (Silvex)-------	DOW, HPC, RIV.
2-(2,4,5-Trichlorophenoxy)propionic acid, 2-ethylhexyl ester.	HPC.
2-(2,4,5-Trichlorophenoxy)propionic acid, triethanolamine salt).	BKL.
α,α,α-Trifluoro-2,6-dinitro-N,N-dipropyl-p-toluidine (Trifluralin).	LIL.
3-(m-Trifluoromethylphenyl)-1,1-dimethylurea (Fluometuron).	CBA
Tris(2, 4-dichlorophenoxyethyl) phosophite (2, 4-DEP)---	USR.
Insect attractants and repellants:	
tert-Butyl 4(or 5)-chloro-2-methylcyclohexanecarboxylate (Trimedlure).	UOP.
N,N-Diethyltoluamide (DEET)----------	HPC, PFZ.
Di-n-propyl isocinchomeronate----------	MGK.
*Insecticides:	
Allethrin (allyl homolog of Cinerin I)----------	BPC.
3-sec-Amylphenyl-N-methylcarbamate----------	x.
Benzyl thiocyanate----------	HK.
2-sec-Butyl-4,6-dinitrophenyl-3,3-dimethylacrylate (Binapacryl).	FMN.
Chlorinated insecticides:	
*Aldrin-toxaphene group:	
Heptachloro-tetrahydro-endo-methanoindene (Heptachlor).	VEL.
Hexachloro-epoxy-octahydro-endo-endo-dimethanonaphthalene (Endrin).	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, SFD.
2,2-Bis(p-chlorophenyl)-1,1-dichloroethane (DDD) (TDE)	ACN, RH.
1,1-Bis(p-chlorophenyl)-2-nitrobutane----------	CCM.
1,1-Bis(p-chlorophenyl)-2-nitropropane----------	CCM.
*α-Bis(p-chlorophenyl)β,β,β-trichloroethane (DDT)------	ACN, DA, LEB, MTO, OMC.
2-(p-tert-Butylphenoxy)isopropyl-2′-chloroethyl sulfite.	USR.
Chlorobenzilate----------	GGY.
p-Chlorophenyl p-chlorobenzenesulfonate (Ovex)--------	AMP, DOW.
o-Chlorophenyl-N-methylcarbamate----------	OTC.
p-Chlorophenyl 2,4,5-trichlorophenyl sulfone (Tetradifon).	FMN, FMP.
6-Chloro-3,4-xylyl, methylcarbamate----------	UPJ.
Decachlorooctahydro-1,3,4-metheno-2H-cyclobuta[cd]pentalen-2-one.	ACN.
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).	ACN.
*Hexachlorocyclohexane (Benzene hexachloride) (BHC)----	DA, HK, PPG.
Hexachlorocyclohexane, 100% γ-isomer (Lindane)--------	HK.
Hexachloro-hexahydro-methano-benzodioxathiepin 3-oxide (Endosulfan).	HK.
1,1,1-Trichloro-2,2-bis(p-methoxyphenyl)ethane (Methoxychlor).	CHF, DUP.
Isobornyl thiocyanoacetate----------	CIS, HPC.
N-(Phenyl-2-nitropropyl)piperidine----------	MRK.
1-Naphthyl N-methylcarbamate (Carbaryl)----------	UCC.

TABLE 20B.--*Pesticides and related products for which U.S. production or sales were reported, identified by manufacturer, 1967*--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] 0,0-diethyl phosphorodithioate (Carbophenothion).	SF.
2-Chloro-1-(2,4,5-trichlorophenyl)vinyl dimethyl phosphate.	SHC.
0,0-Diethyl 0-3-chloro-4-methyl-1-oxo-2H-1-benzopyran-7-yl phosphorothioate (Coumaphos).	CHG.
Diethyl 1-(2,4-dichlorophenyl)-2-chlorovinyl phosphate.	SHC.
0,0-Diethyl-1-(2,5-dichlorophenyl) 0-2-chlorovinyl phosphate.	SHC.
0,0-Diethyl 0-(2-isopropyl-4-methyl-6-pyrimidinyl) phosphorothioate (Diazinon).	GGY.
0,0-Diethyl 0-p-(methylsulfinyl)phenyl phosphorothioate.	CHG.
*0,0-Diethyl 0-p-nitrophenyl phosphorothioate (Parathion).	AMP, MON, SF, SHC.
0,0-Dimethyl 0-[4-(methylthio)-m-tolyl] phosphorothioate (Fenthion).	CHG.
*0,0-Dimethyl 0-p-nitrophenyl phosphorothioate (Methyl parathion).	AMP, MON, SF, SHC, VEL.
0,0-Dimethyl S-[4-oxo-1,2,3-benzotriazin-3(4H)-ylmethyl] phosphorodithioate.	CHG.
0,0-Dimethyl S-phthalimidomethyl phosphorodithioate--	SF.
Dimethyl 2,4,5-trichlorophenyl phosphorothionate (Ronnel).	DOW.
2,3-p-Dioxane S,S-bis(0,0-diethylphosphorodithioate) (Dioxathion).	HPC.
0-Ethyl 0-p-nitrophenyl phenylphosphonothioate (EPN).	SF.
α-Methylbenzyl 3-(dimethoxyphosphinyloxy)-cis-crotonate.	SHC.
0,0,0',0'-Tetramethyl 0,0'-thiodi-p-phenylene phosphorodithioate.	ACY.
Lampricide: 3-Trifluoromethyl-4-nitrophenol----------	MEE.
Nematocides:	
0,0-Diethyl 0-(2,4-dichlorophenyl) phosphorothioate---	SM.
0,0-Diethyl 0-2-pyrazinyl phosphorothioate (Thionazin)-	ACY.
*Rodenticides:	
3-(α-Acetonylbenzyl)-4-hydroxycoumarin (Warfarin)------	CIS, MOT, PEN.
2-Diphenylacetyl-1-3-indandione (Diphacinone)----------	NES.
2-Diphenylacetyl-1-3-indandione, sodium salt----------	NES.
3-(1-Furyl-3-acetylethyl)-4-hydroxycoumarin (Coumafuryl).	AMC.
2-Pivaloyl-1,3-indandione (Pindone)--------------------	MOT, PIC.
Synergists and adjuvants:	
α-[2-(2-n-Butoxyethoxy)-ethoxy]-4,5-methylene-dioxy-2-propyltoluene (Piperonyl butoxide).	FMN, FMP.
N,N-Di-n-butyl-p-chlorobenzenesulfonamide--------------	NES.
N-(2-Ethylhexyl)bicyclo(2.2.1)-5-heptene-2,3-dicarboximide.	MGK.
1,2-Methylenedioxy-4-[2-(octylsulfinyl)propyl]-benzene (Sulfoxide).	PEN.
Piperonal bis[2-(2-butoxyethoxy)ethyl] acetal----------	MGK.
PESTICIDES AND RELATED PRODUCTS, ACYCLIC	
*Fungicides:	
Bis-1,4-bromoacetoxy-2-butene-------------------------	VIN.
Cadmium succinate-------------------------------------	MAL.
1-Chloro-2-nitropropane (Korax)-----------------------	FMN.
Disodium cyanodithioimidocarbonate--------------------	BKM.
Dithiocarbamic acid fungicides:	
*Dimethyldithiocarbamic acid, ferric salt (Ferbam)----	DUP, FMN, VNC, 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.

TABLE 20B.--*Pesticides and related products for which U.S. production or sales were reported, identified by manufacturer, 1967*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
PESTICIDES AND RELATED PRODUCTS, ACYCLIC--Continued	
*Fungicides--Continued	
Dithiocarbamic acid fungicides--Continued	
*Ethylene bis(dithiocarbamic acid), zinc salt (Zineb).	CIS, DUP, FMN, RH, WOD.
Polyethylenethiuram disulfide (PETD)	FMN.
Other dithiocarbamic acid fungicides	VNC.
n-Dodecylguanidine acetate (Dodine)	ACY.
Mercury fungicides:	
Chloromethoxypropylmercuric acetate	TRO.
3-Methyl (mercurithio)-1,2-propanediol	DUP.
Methylmercuric hydroxide	MRT.
Methylmercury nitrile	WRC.
All other acyclic fungicides:	
Dimethyl thiocarbonyl disulfide	CLY.
2-Propene-1,1-diol diacetate	SHC.
*Herbicides and plant hormones:	
Cacodylic acid	ASL, VIN.
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-Dimethylaminosuccinamic 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 phosphorotrithioite	SM.
Trichloroacetic acid, sodium salt (TCA)	DOW.
S-2,3,3-Trichloroallyl N,N-diisopropylthiol carbamate (Tri-allate).	MON.
Other acyclic herbicides	ACN.
*Insecticides:	
2-(2-Butoxyethoxy)ethyl thiocyanate	RH.
Metaldehyde	COM.
*Organophosphorus insecticides:	
S-[1,2-Bis (ethoxycarbonyl) ethyl] O,O-dimethyl phosphorodithioate (Malathion).	ACY, CIS.
2-Carbomethoxy-1-propen-2-yl dimethyl phosphate	SHC.
1,2-Dibromo-2,2-dichloroethyl dimethyl phosphate (Naled)	SHC.
O,O-Diethyl S-2-(ethylthio)ethyl phosophorodithioate (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 phosphorothioate (Oxydemetonmethyl).	CHG.
O,O,O',O'-Tetraethyl S,S'-methylene bis-phosphorodithioate (Ethion).	FMN, FMP.
Tetraethyl pyrophosphate (TEPP)	ALC, OTH.
Tetra-n-propyl dithiopyrophosphate	SF.
2-Thiocyanoethyl dodecanoate	RH.
Other acyclic insecticides	BFG.

TABLE 20B.--*Pesticides and related products for which U.S. production or sales were reported, identified by manufacturer, 1967*--**Continued**

Chemical	Manufacturers' identification codes (according to list in table 22)
PESTICIDES AND RELATED PRODUCTS, ACYCLIC--Continued	
*Rodenticides: Sodium fluoracetate	RBC.
*Soil conditioners: Polyacrylonitrile, hydrolyzed, sodium salt.	ACY.
*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, GTL, MCH.
N-Methyldithiocarbamic acid, sodium salt (Metham)	CHF, DUP, RH, 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, 1967*

[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.
Adamantane and carboxylic acid	ALD.
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, SHL.
Arylalkyl phosphites	WES.
Barium octylphenate	CCA.
Benzoic acid salts:	
Ammonium benzoate	FIS.
*Sodium benzoate	HK, HN, MON, PFZ, VEL.
p-Benzoquinone (p-Quinone)	EKT.
Benzothiazole	ACY.
*Benzoyl peroxide	ARG, AZT, BKL, CAD, NOC, RCI, SDH, UPR, WTL.
Benzyltrimethylammonium chloride	COM.
Biological stains	ACS, EK.
Bis(2,4-dichlorobenzoyl) peroxide	CAD, WTL.
2,4-Bis(4-hydroxy-3,5-di-tert-butyl-phenoxy)-6-(n-octylthio)-1,3,5-triazine.	GGY.
2,4-Bis(n-octylthio)-6-(4'-hydroxy-3',5'-di-tert-butylanilino)-1,3,5-triazine.	GGY.
Boron fluoride-phenol complex	ACS.
*Butyl benzoate	FRO, TCC, VEL.
p-tert-Butylbenzoic acid, barium bis-salt	CCA.
2(and 3)-tert-Butyl-4-methoxyphenol	EKT.
p-tert-Butyl-α-methylcinnamaldehyde	GIV.
tert-Butyl peroxybenzoate	AZT, WTL.
4-tert-Butylphenyl salicylate	DOW.
*4-tert-Butylpyrocatechol	BKL, CTA, DOW.
Camphene	GLD, HPC.
Catecholsulfonic acid, sodium salt	ICO.
Centralite-1 (N,N'-Diethyl-N,N'-diphenylurea)	ACS, OTC, PAS.
Chemical indicators	ACS, EK, LAM.
Chemical reagents	ACS, CLB, EK, GFS, LAM, PIC.
Chloramine B (Sodium derivative of N-chlorobenzenesulfonamide).	NES.
1-(3-Chloroallyl)-3,5,7-triaza-1-azon iaadamantane chloride.	DOW.
o-Chlorobenzamalononitrile	NCA.
5-Chloro-α,α-bis(3,5-dichloro-2-hydroxyphenyl)-o-toluenesulfonic acid	TRO.
5-Chloro-2-hydroxybenzophenone	DOW.
Chlorophyllin, sodium-potassium-copper	KCH.
Cobalt phthalocyaninedisulfonic acid	ACS.
Cumene hydroperoxide	HPC, RCI.
Cyanuric acid	FMB.
1,3-(and 1,4-)Cyclohexadiene	ALD.
*Cyclohexanone peroxide	AZT, CAD, NOC, WTL.
Cyclohexene-1,2-dicarboxylic acid (Tetrahydrophthalic acid) disubstituted, polyester salts: Barium and cadmium salts.	RCI.
Cyclohexenone and Cyclopentanone	ALD.
1,4-Cyclohexylenedimethanol	EKT.
Cyclopropane	OH, OMS, TAE.
Cytidine and derivatives	PLB.
Decahydronaphthalene (Decalin)	DUP.
Decyl diphenyl phosphite	HK, x.
Dehydroacetic acid, and sodium salt	GAN.
Diaminohexanitrobiphenyl	NCA.
Diaminotrinitrobenzene	NCA.

TABLE 21B. --*Miscellaneous chemicals for which U.S. production or sales were reported, identified by manufacturer, 1967*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
MISCELLANEOUS CHEMICALS, CYCLIC--Continued	
2,5-Di-tert-amylhydroquinone	EKT.
1,5-Diazabicyclo(4.3.0)-5-non-5-ene	ALD.
1,4-Diazabicyclo(2.2.2)octane	HOU.
Diazodinitrophenol	HPC.
2,4-Dibenzoylresorcinol	DOW.
2,6-Di-tert-butyl-p-cresol:	
*Food grade	ASH, EKT, HPC, KPT, PRD, SHC.
*Tech	ASH, EKT, HPC, KPT, PRD, SHC.
2,5-Di-tert-butylhydroquinone	EKT.
Di-tert-butyl peroxyphthalate	WTL.
1,3-Dichloro-5,5-dimethylhydantoin	GLY.
Dichloro-s-triazine-2,4,6(1H,3H,5H)trione (Dichloroisocyanuric acid), potassium and sodium salts.	FMB, MON.
4,4'-Dichloro-3-trifluoromethylcarbonalide	GGY.
Dicyclohexylammonium nitrite	CMC.
Didecyl phenyl phosphite	HK.
Digitonin	PEN.
2,4-Dihydroxybenzophenone	DUP.
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, UOP.
5,6-Dimethylbenzimidazole	ALD.
2,5-Dimethyl-2,5-di(benzoylperoxy)hexane	WTL.
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.
Dipropylene glycol salicylate	HAL.
Dithioammilide, monoethanolamine salt	ACY.
4-(Dodecyloxy)-2-hydroxybenzophenone	DUP, EKT.
Enzymes:	
Hydrolytic:	
Amylases	BAX, CRN, MLS, OMS, PMP, RH, SBI, WBC.
Proteases	BAX, MLS, PFZ, PMP, RH, WBC.
Other	MLS, RH, WBC.
Nonhydrolytic	MLS, PLB, WBC.
1,2-Epoxy-3-phenoxypropane (Glycidyl phenyl ether)	SHC.
Ethyl cellulose phthalate	EK.
Ethylenediaminedi(o-hydroxyphenylacetic acid), ferric, sodium salt.	GGY.
2-Ethylethyleneimine	ICO.
4-Ethylmorpholine	BRD, JCC.
*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)	ACS, ACY.
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	x.
*N,N'-Di-sec-butyl-p-phenylenediamine	DUP, EKT, UPM.
N,N'-Diisopropyl-p-phenylenediamine	DUP, x.
*N,N'-Disalicylidene-1,2-propanediamine	DUP, EKT, SM, TX, UPM.

TABLE 21B. --*Miscellaneous chemicals for which U.S. production or sales were reported, identified by manufacturer, 1967*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
MISCELLANEOUS CHEMICALS, CYCLIC--Continued	
Photographic chemicals--Continued	
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.	ESA, FMT, IDC.
4-(2′,6′-Dimethylmorpholinyl)benzenediazonium chloride - zinc chloride.	IDC.
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.	FMT.
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	EK.
5-Methylbenzotriazole	EK.
2-Methylbenzoxazole	FMT.
4-Methyl-1-phenyl-3-pyrazolidinone	WAY.
4-Morpholinylbenzenediazonium salts	FMT, 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, FMT, IDC, VPC, WAY, x.
Phthalic acid, lead salt, dibasic	NTL.
Picric acid, sodium salt	NCA, SDC.
*Pinene (α- and β-)	ARZ, CBY, GLD, HNW, HPC, NCI.
Piperonal, sodium bisulfite complex	SHL.
Poly-4-(2-acryloxy ethoxy)-2-hydroxybenzophenone	ACY.
Poly(dihydroxyphenylene) sulfide	ACY.
Polyethylene terephthalate	DUP, EK.
Polyvinyl phthalate	EK.
*Propyl gallate	EKT, HN, HSH.
Pyrogallol (Pyrogallic acid)	HSH, MAL.
Resorcinol monobenzoate	EKT.
*Rosin acid salts:	
Aluminum resinate	JMS.
Calcium resinate	JMS, SW.
Cobalt manganese resinate	JMS.
Copper resinate	JMS.
Iron resinate	HSH, JMS.
Lead resinate	JMS.
Manganese resinate	JMS, WVA.
Zinc resinate	JMS, SW.
Salicylanilide	DUP, PCW.
Salicylic acid salts:	
Lead salicylate	NTL.
Strontium salicylate	CFC.
Sodium cresoxide (Cresylic acid, sodium salt)	DEX, GOC.
Sucrose benzoate	VEL.

TABLE 21B. *--Miscellaneous chemicals for which U.S. production or sales were reported, identified by manufacturer, 1967--*Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
MISCELLANEOUS CHEMICALS, CYCLIC--Continued	
Sulfosalicylic acid	MON, MRK.
Tall oil fatty acid chloride	GAF.
*Tall oil salts (Linoleic-rosin acid salts):	
Barium zinc tallate	HSH.
Calcium manganese tallate	MCI.
*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, MCI, MLD, SHP.
Iron tallate	CCA, MCI, MLD, SHP, SRR, WTC.
Lead manganese tallate	HSH, MCI.
*Lead tallate	CCA, CCC, FER, HNX, HSH, MCI, MLD, SHP, SRR, TRO, WTC.
*Manganese tallate	CCA, CCC, FER, HNX, HSH, MCI, MLD, SHP, SRR, TRO, WTC.
Manganese zinc tallate	MCI.
Zinc tallate	CCA, HSH, MCI.
Tannic acid	HSH, MAL.
*Tanning materials, synthetic:	
Hydroxytoluenesulfonic acid, formaldehyde condensate (Cresol-formaldehyde sulfonate), sodium salt.	GGY.
*2-Naphthalenesulfonic acid, formaldehyde condensate and salts.	AKS, DA, GRD, NYC, RH.
*1-Phenol-2-sulfonic acid, formaldehyde condensate (Phenol-formaldehyde, sulfonated).	ACS, DA, RH.
Styrene maleic anhydride interpolymer, partial sodium salt.	DUP.
Sulfonyldiphenolsulfonic acid, formaldehyde condensate	GAF.
All other	AKS, GGY.
Tetra(n-butyl)ammonium picrate	MED.
Tetrahydromethylthiophene-1,1-dioxide	PLC.
1,2,3,4-Tetrahydronaphthalene (Tetralin)	DUP, UCC.
Tetrahydrothiophene	ORO, PAS.
Tetrahydrothiophene-1,1-dioxide (Sulfolane)	PLC.
Tetrakis[methylene-3-(3′,5′-di-tert-butyl-4′-hydroxyphenol) propionate]methane.	GGY.
Tetranitrocarbazole	SDC.
Tetraphenyltin	x.
*Textile chemicals, other than surface-active agents:	
1,3-Bis(hydroxymethyl)-2-imidazolidone (Dimethylol ethylene urea).	ACY, AKS.
4-Decyloxy-2-hydroxybenzophenone	GAF.
N^1,N^1-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	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.
3-o-Tolyloxy-1,2-propanediol	ICO.
o-Tolylbiguanide	MON.
Triallyl cyanurate	ACY.
Triaryl phosphites	WES.
Tribenzylamine	BPC.
3,4′,5-Tribromosalicylanilide	DOW, FIN, MEE.
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.
α,α,α-Trifluoro-p-toluidine (p-Aminobenzotrifluoride)	PIC.
Trimethylaminoethylpiperazine	JCC.
3,5,5-Trimethyl-2-cyclohexen-1-one (Isophorone)	ENJ, UCC.
2,4,6-Trinitroresorcinol, lead derivative	x.
s-Trioxane	CEL.
Triphenylphosphine	CCW, x.

TABLE 21B. *--Miscellaneous chemicals for which U.S. production or sales were reported, identified by manufacturer, 1967*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
MISCELLANEOUS CHEMICALS, CYCLIC--Continued	
Triphenyl phosphite	HK, MON.
Triphenyltin	x.
Triphenyltin chloride	x.
Tris(1-aziridinyl)phosphine oxide	DOW.
Uridine derivatives	PLB.
1-Vinyl-2-pyrrolidinone - acrylamide copolymer	GAF.
1-Vinyl-2-pyrrolidinone - ethyl - acrylamide copolymer	GAF.
1-Vinyl-2-pyrrolidinone - olefin copolymers	GAF.
1-Vinyl-2-pyrrolidinone - vinyl acetate copolymer	GAF.
1-Vinyl-2-pyrrolidinone, monomer and polymer	GAF.
MISCELLANEOUS CHEMICALS, ACYCLIC	
Cellulose Esters and Ethers	
*Cellulose esters:	
*Cellulose acetate	AV, CEL, DUP, EKT.
Cellulose acetate butyrate	EKT.
Cellulose acetate propionate	EKT.
Cellulose propionate	CEL.
Nitrocellulose (Cellulose nitrate)	DUP, HPC.
*Cellulose ethers:	
Ethylcellulose	DOW, x.
Ethylhydroxyethylcellulose	HPC.
Hydroxyethylcellulose	HPC, UCC.
Hydroxypropylcellulose	x.
Methylcellulose	DOW.
*Sodium carboxymethylcellulose, 100%	BUK, DUP, HPC, KON, WMP, WYN, UCC.
Sodium carboxymethylhydroxyethylcellulose	HPC.
Lubricating Oil Additives	
Chlorosulfurized lard oil	CCW.
Chlorosulfurized sperm oil	CCW.
Oxidized hydrocarbons	ALX.
*Phosphorodithioates (Dithiophosphates):	
Zinc di(butylhexyl) phosphorodithioate	ORO.
Zinc dihexyl phosphorodithioate	MON, 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.
All other	CCW, ENJ, HK, LUB, MON, ORO, PAS, SIN, SM, SOI, TX.
Nitrogenous Compounds	
Acetamide	ACS.
Acetamidine hydrochloride	MRK.
Acetamidoethanol (n-Acetyl-ethanolamine)	RBC.
Acetonitrile	EKX, SOH, UCC.
*Acrylonitrile	ACY, BFG, DUP, MON, SOH.
Adiponitrile	DUP, MON.
Allyl-sec-butylcyanoacetic acid, ethyl ester	SDW.
1-Allyl-3-(2-hydroxyethyl)-2-thiourea	FMT, IDC.
Allyl isocyanate	CWN.
Allyl isothiocyanate, non-perfume grade	ICO.
Allyl nitrile (Allyl cyanide)	KF.
Amidinourea (Guanylurea) phosphate	ACY.
*Amines:	
Allylamines	SHC.
n-Butylamines:	
*n-Butylamine, mono-	EKT, PAS, UCC, VGC.
*Di-n-butylamine	PAS, UCC, VGC.
Tri-n-butylamine	PAS, VGC.
tert-Butylamine, mono-	MON, RH.
n-Butylethylamine	PAS.
n-Butylmethylamine	PAS.
Diethylaminopropylamine	UCC
Diethylenetriamine	DOW, JCC, UCC.
N,N-Diethylethylenediamine	ALB, CBP.
N^1,N^1-Diethyl-1,4-pentanediamine (Novoldiamine)	SDH.
Dihexylamine	VGC.

TABLE 21B. *--Miscellaneous chemicals for which U.S. production or sales were reported, identified by manufacturer, 1967*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued	
Nitrogenous Compounds--Continued	
*Amines--Continued	
N,N-Dimethyl-1,3-propanediamine	JCC.
Dimethylaminopropylamine	ARC, UCC.
Ethylamines:	
*Diethylamine	DUP, ESC, PAS, UCC, VGC.
Diethylamine hydrochloride	CFC.
*Ethylamine, mono-	ESC, PAS, UCC, VGC.
*Triethylamine	ESC, PAS, UCC, VGC.
Ethylenediamine	DOW, JCC, UCC.
Ethylenediamine sulfate	ASH.
(2-Ethylhexyl)amine, mono-	VGC.
n-Heptylamine	ALB.
*1,6-Hexanediamine (Hexamethylenediamine)	CEL, DUP, ELP, MON.
n-Hexylamine	VGC.
3,3'-Iminobispropylamine	JCC, UCC.
Isobutylamines:	
Diisobutylamine	PAS.
Isobutylamine, mono-	PAS.
Isopropylamines:	
*Diisopropylamine	ESC, PAS, UCC, VGC.
*Isopropylamine, mono-	ESC, PAS, UCC, VGC.
Methylamines:	
*Dimethylamine	COM, DUP, ESC, GAF, PAS, RH.
Dimethylamine hydrochloride	CFC, EK.
Dimethylamine sulfate	RH.
*Methylamine, mono-	COM, DUP, ESC, GAF, PAS, RH.
Methylamine hydrochloride	EK, RBC.
*Trimethylamine	COM, DUP, ESC, GAF, PAS, RH.
n-Octylamine, mono-	VGC.
Pentaethylenehexamine	DOW.
Pentylamines (Amylamines):	
Dipentylamine	ASH, PAS, VGC.
Pentylamine, mono-	EK, PAS.
Tripentylamine	PAS.
1,2-Propanediamine (Propylenediamine)	UCC.
1,3-Propanediamine (1,3-Diaminopropane)	JCC.
Propylamines:	
*Dipropylamine	PAS, UCC, VGC.
Propylamine, mono-	PAS, UCC, VGC.
Tripropylamine	PAS.
Tetraethylenepentamine	DOW, UCC.
N,N,N',N'-Tetramethyl-1,3-butanediamine	UCC.
Tetramethylethylenediamine	RH.
Triethylenetetramine	DOW, UCC.
Other amines	ALB, ALD, DUP, EK, NLC, PIC, SDW, UCC.
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, HDG, JCC, UCC.
2-Aminoethyl mercaptoacetate (Monoethanolamine thioglycolate).	EVN, HAB.
2-Amino-2-ethyl-1,3-propanediol	COM.
Aminoguanidine bicarbonate	COM, 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(hydroxymethyl)urea (Dimethylolurea)	CCW, GLY, x.

TABLE 21B.--*Miscellaneous chemicals for which U.S. production or sales were reported, identified by manufacturer, 1967*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued	
Nitrogenous Compounds--Continued	
N,O-Bis(trimethylsilyl)acetamide	PIC.
Biuret	SW.
N-Bromoacetamide	ARA.
N-Bromosuccinimide (Succinibromimide)	ARA, SDW.
2,3-Butanedione monoxime	EK.
2-Butanone oxime	ACS, CCA, MLD.
1-Butyl-3-ethyl-2-thiourea	PAS.
2,2'-(Butylimino)diethanol (N,N-Bis(2-hydroxyethyl)-butylamine).	PAS.
Butyl isocyanate	CWN, UPJ.
Butyraldehyde oxime	ACS.
n-Butyronitrile	EKX.
*Caprolactam (2-Oxohexamethylenimine)	ACS, CNP, DBC, DUP.
Chloroacetamide	BPC.
Chloroacetonitrile	BPC.
β-Chloroallyl-N-methylamine	LIL.
Chlorocholine chloride	ACY.
2-Chloro-N,N-dimethylethylamine (Dimethylaminoethyl chloride) hydrochloride.	ABB, HEX, MCH, PAS.
2-Chloro-N,N-diethylethylamine hydrochloride	HEX.
3-Chloro-N,N-dimethylpropylamine	SK.
2-Chloro-N,N-dimethylpropylamine hydrochloride	MCH.
3-Chloro-N,N-dimethylpropylamine hydrochloride	MCH.
2-Chloroethylamine hydrochloride	NES.
N-Chlorosuccinimide (Succinichlorimide)	ACS, ARA.
Choline base	RH.
Coco nitrile	FOR.
Coconut oil amide	ARC, PG.
Cottonseed oil acids, ammonium salt	GLY.
Cottonseed oil nitrile	FOR.
Creatine and creatinine	PFN.
2-Cyanoacetamide	KF.
2-Cyanoacethydrazide	KF.
Cyanoacetic acid	KF.
Cyanogen bromide	EK.
3-Cyanopropylamine	EKT.
2-Dibutylaminoethanol	AAC, PAS.
1,3-Dibutyl-2-thiourea	CMC, PAS, RBC.
1,4-Dicyanobutene	x.
Diethanolamine polyoxypropylene ether	JCC.
Diethyl acetamidomalonate	RSA, SDW.
Diethylaminoethanethiol hydrochloride	EVN.
2-Diethylaminoethanol	AAC, PAS, UCC.
2-(2-Diethylaminoethoxy)ethanol	PAS.
2-Diethylaminoethyl methacrylate	DUP.
Diethyldithiocarbamic acid, sodium salt	EK.
N,N-Diethyldodecanamide	EK.
Diethylhydroxylamine	PAS.
1,3-Diethyl-2-thiourea	PAS, RBC.
Diisopropylaminoethanol	PAS, UCC.
Diisopropylammonium nitrite	CMC.
N,N-Dimethylacetamide	DUP.
2-Dimethylaminoethanethiol hydrochloride	EVN.
*2-Dimethylaminoethanol	AAC, JCC, PAS, RH, UCC.
Dimethylaminoethyl methacrylate	x.
Dimethylamino-2-propanol	COM, PAS.
3-Dimethylaminopropionitrile	ACY.
Dimethylcarbamoyl chloride	CTN, OTC.
N,N-Dimethylformamide	DUP.
1,1-Dimethylhydrazine	FMP.
2,5-Dithiobiurea	ACY.
Dithiooxamide	MAL.
*Erucamide	ARC, ASH, FIN, HUM.
*Ethanolamines:	
*2-Aminoethanol (Monoethanolamine)	ACP, DOW, JCC, UCC.
*2,2'-Iminodiethanol (Diethanolamine)	ACP, DOW, JCC, UCC.
*2,2',2''-Nitrilotriethanol (Triethanolamine)	ACP, DOW, JCC, UCC.

TABLE 21B. --*Miscellaneous chemicals for which U.S. production or sales were reported, identified by manufacturer, 1967*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued	
Nitrogenous Compounds--Continued	
Ethoxymethylenemalononitrile	KF.
3-Ethoxypropionitrile	ACY.
Ethyl acetamidocyanoacetate	SDW.
2-Ethylaminoethanol (Ethylmonoethanolamine)	PAS.
Ethyl carbamate	FMP.
Ethyl carbodiimide hydrochloride	OTC.
Ethyl cyanoacetate	KF.
N,N'-Ethylenebis stearamide	CTN.
2-Ethylhexyl cyanoacetate	GAF, KF.
5-(N-Ethyl-N-hydroxyethylamino)-2-pentanone	SDW.
N-Ethyl-N-hydroxyethyl-1,4-pentanediamine	SDW.
Ethyl isocyanate	OTC.
Ethyl isothiocyanate	CWN, EK.
Fish oil fatty acid amide	ASH, HUM.
Formamide	DUP.
Formamidine disulfide dihydrochloride	WAY.
Formamidine hydrochloride	KF.
Glycine (Aminoacetic acid), non-medicinal	BPC, CHT.
Glycine ethyl ester hydrochloride	BPC.
Glycine salts: Cupric glycinate	BPC.
Glycolonitrile	ACY.
Guanidine hydrochloride	ACY.
Hexadecyl nitrile	FOR.
Hexamethyldiaminoisopropanol diiodide	RSA.
Hexamethylenediammonium adipate (Nylon salt)	CEL, DUP, MON.
Hydracrylonitrile (Ethylene cyanohydrin)	UCC.
N-(2-Hydroxyethyl)chloracetamide	KF.
2-(Hydroxymethyl)-2-nitro-1,3-propanediol (Tris(hydroxymethyl)nitromethane).	COM.
N-Hydroxymethylstearamide	ICI.
3,3'-Iminodi-1,2-propanediol	DUP.
Isobutyl cyanoacetate	KF.
Isobutyronitrile	EKX, ESC.
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.
Isopropyl isocyanate	OTC.
Lactonitrile	MON.
Lauronitrile (Dodecyl nitrile)	ARC, FOR.
Malononitrile	KF, MTR.
Methacrylamide	RH, x.
Methacrylonitrile	SOH.
Methoxyamine hydrochloride	EK.
Methoxyiminobis(propylamine)	JCC.
3-Methoxypropionitrile	DUP.
3-Methoxypropylamine	DUP, 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.
Methylenebis(thiocyanate)	NLC.
N-Methylglucamine	DUP.
2,2'-(Methylimino)diethanol (Methyldiethanolamine)	UCC.
Methyl isobutyl ketoxime	ALB.
Methyl isocyanate	OTC. UCC.
*2-Methyllactonitrile (Acetone cyanohydrin)	ACY, RH, x.
2-Methyl-2-nitro-1,3-propanediol	COM.

TABLE 21B.--*Miscellaneous chemicals for which U.S. production or sales were reported, identified by manufacturer, 1967*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued	
Nitrogenous Compounds--Continued	
2-Methyl-2-nitro-1-propanol	COM.
Methylpolyethanolamine	GAF.
N-Methyltaurine	GAF.
N-Methylurea	EK.
Nitrated lard oil	SM.
*Nitriloacids and salts:	
(Diethylenetrinitrilo)pentaacetic acid	HMP.
(Diethylenetrinitrilo)pentaacetic acid, mono-sodium hydrogen ferric salt.	GGY.
(Diethylenetrinitrilo)pentaacetic acid, pentasodium salt	GGY, HMP.
(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 (Ethylenediamine-tetraacetic acid).	DOW, EK, GGY, HMP.
(Ethylenedinitrilo)tetraacetic acid, calcium disodium salt.	DOW, GGY.
(Ethylenedinitrilo)tetraacetic acid, disodium salt	DOW, EK, GGY, HMP, RPC.
(Ethylenedinitrilo)tetraacetic acid, disodium copper salt, dihydrate.	GGY.
(Ethylenedinitrilo)tetraacetic acid, disodium zinc salt, dihydrate.	GGY, HMP.
(Ethylenedinitrilo)tetraacetic acid, manganese salt	GGY.
(Ethylenedinitrilo)tetraacetic acid, monosodium iron salt.	GGY, HMP.
(Ethylenedinitrilo)tetraacetic acid, tetrammonium salt	DOW.
(Ethylenedinitrilo)tetraacetic acid, tetrapotassium salt	GGY.
*(Ethylenedinitrilo)tetraacetic acid, tetrasodium salt	CRT, CWL, DOW, GGY, HMP, HRT, IBI, RPC, TCC.
(Ethylenedinitrilo)tetraacetic acid, triammonium salt	DOW.
*(Ethylenedinitrilo)tetraacetic acid, trisodium salt	DA, GGY, HMP.
(N-Hydroxyethylethylenedinitrilo)triacetic acid	GGY.
*(N-Hydroxyethylethylenedinitrilo)triacetic acid, trisodium salt.	CRT, CWL, DOW, GGY, HMP, IBI, RPC, TCC.
Nitrilotriacetic acid, trisodium salt	DOW, GGY, HMP.
Other	HMP.
2-Nitro-1-butanol	COM.
Nitroethane	COM.
Nitromethane	COM.
1-Nitropropane	COM.
2-Nitropropane	COM.
*Nylon, 6 and 6/6 polymer for fiber	ACS, DBC, DUP, MON.
Octadecyl isocyanate	CWN, MOB.
Octadecyloxymethyltriethylammonium chloride	DAN.
Oleamide (Octadecene amide)	ARC, ASH, FIN, HUM.
Oleonitrile (Octodecene nitrile)	ARC, FOR.
Oleoylhydroxamic acid	WAY, WOB.
Oleoylpalmitamide	FIN.
*Pentaerythritol tetranitrate	COM, DUP, HPC, TRJ.
Pentyl nitrate (Amyl nitrate)	TNA.
Polyacrylamide	ACY, HPC, NLC.
Polyacrylonitrile	DUP.
Polyesteramide	ICI.
n-Propyl carbamate	BKL.
Propyl isocyanate	CWN, OTC.
Propyl nitrate	TNA.
Quaternary ammonium compounds	EK, RSA, WAY.
Ricinolamide	TKL.
*Sarcosine (N-Methylaminoacetic acid)	GAF, GGY, HMP.
Semicarbazide base	FMT.
Semicarbazide hydrochloride	FMT.
Semioxamazide	NOR.
*Stearamide (Octadecane amide)	ARC, ASH, DUP, FIN, HUM.
Stearonitrile (Octadecanenitrile)	FOR, HUM.
Succinimide	ACS.
Tallow amide, hydrogenated	ARC, ASH.
Tallow nitrile	ASH, FOR.
Tallow nitrile, hydrogenated	FOR.
N,N,N',N'-Tetrakis(2-hydroxypropyl)ethylenediamine	WYN.

TABLE 21B. --*Miscellaneous chemicals for which U.S. production or sales were reported, identified by manufacturer, 1967*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued	
Nitrogenous Compounds--Continued	
Tetramethylguanidine	ACY.
Thioacetamide	EK.
3,3'-Thiodipropionitrile	ACY.
Thiosemicarbazide	ACY, FMT.
*Urea in compounds or mixtures, 100% basis:	
*In feed compounds	ACN, [illegible], DUP, GCC, JDC, KET, MON, MSC, SHC, SOH, TER, VLN, WYC.
*In liquid fertilizer	ACN, AGY, BOR, CFA, CNC, COL, DUP, ESC, FCA, FTX, GCC, GOC, HKY, HPC, JDC, KET, MON, MSC, NIT, OMC, PLC, PPC, SHC, SNI, SOH, TER, VLN, WYC, x.
*In solid fertilizer	ACN, ACY, DUP, GCC, GOC, HPC, JDC, MON, MSC, OMC, PPC, SHC, SNO, SOH, TER, VLN, WYC, x, x, x, x.
In plastics	DUP, MON.
All other	ACN, ACY, DUP, HPC, MON, SHC, SNO, SOH.
Urea peroxide	FMB.
Urea - Urethane copolymer	DUP.
γ-Valeronitrile	EK, SEL.
All other nitrogenous compounds	ACY, ALD, ARC, DUP, EK, FIN, GAF, GLY, LIL, MOB, NCA, OMC, SM, VPC, WAY, WYN, x, x.
Acids, Acid Anhydrides, and Acyl Halides	
*Acetic acid, synthetic, 100%	BOR, CEL, EKT, HPC, PUB, SNC, UCC.
*Acetic anhydride, 100%:	
From acetaldehyde	HPC.
From acetic acid, other than recovered, by the vapor-phase process.	CEL, EKT, FMT.
From acetic acid, recovered, by the vapor-phase process-	CEL.
From ethylene	UCC.
Aconitic acid	PCW.
*Acrylic acid	BFG, CEL, DBC, MMM, UCC.
*Adipic acid	ACS, CEL, DUP, ELP, MON, RH.
Adipoyl chloride	CFC, EK.
Azelaic acid	EMR.
Behenic acid	ASH.
α-Bromo(lauric-stearic) acid	DUP.
tert-Butylperoxymaleic acid	WTL.
Butylstannoic acid	CCW.
*Butyric acid	CEL, EKT, UCC.
Butyric anhydride	ARC, EKT, UCC.
Butyryl chloride	HK.
Castor oil fatty acids, dehydrated	BAC.
*Chloroacetic acid, mono-	BUK, DA, DOW, HPC, MON.
Chloroacetyl chloride	DOW.
Chlorolevulinic acid	CRZ.
Citric acid	MLS, PFZ.
Crotonic acid (2-Butenoic acid)	EKT.
*Decanoyl chloride	CAD, UPR, WTL.
Diglycolic acid	DUP.
Dodecenylsuccinic anhydride	ACS, ARC, HMY, MON.
2-Ethylbutyric acid (Diethylacetic acid)	UCC.
2-Ethylhexanoic acid (α-Ethylcaproic acid)	EKT. UCC.
2-Ethylhexanoyl chloride	UPR, WTL.
*Formic acid, 90%	DUP, HN, SFI, SNC, UCC.
*Fumaric acid	ACS, HN, MON, PCC, PFZ, PTT.
*Gluconic acid, tech	CWL, DLI, IBI, PFZ.
Glutaric anhydride	UCC.
Glycolic acid (Hydroxyacetic acid)	DUP.
n-Hexadecenylsuccinic anhydride	HMY.
Hexafluoroglutaric acid	PIC.
Isethionic acid (2-Hydroxyethanesulfonic acid)	GAF.
Isoasorbic acid	MRK, PFZ.
Isobutyric acid	EKT.
Isobutyric anhydride	EKT.
Iso-octanoic acid	SFA, UCC.
Itaconic acid (Methylenesuccinic acid)	PFZ.

TABLE 21B.--*Miscellaneous chemicals for which U.S. production or sales were reported, identified by manufacturer, 1967*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued	
Acids, Acid Anhydrides, and Acyl Halides--Continued	
Lactic acid:	
Edible, 100%--	CLN, MON.
Technical, 100%--	CLN, MON.
*Lauroyl chloride--	CAD, GAF, HK, ONX, THC, UPR, WTL.
Levulinic acid--	QKO.
Maleic acid--	ACS, PFN, PFZ.
*Maleic anhydride--	ACS, HN, KPS, MON, PCC, PTT, RCI.
Malic acid--	ACS, EK.
Malonic acid--	KF.
Mercaptoacetic acid (Thioglycolic acid)--	EVN, HAB.
β-Mercaptopropionic acid--	EVN.
Mercaptosuccinic acid (Thiomalic acid)--	EVN.
Methacrylic acid--	DUP, RH.
Methanesulfonic acid--	EK, PAS.
2-Methylvaleric acid (2-Methylpentanoic acid)--	UCC.
Mucochloric acid (2,3-Dichloro-3-formylacrylic acid)--	EKT.
Neodecanoic acid--	ENJ.
Neoheptanoic acid--	ENJ.
Neononanoic acid--	ENJ.
Neopentanoic acid--	ENJ.
Nonanoic acid (Pelargonic acid)--	EMR, GIV.
Nonenylsuccinic anhydride--	HMY.
Octadecylphosphonic acid--	SM.
Octanoyl chloride--	HK.
Octenylsuccinic anhydride--	HMY.
Oleoyl chloride--	GAF.
Oxalic acid--	ACS, MAL, PFZ, SFI.
*Palmitoyl chloride--	GAF, OPC, PD.
Pelargonyl chloride--	WTL.
Perfluorobutyryl chloride--	PIC.
Perfluoroglutaryl chloride--	PIC.
Peroxyacetic acid--	FMB, UCC.
Pivaloyl chloride--	WTL.
Polyacrylic acid--	RH.
Polygalacturonic acid--	SKG.
*Propionic acid--	CEL, COM, EKT, UCC.
Propionic anhydride--	EKT, UCC.
Propionyl chloride--	ABB, EK.
Sebacic acid--	RH, WTH.
Sorbic acid (2,4-Hexadienoic acid)--	UCC.
Succinic acid--	ACS, BKC.
Succinic anhydride--	ACS.
d-Tartaric acid--	BKC.
Tetrahydroxysuccinic acid (Dioxytartaric acid)--	ACY.
Thioacetic acid--	EK, EVN.
3,3'-Thiodipropionic acid--	EVN.
Thiodisuccinic acid--	EVN.
Thiolactic acid--	EVN.
Trichloroacetic acid--	DOW.
Trichloroacetyl chloride--	EK.
Trifluoroacetic anhydride--	EK, PIC.
Valeric acid--	ARC, UCC.
All other--	ABB, ALD, CCW, EK, KF, PD, PIC, RH, x, x.
Salts of Organic Acids	
*Acetic acid salts:	
Aluminum acetate--	ACY, UCC.
Aluminum subacetate--	MAL.
*Ammonium acetate--	ACS, BKC, MAL, WSN.
Barium acetate--	ACS, BKC, MAL.
Cadmium acetate--	MAL, SHP.
Calcium acetate--	ACS, BKC, ENJ, MAL.
Chromium acetate--	ACY.
Cobalt acetate--	BKC, HSH, SHP.
Copper acetate--	ACS, BKC, SHP, UCC.
Dibutyltin diacetate--	CCW, x.

TABLE 21B.--*Miscellaneous chemicals for which U.S. production or sales were reported, identified by manufacturer, 1967*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued	
Salts of Organic Acids--Continued	
*Acetic acid salts--Continued	
Lead acetate	BKC, MAL, SW.
Lead subacetate	ACS, BKC, MAL.
Lead tetraacetate	ARA, UCC.
Magnesium acetate	ACS, BKC.
Manganese acetate	HSH, SHP.
Mercuric acetate	MAL.
Methylmercury acetate	DUP.
Nickel acetate	BKC, HSH, SHP.
Potassium acetate	ACS, BKC, CWL, MAL, UCC, WSN.
Silver acetate	MAL.
*Sodium acetate	ACS, BKC, CEL, DAN, EKT, MAL, UCC, WSN.
Sodium diacetate	UCC.
Strontium acetate	BKC.
Uranyl acetate	BKC.
*Zinc acetate	ACS, BKC, HSH, MAL, SHP, SNW, UCC.
*Zirconium acetate	HSH, NTL, SNW, TZC.
Adipic acid, ammonium salt	FIS.
Chloroacetic acid, sodium salt	DOW.
Chlorohydroxylactic acid, aluminum, sodium salt	REH.
Citric acid salts:	
Ammonium citrate	MAL, PFZ.
Calcium citrate	PFZ.
Ferric ammonium citrate	PFZ.
Ferric citrate	MAL.
Ferrous calcium citrate	BKL, MAL.
Potassium citrate	MLS, PFZ.
Sodium citrate	MLS, PFZ.
Cottonseed oil acids, calcium salt	PD.
*2-Ethylhexanoic acid (α-Ethylcaproic acid) salts:	
Aluminum 2-ethylhexanoate	EK, WTC.
Barium 2-ethylhexanoate	CCA.
Cadmium 2-ethylhexanoate	CCA.
*Calcium 2-ethylhexanoate	CCA, CCC, FER, HNX, HSH, MCI, SRR, SW, WTC.
*Cobalt 2-ethylhexanoate	CCA, CCC, FER, HNX, HSH, MCI, MLD, SRR, SW, TRO, WTC.
Cobalt lead manganese 2-ethylhexanoate	MCI.
Copper 2-ethylhexanoate	CCA, SRR.
Dibutyltin di-2-ethylhexanoate	x.
Iron 2-ethylhexanoate	CCA, MCI, SRR.
*Lead 2-ethylhexanoate	CCA, CCC, HNX, HSH, MCI, SRR, SW, TRO, WTC.
Lithium 2-ethylhexanoate	SRR.
*Manganese 2-ethylhexanoate	CCA, HNX, MCI, MLD, WTC.
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.
Zirconium 2-ethylhexanoate	CCA, HNX, WTC.
*Formic acid salts:	
Aluminum formate	UCC, WSN.
Ammonium formate	ACS, WSN.
Calcium formate	COM, TRJ.
Chromic formate	GAF.
Copper formate	CTN.
Lead formate	NTL.
Nickel formate	HSH.
Potassium formate	CFC.
Sodium formate, refined	ACS, BKC.
Sodium formate, tech	COM, HPC, TRJ.
Fumaric acid, lead salt	NTL.
Glucoheptonic acid salts:	
Sodium glucoheptonate	IBI.
Zinc glucoheptonate	PFN.
Gluconic acid salts:	
Ammonium gluconate	PFZ.
*Sodium gluconate	CWL, DLI, IBI, PFZ, PMP.

TABLE 21B.--*Miscellaneous chemicals for which U.S. production or sales were reported, identified by manufacturer, 1967*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued	
Salts of Organic Acids--Continued	
Glycolic acid salts:	
Aluminum glycolate	CIB.
Sodium glycolate	CFC, MED.
9H-Hexadecafluorononanoic acid, ammonium salt	ARC, DUP.
Humic acids, sodium salts	NLC.
Isoascorbic acid, sodium salt	BAX, MRK, PFZ.
Lactic acid salts:	
Aluminum sodium lactate	TZC.
Ammonium lactate	TCC.
Calcium lactate	SHF.
Other	REH.
Lauric acid, dibutyltin salt	CCA, x.
*Linoleic acid salts:	
Calcium linoleate	CCA, SHP, SRR.
Cobalt linoleate	HSH, SHP, SRR.
Copper linoleate	SHP, WTC.
Lead linoleate	SHP, SRR.
Lead manganese linoleate	SDH, IMC.
Manganese linoleate	SHP.
Maleic acid salts:	
Dibutyltin maleate	CCA, x.
Lead (tribasic) maleate	NTL.
Malonic acid, calcium salt	GIV.
*Mercaptoacetic acid (Thioglycolic acid) salts:	
Ammonium mercaptoacetate	EVN, HAB, TNI.
Antimony mercaptoacetate	CCA.
Calcium mercaptoacetate	EVN.
Dibutyltin mercaptoacetate	CCA.
Potassium mercaptoacetate	EVN.
Sodium mercaptoacetate	EVN, MED.
Mercaptopropionic acid, dibutyltin salt	CCA.
Methylsuccinic acid, disodium salt	SDW.
Myristic acid, lithium salt	CCW.
Neodecanoic acid salts:	
Cadmium neodecanoate	CCA.
Calcium neodecanoate	CCA, MCI.
Cobalt neodecanoate	MCI.
Lead neodecanoate	CCA, MCI.
Lithium neodecanoate	MCI.
Zinc neodecanoate	CCA, MCI.
Other	MCI.
Octanoic acid (Caprylic acid) salts:	
Aluminum octanoate	ARC, DA.
Stannous octanoate	CCW, x.
Zinc octanoate	BKC.
*Oleic acid salts:	
Aluminum oleate	WTC.
Ammonium oleate	BCN.
Barium zinc oleate	WTC.
Chromium oleate	SHP.
Copper oleate	MLD, SHP, WTC.
Lead oleate	SHP.
Stannous oleate	CCW, x.
Oxalic acid salts:	
Ammonium oxalate	ACS, BKC, PFZ.
Copper oxalate	CFC.
Ferric ammonium oxalate	PFZ.
Ferric oxalate	PFZ.
Ferrous oxalate	BKL.
Potassium binoxalate	BKC.
Potassium oxalate	BKC, PFZ.
Sodium oxalate	BKC, MAL, SFI.
Palmitic acid salts:	
*Aluminum palmitate	ACY, DA, WTC.
Zinc palmitate	ACY, DA, WTC.

TABLE 21B.--*Miscellaneous chemicals for which U.S. production or sales were reported, identified by manufacturer, 1967*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued	
Salts of Organic Acids--Continued	
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.
Sodium polyacrylate	ALC, BFG, GRD, JOR, RH.
Polymethacrylic acid, sodium salt	GRD.
Propionic acid salts:	
*Calcium propionate	HFT, PFZ, UCC, WSN.
*Sodium propionate	HFT, 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, DA, JTC, MAL, NOC, PEN, SYP, WTC.
*Aluminum monostearate	DA, JTC, MAL, NOC, WTC.
*Aluminum tristearate	ACY, DA, MAL, NOC, PEN, SYP.
Ammonium stearate	DA, WTC.
Barium stearate	DA, NOC, PEN, SYP.
Cadmium stearate	DA, NOC, PEN, SYP, WTC.
*Calcium stearate	ACY, DA, HNX, JTC, MAL, NOC, PEN, SYP, WTC.
Cobalt stearate	WTC.
Copper stearate	NOC, WTC.
Ferric stearate	NOC, WTC.
Ferrous stearate	WTC.
Lead stearate	DA, NTL, WTC.
Lead stearate, dibasic	NTL.
*Lithium stearate	DA, PEN, SYP, WTC.
*Magnesium stearate	ACY, DA, JTC, MAL, NOC, PEN, SYP, WTC.
Manganese stearate	NOC.
Nickel stearate	NOC, WTC.
Strontium stearate	MAL.
*Zinc stearate	ACI, ACY, BCN, CCA, DA, HNX, JTC, MAL, NOC, PEN, SYP, WTC.
All other	APD, NOC.
Succinic acid, sodium salt	MAL.
Sugar acids, sodium salt	PFN.
Tartaric acid salts:	
Antimony potassium tartrate	PFZ.
Calcium tartrate	CFC.
Potassium bitartrate	ATC.
Potassium sodium tartrate	PFZ.
Sodium bitartrate	PFZ.
Valeric acid, ammonium salt	RSA.
Xanthic acid salts:	
Potassium ethylxanthate	ACY, DOW.
Potassium hexylxanthate	DOW.
Potassium isopropylxanthate	DOW.
Potassium pentylxanthate	ACY, DOW.
Potassium sec-pentylxanthate	DOW.
Sodium n-butylxanthate	KCC.
Sodium sec-butylxanthate	ACY, DOW.
Sodium ethylxanthate	ACY, DOW.

TABLE 21B.--*Miscellaneous chemicals for which U.S. production or sales were reported, identified by manufacturer, 1967*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued	
Salts of Organic Acids--Continued	
Xanthic acid salts--Continued	
Sodium isobutylxanthate	DOW.
Sodium isopropylxanthate	ACY, DOW.
All other salts of organic acids	CCW, EK, RSA, SYP, 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, UCC.
*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.
Crotonaldehyde	CEL, EKT, UCC.
Dichloroacetaldehyde	FMB.
Dihydropseudoionone	GIV.
1,3-Dihydroxy-2-propanone (Dihydroxyacetone)	BAX.
2-Ethylbutyraldehyde	UCC.
2-Ethylhexanal (α-Ethylcaproaldehyde)	EKT, EKX, UCC.
Ethylpropylacrolein	UCC.
*Formaldehyde (37% by weight)	ACN, 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.
Heptyl methyl ketone	ARC.
Hexaldehyde	GIV.
2,5-Hexanedione (Acetonylacetone)	ACI, RBC, UCC.
2-Hydroxy-2-methyl-3-butanone	LIL.
*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.
Methyl nonyl ketone	ARC.
*4-Methyl-2-pentanone (Methyl isobutyl ketone)	EKT, ENJ, SHC, UCC.
4-Methyl-3-penten-2-one (Mesityl oxide)	SHC, UCC.
Methylpseudoionone	GIV.
2-Methylvaleraldehyde (2-Methylpentaldehyde)	UCC.
3-Octanone (Amyl ethyl ketone)	SHC.
Paraformaldehyde	CEL, HN.
Paraldehyde (Paracetaldehyde)	ARC, UCC.
2,4-Pentanedione (Acetylacetone)	UCC.
3-Pentanone (Diethyl ketone)	DUP.
Propionaldehyde	EKX, UCC.
Pseudoionone	GIV.
Tetrahydropseudoionone	GIV.
2,6,8-Trimethyl-4-nonanone (Isobutyl heptyl ketone)	UCC.
Valeraldehyde	UCC.
All other	CEL, CLB, EK, MLS, PIC, UCC.
Alcohols, Monohydric, Unsubstituted	
*Alcohols C_9 or lower, unmixed:	
Allyl alcohol	DOW, SHC.
Amyl alcohols:	
2-Methyl-1-butanol	UCC.
2-Methyl-2-butanol (tert-Amyl alcohol)	SHC.

TABLE 21B. --*Miscellaneous chemicals for which U.S. production or sales were reported, identified by manufacturer, 1967*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued	
Alcohols, Monohydric, Unsubstituted--Continued	
*Alcohols C_9 or lower, unmixed--Continued	
Amyl alcohols--Continued	
1-Pentanol	UCC.
2-Pentanol	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.
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	CO, EKX, ENJ, PG, UCC.
*Hexynol	CUC, LIL, x.
*Iso-octyl alcohols	ENJ, GOC, HOU, PCC, TID, UCC.
*Isopropyl alcohol	ENJ, SHC, UCC.
*Methanol, synthetic	ACN, BOR, CEL, COM, DUP, ENJ, ESC, GOC, HN, HPC, MON, RH, TCC, UCC.
2-Methyl-3-buten-2-ol	CUC.
2-Methyl-3-butyn-2-ol	CUC.
4-Methyl-2-pentanol (1-Methylisobutylcarbinol)	SHC, UCC.
3-Methyl-1-pentyn-3-ol (Methylparafynol)	CUC.
*1-Octanol	CO, DUP.
*2-Octanol (sec-Capryl alcohol)	RH, WTH.
Octanols, other	EKX, IFF.
Propyl alcohol (Propanol)	CEL, EKX, UCC.
2-Propyn-1-ol	GAF.
All other	CUC, EK, GOC, GYR, LIL, UCC.
*Alcohols C_{10} or higher, unmixed:	
*Decyl alcohols	CO, DUP, ENJ, GOC, HOU, PCC, TID, TNA, UCC.
3,9-Diethyl-6-tridecanol	GOC, UCC.
Dodecyl alcohol (Lauryl alcohol) (95%)	CO, DUP, PG, RH.
7-Ethyl-2-methyl-4-hendecanol	UCC.
*1-Hexadecanol (Cetyl alcohol) (95%)	ASH, CO, DUP, GIV, RH.
Hexadecyl alcohols	ENJ, PG.
1-Octadecanol (Stearyl alcohol) (95%)	ASH, CO, DUP, PG, RH.
cis-9-Octadecen-1-ol (Oleyl alcohol)	ASH, DUP.
Tetradecyl alcohols	CO, PG.
1-Tridecanol	ENJ, HOU, TID.
2,6,8-Trimethyl-4-nonanol	UCC.
*Mixtures of alcohols:	
*C_9 and lower only:	
Amyl alcohols	ENJ, PUB, UCC.
Other	CEL, EKX, ENJ, GOC.
*C_{10} and higher only	ASH, CO, ENJ, GOC, PG, RH, SHC, TNA, VPC.
*C_6 to C_{12} and others	CO, EKX, GOC, PG, TNA.
Polyhydric Alcohols and Their Esters and Ethers	
*Polyhydric alcohols:	
1,4-Butanediol	GAF.
1,2(and 1,3)-Butanediol (Butylene glycol)	CEL.
1,2,4-Butanetriol	GAF, NEP.
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, SHC, UCC, WYN.

TABLE 21B. --*Miscellaneous chemicals for which U.S. production or sales were reported, identified by manufacturer, 1967*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued	
Polyhydric Alcohols and Their Esters and Ethers--Continued	
*Polyhydric alcohols--Continued	
2-Ethyl-1,3-hexanediol	UCC.
2-Ethyl-2-(hydroxymethyl)-1,3-propanediol (Trimethylolpropane).	CEL.
Glycerol, synthetic	APD, DOW, SHC.
1,6-Hexanediol	CEL, UCC.
2-(Hydroxymethyl)-2-methyl-1,3-propanediol (Trimethylolethane).	COM, 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	ASH.
*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.
All other	GAF, PHR, UCC, x.
*Polyhydric alcohol esters:	
1,3-Butanediol dimethacrylate	SAR.
2-(2-Butoxyethoxy)ethyl acetate	EKT, UCC.
2-Butoxyethyl acetate	UCC.
Diethylene glycol chloroformate	PPG.
2-(2-Ethoxyethoxy)ethyl acetate	EKT, UCC.
2-Ethoxyethyl acetate	DOW, EKT, ENJ, UCC.
Ethylene glycol diacetate	EKT, UCC.
Ethylene glycol dimercaptoacetate	EVN.
Ethylene glycol dimethacrylate	SAR.
Ethylene glycol glycolate	CCA.
2-Ethyl-2(hydroxymethyl)-1,3-propanediol trimethacrylate	SAR.
Glyceryl monoacetate (Monoacetin)	HAL.
Glyceryl triacetate (Triacetin)	EKT, UCC.
Glyceryl trioleate	GRO.
Glycol adipate	x.
Hexylene glycol diacetate	UCC.
Hydroxyethyl carbonate	JCC.
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.
Sucrose octa-acetate	PD.
Tetraethylene glycol dimethacrylate	SAR.
Tri(hexylene glycol) biborate	USB.
2,2,4-Trimethyl-1,3-pentanediol monoisobutyrate	EKX.
All other	EK, EMR, GLY, SAR.
*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, SHC, UCC.
2-[2-(2-Butoxyethoxy)ethoxy]ethanol (Triethylene glycol monobutyl ether).	DOW, OMC, UCC.
1-Butoxyethoxy-2-propanol	UCC.

TABLE 21B. --*Miscellaneous chemicals for which U.S. production or sales were reported, identified by manufacturer, 1967*--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 ethers--Continued	
*Diethylene glycol	ACP, CAU, DOW, EKX, GAF, HCH, JCC, OMC, SHC, UCC, WYN.
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, JCC, OMC, UCC.
2-[2-(Hexyloxy)ethoxy]ethanol	UCC.
Isobutoxyethanol	UCC.
1-Isobutoxy-2-propanol (Propylene glycol isobutyl ether).	DOW.
*2-Methoxyethanol (Ethylene glycol monomethyl ether)	DOW, HCH, 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	UCC.
1-Methoxy-2-propanol	DOW, UCC.
3-(3-Methoxypropoxy)propanol	DOW, UCC.
3-[3-(3-Methoxypropoxy)propoxy]propanol	DOW.
Polybutylene glycol	NLC.
Polyethoxyethylglycerol	GLY.
Polyethoxyethylsorbitol	APD, GLY, TCH.
*Polyethylene glycol	ACP, DOW, DUP, GAF, HDG, JCC, NLC, OMC, UCC, WYN.
*Polypropoxy ethers:	
*Glycerol tri(polyoxypropylene) ether	JCC, OMC, UCC, WYN.
Other	ACS, APD, JCC, UCC, WYN.
*Polypropylene glycol	DOW, HDG, 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, EKX, NLC, UCC, WYN.
Esters of Monohydric Alcohols	
Allyl methacrylate	SAR.
Amyl acetates, 90%:	
Isopentyl acetate (Isoamyl acetate)	NW.
Mixed	PFW, PUB, UCC.
*Butyl acetates:	
Iso	EKT, PUB, UCC.
*Normal	CEL, EKT, ENJ, PUB, SHC, UCC.
Secondary	ENJ, HPC, PUB, SHC.
Mixed	CEL.
*Butyl acrylate	CEL, DBC, RH, UCC.
Butyl chloroacetate	MON.
Butyl formate	BJL.
Butyl lactate	COM.
Butyl maleate, mono-	PCC.
tert-Butyl peroxyacetate	WTL.
tert-Butyl peroxy-2-ethylhexanoate	WTL.
tert-Butyl peroxyisobutyrate	WTL.
tert-Butyl peroxyisopropylcarbonate	PPG, WTL.
tert-Butyl peroxypivalate	WTL.
Cetyl lactate	VND.
Diallyl maleate	FMP.
*Dibutyl fumarate	MON, PFZ, RCI, RUB.
*Dibutyl maleate	CUC, DUP, MON, PCC, RCI, RUB.

TABLE 21B.--*Miscellaneous chemicals for which U.S. production or sales were reported, identified by manufacturer, 1967*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued	
Esters of Monohydric Alcohols--Continued	
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.
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 methoxymethylene malonate	KF.
Diethyl (1-methylbutyl)malonate	ABB.
Diethyl methylmalonate	BPC.
Diethyl (1-methylpropyl)malonate	BPC.
Diethyl oxalate (Ethyl oxalate)	FMP.
Diisobutyl maleate	RUB.
Di-iso-nonyl maleate	RUB.
Diisopropyl peroxydicarbonate (Isopropyl percarbonate)	PPG, WTL.
*Dilauryl 3,3'-thiodipropionate	ACY, CCW, EVN, HAB.
Dimethyl acetylenedicarboxylate	EK.
2,5-Dimethylhexane 2,5-diperoctoate	UPR.
Dimethyl maleate	AAC.
Dimethyl malonate	KF.
Di(4-methyl-2-pentyl) maleate	RUB.
Dioctyl fumarate	RCI.
*Dioctyl maleate	HRT, MON, PCC, RCI.
*Distearyl 3,3'-thiodipropionate	ACY, CCW, EVN, HAB.
Dithiobis(stearyl propionate)	EVN.
Ditridecyl maleate	RUB.
Di(tridecyl) 3,3'-thiodipropionate	ACY, EVN.
*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	JCC.
Ethyl formate	CCM.
2-Ethyl-1-hexyl acetate	EKT, UCC.
2-Ethyl-1-hexyl acrylate	CEL, DBC, UCC.
2-Ethyl-1-hexyl methacrylate	x.
Ethylidene diacetate	CEL.
Ethyl propionate	NW.
Ethyl silicate (Tetraethoxysilane)	MTR.
Ethyl sulfate (Diethyl sulfate)	UCC.
Ethyl thioglycolate	EVN.
Fatty acid esters, not included with plasticizers or surface-active agents:	
Dimethyl brassylate	EMR.
Ethyl stearate	ICO.
Hexadecyl stearate	ICI.
Isopropyl linoleate	VND.
Methyl esters of coconut oil	PG.
Methyl esters of cottonseed oil	BFR.
*Methyl esters of tallow	BFR, CHL, HUM.
Methyl 12-hydroxystearate	BAC, HUM.
Methyl laurate	PG.
Methyl myristate	PG.
Methyl stearate	PG, SUG.
Myristyl myristate	VND.
All other	EMR, ICI, SNW, SUG.
Hexyl acetate	ENJ.
n-Hexyl formate	EK.
*Isobutyl acrylate	DBC, RH, UCC.

TABLE 21B. --*Miscellaneous chemicals for which U.S. production or sales were reported, identified by manufacturer, 1967*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued	
Esters of Monohydric Alcohols--Continued	
Isobutyl isobutyrate	EKX.
Isodecyl acrylate	UCC.
*Iso-octyl mercaptoacetate	CCW, EVN, HAB.
Iso-octyl 3-mercaptopropionate	EVN.
*Isopropyl acetate	EKT, ENJ, HPC, UCC.
Isopropyl chloroformate	CTN, OTC, PPG.
Lauryl lactate	VND.
Methallylidene diacetate	UCC.
Methyl acetate	EK, MON, UCC.
Methyl acetoacetate	EKT, UCC.
Methyl acrylate, monomer	CEL, DBC, RH.
Methyl borate	CAL, MHI, SFA.
Methyl chloroacetate	DOW, KF.
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 thioglycolate	EVN.
Methyl vinyl acetate	UCC.
Myristyl lactate	VND.
Octadecyl 3-mercaptopropionate	EVN.
*Phosphorus acid esters:	
Bis(2-ethylhexyl) hydrogen phosphate	SM, UCC.
Butyl phosphates	SM.
Chloropropyl phosphorothioate	TNA.
Dibutyl butylphosphonate	SM.
Dibutyl hydrogen phosphite	SM.
Didodecyl hydrogen phosphate	DUP.
Diethyl phosphorochloridothionate	SF.
Dimethyl methylphosphonate	SM.
Dimethyl phosphorochloridothionate	SF.
Iso-octyl phosphate	SM.
Methyl phosphates	HK, SM.
Tributyl phosphate	COM.
Tributyl phosphite	SFI, SM.
Tridecyl phosphite	HK.
Triethyl phosphite	SM.
Triiso-octyl phosphite	SM.
Trimethyl phosphate	TNA.
Trimethyl phosphite	SM.
Trioctyl phosphite	HK.
Tris(2-chloroethyl) phosphite	SM.
Tris(2,3-dibromopropyl) phosphate	MCH.
Tris(2-ethylhexyl) phosphite	SM.
Tris(octadecyl) phosphite	SM.
All other	DUP, EK, MON, SFA, SM.
Propyl acetate	CEL, EKT, 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	ALD, ARG, CEL, CTN, DUP, EK, FMP, PIC, PCC, RH, RSA, TNI, UCC, WTL.
Halogenated Hydrocarbons	
1-Bromobutane (n-Butyl bromide)	ABB, BPC, MCH.
2-Bromobutane (sec-Butyl bromide)	ABB, BPC, EK.

TABLE 21B. --*Miscellaneous chemicals for which U.S. production or sales were reported, identified by manufacturer, 1967*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued	
Halogenated Hydrocarbons--Continued	
Bromochloromethane	DOW.
1-Bromo-3-chloropropane (Trimethylenechlorobromide)	DOW, MCH.
2-Bromo-2-chloro-1,1,1-trifluoroethane	ICI.
1-Bromododecane	DUP, GAF.
Bromoethane (Ethyl bromide)	DOW, MCH.
1-Bromo-3-methylbutane (Isoamyl bromide)	LIL.
1-Bromo-octadecane	DUP, GAF.
1-Bromopentane (n-Amyl bromide)	BPC.
*2-Bromopentane (1-Methylbutyl bromide)	ABB, LIL, PD.
1-Bromopropane (n-Propyl bromide)	BPC, EK.
2-Bromopropane (Isopropyl bromide)	BPC.
3-Bromopropene (Allyl bromide)	DOW.
Bromotrichloromethane	MCH.
Bromotrifluoromethane	DUP.
*Carbon tetrachloride	ACS, DA, DOW, FMB, FRO, PPG, SFI.
*Chlorinated paraffins:	
35%-64% chlorine	CCH, DA, DVC, HK, HPC, ICI, KPS, NEV.
65% or more chlorine	DA, DVC, NEV.
1-Chlorobutane (n-Butyl chloride)	PUB, UCC.
2-Chlorobutane (sec-Butyl chloride)	PLC, EK.
1-Chloro-1,1-difluoroethane	ACS, DUP.
*Chlorodifluoromethane	ACS, DUP, KAI, PAS, UCC.
*Chloroethane (Ethyl chloride)	AME, DOW, DUP, HPC, PPG, SHC, TNA.
*Chloroform	ACS, DA, DOW, DUP, FRO, SFI.
*Chloromethane (Methyl chloride)	ACS, ANM, CO, DCC, DOW, DUP, FRO, TNA, UCC.
2-Chloro-2-methylpropane (tert-Butyl chloride)	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	DUP, PAS, UCC.
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.
*Dichlorodifluoromethane	ACS, 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, SFI.
*1,2-Dichloropropane (Propylene dichloride)	DOW, JCC, UCC.
2,3-Dichloropropene	DOW, UCC.
*Dichlorotetrafluoroethane	ACS, DUP, PAS, UCC.
1,1-Difluoroethane	ACS, DUP.
Difluorotetrachloroethane	DUP, UCC.
Diiodomethane (Methylene iodide)	NTB, SDW.
Hexachloroethane	NES.
Hexafluoropropylene, monomer	DUP.
Iodoethane (Ethyl iodide), tech	CLB, EK, FMT.
*Iodomethane (Methyl iodide)	CLB, EK, FMT, RSA.
1-Iodoperfluorohexane	x.
Lauryl chlorides	BRD.
Octafluorocyclobutane	DUP.
Tetrabromoethane	DOW.
1,1,2,2-Tetrabromoethane (Acetylene tetrabromide)	DOW.
1,1,2,2-Tetrachloroethane (Acetylene tetrachloride)	DUP.
*Tetrachloroethylene (Perchloroethylene)	DA, DOW, DUP, FRO, HK, PPG, SFI, TNA, TTX.
Tetrafluoroethylene, monomer	DUP.
Tetrafluoroethylene, polymer	DUP.
Tetrafluoromethane	DUP.
*1,1,1-Trichloroethane (Methyl chloroform)	DOW, PPG, TNA.
1,1,2-Trichloroethane (Vinyl trichloride)	DOW, TNA, UCC.
*Trichloroethylene	DOW, DUP, HK, PPG, TNA, TTX.

TABLE 21B. --*Miscellaneous chemicals for which U.S. production or sales were reported, identified by manufacturer, 1967*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued	
Halogenated Hydrocarbons--Continued	
*Trichlorofluoromethane	ACS, DUP, KAI, PAS, UCC.
1,2,3-Trichloropropane	DOW, SHC.
1,2,3-Trichloropropene	DOW.
Trichlorotrifluoroethane	ACS, DUP, PAS, UCC.
*Vinyl chloride, monomer (Chloroethylene)	ACS, AME, BFG, CUC, DA, DOW, GNT, GYR, HN, MNO, MON, PPG, TNA, UCC.
Vinyl fluoride	x.
Vinylidene chloride, monomer (1,1-Dichloroethylene)	DOW, TNA.
Vinylidene fluoride	x.
All other	CLB, DUP, EK, RSA, SDW.
All Other Miscellaneous Acyclic Chemicals	
Acetyl peroxide	AZT, WTL.
Alkyl sulfides, mixed	ORO.
Aluminum isopropoxide (Aluminum isopropylate)	CHT.
*2-Butanone peroxide	AZT, CAD, NOC, RCI, WTL.
tert-Butyl hydroperoxide	AZT, CAD, WTL.
*tert-Butyl peroxide (Di-tert-butyl peroxide)	ARG, AZT, CAD, NOC, SHC, WTL.
Butyrolactone	GAF.
Caprolactone	UCC.
*Carbon disulfide	ACS, FMB, PAS, PPG, SFI.
2-Chloroethanol (Ethylene chlorohydrin)	CMC, UCC.
1-Chloro-2-propanol	RSA.
*Decanoyl peroxide	CAD, UPR, WTL.
Dialdehyde starch	MLS.
Dichloropropanol	ICO.
1,3-Dichloro-2-propanol	EK.
2,4-Dihydroxy-3,3-dimethylbutyric acid, gammalactone (Pantolactone).	CKL, PD.
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)	SHC.
Bis(2-chloroethoxy)methane (Dichloroethylformal)	TKL.
Bis(2-Chloroethyl) ether (Dichlorodiethyl ether)	DOW, UCC.
Bis(2-chloro-1-methylethyl) ether (Dichloroisopropyl ether).	DOW.
1-Butoxy-2,3-epoxypropane (Butyl glycidyl ether)	DOW, SHC.
Butylene oxide	DOW.
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	DOW, SHC.
*Ethylene oxide	ACP, CAU, DOW, EKX, GAF, HCH, JCC, CMC, SNO, UCC, WYN.
*Ethyl ether:	
Absolute	MAL.
Tech	ENJ, HPC, UCC, USI.
U.S.P	MAL, CMS.
Ethyl vinyl ether	GAF, UCC.
Glycidol (2,3-Epoxy-1-propanol)	DIX, OTC.
Isobutyl vinyl ether	GAF.
*Isopropyl ether	ENJ, SHC, UCC.
Methylal (Dimethoxymethane)	CEL.
*Methyl ether (Dimethyl ether)	COM, DUP, UCC.
Methyl vinyl ether	GAF, UCC.
*Propylene oxide	CEL, DOW, JCC, CMC, UCC, WYN.
Other	EK, HDG, UCC.
Ethanedithiol	RBC.
Ethanethiol	EK.
2-(Ethylmercapto)ethanol	PAS, PLC.
Fats and oils, chemically modified	ABB, CHL, DOM, RT.
Glucono-delta-lactone	DLI, PFZ.

TABLE 21B. --*Miscellaneous chemicals for which U.S. production or sales were reported, identified by manufacturer, 1967*--Continued

Chemical	Manufacturers' identification codes (according to list in table 22)
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued	
All Other Miscellaneous Acyclic Chemicals--Continued	
Glucoheptonolactone	PFN.
Glutaraldehyde bis(sodium bisulfite)	IDC.
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, NCI.
1-Octadecene	HMY.
n-Octane	HMY.
Propyne (Methylacetylene)	CUC.
Other	EK, HMY.
*Lauroyl peroxide	ARG, AZT, CAD, UPR, WTL.
Magnesium methylate	MRT, SFA.
Methanesulfanol	PAS.
Methyl disulfide	CRZ.
Methyl sulfide (Dimethyl sulfide)	CRZ, PAS.
Methyl sulfoxide	CRZ.
1-Octanethiol (n-Octyl mercaptan)	PAS.
Organo-aluminum compounds:	
Ethylaluminum chlorides	TNA, TSA.
Isobutylaluminum chlorides	TNA, TSA.
Methylaluminum chlorides	TNA, TSA.
Other	TNA, TSA.
Organo-boron compounds	ACS, CAL, SFA.
Organo-lead compounds:	
*Tetraethyllead	DUP, HCH, NLC, TNA.
*Tetramethyllead	DUP, NLC, TNA.
*Tetra(methyl-ethyl)lead	DUP, HCH, TNA.
Organo-lithium compounds	FTE.
Organo-magnesium compounds	ARA, x.
Organo-mercury compounds	NTB.
Organo-silicon compounds:	
Monomers	DCC, PIC, UCC.
*Polymers	DCC, ORO, SFA, SPD, UCC.
Organo-tin compounds:	
Bis(tributyltin) oxide	CCW, x.
Dibutylmethoxytin (Dibutyltin methoxide)	CCA.
Dibutyltin dichloride	CCW, x.
Other	CCA, CCW, x.
Perchloromethanethiol (Perchloromethyl mercaptan)	CHO.
Perlargonyl peroxide	WTL.
*Phosgene (Carbonyl chloride)	ACS, CTN, DUP, MOB, OMC, OTC, PPG, RUC, UCC, UPJ, VDM.
Pine oil, synthetic	CBY, NCI.
β-Propiolactone	CEL.
Propionyl peroxide	WTL.
Rare sugars	PFN, RSA.
Sodium ethoxide	FMP.
Sodium formaldehyde bisulfite	EK, IDC.
*Sodium formaldehyde sulfoxylate	DA, RH, ROY.
*Sodium methoxide (Sodium methylate)	BFR, DA, DUP, KF, OMC, RBC, SFA.
Sodium octylate	DA.
Succinyl peroxide	WTL.
Tetrakis(hydroxymethyl)phosphonium chloride	HK.
Tributylphosphine	CCW, x.
Tridecyl mercaptan	PAS.
Trioctylphosphine oxide	EK.
*Zinc formaldehyde sulfoxylate	DA, RH, ROY.
Other	ALX, CAD, CCW, DUP, EK, GAF, KF, NES, ORO, PLC, RSA, SFA, SFI, UCC, WAY, WTL, 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 1967, the Directory of Manufacturers lists approximately 819 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, 1967*

SECTION 1. ALPHABETICAL DIRECTORY BY CODE

[Names of synthetic organic chemical manufacturers that reported production or sales to the U.S. Tariff Commission for 1967 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
AAC	Alcolac Chemical Corp.
AAE	American Aniline & Extract Co., Inc.
AAP	American Aniline Products, Inc.
ABB	Abbott Laboratories
ABS	Abex Corp., American Brakeblok Div.
ACB	Allied Chemical Corp., Fabricated Products Div.
ACC	Amoco Chemicals Corp.
ACE	Acme Chemical Co.
ACI	Aceto Industrial Chemical Co.
ACN	Allied Chemical Corp., Agricultural Div.
ACP	Allied Chemical Corp., Plastics Div.
ACR	Corn Products Co., Acme Resin Co. Div.
ACS	Allied Chemical Corp., Specialty Chemicals Div.
ACT	Arthur C. Trask Co.
ACU	Allied Chemical Corp., Union Texas Petroleum Div.
ACY	American Cyanamid Co.
AES	Amerace-Esna Corp., Chemical Specialties Div.
AGP	Armour & Co., Armour Grocery Products Co. Div.
AGY	Agway, Inc.
AKS	Arkansas Co., Inc.
ALB	Ames Laboratories, Inc.
ALC	Alco Chemical Corp.
ALD	Aldrich Chemical Co., Inc.
ALF	Allied Chemical Corp., Fibers Div.
ALL	Alliance Color & Chemical Co.
ALT	Crompton & Knowles Corp., Chemicals Group, Althouse & Bates Div.
ALX	Alox Corp.
AMB	American Bio-Synthetics Corp.
AMC	Amchem Products, Inc.
AME	American Chemical Corp.
AML	Amalgamated Chemical Corp.
AMO	American Oil Co. (Texas)
AMP	American Potash & Chemical Corp.
AMR	Pacific Resins & Chemical Co.
AMS	Martin-Marietta Corp., Ridgway Color & Chemical Div.
ANM	Ancon Chemical Corp.
APD	Atlas Chemical Industries, Inc.
APR	Atlas Processing Co.
APV	Armstrong Paint & Varnish Works, Inc.
APX	Apex Chemical Co., Inc.
ARA	Arapahoe Chemicals Div. of Syntex Corp.
ARC	Armour & Co., Armour Industrial Chemical Co. Div.
ARD	Ardmore Chemical Co.
ARG	Argus Chemical Corp.
ARK	Armstrong Cork Co.
ARL	Arol Chemical Products Co.
ARM	Armour Agricultural Chemical Co.
ARN	Arenol Chemical Corp.
ARP	Armour Pharmaceutical Co.
ARZ	Arizona Chemical Co.
ASH	Ashland Oil & Refining Co.: Ashland Chemical Co. Div. Catalin Corp. Div.
ASL	Ansul Chemical Co.
AST	Astra Pharmaceutical Products, Inc.
ASY	American Synthetic Rubber Corp.
ATC	American Tartars Corp.
ATL	Atlantic Chemical Corp.
ATP	Atco Chemical-Industrial Products, Inc., Fine Chemicals Div.
ATR	Atlantic Richfield Co., ARCO Chemical Co. Div.
ATU	Atlantic Tubing & Rubber Co.
AV	FMC Corp., American Viscose Div.
AVS	Avisun Corp.
AZT	Aztec Chemicals, Inc.
BAC	Baker Castor Oil Co.
BAL	Baltimore Paint & Chemical Corp.
BAO	Bayoil Co., Inc.
BAR	American Rubber & Chemical Co.
BAS	BASF Corp.
BAX	Baxter Laboratories, Inc.
BCM	Belding Chemical Industries
BCN	Lehn & Fink Products Corp., Beacon Div.
BDO	Benzenoid Organics, Inc.
BEN	Bennett's
BFG	B. F. Goodrich Co., B. F. Goodrich Chemical Co. Div.
BFR	Branchflower Co.
BJL	Burdick & Jackson Laboratories, Inc.
BKC	J. T. Baker Chemical Co.
BKL	Millmaster Onyx Corp., Millmaster Chemical Div., Berkeley Chemical Dept.
BKM	Buckman Laboratories, Inc.
BKS	Tenneco Chemicals, Inc., Tenneco Colors Div.
BL	Belle Chemical Co., Inc.

TABLE 22.--*Synthetic organic chemicals: Directory of manufacturers, 1967*--Continued

Code identification	Name of company
BLA	Astor Products, Blue Arrow Div.
BLS	Beech-Nut Inc.
BME	Bendix Corp., Friction Materials Div.
BOR	Borden Co., Borden Chemical Co. Div.
BOY	Walter N. Boysen Co.
BPC	Cowles Chemical Co., Benzol Products Div.
BPL	Brand Plastics Co.
BRD	Baird Chemical Industries, Inc.
BRS	Bristol-Meyers Co., Bristol Laboratories Div.
BRU	M. A. Bruder & Sons, Inc.
BRY	Bryant Chemical Corp.
BST	Occidental Petroleum Corp., Occidental Chemical Co. Div.
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., a subsidiary of Chemetron Noury Corp.
CAL	Callery Chemical Co.
CAP	Cap-Roc, Inc.
CAU	Calcasieu Chemical Corp.
CBA	Ciba Corp.: Ciba Argochemical Co. 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. Organic Chemical Dept.
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.
CHP	C. H. Patrick & Co., Inc.
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.
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	Columbia Nitrogen Corp.
CNP	Columbia Nipro 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.
CPP	Charmin Paper Products Co.
CPV	Cook Paint & Varnish Co.
CPY	Copolymer Rubber & Chemical Corp.
CRD	Croda, Inc.
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	Imoco Corp., Chemical Services Div.
CSD	Cosden Oil & Chemical Co.
CSO	Cities Service Oil Co.
CSP	Coastal States Petrochemical Co.
CST	Charles S. Tanner Co.
CTA	Chemetron Corp., Chemetron Chemicals, Organic Chemical Dept.
CTL	Continental Chemical Co.
CTN	Chemetron Corp., Chemetron Chemicals Organic Chemical Dept.
CUC	Air Reduction Co., Inc., Airco Chemicals & Plastics
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.
DA	Diamond Shamrock Corp.
DAN	Dan River Mills, Inc.
DAV	Conchemco, Inc., H. B. Davis Co. Div.
DBC	Dow Badische Co.
DCC	Dow Corning Corp.
DCP	Dixie Chemical Products, Inc.
DEG	Degen Oil & Chemical Co.
DEP	DePaul Chemical Co., Inc.
DEX	Dexter 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, 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.
ECC	Eastern Color & Chemical Co.

TABLE 22.--*Synthetic organic chemicals: Directory of manufacturers, 1967*--Continued

Code identification	Name of company
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.
ENO	Enenco, Inc.
EPC	Epoxylite Corp.
ESA	East Shore Chemical Co., Inc.
ESC	Escambia Chemical Corp.
ETD	Ethyl-Dow Chemical Co.
EVN	Evans Chemetics, Inc.
EW	Westinghouse Electric Corp., Benolite Dept.
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 International, 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 Chemicals Co., Inc. & Fisher Melamine Corp.
FLH	H. B. Fuller Co.
FLM	Fleming Laboratories, Inc.
FLO	Florasynth, Inc.
FLW	Fuller-O'Brien Corp.
FMB	FMC Corp., Inorganic Chemicals Div. & Organic Chemicals Div.
FMN	FMC Corp., Niagara Chemical Div.
FMP	FMC Corp., Organic Chemicals Div. & Nitro Plant
FMT	Fairmount Chemical Co., Inc.
FOC	Farac Oil & Chemical Co., Div of Handschy Chemical Co.
FOM	Formica Corp.
FOR	El Dorado Chemical Co.
FRE	Freeman Chemical Corp.
FRL	Firestone Tire & Rubber Co., Firestone Industrial Rubber 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.
FST	First Chemical Corp.
FTE	Foote Mineral Co.
FTX	Central Farmers Fertilizer Co., Fel-Tex Plant
GAF	General Anilne & Film Corp.: Dyestuff & Chemical Div. Textile Finishes Dept., Textile Chemical Div.
GAN	Gane's Chemical Works, Inc.
GCC	W. R. Grace & Co., Agricultural Products 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	SCM Corp., Glidden-Durkee Div.
GLX	Electro-Seal Glasflex Corp.
GLY	Glyco Chemicals, Inc.
GNF	General Foods Corp., Maxwell House Div.
GNM	General Mills, Inc. & Chemical Div.
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	Millmaster Onyx Corp., A. Gross & Co. Div.
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.
HCR	Hercor Chemical Corp.
HDG	Hodag Chemical Corp.
HER	Heresite & Chemical Co.
HET	Heterochemical Corp.
HEW	Hewitt Soap Co.
HEX	Hexagon Laboratories, Inc.
HFT	Hoffman-Taff, Inc.
HK	Hooker Chemical Corp.
HKD	Hooker Chemical Corp., Durex Div.
HKY	Hawkeye Chemical 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.
HSY	Hershey Estates, Inc.
HUM	National Dairy Products Corp., Humko Products Chemical Div.
HUS	Husky Briquetting, Inc.
HVG	Haveg Industries, Inc.
HYC	Dexter Corp., Hysol Co. Div.
HYN	Hynson, Westcott & Dunning, Inc.
IBI	Industrial Biochemicals, Inc.

TABLE 22.--*Synthetic organic chemicals: Directory of manufacturers, 1967*--Continued

Code identification	Name of company
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.
INL	Inland Steel Co., Inland Steel Container Co. Div.
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.
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.
KEL	Kelly-Pickering Chemical Corp.
KEN	Witco Chemical Co. Inc., Kendall Refining Div.
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., Organic Materials 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.
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	Lake States, Div. of St. Regis Paper Co.
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	Pickands Mather & Co. Manganese Chemical Co. Div.
MAR	American Can Co., Marathon Products/Chemical
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.
MCP	Moretex Chemical Products, Inc.
MED	Medical Chemicals Corp.
MEE	Maumee Chemical Co.
MER	Merichem Co.
MET	M & T Chemicals, Inc.
MFG	Molded Fiber Glass Body Co.
MGK	McLaughlin Gormley King Co.
MGR	Magruder Color Co., Inc.
MHI	Ventron Corp.
MID	Midland Industrial Finishes Co.
MIR	Miranol Chemical Co., Inc.
MLD	Metalead Products Corp.
MLS	Miles Laboratories, Inc., Marschall 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.
MR	Benjamin Moore & Co.
MRA	Metro-Atlantic, Inc.
MRB	Marblette Co. Div. of Allied Products 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.
NCA	Northrop Carolina, Inc.
NCI	Union Camp Corp., Chemicals 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.
NLC	Nalco Chemical Co.
NMC	National Milling & Chemical Co., Inc.
NOC	Norac Co., Inc. & Mathe Chemical Co. Div.
NON	A. P. Nonweiler Co.
NOR	Norwich Pharmacal Co.
NPC	Northwest Petrochemical Corp.
NPI	National Polychemicals, Inc.

TABLE 22.--*Synthetic organic chemicals: Directory of manufacturers, 1967*--Continued

Code identification	Name of company
NPP	Enjay Chemical Co., Enjay Fibers & Laminates Co. Div.
NPR	Safeway Stores, Inc., Newport Products Co. Div.
NPV	Norris Paint & Varnish Co.
NRS	Norse Chemical Corp.
NSC	National Starch & Chemical Corp.
NTB	National Biochemical Co.
NTC	National Casein Co.
NTL	National Lead Co.
NVF	NVF Co.
NVT	Novamont Corp., Neal Works
NW	Northwestern Chemical Co.
NYC	Tenneco Chemicals, Inc., New York Color Div.
OBC	O'Brien Corp.
OCF	Owens-Corning Fiberglas Corp.
OH	Air Reduction Co., Inc., Ohio Medical Products Div.
OMC	Olin Mathieson Chemical Corp., & Agricultural Div.
OMS	E. R. Squibb & Sons, Inc.
ONX	Millmaster Onyx Corp., Onyx Chemical Div.
OPC	Orbis Products Corp.
ORG	Organics, Inc.
ORO	Chevron Chemical Co.
ORT	Roehr Chemicals, Inc.
OSB	C. J. Osborn Co.
OTA	Ottawa Chemical Co.
OTC	Ott Chemical Co.
OTH	Chevron Chemical Co.
PAI	Pennsylvania Industrial Chemical Corp.
PAN	Pan American Petroleum Corp.
PAR	Pennsylvania Refining Co.
PAS	Pennsalt Chemicals Corp.
PAT	Patent Chemicals, Inc.
PBI	Private Brands, Inc.
PBY	Pillsbury Co.
PC	Proctor Chemical Co., Inc.
PCC	USS Chemicals, Div. of U.S. Steel Corp.
PCH	Peerless Chemical Co.
PCI	Pioneer Chemical Works, Inc.
PCR	Princeton Chemical Research, Inc.
PCS	Emery Industries, Inc., Western Div.
PCW	Pfister Chemical, Inc.
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., Procter & Gamble Manufacturing Co.
PGU	Gulf Oil Corp., Perkins Glue, Chemicals Dept.
PHF	Peter Hand Foundation, Inc.
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.
PLX	Plex Chemical Corp.
PMC	Plastics Manufacturing Co.
PMP	Premier Malt Products, Inc.
PNT	Pantasote Co. of New York, Inc.
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.
PRT	Pratt & Lambert, Inc.
PRX	Purex Corp., Ltd.
PSC	Passaic Color & Chemical Co.
PSP	Georgia-Pacific Corp., Bellingham Div.
PTO	Puerto Rico Chemical Co., Inc.
PTP	Preservative Paint Co.
PTT	Petro-Tex Chemical Corp.
PUB	Publicker Industries, Inc.
PUR	Puritan Chemical Co.
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.
RAY	ITT Rayonier, Inc.
RBC	Roberts Chemicals, Inc.
RCC	Rexall Chemical Co.
RCD	Richardson Co.
RCI	Reichhold Chemicals, Inc.
RDA	Rhodia, Inc.
RED	Red Spot Paint Co., Inc.
REH	Reheis Chemical Co., Div. of Armour Pharmaceutical Co.
REL	Reliance Universal, Inc. & Rel-Rez Div.
REM	Remington Arms Co., Inc.
REN	Renroh Resins
REZ	Rezolin, Inc.
RGC	Rogers Corp.
RH	Rohm & Haas Co.
RIK	Riker Laboratories, Div. of Rexall Drug & Chemical Co.
RIL	Reilly Tar & Chemical Corp.
RIV	Riverdale Chemical Co.
RLS	Rachelle Laboratories, Inc.
ROB	Robeco Chemicals, 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. & Dyestuff & Chemical Div.
SAC	Southeastern Adhesives Co.
SAL	Salsbury Laboratories
SAR	Sartomer Resins, Inc.
SBC	Scher Bros., Inc.
SBI	Southern Biochemical Corp.

TABLE 22.--*Synthetic organic chemicals: Directory of manufacturers, 1967*--Continued

Code identification	Name of company
SBP	Sugar Beet Products Co.
SCC	Standard Chlorine Chemical Co., Inc.
SCF	Schaefer Varnish Co.
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	Conchemco, Inc., Seidlitz Paint Div.
SEK	Plastic Systems Corp.
SEL	Selney Co., Inc.
SEY	Seydel-Woolley & Co.
SF	Stauffer Chemical Co., Agricultural Div.
SFA	Stauffer Chemical Co., Specialty Chemical Div.
SFD	Sonford Chemical Co.
SFI	Stauffer Chemical Co., Industrial Div.
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 Div.
SHL	Shulton, Inc.
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.
SKT	Textron, Inc., Spencer Kellogg Div.
SLC	Soluol Chemical Co., Inc.
SLV	Sterling Drug, Inc., Salvo Chemical Div.
SM	Mobil Chemical Co.
SM	Mobil Oil Corp. & Mobil Chemical Co. Div., Industrial Chemical Div.
SMC	Stamford Chemical Industries, Inc.
SNA	Sun Chemical Corp., Pigments 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 Div.
SOC	Standard Oil Co. of California, Chevron Chemical Co.
SOG	Signal Oil & Gas Co.
SOH	Solar Nitrogen Chemicals, Inc. & Vistron Corp.
SOI	American Oil Co. (Maryland)
SOL	Solar Chemical Corp.
SOP	Southern Chemical Products Co.
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.
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	Colonial Sugars Co., Sucro-Chemical Div.
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.
SYP	Synthetic Products Co.
SYV	Synvar Corp.
TAE	Chemetron Corp., National Cylinder Gas Div.
TCC	Tanatex Chemical Corp.
TCH	Trylon Chemical, Corp.
TCI	Norwich Pharmacal Co., Texize Chemicals, Inc. Div.
TDC	Diversey Corp.
TEK	Teknor Apex Co.
TEN	Tennessee Copper Co., Div. of Tennessee Corp.
TER	Terra Chemicals International, Inc.
TGL	Triangle Chemical Co.
THC	Thompson Apex Co., Div. of Continental Oil Co.
THM	Wm. T. Thompson Co., Thompson Chemicals Div.
TIC	Ticonderoga Chemical Corp.
TID	Getty Oil Co.
TKL	Thiokol Chemical Corp.
TMH	Thompson-Hayward Chemical Co.
TMS	Sterling Drug, Inc., Thomasset Colors Div.
TNA	Ethyl Corp.
TNI	Gillette Chemical Co., Div. of Gillette Co.
TOC	Tenneco Oil Co.
TRC	Toms River Chemical Corp.
TRJ	Jeras Corp.
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.
UDI	Petrochemicals Co., Inc.
UHL	Paul Uhlich & Co., Inc.
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
UOP	Universal Oil Products Co., UOP Chemical Div.
UPF	United States Pipe & Foundry Co.
UPJ	Upjohn Co.
UPL	United States Plywood-Champion Papers, Inc., California Div., Shasta Operations.
UPM	Universal Oil Products Co.
UPR	Argus Chemical Corp., U.S. Peroxygen Div.
URC	United Carbon Co.

TABLE 22.--*Synthetic organic chemicals: Directory of manufacturers, 1967*--Continued

Code identification	Name of company
USB	U.S. Borax Research Corp.
USI	National Distillers & Chemical Corp.: National Petro Chemical Corp. Div. U.S. Industrial Chemicals Co. Div.
USO	U.S. Oil Co.
USR	Uniroyal, Inc., Chemical Div.
UTR	Utah Resin Co., Inc.
UVC	Universal Chemicals Corp.
VAC	Northern Petrochemical Co., Varney Div.
VAL	Valchem
VB	Vermilye-Bell
VDM	Van De Mark Chemical Co.
VEL	Velsicol Chemical Corp.
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.
VTM	Vitamins, Inc.
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 Co., Inc.
WHC	Whittaker Corp., Research & Development/San Diego
WHI	White & Hodges, Inc.
WHL	Whitmoyer Laboratories, Inc.
WHW	Whittemore-Wright Co., Inc.
WIC	Wica Chemicals, Inc.
WIL	Wilson Pharmaceutical & Chemical Corp., Wilson Laboratories Div.
WJ	Warner-Jenkinson Manufacturing Co.
WLI	White Laboratories, Inc.
WLM	Wilmot & Cassidy, Inc.
WM	Wilson Pharmaceutical & Chemical Corp. Wilson-Martin Div.
WMP	Warner Machine Products, Inc., Warner Chemical Div.
WOB	Woburn Chemical Corp.
WOD	Woodbury 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.: Chemical Div., Tall Oil Dept. Polychemicals Div.
WYC	Wycon Chemical Co.
WYN	Wyandotte Chemicals Corp.
WYT	Wyeth Laboratories, Inc., Div. of American Home Products Corp.
YAW	Young Aniline Works, Inc.

Table 22. -- *Synthetic organic chemicals: Directory of manufacturers, 1967* --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 1967 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
ABB	Abbott Laboratories	14th St. and Sheridan Rd., N. Chicago, IL 60664.
ABS	Abex Corp., American Brakeblok Div	900 W. Maple Rd., Troy, MI 48084.
ACI	Aceto Industrial Chemical Co.	126-02 Northern Blvd., Flushing, New York, NY 11368.
ACE	Acme Chemical Co	2506 N. 32d St., Milwaukee, WI 53245.
AGY	Agway, Inc.	1446 Buffalo St., Olean, NY 10760.
HOU	Air Products & Chemicals, Inc., Houndry Process & Chemical Div.	1339 Chestnut St., Philadelphia, PA 19107.
	Air Reduction Co., Inc.:	
CUC	Airco Chemicals & Plastics	150 E. 42d St., New York, NY 10017.
OH	Ohio Medical Products Div	1400 E. Washington Ave., Madison, WI 53701.
ALC	Alco Chemical Corp	Trenton Ave. and William St., Philadelphia, PA 19134.
AAC	Alcolac Chemical Corp	3440 Fairfield Rd., Baltimore, MD 21226.
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	40 Rector St., New York, NY 10006.
ACB	Fabricated Products Div	40 Rector St., New York, NY 10006.
ALF	Fibers Div	1450 Broadway, New York, NY 10018.
ACP	Plastics Div	P.O. Box 365, Morristown, NJ 07960.
ACS	Specialty Chemicals Div	Columbia Rd. & Park Ave., Morristown, NJ 07960.
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.
AES	Amerace-Esna Corp., Chemical Specialities Div.	74 Hudson Ave., Tenafly, NJ 07670.
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., Marathon Products/Chemical	708 3d 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.
SOI	American Oil Co. (Maryland)	910 S. Michigan Ave., Chicago, IL 60680.
AMO	American Oil Co. (Texas)	910 S. Michigan Ave., Chicago, IL 60680.
AMP	American Potash & Chemical Corp	3000 W. 6th St., Los Angeles, CA 90005.
BAR	American Rubber & Chemical Co	P.O. Box 1034, Louisville, KY 40201.
ASY	American Synthetic Rubber Corp	P.O. Box 360, 4500 Camp Ground Rd., Louisville, KY 40201.
ATC	American Tartars Corp	420 Lexington Ave., New York, NY 10017.
AIB	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.
UPR	U.S. Peroxygen Div	840 Morton Ave., Richmond, CA 94804.
ARZ	Arizona Chemical Co	Wayne, NJ 07470.
AKS	Arkansas Co., Inc	185 Foundry St., Newark, NJ 07105.
	Armour & Co.:	
AGP	Armour Grocery Products Co. Div	100 S. Wacker Dr., Chicago, IL 60606.
ARC	Armour Industrial Chemical Co. Div	401 N. Wabash Ave., Chicago, IL 60690.
ARM	Armour Agricultural Chemical Co	P.O. Box 1685, Atlanta, GA 30301.
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.
ASH	Ashland Oil & Refining Co	1401 Winchester Ave., Ashland KY 41101.
	Ashland Chemical Co. Div	Henry St., Bethel, CT 06801 and P.O. Box 2458, Columbus, OH 43216.
	Catalin Corp. Div	170 N. High St., Columbus, OH 43215.

TABLE 22.--*Synthetic organic chemicals: Directory of manufacturers, 1967*--Continued

Identification code	Name of company	Office address
AST	Astra Pharmaceutical Products, Inc	7-1/2 Neponset St., Worcester, MA 01606.
BLA	Astor Products, Blue Arrow Div	5050 Edgewood Ct., Jacksonville, FL 32203.
ATP	Atco Chemical-Industrial Products, Inc., Fine Chemical Div.	93 Main St., Franklin, NJ 07416.
ATL	Atlantic Chemical Corp	P.O. Box 216, Nutley, NJ 07110.
ATR	Atlantic Richfield Co., ARCO Chemical Co. Div	260 S. Broad St., Philadelphia, PA 19101.
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 9188, 3546 Midway St., Shreveport, LA 71109.
AVS	Avisun Corp	P.O. Box 312, New Castle, DE 19720.
AZT	Aztec Chemicals, Inc	P.O. Box 756, Elyria, OH 44035.
BAS	BASF Corp	866 3d St., New York, NY 10022.
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.
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	1700 South El Camino Real, San Mateo, CA 94402.
BAX	Baxter Laboratories, Inc	6301 N. Lincoln Ave., Morton Grove, IL 60053.
BAO	Bayoil Co., Inc	2 Union St., Peabody, MA 01960.
BLS	Beech-Nut, 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 28098.
BME	Bendix Corp., Friction Materials Div	P.O. Box 238, Troy, NY 12180.
BEN	Bennett's	65 W. 1st South St., Salt Lake City, UT 84110.
BDO	Benzenoid Organics, Inc	P.O. Box 156, Bellingham, MA 02019.
PDC	Berncolors-Poughkeepsie, Inc	75 N. Water St., Poughkeepsie, NY 12601.
BUC	Blackman-Uhler Chemical Co	P.O. Box 5627, Spartanburg, SC 29301.
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.
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.
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., Subsidiary of Chemetron Noury 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.
CAP	Cap-Roc, Inc	300 State St., Rochester, NY 14614.
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 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	245 Park 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.
FTX	Central Farmers Fertilizer Co., Fel-Tex Plant	P.O. Box 68, Fremont, NB 68025.
CCL	Charlotte Chemical Laboratories	P.O. Box 948, Charlotte, NC 28201.
CPP	Charmin Paper Products Co	800 Hoberg St., Green Bay, WI 54305.
CCC	Chase Chemical Corp	3527 Smallman St., Pittsburgh, PA 15201.
CHT	Chattem Drug & Chemical Co., Chattem Chemicals Div.	1715 W. 38th St., Chattanooga, TN 37409.
CHG	Chemagro Crop	P.O. Box 4913, Station "F", Kansas City, MO 64120.
CBD	Chembond Corp	P.O. Box 270, Springfield, OR 97477.

TABLE 22. --*Synthetic organic chemicals: Directory of manufacturers, 1967*--Continued

Identification code	Name of company	Office address
	Chemetron Corp.:	
CTN & CTA	Chemetron Chemicals, Organic Chemical Dept.	393 7th Ave., New York, NY and Wilmington Industrial Park, Wilmington, DE 19801.
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.
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 20687, Greensboro, NC 27420.
OTH & ORO	Chevron Chemical Co----------	940 Hensley St., Richmond, CA 94801 and 200 Bush St., San Francisco, CA 94120.
CPC	Childs Pulp Colors, Inc----------	43 Summit St., Brooklyn, NY 11231.
CHC	Chipman Chemical Co., Inc----------	120 Jersey Ave., New Brunswick, NJ 08903.
CIB	Ciba Chemical & Dye Co----------	Route 208, Fair Lawn, NJ 07410.
	Ciba Corp.:	
CBA	Ciba Argochemical Co----------	556 Morris Ave., Summit, NJ 07901.
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----------	4342 S. Wolcoth Ave., Chicago, IL 60609.
CLV	Clover Chemical Co----------	P.O. Box 146, Eighty Four, PA 15330.
CSP	Coastal States Petrochemical Co----------	6th Fl., Lincoln Liberty Life Bldg., Houston, TX 77002.
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 Carbor & Chemical Corp----------	714 W. Olympic Blvd., Los Angeles, CA 90015.
CLD	Colloids, Inc----------	394 Frelinghuysen Ave., Newark, NJ 07114.
SUG	Colonial Sugars Co., Sucro-Chemical Div-------	Drawer G, Gramercy, LA 70052.
CNC	Columbia Nitrogen Corp----------	P.O. Box 1483, Augusta, GA 30903.
CNP	Columbia Nipro Corp----------	P.O. Box 1483, Augusta, GA 30903.
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.
CMP	Commercial Products Co., Inc----------	117 Ethel Ave., Hawthorne, NJ 07641.
COM	Commercial Solvents Corp----------	245 Park Ave., New York, NY 10017.
COR	Commonwealth Oil Refining Co., Inc----------	G.P.O. Box 4065, San Juan, PR 00936.
	Conchemco, Inc.:	
DAV	H.B. Davis Co. Div----------	Bayard & Severn Sts., Baltimore, MD 21230.
SED	Seidlitz Paint Co. Div----------	18th & Garfield Sts., Kansas City, MO 64127.
CON	Concord Chemical Co., Inc----------	205 S. 2d St., Camden, NJ 08103.
CWP	Consolidated Papers, Inc----------	P.O. Box 50, 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----------	1412 Knox, N. Kansas City, MO 64116.
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.
ACR	Acme Resin Co. Div----------	1401 S. Circle Ave., Forest Park, IL 60130.
CSD	Cosden Oil & Chemical Co----------	P.O. Box 1311, Big Spring, TX 79720.
CWL	Cowles Chemical Co----------	12000 Shaker Blvd., Cleveland, OH 44120.
BPC	Benzol Products Div----------	Mento Park Office Bldg., Edison, NJ 08817.
CRT	Crest Chemical Corp----------	225 Emmet St., Newark, NJ 07114.
CRD	Croda, Inc----------	51 Madison Ave., New York, NY 10010.
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.
CRZ	Crown Zellerbach Corp., Chemical Products Div.	Camas, WA 98607.
CUL	Culver Chemical Co----------	1502 N. 25th St., Melrose Park, IL 60160.
CUT	Cutter Laboratories, Inc----------	4th and Parker Sts., Berkeley, CA 94710.
DAN	Dan River Mills, Inc----------	Danville, VA 24541.
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.

TABLE 22.--*Synthetic organic chemicals: Directory of manufacturers, 1967*--Continued

Identification code	Name of company	Office address
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, Inc	1700 S. Mt. Prospect Ave., Des Plaines, IL 60018.
TTX	Detrex Chemical Industries, Inc	14331 Woodrow Wilson, Detroit, MI 48232.
DEX	Dexter Corp	845 Edgewater Rd., Bronx, NY 10474.
HYC	Hysol Co. Div	211 Franklin St., Olean, NY 14760.
DA	Diamond Shamrock Corp	300 Union Commerce Bldg., Cleveland, OH 44114.
TDC	Diversey Corp	212 W. Monroe St., Chicago, IL 60606.
DIX	Dixie Chemical Co	P.O. Box 13410, Houston, TX 77019.
DCP	Dixie Chemical Products, Inc	P.O. Box 13410, 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	Drawer D, Williamsburg, VA 23185.
DOW	Dow Chemical Co	Hopkins Bldg., 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.
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.
FOR	El Dorado Chemical Co	P.O. Box 599, Oakland, CA 94604.
GLX	Electro-Seal Glasflex Corp	Stirling, NJ 07980.
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.
ENO	Enenco, Inc	P.O. Box 398, Memphis, TN 38101.
ENJ	Enjay Chemical Co	60 W. 49th St., New York, NY 10020.
NPP	Enjay Fibers & Laminates Co. Div	Odenton, MD 21113.
EPC	Epoxylite Corp	P.O. Box 3397, 1428 N. Tyler Ave., S. El Monte, CA 91733.
ESC	Escambia Chemical Corp	P.O. Box 467, Pensacola, FL 32502.
TNA	Ethyl Corp	330 S. 4th St., Richmond, VA 23217.
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	P.O. Box 8127, S. Charleston, WV 25303 and Sawyer Ave. & River Rd., Town of Tonawanda, NY 14150.
FMN	Niagara Chemical Div	100 Niagara St., Middleport, NY 14105.
FMB	Organic Chemicals Div	633 3rd Ave., New York, NY 10017.
FMP	Organic Chemicals Div	1701 Patapsco Dr., Baltimore, MD 21226.
	Nitro Plant	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, 3713 W. Main St., Kalamazoo, MI 49005.
FAR	Farnow, Inc	77 Jacobus Ave., S. Kearny, NJ 07032.
FCL	Federal Color Laboratories, Inc	4526 Chickering Ave., Cincinnati, OH 45232.
FEL	Felton International, Inc	599 Johnson Ave., Brooklyn, NY 11237.
FER	Ferro Corp., Ferro Chemical Div	P.O. Box 349, 7050 Krick Rd., 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.:	
FRL	Firestone Industrial Rubber Products Div	P.O. Box 2290, Fall River, MA 02777.
FIR	Firestone Plastics Co. Div	P.O. Box 699, Pottstown, PA 19464.
FRS	Firestone Synthetic Rubber & Latex Co. Div	381 W. Wilbeth Rd., Akron, OH 44301.
FST	First Chemical Corp	P.O. Box 1427, Pascagoula, MS 39567.

TABLE 22. --*Synthetic organic chemicals: Directory of manufacturers, 1967*--Continued

Identification code	Name of company	Office address
FIS	Fisher Chemical Co., Inc	580 Sylvian Ave., Englewood, NJ 07632.
FIS	Fisher Melamine Corp	410 Park Ave., New York, NY 10022.
FLM	Fleming Laboratories, Inc	P.O. Box 10372, Charlotte, NC 28201.
FLO	Florasynth Laboratories, Inc	900 Van Nest Ave., Bronx, NY 10462.
FTE	Foote Mineral Co	Route 100, Exton, PA 19341.
FOM	Formica Corp	4614 Spring Grove Ave., Cincinnati, OH 45232.
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	Fuller-O'Brien Corp	450 E. Grand Ave., S. San Francisco, CA 94080.
GAN	Gane's Chemical Works, Inc	535 5th Ave., New York, NY 10017.
GGY	Geigy Chemical Corp	444 Saw Mill River Rd., Ardsley, NY 10502.
GAF	General Aniline & Film Corp.:	
	Dyestuff & Chemical Div.	P.O. Box 12, Linden, NJ 07036.
	Textile Finishes Dept., Textile Chemical Div.	1228 Chestnut St., Chattanooga, TN 37402.
	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	Mechanicville Rd., 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.:	
PSC	Bellingham Div	P.O. Box 1236, Bellingham, WA 98225.
CBC	Coos Bay Div	P.O. Box 869, Coos Bay, OR 97420.
TID	Getty Oil Co	Delaware City, DE 19706.
TNI	Gillette Chemical Co., Div. of Gillette 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.
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 Chemical 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., Edison, NJ 08817.
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, IA 52761.
GRA	Great American Plastics Co	85 Water St., Fitchburg, MA 01420.
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.
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. Box 2100, Houston, TX 77001.
PGU	Perkins Glue, Chemicals Dept	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.
HAL	C. P. Hall Co. of Illinois	7300 S. Central Ave., Chicago, IL 60638.

TABLE 22. --*Synthetic organic chemicals: Directory of manufacturers, 1967*--Continued

Identification code	Name of company	Office address
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.
HRT	Hart Products Corp	1440 Broadway, New York, NY 10018.
HVG	Haveg Industries, Inc	900 Greenbank Rd., Wilmington, DE 19808.
HKY	Hawkeye Chemical Co	P.O. Box 899, Clinton, IA 52733.
HCR	Hercor Chemical Corp	P.O. Box 4198, Ponce, PR 00731.
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.
HSY	Hershey Estates, Inc	1 W. Chocolate Ave., Hershey, PA 17033.
DLH	Hess Oil & Chemical Corp	State St., Perth Amboy, NJ 08862.
HET	Heterochemical Corp	111 E. Hawthorne Ave., Valley Stream, NY 11757.
HEW	Hewitt Soap Co	333 Linden Ave., Dayton, OH 45403.
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 Kingsland Rd., Nutley, NJ 07110.
HFT	Hoffman-Taff, Inc	P.O. Box 1246 S.S.S., Springfield, MO 65805.
HSC	Holland-Suco Color Co	P.O. Box 2166, Huntington, WV 25722.
HK	Hooker Chemical Corp	Buffalo Ave. & 47th St. Niagara Falls, NY 14302.
HKD	Durez 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.
HMY	Humphrey Chemical Co	Devine St., North Haven, CT 06473.
WAY	Philip A. Hunt Chemical Corp., Wayland Chemical Div.	P.O. Box 0, 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.
ICI	I.C.I./Organics/Inc	P.O. Box 1274, 151 South St., Stamford, CT 06904.
IRC	IRC, Inc	401 N. Broad St., Philadelphia, PA 19108.
RAY	ITT Rayonier, Inc	161 E. 42d St., New York, NY 10017.
CSB	Imoco Corp., Chemical Services Div	Howard & West Sts., Baltimore, MD 21230.
IBI	Industrial Biochemicals, Inc	U.S. Highway #1, Edison, NJ 08817.
IDC	Industrial Dyestuff Co	P.O. Box 4249, E. Providence, RI 02914.
INL	Inland Steel Co., Inland Steel Container Co	4300 W. 130th St., Chicago, IL 60658.
	Interchemical Corp.:	
ICC	Color & Chemicals Div	150 Wagaraw Rd., Hawthorne, NJ 07506.
ICF	Finishes Div	5935 Milford Ave., Detroit, MI 48210.
ICO	Organic Chemicals Dept	Berry Ave. and Route 17, Carlstadt, NJ 07072.
IFF	International Flavors & Fragrances, 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 Ave., Sweet Home, OR 97386.
IPC	Interplastic Corp., Commercial Resins Div	2015 NE. Broadway St., Minneapolis, MN 55413.
IRI	Ironsides Resins, Inc	270 W. Mound St., Columbus, OH 43216.
IPI	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.
TRJ	Jeras Corp	17 N. 7th St., Allentown, PA 18105.
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	325 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 Chemicals Div	P.O. Box 337, Gramercy, LA 70052.
KAL	Kali Manufacturing Co	427 Moyer St., Philadelphia, PA 19125.
KF	Kay-Fries Chemicals, Inc	360 Lexington Ave., New York, NY 10017.
KMP	Kelly-Moore Paint Co	1015 Commercial St., San Carlos, CA 94070.
KEL	Kelly-Pickering Chemical Corp	956 Bransten Rd., San Carlos, CA 94070.
	Kennecott Copper Corp.:	
KCC	Chino Mines Div	Hurley, NM 88043.
KCU	Utah Copper Div	P.O. Box 11299, Salt Lake City, UT 84111.

TABLE 22.--*Synthetic organic chemicals: Directory of manufacturers, 1967*--Continued

Identification code	Name of company	Office address
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, Denver, CO 80201.
KON	H. Kohnstamm & Co., Inc	161 Avenue of the Americas, New York, NY 10013.
KPT	Koppers Co., Inc., Organic Materials Div	Koppers Bldg., Pittsburgh, PA 15219.
KPS	Koppers Pittsburgh Co	Koppers Bldg., 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.
LKY	Lake States, Div. of St. Regis Paper Co	603 W. Davenport St., Rhinelander, WI 54501.
LAK	Lakeway Chemical Co	5025 Evanston Ave., Muskegon, MI 49443.
LAM	LaMotte Chemical Products Co	Chestertown, MD 21620.
LAS	Lasco Industries, Inc	1561 Chapin Rd., Montebello, CA 90640.
LUR	Laurel Products Corp	2600 E. 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.
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.
MOC	Marathon Oil Co., Texas Refining Div	P.O. Box 1191, Texas City, TX 77590.
MRB	Marblette Co., Div. of Allied Products 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	1511 Joshua Circle, High Point, NC 27260.
	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., Div. of Norac Co., Inc	169 Kennedy Dr., 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 SE. 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	E. Water, St., Waukegan, IL 60086.
MLS	Miles Laboratories, Inc., Marschall Div	Myrtle and McNaughton Sts., Elkhart, IN 46514.
	Millmaster Onyx Corp.:	
BKL	Millmaster Chemical Div., Berkeley Chemical Dept.	99 Park Ave., New York, NY 10016.
GRO	A. Gross & Co. Div	295 Madison Ave., New York, NY 10017.
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	3M Center, St. Paul, MN 55101.
MNP	Minnesota Paints, Inc	1101 S. 3d St., Minneapolis, MN 55415.
MIR	Miranol Chemical Co., Inc	277 Coit St., Irvington, NJ 07111.

TABLE 22.--*Synthetic organic chemicals: Directory of manufacturers, 1967*--Continued

Identification code	Name of company	Office address
MSC	Mississippi Chemical Corp	P.O. Box 388, Yazoo City, MS 39191.
MOB	Mobay Chemical Co	Penn Lincoln Parkway, W. Pittsburgh, PA 15205.
SM	Mobil Chemical Co	P.O. Box 3868, Beaumont, TX 77704; 7301 Bessemer Ave., Cleveland, OH 44127; 12815 Elmwood St., Cleveland, OH 44111; P.O. Box 250, Edison, NJ 08817 and 1630 W. Hill St., Louisville, KY 40210.
SM	Mobil Oil Corp	612 S. Flower St., Los Angeles, CA 90054.
	Mobil Chemical Co. Div., Industrial Chemical Div.	401 E. Main St., Richmond, VA 23208.
MFG	Molded Fiber Glass Body Co	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	800 N. Lindbergh Blvd., St. Louis, MO 63166.
	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.
	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	800 N. Lindbergh Blvd., St. Louis, MO 63166.
	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 Chemicals, Inc	2301 Scranton Rd., Cleveland, OH 44113.
MR	Benjamin Moore & Co	548 5th Ave., New York, NY 10036.
MCP	Moretex Chemical Products, Inc	314 W. Henry St., P.O. Box 1799, Spartanburg, SC 29301.
MRT	Morton Chemical Co	110 N. Wacker Dr., Chicago, IL 60606.
MOT	Motomco, Inc	89 Terminal Ave., Clark, NJ 07066.
NVF	NVF Co	700 Maryland Ave., Wilmington, DE 19805.
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	5050 Poplar Ave., Memphis, TN 38117.
SHF	Sheffield Chemical Div	2400 Morris Ave., Union, NJ 07083.
USI	National Distillers & Chemical Corp.:	
	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.
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, Harriman, NY 10926.
NEV	Neville Chemical Co	Neville Island P.O., Pittsburgh, PA 15225.
NIL	Nilok Chemicals, Inc	Mill St. and N. Transit Rd., Lockport, NY 14094.
JDC	Nipak, Inc	301 S. Harwood 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.
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	P.O. Box 2023, Salem, OR 97308.
NRS	Norse Chemical Corp	2121 Norse Ave., Cudahy, WI 53110.
LMI	North American Chemical Co	19 S. Canal St., Lawrence, MA 01843.
VAC	Northern Petrochemical Co., Varney Div	2001 Afton Rd., Janesville, WI 53545.
NCA	Northrop Carolina, Inc	P.O. Box 3049, Asheville, NC 28802.
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.
TCI	Texize Chemicals, Inc. Div	P.O. Box 368, Greenville, SC 29602.
NCW	Nostrip Chemical Works, Inc	182 Liberty Ave., Jamaica, NY 11433.
NVT	Novamont Corp., Neal Works	P.O. Box 189, Kenova, WV 25530.
CMG	Nyanza, Inc	P.O. Box 349, Ashland, MA 01721.
OBC	O'Brien Corp	2001 W. Washington Ave., South Bend, IN 46621.
BST	Occidental Petroleum Corp., Occidental Chemical Co. Div.	P.O. Box 198, Lathrop, CA 95330.
OMC	Olin Mathieson Chemical Corp	445 W. 59th St., New York, NY 10019.
	Agricultural Div	1120 Marshall St., Little Rock, AR 72203.

TABLE 22. --*Synthetic organic chemicals: Directory of manufacturers, 1967* --Continued

Identification code	Name of company	Office address
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.
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. of New York, Inc	26 Jefferson St., Passaic, NJ 07056.
PD	Parke, Davis & Co	Foot of Jos. Campau, 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.
CHP	C. H. Patrick & Co., Inc	P.O. Box 2526, Greenville, SC 29602.
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.
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.
PHF	Peter Hand Foundation, Inc	2 E. Madison St., Waukegan, IL 60085.
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, Inc	Linden Ave., 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.	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.
MAN	Pickands Mather & Co., Manganese Chemical Co. Div.	2000 Union Commerce Bldg., Cleveland, OH 44115.
PIC	Pierce Organics, Inc	P.O. Box 98, Rockford, IL 61105.
PBY	Pillsbury Co	608 2nd Ave. S., Minneapolis, MN 55402.
PIL	Pilot Chemical Co	11756 Burke St., Santa Fe Springs, CA 90670.
PCI	Pioneer Chemical Works, Inc	P.O. Box 237, 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.
SEK	Plastic Systems Corp	666 Dietrich Ave., Hazelton, PA 18201.
PLX	Plex Chemical Corp	1205 Atlantic St., Union City, CA 94587.
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	1801 Nueces Bay Blvd., Corpus Christi, TX 78403.
PRT	Pratt & Lambert, Inc	P.O. Box 22, Buffalo, NY 14240.
PMP	Premier Malt Products, Inc	917 W. Juneau Ave., Milwaukee, WI 53201.
PPC	Premier Petrochemical Co	P.O. Box 100, Pasadena, TX 77501.
PTP	Preservative Paint Co	5410 Airport Way, S., Seattle, WA 98108.
PCR	Princeton Chemical Research, Inc	P.O. Box 652, Princeton, NJ 08540.
PBI	Private Brands, Inc	300 S. 3d St., Kansas City, KS 66118.
PG	Procter & Gamble Co., Procter & Gamble Manufacturing Co.	Ivorydale Technical Ctr., RM. 2S22, 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.

TABLE 22.--*Synthetic organic chemicals: Directory of manufacturers, 1967*--Continued

Identification code	Name of company	Office address
PTO	Puerto Rico Chemical Co., Inc	P.O. Box 157, Arecibo, PR 00612.
PRX	Purex Corp., Ltd	5101 Clark Ave., Lakewood, CA 90712, and 2244 N. Elston Ave., Chicago, IL 60614.
PUR	Puritan Chemical Co	916 Ashby St., NW., Atlanta, GA 30318.
QCP	Quaker Chemical Corp	Lime, 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	P.O. Box 9095, 700 Henry Ford Ave., Long Beach, CA 90810.
RAB	Raybestos-Manhattan, Inc., Raybestos Div	75 E. Main St., Stratford, CT 06601.
RED	Red Spot Paint 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.
RIL	Reilly Tar & Chemical Corp	11 S. Meridan St., Indianapolis, IN 46204.
REL	Reliance Universal, Inc	6901 Cavalcade, Houston, TX 77001.
	Rel-Rez Div	4730 Crittenden Dr., Louisville, KY 40221.
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	P.O. Box 37, Paramus, NJ 07652.
FBF	Fiberfil Div	1701 N. Heidelbach Ave., Evansville, IN 47717.
REZ	Rezolin, Inc	20701 Nordhoff St., Chatsworth, CA 91311.
RDA	Rhodia, Inc	600 Madison Ave., New York, NY 10022.
RCD	Richardson Co	27th Ave. & Lake St., Melrose Park, IL 60160.
PLA	Richardson Polymers Div	425 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., Armsterdam, 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.
ROB	Robeco Chemicals, Inc	51 Madison Ave., New York, NY 10010.
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	Main St., 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	E. Rutherford P.O., E. Rutherford, NJ 07073.
RUC	Rubicon Chemicals, Inc	P.O. Box 517, Geismar, LA 70734.
SAL	Salsbury Laboratories	500 Gilbert St., Charles City, IA 50616.
GLD	SCM Corp., Glidden-Durkee Div	2333 W. Logan Blvd., Chicago, IL 60647, and 900 Union Commerce Bldg., Cleveland, OH 44115.
NPR	Safeway Stores, Inc., Newport Products Co. Div	1501 Mariposa St., San Francisco, CA 94107.
S	Sandoz, Inc	P.O. Box 357, Fair Lawn, NJ 07410.
	Dyestuff & Chemical Div	Route No. 10, Hanover, NJ 07936.
SAR	Sartomer Resins, Inc	P.O. Box 56, Essington, PA 19029.
SCF	Schaefer Varnish Co.	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.
SEL	Selney Co., Inc	7 Park Ave., New York, NY 10016.
SEY	Seydel-Woolley & Co.	762 Marietta Blvd., NW., Atlanta, GA 30318.
SHA	Shanco Plastics & Chemicals, Inc	111 Wales St., Tonawanda, NY 14150.
SHO	Shell Oil Co	52 W. 52d St., New York, NY 10019.
SHC	Shell Chemical Co. Div	52 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, Houston, TX 77012.

TABLE 22.--*Synthetic organic chemicals: Directory of manufacturers, 1967*--Continued

Identification code	Name of company	Office address
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.
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	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.
SOL	Solar Chemical Corp	Solar Park, Leominster, MA 01453.
SOH	Solar Nitrogen Chemicals, Inc	1434 Midland Bldg., Cleveland, OH 44115.
SLC	Soluol Chemical Co., Inc	Green Hill and Market Sts., 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.
SBI	Southern Biochemical Corp	P.O. Box 2526, Greenville, SC 29602.
SOP	Southern Chemical Products Co	420 Lower Boundary St., P.O. Box 205, Macon, GA 31202.
SOS	Southern Sizing Co	3056 SE. Main St., East Point, GA 30344.
SPL	Spaulding Fibre Co., Inc	310 Wheeler St., Tonawanda, NY 14150.
OMS	E. R. Squibb & Sons, Inc	460 Park 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 Industries, Inc	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	1035 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.:	
SF	Agricultural Div	299 Park Ave., New York, NY 10017.
CHO	Calhio Chemicals, Inc. Div	299 Park Ave., New York, NY 10017.
SFI	Industrial Div	299 Park Ave., New York, NY 10017.
SFA	Specialty Chemical Div	299 Park 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 Corp.	400 W. Roosevelt Ave., Bensenville, IL 60106.
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.
	Sun Chemical Corp.:	
SNW	Chemicals Div	Wood River Junction, RI 02894.
TV	Industrial Coatings Div	135 W. Lake St., North Lake, IL 60164.
CFC	Organic Chemical Dept	P.O. Box 153, Harrison, NJ 07029.
SNA	Pigments Div	441 Tompkins Ave., Staten Island, NY 10305.
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.
SYV	Synvar Corp	917 Washington St., Wilmington, DE 19899.

TABLE 22. --*Synthetic organic chemicals: Directory of manufacturers, 1967*--Continued

Identification code	Name of company	Office address
TCC	Tanatex Chemical Corp	P.O. Box 388, Lyndhurst, NJ 07071.
CST	Charles S. Tanner Co	450 Furman Hall Rd., Greenville, SC 29608.
TEK	Teknor Apex Co	505 Central Ave., Pawtucket, RI 02662.
HN	Tenneco Chemicals, Inc	300 E. 42d St., New York, NY 10017.
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.
HNX	Nuodex Div	P.O. Box 2, Piscataway, NJ 08854.
BKS	Tenneco Colors Div	11th & Bern Sts., Reading, PA 19604.
CRY	Tenneco Manufacturing Co., Tenneco Plastics Div.	P.O. Box 2, Piscataway, NJ 08854.
TOC	Tenneco Oil Co	P.O. Box 2511, Houston, TX 77001.
TEN	Tennessee Copper Co., Div. of Tennessee Corp	Copperhill, TN 37317.
TER	Terra Chemicals International, Inc	Davidson Bldg., Sioux City, IA 51102.
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.
TXT	Textilana Corp	12607 Cerise Ave., Hawthorne, CA 90250.
TXN	Textilana-Nease, Inc	2140 S. 88th St., Edwardsville, KS 66022.
SKT	Textron, Inc., Spencer Kellogg Div	120 Delaware Ave., Buffalo, NY 14240.
TKL	Thiokol Chemical Corp	P.O. Box 27, Bristol, PA 19007.
SOR	Thomason Industries, Inc., Southern Resin Div	P.O. Drawer 1600, Fayetteville, NC 28302.
THC	Thompson Apex Co., Div. of Continental Oil Co	505 Central Ave., Pawtucket, RI 02862.
THM	Wm. T. Thompson Co., Thompson Chemicals Div	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.
TZC	Tizon Chemical Corp	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.
TRO	Troy Chemical Co	338 Wilson Ave., Newark, NJ 07105.
TCH	Trylon Chemical Corp	P.O. Box 607, Mauldin, SC 29662.
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., Chemicals Div	P.O. Box 6170, Jacksonville, FL 32205.
UCC	Union Carbide Corp	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	900 19th St., Granite City, IL 62040.
USR	Uniroyal, Inc., Chemical Div	Naugatuck, CT 06771.
URC	United Carbon Co	P.O. Box 149, Baytown, TX 77520.
UNN	United Chemical Corp. of Norwood	Endicott St., Norwood, MA 02062.
UNP	United Chemical Products Corp	York and Colgate Sts., Jersey City, NJ 07302.
ROM	United Merchants & Manufacturers, 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.
UPF	United States Pipe & Foundry Co	3300 1st Ave. N., Birmingham, AL 35202.
UPL	United States Plywood-Champion Papers, Inc., California Div., Shasta Operations.	P.O. Box 2317, Redding, CA 96002.
UVC	Universal Chemicals Corp	1224 Mendon Rd., Ashton, RI 02864.
UPM	Universal Oil Products Co	30 Algonquin Rd., Des Plaines, IL 60018.
	UOP 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.
VAL	Valchem	1407 Broadway, New York, NY 10018.
VSV	Valentine Sugars, Inc	726 Whitney Bldg., New Orleans, LA 70130.
VLN	Valley Nitrogen Producers, Inc	1221 Van Ness Ave., Fresno, CA 93721.
VDM	Van De Mark Chemical Co., Inc	N. Transit Rd., Lockport, NY 14094.
VNC	Vanderbilt Chemical Corp	31 Taylor Ave., Bethel, CT 06801.
VND	Van Dyk & Co., Inc	Main & William Sts., Belleville, NJ 07109.
VEL	Velsicol Chemical Corp	341 E. Ohio St., Chicago, IL 60611.
MHI	Ventron Corp	Congress St., Beverly, MA 01915.

TABLE 22. --*Synthetic organic chemicals: Directory of manufacturers, 1967*--Continued

Identification code	Name of company	Office address
VB	Vermilye-Bell	21707 Bothell Way, Bothell, WA 98011.
VPC	Verona-Pharma Chemical Corp	Iorio Ct., 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	Portsmouth, VA 23703.
SOH	Vistron Corp	1434 Midland Bldg., Cleveland, OH 44115.
SIC	Silmar Div	12335 S. Van Ness Ave., Hawthorne, CA 90250.
VIM	Vitamins, Inc	401 N. Michigan Ave., Suite 2730, Chicago, IL 60611.
FRO	Vulcan Materials Co., Chemicals Div	P.O. Box 545, Wichita, KS 67201.
	Wallace & Tiernan, Inc.:	
WTH	Harchem Div	110 E. Hanover Ave., Cedar Knolls, NJ 07927.
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., Benolite Dept	Manor, PA 15665.
WES	Weston Chemical Co., Inc	104 E. 40th St., New York, NY 10016.
WVA	West Virginia Pulp & Paper Co.:	
	Chemical Div., Tall Oil Dept	P.O. Box 5207, N. Charleston, SC 29406.
	Polychemicals Div	P.O. Box 5207, N. Charleston, SC 29406.
WRD	Weyerhaeuser Co., Wood Products Div	115 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., Research & Development/San Diego.	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.
WIM	Wilmot & Cassidy, Inc	108 Provost St., Brooklyn, NY 11222.
	Wilson Pharmaceutical & Chemical Corp.:	
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.
KEN	Kendall Refining Co. Div	77 N. Kendall Ave., Bradford, PA 16701.
WCC	Witfield Chemical Corp	P.O. Box 1243, Wilmington, CA 90744.
WOB	Woburn Chemical Corp	1200 Harrison Ave., Harrison, NJ 07029.
WOD	Woodbury Chemical Co	P.O. Box 788, St. Joseph, MO 64502.
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 Chemical Co	P.O. Box 1087, Colorado Springs, CO 80901.
WYT	Wyeth Laboratories, Inc., Div. of American Home Products Corp.	P.O. Box 8299, Paoli, PA 19101.
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 1966 and 1967, 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 1967, general imports of benzenoid intermediates entered under part 1B, comprised 617 items with a total weight of 71.8 million pounds, and an invoice value of $28.2 million, compared with 68.9 million pounds, with an invoice value of $31.2 million, in 1966. Half of these intermediate products were declared to be "competitive" (duty based on "American selling price"). In terms of value, 47 percent of all the intermediates imported in 1967 came from West Germany; 12 percent, from the United Kingdom; and 10 percent, from Japan. The remaining imports came mainly from Italy, Switzerland, Canada and France. Imports from West Germany in 1967 increased to $13.2 million from $12.1 million in 1966. In 1967, imports from Italy increased to $2.6 million, from $1.9 million in 1966. Imports in 1967 from Canada increased to $2.3 million from $2.1 million in 1966. Imports from Japan amounted to $2.7 million in 1967, compared with

TABLE 23.--*Benzenoid intermediates and finished benzenoid products: U.S. general imports, classified by use, 1966 and 1967*

Product	1966		1967	
	Quantity	Invoice value	Quantity	Invoice value
	1,000 pounds	*1,000 dollars*	*1,000 pounds*	*1,000 dollars*
Intermediates[1]	68,919	31,217	71,779	28,230
Finished benzenoid products, total	47,875	56,859	45,907	54,340
Dyes, total	13,715	25,817	12,812	23,382
Acid	2,555	...	2,168	...
Azoic dyes	14	...	5	...
Azoic components:				
Fast color bases	520	...	648	...
Fast color salts	269	...	273	...
Naphthol AS and its derivatives	1,558	...	749	...
Basic	1,136	...	1,198	...
Direct	1,159	...	794	...
Disperse	2,494	...	2,358	...
Fiber-reactive	1,249	...	1,188	...
Fluorescent brightening agents	247	...	250	...
Mordant	362	...	367	...
Solvent	265	...	203	...
Sulfur	45	...	89	...
Vat	1,761	...	2,455	...
All other	[2] 81	...	[2] 67	...
Benzenoid pigments (toners and lakes)	1,010	1,738	1,485	2,944
Medicinals and pharmaceuticals	4,674	10,855	4,581	11,935
Flavor and perfume materials	2,564	4,033	1,740	2,758
All other	[3] 25,912	14,416	[3] 25,289	13,321

[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, 1967*, TC Publication 264, 1968 [processed].

$4.3 million in 1966, while imports from Switzerland totaled $2.5 million, compared with $4.2 million in 1966.

In 1967, 10 chemicals accounted for approximately 67 percent of the quantity of imports of benzenoid intermediates. The large-volume intermediates imported in 1967 were styrene, polyalkylbenzene, phenol, phthalic anhydride, N-isopropylaniline, 1,4-cyclohexanedimethanol, acetoacetanilide, 4-(p-chlorophenoxy)phenyl isocyanate, anthraquinone, and cyclohexanone. In 1967, imports of styrene amounted to 16.6 million pounds and came from Canada and Italy. Imports of polyalkylbenzene amounted to 14.2 million pounds and all came from Italy. Imports of phenol in 1967 totaled 4.4 million pounds, compared with 8.6 million pounds in 1966 and came from France and Italy. Imports of phthalic anhydride in 1967 amounted to 3.3 million pounds and imports of N-isopropylaniline amounted to 2.4 million pounds. Phthalic anhydride came principally from Italy, Japan, and the United Kingdom; N-isopropylaniline all came from Canada. In 1967, imports of 1,4-cyclohexanedimethanol, which came from West Germany, amounted to 2.4 million pounds; acetoacetanilide, which came principally from the United Kingdom, Switzerland, and West Germany, amounted to 1.4 million pounds; 4-(p-chlorophenoxy)phenyl isocyanate, which all came from West Germany, totaled 1.2 million pounds; anthraquinone, which came from Japan, the United Kingdom, and West Germany, totaled 1.2 million pounds; and imports of cyclohexanone, which came from Italy and the United Kingdom, totaled 810,000 pounds.

Imports in 1967 of all finished benzenoid products that are dutiable under part 1C comprise 2,227 listed items, with a total weight of 45.9 million pounds and an invoice value of $54.3 million. In 1966, imports consisted of 2,401 items, with a total weight of 47.9 million pounds and an invoice value of $56.9 million. The most important group of finished benzenoid products imported in 1967 was benzenoid dyes. Imports of dyes amounted to $23.4 million (invoice value), or 43.0 percent of the value of all imports under part 1C. In 1966, imports of dyes amounted to $25.8 million (invoice value), or 45.4 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 1967, increased in 1967, compared with 1966. In 1967, imports of medicinals and pharmaceuticals were valued at $11.9 million (invoice value), or 22.0 percent of the total value of imports under part 1C. In 1966, imports of medicinals and pharmaceuticals were valued at $10.9 million, or 19.1 percent of the total value of imports under part 1C.

As in 1966, imports of benzenoid pigments increased in 1967. In 1967, imports of these products were valued at $2.9 million, compared with $1.7 million in 1966.

Imports of benzenoid flavor and perfume materials in 1967 ($2.8 million) were 30 percent less than in 1966 ($4.0 million). In 1967 imports of other benzenoid products entered under part 1C (chiefly polyamide resins and pesticides) were valued at $13.3 million, compared with $14.4 million in 1966.

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