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**United States Production
and Sales, 1953**

**[GPO Cl. No.
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**SYNTHETIC
ORGANIC CHEMICALS**

**United States Production
and Sales, 1953**

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

**UNITED STATES
GOVERNMENT PRINTING OFFICE
WASHINGTON : 1954**

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INTRODUCTION

This is the thirty-seventh annual report of the United States Tariff Commission on production and sales in the United States of synthetic organic chemicals and the raw materials from which they are made. The report gives statistics, for 1953, on the production and sales of crude organic chemicals derived from coal, natural gas, and petroleum; intermediates; and finished synthetic organic chemical products. The finished products are grouped according to their principal use--dyes, toners and lakes, medicinals, flavor and perfume materials, plastics and resin materials, rubber-processing chemicals, elastomers, plasticizers, surface-active agents, pesticides and other organic agricultural chemicals, and miscellaneous chemicals. With a few exceptions, the report does not cover organic chemicals (such as wood-distillation products, essential oils, and naval stores) that are derived from natural (vegetable) sources by simple extraction or distillation. The Commission has compiled the statistics presented in this report from information supplied by more than 600 primary manufacturers listed in part III.

The raw materials covered in this report are obtained from coal, crude petroleum, natural gas, and certain other natural materials such as vegetable oils, fats, rosin, and grains. Thermal decomposition of coal yields coal-tar crudes and other raw materials. Crude organic chemicals are derived also from petroleum and natural gas by catalytic cracking, followed 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 then are converted into finished chemical products, such as medicinals, plastics and resin materials, and dyes. Intermediates usually are not sold directly to the ultimate consumer, but are used by the producing companies themselves, or by other industrial concerns, in their manufacturing processes.

In this report, the statistics on production include the total output of the reporting companies' plants--the materials produced for consumption within the plants, as well as those produced for sale. The quantities reported as produced, therefore, generally exceed the quantities reported as sold, although changes in inventory may account for some differences. No chemical is reported as produced, however, unless it has been withdrawn from the reaction system. Sales are actual sales of commodities--by original manufacturers only--accompanied by passage of title. The value of sales is the net selling value, f.o.b. plant or warehouse.

Data on the chemicals covered in the report usually are given in terms of undiluted materials. Principal exceptions are the statistics on dyes and a few solvents, which are reported in terms of commercial concentrations, and those 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 weighted averages for products which vary widely in unit values and in the quantities sold.

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

Statistics on United States imports in 1953 of coal-tar intermediates and finished coal-tar products which entered under paragraphs 27 and 28 of the Tariff Act of 1930 are given in appendix A. Appendix B includes a table showing the number of technical research workers in the synthetic organic chemical industry and the cost of research in the industry. Appendix C is a glossary of the common (or trivial) names of coal-tar intermediates usually encountered in the trade, together with their equivalent standard (or Chemical Abstracts) names. Appendix D summarizes the data on production and sales of cellulose plastics that were reported to the Commission monthly during 1953.

SUMMARY

Combined production of all synthetic organic chemicals (including their raw materials) in 1953 was 60,759 million pounds--15.5 percent more than that in 1952 (see table 1). Sales in 1953 totaled 35,037 million pounds, valued at 4,587 million dollars--an increase of 14.9 percent in quantity and 7.1 percent in value, compared with 1952. As these totals include the data for several successive steps in the manufacturing process, they necessarily include much duplication.

The output of tars from all sources in 1953 was 9,007 million pounds (901 million gallons)--13.6 percent more than in 1952. Production of tar crudes in 1953 totaled 11,476 million pounds, compared with 10,701 million pounds in 1952--an increase of 7.2 percent. Sales of tar crudes in 1953 totaled 7,105 million pounds, valued at 204 million dollars. The output in 1953 of crude products from petroleum and natural gas for chemical conversion totaled 11,147 million pounds--an increase of 41.7 percent from the 7,867

TABLE 1.--Synthetic organic chemicals and their raw materials: United States production and sales, 1952 and 1953

Chemical	Production			Sales					
	1952	1953	In-crease, or de-crease (-), 1953 over 1952 ¹	Quantity			Value		
				1952	1953	In-crease, or de-crease (-), 1953 over 1952 ¹	1952	1953	In-crease, or de-crease (-), 1953 over 1952 ¹
	Million pounds	Million pounds	Percent	Million pounds	Million pounds	Percent	Million dollars	Million dollars	Percent
Grand total ² -----	52,618	60,759	15.5	30,502	35,037	14.9	4,282	4,587	7.1
Tar-----	7,931	9,007	13.6	4,327	4,994	15.4	42	50	19.0
Tar crudes ³ -----	10,701	11,476	7.2	7,059	7,105	.7	192	204	6.3
Crude products from petroleum and natural gas-----	7,867	11,147	41.7	4,732	7,301	54.3	265	303	14.2
Synthetic organic chemicals, total-----	26,119	29,129	11.5	14,384	15,637	8.7	3,783	4,030	6.5
Intermediates-----	4,171	4,699	12.6	1,544	1,874	21.4	290	341	17.6
Dyes-----	145	166	14.2	149	152	2.1	171	168	-1.9
Toners and lakes-----	39	44	13.6	36	37	2.8	49	56	14.9
Medicinals-----	67	67	-.3	51	54	6.8	430	409	-4.8
Flavor and perfume materials-----	28	34	22.1	27	31	17.3	40	47	17.1
Plastics and resin materials-----	2,333	2,777	19.0	2,045	2,372	16.0	727	838	15.2
Rubber-processing chemicals-----	127	145	13.7	94	103	9.5	54	60	11.7
Elastomers (synthetic rubbers)-----	1,889	1,958	3.7	2,003	1,909	-4.7	549	529	-3.5
Plasticizers-----	268	293	9.4	202	235	16.2	75	83	10.8
Surface-active agents-----	741	921	24.3	612	732	19.6	120	145	21.1
Pesticides and other organic agricultural chemicals-----	418	356	-14.8	331	334	.9	133	118	-11.1
Miscellaneous chemicals-----	15,893	17,669	11.2	7,290	7,804	7.1	1,145	1,236	7.9

¹ Percentages calculated on figures rounded to thousands.

² This total involves much duplication.

³ Excludes products derived from petroleum.

million pounds reported for 1952. Sales of these products in 1953 were 7,301 million pounds, valued at 303 million dollars.

Production of all synthetic organic chemicals in 1953 (excluding the raw materials mentioned above) totaled 29,129 million pounds--a total that also involves considerable duplication. This output represents an increase of 11.5 percent from the 26,119 million pounds produced in 1952. Compared with that in 1952, the volume of output of 9 of the 11 individual groups of finished synthetic organic chemicals and that of the group of intermediates increased in 1953; the output of 2 groups declined. Production of surface-active agents in 1953 increased to 921 million pounds from the 741 million pounds reported for 1952--an increase of 24.3 percent. Production of flavor and perfume materials increased to 34 million pounds (or by 22.1 percent); plastics and resin materials, to 2,777 million pounds (or by 19.0 percent); dyes, to 166 million pounds (or by 14.2 percent); rubber-processing chemicals, to 145 million pounds (or by 13.7 percent); toners and lakes, to 44 million pounds (or by 13.6 percent); intermediates, to 4,699 million pounds (or by 12.6 percent); miscellaneous chemicals, to 17,669 million pounds (or by 11.2 percent); plasticizers, to 293 million pounds (or by 9.4 percent); and elastomers, to 1,958 million pounds (or by 3.7 percent).

Production of pesticides and other organic agricultural chemicals declined to 356 million pounds in 1953 (or by 14.8 percent compared with that in 1952). The output of medicinals in 1953--67 million pounds--represents a decline of 0.3 percent from that in 1952.

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 in the United States from all sources in 1953 was 901 million gallons, or 13.6 percent more than the output in 1952. Of the total quantity produced in 1953,

TABLE 2.--Tar: United States production and consumption, 1952 and 1953
[In thousands of gallons]

Product	1952	1953
PRODUCTION		
Total-----	793,087	900,671
Water-gas and oil-gas tar ¹ -----	88,282	67,290
Coal tar, ² total-----	704,805	833,381
Coal tar from coke-oven byproduct plants, total-----	703,890	828,729
Plants not owned by city gas companies-----	672,126	802,044
Plants owned by city gas companies (public utilities)-----	31,764	26,685
Coal tar from coal-gas retort plants-----	915	³ 4,652
CONSUMPTION		
Total-----	670,940	877,751
Tar consumed by distillation, total-----	471,686	641,720
Water-gas and oil-gas tar distilled by producers and tar distillers ⁴ -----	25,274	41,957
Coal tar distilled or topped by coke-oven operators ² -----	219,892	254,448
Coal tar distilled by tar distillers ⁵ -----	226,520	345,315
Tar consumed chiefly as fuel, total-----	134,930	153,991
Water-gas and oil-gas tar consumed as fuel ⁶ -----	20,338	9,667
Coal tar sold or consumed as fuel by coke-oven operators ² -----	114,592	144,324
As fuel under boilers-----	1,666	3,152
In open-hearth or affiliated plants-----	107,734	124,181
Sold as fuel by coke-oven operators to affiliates-----	5,022	12,536
Sold as fuel by coke-oven operators to others-----	170	4,455
Tar consumed otherwise than by distillation or as fuel, total-----	64,324	82,040
Coal tar from retort plants sold for consumption ² -----	985	4,329
Coal tar consumed at coke-oven plants for roads and upkeep ² -----	2,758	2,373
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 ⁶ -----	60,581	75,338

¹ Reported to the American Gas Association.

² Reported to the U. S. Bureau of Mines, Department of the Interior.

³ Includes low-temperature carbonization tar not included in 1952.

⁴ Reported to U. S. Tariff Commission.

⁵ Represents tar purchased from companies operating coke ovens and gas-retort plants and distilled by companies operating tar-distillation plants.

⁶ Reported to the American Gas Association and to the U. S. Tariff Commission.

about 833 million gallons was coal tar and 67 million gallons was water-gas and oil-gas tars (see table 2). The corresponding figures for 1952 were 705 million gallons of coal tar and 88 million gallons of water-gas and oil-gas tars. The decline in output of water-gas tar and oil-gas tar in 1953 was the result of further displacement of manufactured gas by natural gas--particularly in the eastern part of the United States.

Of the total consumption of tar in 1953 (878 million gallons), 642 million gallons was consumed by distillation, 154 million gallons was consumed as fuel, and 82 million gallons was consumed in miscellaneous uses such as refinery upkeep and the making of special road-tar blends.

The total quantity of tar distilled in 1953 was 170 million gallons greater than in 1952; the quantity consumed as fuel was 19 million gallons greater. In 1953 the quantity of tar distilled or topped by coke-oven operators was 254 million gallons, compared with 345 million gallons distilled by tar distillers.

Tar Crudes

Tar crudes, the most important of which are benzene, toluene, xylene, and naphthalene, are derived from coke-oven gas and by distilling coal tar, water-gas tar, and oil-gas tar. Some products identical with those derived from coal tar are also derived from petroleum and natural gas; these latter materials are, for the most part, included in the statistics on tar crudes which are given in tables 3 and 4A.¹

The total production of specification and industrial grades of benzene in 1953 amounted to 273 million gallons, compared with 252 million gallons in 1952. These totals include benzene produced from tar, from domestic and imported crude light oil, from petroleum, and from imported motor-grade benzene. Sales of benzene in 1953 amounted to 233 million gallons, valued at 96 million dollars, compared with 217 million gallons, valued at 83 million dollars, in 1952. Coke-oven operators accounted for the largest part of the benzene production in 1953 (178 million gallons); production of motor-grade benzene by these operators amounted to slightly more than 1 million gallons. The output of toluene from all sources in 1953 amounted to 156 million gallons, an increase of 48.4 percent from the 105 million gallons produced in 1952. Sales of toluene in 1953 totaled 130 million gallons, valued at 39 million dollars, compared with 88 million gallons, valued at 25 million dollars, in 1952. Petroleum sources accounted for about 74 percent of the total output of toluene in 1953.

Production of xylene in 1953 amounted to 113 million gallons, compared with 72 million gallons in 1952. Sales of xylene in 1953 were 66 million gallons, valued at 17 million dollars, compared with 58 million gallons, valued at 14 million dollars, in 1952. In 1953, more than 90 percent of the xylene produced was from petroleum sources. Production of naphthalene in 1953 was 276 million pounds, or 14.5 percent less than the output of 322 million pounds reported for 1952. Sales in 1953 amounted to 200 million pounds, valued at 11 million dollars.

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

TABLE 3.--Tar and tar crudes: Summary of production and sales of specified products, average 1948-52, annual 1952 and 1953

Chemical ¹	Unit of quantity	Average 1948-52	1952	1953	Increase, or decrease (-)	
					1953 over 1948-52	1953 over 1952
					Percent	Percent
Tar: Production ² -----	1,000 gal---	930,218	793,087	900,671	-3.2	13.6
Benzene:						
Production-----	1,000 gal---	202,134	251,667	272,744	34.9	8.4
Sales-----	1,000 gal---	181,565	216,998	232,701	28.2	7.2
Value of sales-----	1,000 dol---	53,451	83,210	95,765	79.2	15.1
Motor benzene:						
Production-----	1,000 gal---	³ 13,295	(4)	⁵ 1,160	...	...
Sales-----	1,000 gal---	³ 12,122	(4)	⁵ 1,150	...	...
Value of sales-----	1,000 dol---	³ 1,960	(4)	⁵ 184	...	...
Toluene:						
Production-----	1,000 gal---	91,159	105,297	156,248	71.4	48.4
Sales-----	1,000 gal---	77,681	87,507	130,222	67.6	48.8
Value of sales-----	1,000 dol---	19,869	24,890	39,244	97.5	57.7
Xylene:						
Production-----	1,000 gal---	67,581	71,727	113,474	67.9	58.2
Sales-----	1,000 gal---	51,227	57,810	65,588	28.0	13.5
Value of sales-----	1,000 dol---	12,003	14,060	16,968	41.4	20.7
Naphthalene:						
Production-----	1,000 lb---	306,051	322,485	275,799	-8.9	-14.5
Sales-----	1,000 lb---	211,195	209,765	200,086	-5.3	-4.6
Value of sales-----	1,000 dol---	11,342	12,219	11,100	-2.1	-9.2
Creosote oil:						
Production-----	1,000 gal---	141,800	138,722	145,300	2.5	4.7
Sales-----	1,000 gal---	133,873	139,681	125,285	-6.4	-10.3
Value of sales-----	1,000 dol---	23,814	25,476	25,020	5.1	-1.8

¹ For details concerning statistics shown in this table, see table 4A.

² Includes data for oil-gas and water-gas tar reported to the American Gas Association and for coal tar reported to the Coal Economics Division, U. S. Bureau of Mines.

³ 4-year average.

⁴ Production and sales of motor benzene in 1952 were negligible.

⁵ Includes data for coke-oven operators only.

In 1953 the output of creosote oil (a mixture of xylenols and cresols and their homologues and derivatives, and of anthracene oil, naphthalene, and some phenols), which is used chiefly in wood preserving, amounted to 145 million gallons--somewhat more than the 139 million gallons produced in 1952. The output of road tar in 1953 was 110 million gallons, compared with 112 million gallons in 1952.

Some of the products included in the statistics given in table 4A are derived from other products, data for which are also included. The statistics, therefore, involve some duplication, and for this reason group totals and grand totals are not given. After as much duplication as possible has been eliminated, it is estimated that in 1953 the net value of production of these products and of tar burned as fuel was 344 million dollars, compared with 282 million dollars in 1952, and 314 million dollars in 1951.

UNITED STATES TARIFF COMMISSION

TABLE 4A.--Organic chemicals: United States production and sales of tar crudes, 1953

[Listed below are all tar crudes for which any reported data on production or sales may be published. Table 4B in part 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
Crude light oil-----	1,000 gal-----	304,091	23,898	1,000 dollars 5,610	\$0.24
Intermediate light oil: Coke-oven operators-----	1,000 gal-----	1,062	1,065	204	.19
Light-oil distillates:					
Benzene, specification and industrial grades, total-----	1,000 gal-----	272,744	232,701	95,765	.41
Tar distillers ² -----	1,000 gal-----	32,108	19,224	8,496	.44
Coke-oven operators-----	1,000 gal-----	177,593	172,406	66,479	.39
Petroleum operators-----	1,000 gal-----	63,043	41,071	20,790	.51
Benzene, motor grade, coke-oven operators-----	1,000 gal-----	1,160	1,150	184	.16
Toluene, all grades, total-----	1,000 gal-----	156,248	130,222	39,244	.30
Tar distillers-----	1,000 gal-----	4,677	3,866	1,307	.34
Coke-oven operators-----	1,000 gal-----	36,036	35,445	11,075	.31
Petroleum operators-----	1,000 gal-----	115,535	90,911	26,862	.30
Xylene, all grades, total-----	1,000 gal-----	113,474	65,588	16,968	.26
Tar distillers-----	1,000 gal-----	660	580	213	.37
Coke-oven operators-----	1,000 gal-----	9,928	9,759	3,118	.32
Petroleum operators-----	1,000 gal-----	102,886	55,249	13,637	.25
Solvent naphtha, total-----	1,000 gal-----	15,661	15,389	5,804	.38
Tar distillers-----	1,000 gal-----	9,376	9,321	4,281	.46
Coke-oven operators-----	1,000 gal-----	6,285	6,068	1,523	.25
Other light-oil distillates, total-----	1,000 gal-----	14,657	11,410	3,512	.31
Tar distillers-----	1,000 gal-----	8,560	8,153	3,064	.38
Coke-oven operators-----	1,000 gal-----	6,097	3,257	448	.14
Pyridine crude bases (dry basis): Coke-oven operators-----	1,000 gal-----	551	456	963	2.11
Naphthalene, crude (solidifying at less than 79° C.), ³ total-----	1,000 lb-----	275,799	200,086	11,100	.05
Tar distillers-----	1,000 lb-----	162,862	108,544	6,713	.06
Coke-oven operators-----	1,000 lb-----	112,937	91,542	4,387	.05
Crude tar-acid oils:					
Tar distillers-----	1,000 gal-----	2,945	688	298	.43
Coke-oven operators-----	1,000 gal-----	24,812	23,691	6,147	.26
Cresylic acid, crude (less than 75% distilling over 215° C.); Tar distillers-----	1,000 lb-----	4,537	...	...	...
Creosote oil (Dead oil), ⁴ total-----	1,000 gal-----	145,300	125,285	25,020	.20
Tar distillers:					
Sold or consumed as such-----	1,000 gal-----	88,368	68,329	14,092	.21
Sold or consumed in coal-tar solution-----	1,000 gal-----	19,605	20,012	3,945	.20
Coke-oven operators:					
Distillate as such-----	1,000 gal-----	31,343	31,303	6,031	.19
In coal-tar solution-----	1,000 gal-----	5,984	5,641	952	.17
Coal tar sold or consumed in coal-tar solution:					
Tar distillers-----	1,000 gal-----	8,370	8,523	1,186	.14
All other distillate products ⁵ -----	1,000 gal-----	18,469	16,537	3,217	.19
Tar, road-----	1,000 gal-----	109,832	95,677	14,278	.15
Tar (crude and refined) for other uses ⁶ -----	1,000 gal-----	36,415	36,095	7,585	.21
Pitch of tar:					
Soft and medium, total-----	1,000 tons-----	1,174	602	21,061	34.99
Soft (Water softening point less than 110° F. ASTM D61-24)-----	1,000 tons-----	641	...	...	...
Medium (Water softening point 110° F. to 160° F.)-----	1,000 tons-----	533	...	...	...
Hard (Water softening point above 160° F.)-----	1,000 tons-----	710	410	12,812	31.25
Pitch of tar coke and pitch emulsion-----	1,000 tons-----	38	36	1,242	34.50

¹ Unit value per gallon, pound, or ton, according to the unit specified; calculated on rounded figures.

² Includes data for benzene distilled from imported crude light oil.

³ Statistics represent the combined production and sales of the three commercial grades of crude naphthalene to avoid disclosure of individual company operations. As there is some conversion between grades of crude naphthalene, the published totals necessarily include some duplication.

⁴ The statistics include data only for material sold for or consumed in wood preserving. The figures do not represent the total distillate that could be used as creosote oil, from which other products are extracted.

⁵ Includes data for neutral and high-boiling oils, shingle-stain oil, crude and semirefined pyridine, and other products produced by tar distillers, and for crude sodium phenolate and carboxylate, produced by coke-oven operators.

⁶ Includes data for tar used or sold for paints, pipe covering, saturating, etc.

NOTE.--Statistics for materials produced in coke and gas-retort ovens are compiled by the Coal Economics Division of the U. S. Bureau of Mines, and those 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

The crude products that are derived from petroleum and natural gas are related to the products made from them 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 production and sales may be reported at successive stages in the conversion processes. Notwithstanding these duplications, the statistics (see table 5A²) 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 as fuel or as basic materials from which to derive other chemicals, depending upon prevailing economic conditions. In this report, however, every effort has been made to exclude data on materials that are used as fuels.

As shown in table 5A, production in 1953 of crude products derived from petroleum and natural gas as a group amounted to 11,147 million pounds--an increase of 41.7 percent from the 7,867 million pounds reported for 1952. The larger production in 1953 is accounted for in part by several plants which began operations in that year. Sales of crude chemicals from petroleum in 1953 were 7,301 million pounds, valued at 303 million dollars, compared with 4,732 million pounds, valued at 265 million dollars, in 1952.

Production in 1953 of all aromatic and naphthenic products amounted to 2,506 million pounds, compared with 1,605 million pounds in 1952--an increase of 56 percent. Sales in 1953 were 1,795 million pounds, valued at 73 million dollars, an increase of 515 million pounds in quantity and 26 million dollars in value, compared with 1952. In 1953 production of specification- and industrial-grade benzene from petroleum was 462 million pounds, compared with 256 million pounds in 1952 (an increase of 81 percent); the output of toluene from petroleum was 836 million pounds in 1953, compared with 464 million pounds in 1952 (an increase of 80 percent); and the output of xylene in 1953 was 749 million pounds, compared with 444 million pounds in 1952 (an increase of 69 percent). The output of naphthenic acids amounted to 23 million pounds in 1953, compared with 19 million pounds in 1952, and that of cresylic acid was 16 million pounds in 1953, compared with 14 million pounds in 1952. While these increases can be accounted for in part by the production reported by new companies, the increased output probably also reflects a greater use of catalytic re-forming processes by the refiners.

The output of all aliphatic hydrocarbons and derivatives from petroleum and natural gas in 1953 was 8,641 million pounds, compared with 6,262 million pounds in 1952. Sales of these products in 1953 were 5,506 million pounds, valued at 230 million dollars,

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

UNITED STATES TARIFF COMMISSION

TABLE 5A.--Synthetic organic chemicals: United States production and sales of crude products from petroleum and natural gas for chemical conversion, 1953

[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. (Leadeurs are used where the reported data are confidential and may not be published or where no data were reported.) Table 5B in part III lists separately all products from petroleum and natural gas for chemical conversion for which data on production or sales were reported and identifies the manufacturer of each]

Product	Production	Sales		
		Quantity	Value	Unit value ¹
Grand total-----	1,000 pounds 11,147,060	1,000 pounds 7,301,453	1,000 dollars 302,939	Per pound \$0.04
AROMATICS AND NAPHTHENES ²				
Total-----	2,505,691	1,795,099	73,007	.04
Alkyl aromatics, distillates, and solvents-----	404,545	399,420	9,123	.02
Benzene (except motor grade), total-----	462,105	301,051	20,790	.07
Benzene, 1°-----	75,975	...	...	...
Benzene, 2°-----	³ 386,130	...	...	...
Cresylic acid, crude-----	16,080	6,246	320	.05
Naphthenic acids, total-----	23,123	14,294	1,541	.11
Acid number 225-249-----	10,999	10,557	1,222	.12
All other-----	12,124	3,737	.319	.09
Toluene, all grades, total-----	836,473	658,195	26,862	.04
Nitration grade, 1°-----	192,113	166,440	7,441	.04
Pure commercial grade, 2°-----	282,338	...	...	...
All other-----	362,022	...	...	...
Xylenes, mixed-----	749,010	402,213	13,637	.03
All other ⁴ -----	14,355	13,680	734	.05
ALIPHATIC HYDROCARBONS				
Total-----	8,641,369	5,506,354	229,932	.04
C ₂ hydrocarbons, total-----	2,280,363	362,350	12,761	.04
Ethane-----	144,623	108,450	720	.01
Ethylene ⁵ -----	2,135,740	253,900	12,041	.05
C ₃ hydrocarbons, total-----	2,588,797	1,858,248	20,221	.01
Propane-----	1,366,175	1,186,415	12,321	.01
Propylene and propane-propylene mixture-----	1,222,622	671,833	7,700	.01
C ₄ hydrocarbons, total-----	3,167,169	2,868,633	183,492	.06
1,3-Butadiene, grade for rubber (elastomers), total-----	1,152,197	1,135,292	^b 136,235	.12
Produced for Government account-----	1,051,468	...	...	...
Produced for private account-----	100,729	...	...	...
n-Butane-----	418,144	267,136	3,199	.01
1-Butene, 2-butene, and mixtures ⁷ -----	906,732	882,803	26,714	.03
Isobutane-----	155,589	151,318	2,317	.02
All other ⁸ -----	534,507	432,084	15,027	.03
C ₅ hydrocarbons ⁹ -----	122,048	108,908	2,958	.03
All other aliphatic hydrocarbons and derivatives, total-----	482,992	308,215	10,500	.03
Diisobutylene-----	23,157	...	...	...
Dodecene (Tetrapropylene)-----	176,926	125,100	4,685	.04
Nonene (Tripropylene)-----	60,986	4,828	217	.04
Hydrocarbon derivatives ¹⁰ -----	2,681	2,496	462	.19
All other ¹¹ -----	219,242	175,791	5,136	.03

¹ Calculated on rounded figures.

² The chemical raw materials designated as aromatics are in some cases identical with those obtained from the distillation of coal tar. However, the statistics given in the above table relate only to such materials as are derived from petroleum and natural gas.

³ Includes a small amount of 90-percent benzene.

⁴ Includes data for motor-grade benzene, cyclopentane, dicyclopentadiene, petroleum phenols, sodium carbolate and phenolate, and hydrocarbon polymers.

⁵ Includes a small amount of ethylene from coke-oven gas.

⁶ Partly estimated.

⁷ The statistics represent the butene content of crude refinery gases from which butadiene is manufactured.

⁸ Includes data for isobutene, 1-butene, 2-butene, butane-butylene, and butadiene-butene mixtures and concentrates.

⁹ Includes data for isoprene, pentanes, pentene, and mixtures.

¹⁰ Includes data for di-tert-butylidisulfide, miscellaneous mercaptans, and mixed alkanesulfonic and aliphatic acids.

¹¹ Includes data for acetylene, hexane, heptanes and heptene, methane, octanes and octenes, polybutene, sicosane, and hydrocarbon mixtures.

compared with 3,451 million pounds, valued at 219 million dollars, in 1952. Production of ethylene in 1953 was 2,136 million pounds, compared with 1,809 million pounds in 1952. The output of propane, propylene, and propane-propylene mixture in 1953 was 2,589 million pounds, compared with 1,576 million pounds in 1952. The production of 1,3-butadiene in 1953 was 1,152 million pounds, compared with 1,106 million pounds in 1952; this product is one of the principal ingredients of GR-S or Buna-S type synthetic rubber.



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 as intermediates and as finished products. Finished products, in turn, are grouped as follows: Dyes, toners and lakes, medicinals, flavor and perfume materials, plastics and resin materials, rubber-processing chemicals, elastomers (synthetic rubbers), plasticizers, surface-active agents, pesticides and other organic agricultural chemicals, and miscellaneous synthetic organic chemicals. Most of these groups are further subdivided, according to chemical classes, into cyclic and acyclic compounds.

As many of the intermediates are used in the manufacture of finished products, aggregate figures which cover both intermediates and finished products necessarily include much duplication.

The total production of all synthetic organic chemicals (intermediates and finished products combined) was 29,129 million pounds in 1953, or 3,010 million pounds more than the output in 1952 (see table 6), and 1,630 million pounds more than the previous record output of 27,499 million pounds in 1951. Sales in 1953 totaled 15,637 million pounds, valued at 4,030 million dollars, compared with sales of 14,384 million pounds, valued at 3,783 million dollars, in 1952. Production of all cyclic products in 1953 totaled 9,637 million pounds, or 10.9 percent more than in 1952. The output of cyclic intermediates in 1953 was 4,699 million pounds, compared with 4,171 million pounds in 1952--an increase of 12.6 percent. Production of all finished cyclic products in 1953 was 4,939 million pounds, or 9.4 percent more than in 1952. Production in 1953 of finished acyclic products and acyclic intermediates (included with acyclic miscellaneous chemicals) totaled 19,491 million pounds, or 11.8 percent more than the 17,433 million pounds produced in 1952.

Of the individual groups of finished synthetic organic chemicals, six increased in volume of production in 1953, compared with 1952, in both cyclic and acyclic categories. These six groups (and their percentage increases) are as follows: Surface-active agents (cyclic, 24.4 percent, and acyclic, 24.3 percent); flavor and perfume materials (cyclic, 18.6 percent, and acyclic, 26.6 percent); plastics and resin materials (cyclic, 18.8 percent, and acyclic, 19.3 percent); rubber-processing chemicals (cyclic, 12.6 percent, and acyclic, 19.9 percent); elastomers (cyclic, 1.5 percent, and acyclic, 9.7 percent); and miscellaneous chemicals (cyclic, 10.9 percent, and acyclic, 11.2 percent). The cyclic component of the medicinal group declined 8.6 percent in 1953, compared with 1952, whereas the acyclic component increased 41.5 percent. For pesticides and other organic agricultural chemicals, the output of the cyclic

TABLE 6.--Synthetic organic chemicals: Summary of United States production and sales of intermediates and finished products, average 1948-52, annual 1952 and 1953

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

Chemical	Average 1948-52	1952	1953	Increase, or decrease (-)	
				1953 over 1948-52	1953 over 1952
Production, grand total-----	22,390,675	26,119,201	29,128,545	Percent 30.1	Percent 11.5
Sales, grand total-----	11,930,716	14,384,021	15,636,993	31.1	8.7
Sales value, grand total-----	2,943,868	3,783,031	4,030,357	36.9	6.5
I. ORGANIC CHEMICALS, CYCLIC					
Production, total-----	7,070,171	8,686,038	9,637,093	36.3	10.9
Sales, total-----	4,462,820	5,548,476	6,072,460	36.1	9.4
Sales value, total-----	1,552,971	1,953,286	2,011,311	29.5	3.0
A. INTERMEDIATES					
Production-----	3,494,976	4,171,124	4,698,585	34.4	12.6
Sales-----	1,367,014	1,544,388	1,874,175	37.1	21.4
Sales value-----	239,586	290,278	341,421	42.5	17.6
B. FINISHED PRODUCTS					
Production, total-----	3,575,195	4,514,914	4,938,508	38.1	9.4
Sales, total-----	3,095,806	4,004,088	4,198,285	35.6	4.8
Sales value, total-----	1,313,385	1,663,008	1,669,890	27.1	.4
1. Dyes					
Production, total-----	173,754	145,209	165,806	-4.6	14.2
Sales, total-----	164,001	148,603	151,675	-7.5	2.1
Sales value, total-----	168,902	170,699	167,526	-.8	-1.9
a. Colour Index Group					
Production-----	125,151	101,131	117,206	-6.3	15.9
Sales-----	119,065	101,640	107,986	-9.3	6.2
Sales value-----	90,212	83,975	89,546	-7.7	6.6
b. Prototype Group					
Production-----	26,587	24,101	32,612	22.7	35.3
Sales-----	24,406	25,457	29,516	20.9	15.9
Sales value-----	42,794	46,532	49,586	15.9	6.6
c. Ungrouped					
Production-----	22,016	19,977	15,988	-27.4	-20.0
Sales-----	20,530	21,506	14,173	-31.0	-34.1
Sales value-----	35,896	40,192	28,394	-21.9	-29.4
2. Toners and Lakes					
Production-----	42,271	38,779	44,056	4.2	13.6
Sales-----	37,330	35,666	36,661	-1.8	2.8
Sales value-----	46,325	48,748	56,031	21.0	14.9
3. Medicinals					
Production-----	46,444	55,803	51,003	9.8	-8.6
Sales-----	38,594	42,828	41,080	6.4	-4.1
Sales value-----	338,632	407,207	380,914	12.5	-6.5
4. Flavor and Perfume Materials					
Production-----	16,801	15,565	18,458	9.9	18.6
Sales-----	14,028	14,311	16,512	17.7	15.4
Sales value-----	20,034	19,278	21,439	6.9	11.1
5. Plastics and Resin Materials					
Production-----	1,175,713	1,351,329	1,605,447	36.6	18.8
Sales-----	958,004	1,112,786	1,317,069	37.5	18.4
Sales value-----	249,998	310,239	362,958	45.2	17.0
6. Rubber-Processing Chemicals					
Production-----	94,569	107,905	121,532	28.5	12.6
Sales-----	70,586	77,718	85,495	21.1	10.0
Sales value-----	34,044	42,054	47,592	39.8	13.2

TABLE 6.--Synthetic organic chemicals: Summary of United States production and sales of intermediates and finished products, average 1948-52, annual 1952 and 1953--Continued

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

Chemical	Average 1948-52	1952	1953	Increase, or decrease (-)	
				1953 over 1948-52	1953 over 1952
I. ORGANIC CHEMICALS, CYCLIC--Continued					
B. FINISHED PRODUCTS--Continued					
7. Elastomers (Synthetic Rubbers)					
Production-----	1,060,050	1,393,559	1,414,944	Percent 33.5	Percent 1.5
Sales-----	1,047,575	1,513,986	1,387,198	32.4	-8.4
Sales value-----	229,865	361,112	319,056	38.8	-11.6
8. Plasticizers					
Production-----	162,100	194,362	223,810	38.1	15.2
Sales-----	122,428	144,539	180,137	47.1	24.6
Sales value-----	44,496	51,126	59,955	34.7	17.3
9. Surface-Active Agents					
Production-----	344,002	477,643	594,089	72.7	24.4
Sales-----	276,296	380,968	438,491	58.7	15.1
Sales value-----	52,061	64,371	73,301	40.8	13.9
10. Pesticides and Other Organic Agricultural Chemicals¹					
Production-----	256,679	371,890	297,054	15.7	-20.1
Sales-----	206,441	289,441	281,652	36.4	-2.7
Sales value-----	78,008	110,659	98,572	26.4	-10.9
11. Miscellaneous²					
Production-----	202,812	362,870	402,309	98.4	10.9
Sales-----	160,523	243,242	262,315	63.4	7.8
Sales value-----	51,020	77,515	82,566	61.8	6.5
II. ORGANIC CHEMICALS, ACYCLIC (INTERMEDIATES AND FINISHED PRODUCTS)					
Production, total-----	15,320,504	17,433,163	19,491,452	27.2	11.8
Sales, total-----	7,467,896	8,835,545	9,564,533	28.1	8.3
Sales value, total-----	1,390,897	1,829,745	2,019,046	45.2	10.3
1. Medicinals					
Production-----	8,520	11,012	15,582	82.9	41.5
Sales-----	6,876	7,955	13,147	91.2	65.3
Sales value-----	22,540	22,595	28,154	24.9	24.6
2. Flavor and Perfume Materials					
Production-----	9,560	12,177	15,413	61.2	26.6
Sales-----	9,232	12,176	14,568	57.8	19.6
Sales value-----	14,724	20,467	25,109	70.5	22.7
3. Plastics and Resin Materials					
Production-----	804,664	981,863	1,171,180	45.5	19.3
Sales-----	731,974	932,218	1,054,911	44.1	13.2
Sales value-----	303,274	417,010	474,578	56.5	13.8
4. Rubber-Processing Chemicals					
Production-----	16,673	19,395	23,252	39.5	19.9
Sales-----	14,074	16,589	17,726	25.9	6.9
Sales value-----	10,498	11,701	12,463	18.7	6.5
5. Elastomers (Synthetic Rubbers)					
Production-----	376,520	495,324	543,406	44.3	9.7
Sales-----	369,906	489,406	521,595	41.0	6.6
Sales value-----	135,421	187,620	210,308	55.3	12.1

See footnotes at end of table.

TABLE 6.--Synthetic organic chemicals: Summary of United States production and sales of intermediates and finished products, average 1948-52, annual 1952 and 1953--Continued

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

Chemical	Average 1948-52	1952	1953	Increase, or decrease (-)	
				1953 over 1948-52	1953 over 1952
II. ORGANIC CHEMICALS, ACYCLIC (INTERMEDIATES AND FINISHED PRODUCTS)--Continued					
6. Plasticizers ³					
Production-----	58,955	73,362	69,088	Percent 17.2	Percent -5.8
Sales-----	45,836	57,754	54,929	19.8	-4.9
Sales value-----	18,911	24,114	23,380	23.6	-3.0
7. Surface-Active Agents ³					
Production-----	239,002	263,504	327,505	37.0	24.3
Sales-----	198,006	231,328	293,613	48.3	26.9
Sales value-----	57,017	55,345	71,671	25.7	29.5
8. Pesticides and Other Organic Agricultural Chemicals ³					
Production-----	33,085	45,734	58,899	78.0	28.8
Sales-----	28,311	41,874	52,494	85.4	25.4
Sales value-----	11,586	22,700	19,945	72.1	-12.1
9. Miscellaneous ²					
Production-----	13,773,525	15,530,792	17,267,127	25.4	11.2
Sales-----	6,063,681	7,046,245	7,541,550	24.4	7.0
Sales value-----	816,926	1,068,193	1,153,438	41.2	8.0

¹ Data on pesticides and other organic agricultural chemicals were shown in 1951 for the first time in a separate section of this report; the data for 1948-50 have been adjusted to make them comparable with those for 1951-53.

² Data on miscellaneous chemicals given in this table exclude pesticides and other organic agricultural chemicals for the years 1948-50. Data on pesticides and other organic agricultural chemicals were included with those on miscellaneous chemicals in reports for years before 1951. Statistics on miscellaneous chemicals for 1948-50 have been adjusted to make these data comparable with those for 1951-53.

³ Statistics for acyclic plasticizers and surface-active agents in 1953 are not strictly comparable with statistics for earlier years; some items previously reported as plasticizers were reclassified as surface-active agents in 1953. The items transferred amounted to about 25 percent of the total production of acyclic plasticizers and to less than 2 percent of the total production of acyclic surface-active agents in 1953.

group declined 20.1 percent and that of the acyclic group increased 28.8 percent. In the plasticizer group the cyclic component increased 15.2 percent; the acyclic component declined 5.8 percent (partly as a result of the transfer of certain compounds in this group to the group of surface-active agents). The output of all dyes in 1953 increased 14.2 percent, and that of toners and lakes, 13.6 percent, compared with 1952.

The tabulation below shows, by chemical group, the number of companies that reported production in 1953 of one or more of the chemicals included in the groups listed in table 6.

Group	Number of companies	Group	Number of companies
Intermediates	144	Rubber-processing chemicals	18
Dyes	52	Elastomers (synthetic rubbers).....	19
Toners and lakes	42	Plasticizers.....	57
Medicinals.....	126	Surface-active agents.....	152
Flavor and perfume materials.....	52	Pesticides and other organic	
Plastics and resin materials.....	148	agricultural chemicals	82
		Miscellaneous chemicals	218

Cyclic Intermediates

Cyclic intermediates are synthetic organic chemicals derived principally from coal-tar crudes produced by destructive distillation (pyrolysis) of coal. In recent years, however, increasing quantities of cyclic intermediates have been obtained from petroleum and natural gas. Most cyclic intermediates are used in the manufacture of more advanced synthetic organic chemicals and finished products, such as dyes, medicinals, explosives, 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 phthalic anhydride, 2-naphthol, or other more advanced intermediates, or it may be packaged and sold as a moth repellent or as a deodorant. In general, the way in which the greater part of the output of a given chemical is consumed determines its use classification in this report.

Table 7A¹ shows statistics on production and sales of cyclic intermediates in 1953. Intermediates for which individual statistics are given in the table represent 64 percent of the total quantity produced. Since many of the intermediates included in the statistics represent successive steps in production, the totals necessarily include considerable duplication. In 1953, 40 percent 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.

The total output of all cyclic intermediates in 1953 was 4,699 million pounds, or 3.8 percent more than the previous record output of 4,528 million pounds reported for 1951, and 12.6 percent more than the 4,171 million pounds reported for 1952. Sales in 1953 amounted to 1,874 million pounds, valued at 341 million dollars, compared with 1,544 million pounds, valued at 290 million dollars, in 1952, and 1,802 million pounds, valued at 338 million dollars, in 1951. The unit value of sales was 18 cents per pound in 1953, compared with 19 cents per pound in both 1951 and 1952.

In 1953, the output of many individual intermediates was substantially greater than it was in 1952. The output of styrene, which is used in the manufacture of plastics materials and GR-S synthetic rubber, reached a record total of 798 million pounds in 1953, compared with 700 million pounds in 1952. In 1953, the production of phenol, which is used chiefly in the manufacture of phenolic resins, was 382 million pounds, or 13.2 percent more than the 338 million pounds produced in 1952; the output of dodecylbenzenes, used chiefly in the manufacture of surface-active agents, was 297 million pounds, or 43.9 percent more than the 207 million pounds produced in 1952. Other large-volume intermediates the production of which in 1953 increased by substantial percentages over that in 1952, were p-dichlorobenzene (21.8 percent), cyclohexane (18.7 percent), aniline (18.4 percent), cresylic acid (12.1 percent), and nitrobenzene (7.3 percent). On the other hand, important intermediates for which production showed decreases from 1952 to 1953 were refined naphthalene (18.6 percent); cresols (11.8 percent); and monochlorobenzene (1.6 percent).

¹ See also table 7B, part III, which lists these products alphabetically and identifies the manufacturers; part A of the appendix, which shows imports of intermediates and related products during 1951-53; and part C of the appendix, which is a glossary of synonymous names of cyclic intermediates.

TABLE 7A.--Synthetic organic chemicals: United States production and sales of cyclic intermediates, 1953

[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 confidential and may not be published or where no data were reported.) Table 7B in part III lists alphabetically all cyclic intermediates for which data on production or sales were reported and identifies the manufacturer of each. Part C in the appendix lists alphabetically all the important common names of cyclic intermediates usually met with in the trade and gives the corresponding standard (Chemical Abstracts) name under which data are presented in tables 7A and 7B.]

Chemical	Production	Sales		
		Quantity	Value	Unit value ¹
	1,000 pounds	1,000 pounds	1,000 dollars	Per pound
Total-----	4,698,585	1,874,175	341,421	\$0.18
Chemicals for which separate statistics may not be shown-----	1,681,985	325,588	104,815	.32
Chemicals for which separate statistics are shown below-----	3,016,600	1,548,587	236,606	.15
Acetanilide, tech-----	4,468	3,438	949	.28
N-Acetylsulfanilyl chloride-----	3,775	...	...	...
p-Aminoacetanilide (Acetyl-p-phenylenediamine)-----	183	...	...	...
2-(p-Aminoanilino)-5-nitrobenzenesulfonic acid-----	21	...	...	...
1-Aminoanthraquinone and salt-----	1,174	...	...	...
2-Aminoanthraquinone and salt-----	1,095	...	...	...
6-Amino-3,4'-azobis[benzenesulfonic acid]-----	95	...	...	...
1-Amino-4-benzamidoanthraquinone-----	57	...	...	...
6-(m-Aminobenzamido)-1-naphthol-3-sulfonic acid-----	16	...	...	...
6-(p-Aminobenzamido)-1-naphthol-3-sulfonic acid-----	64	...	...	...
2-Amino-p-benzenedisulfonic acid [SO ₃ H=1]-----	17	...	...	...
1-Amino-4-bromo-2-anthraquinonesulfonic acid and salt-----	81	...	...	...
1-Amino-5-chloroanthraquinone-----	61	...	...	...
2-Amino-4-chlorophenol-----	21	...	...	...
2-Amino-5-chloro-p-toluenesulfonic acid [SO ₃ H=1]-----	906	264	251	.95
1-Amino-4-hydroxyanthraquinone (1-Hydroxy-4-aminoanthraquinone)-----	18	...	...	...
3-Amino-1,5-naphthalenedisulfonic acid (Cassella acid) and sodium salt-----	223	20	32	1.60
6-Amino-1,3-naphthalenedisulfonic acid (Amino I acid)-----	1,152	...	...	...
2-Amino-1-naphthalenesulfonic acid (Tobias acid)-----	3,286	1,310	1,110	.85
5-Amino-1-naphthalenesulfonic acid (Laurent's acid)-----	129	...	...	...
5-Amino-2-naphthalenesulfonic acid (1,6-Cleve's acid)-----	140	...	...	...
5 (and 8)-Amino-2-naphthalenesulfonic acid (Cleve's acid, mixed)-----	194	...	...	...
6-Amino-2-naphthalenesulfonic acid (Broenner's acid)-----	74	...	...	...
8-Amino-1-naphthalenesulfonic acid (Peri acid)-----	333	63	74	1.17
8-Amino-2-naphthalenesulfonic acid (1,7-Cleve's acid)-----	139	...	...	...
8-Amino-2-naphthol-----	19	...	...	...
3-Amino-1-naphthol-3,6-disulfonic acid (H acid), monosodium salt-----	2,437	...	...	...
8-Amino-1-naphthol-5,7-disulfonic acid (Chicago acid) (2S acid), monosodium salt-----	110	...	...	...
1-Amino-2-naphthol-4-sulfonic acid (1,2,4-Acid)-----	712	...	...	...
6-Amino-1-naphthol-3-sulfonic acid (I acid), sodium salt-----	845	65	131	2.02
7-Amino-1-naphthol-3-sulfonic acid (Gamma acid), sodium salt-----	762	...	...	...
8-Amino-1-naphthol-5-sulfonic acid (S acid), sodium salt-----	32	...	...	...
2-Amino-5-nitrobenzenesulfonic acid [SO ₃ H=1]-----	64	...	...	...
2-Amino-4-nitrophenol-----	82	...	...	...
m-Aminophenol-----	364	...	...	...
2-Amino-1-phenol-4-sulfonamide-----	19	...	...	...
2-Amino-1-phenol-4-sulfonic acid-----	61	...	...	...
p-(p-Aminophenylazo)benzenesulfonic acid-----	149	...	...	...
4-Amino-m-toluenesulfonic acid [SO ₃ H=1]-----	337	20	18	.90
4- and 5-Amino-o-toluenesulfonic acids [SO ₃ H=1], total-----	92	...	...	...
2-Amino-3,5-xylene-sulfonic acid [SO ₃ H=1]-----	21	...	...	...
Aniline (Aniline oil)-----	113,487	48,565	8,677	.18
Anilinomethanesulfonic acid and salt-----	214	...	...	...
8-Anilino-1-naphthalenesulfonic acid (Phenyl peri acid)-----	357	113	241	2.13
6-Anilino-1-naphthol-3-sulfonic acid (Phenyl J acid)-----	66	...	...	...
7-Anilino-1-naphthol-3-sulfonic acid (Phenyl gamma acid)-----	16	...	...	...
Anthranilic acid (o-Aminobenzoic acid)-----	303	121	140	1.16
1,5-Anthraquinonedisulfonic acid and salt-----	431	...	...	...
1,8-Anthraquinonedisulfonic acid and potassium salt-----	69	...	...	...
2,6-Anthraquinonedisulfonic acid and salt-----	345	...	...	...
1-Anthraquinonesulfonic acid and salt-----	3,011	...	...	...
Anthrarufin (1,5-Dihydroxyanthraquinone)-----	119	...	...	...
1-Benzamido-5-chloroanthraquinone-----	119	...	...	...
7-Benz[de]anthracen-7-one (Benzanthrone)-----	1,900	...	...	...
Benzenesulfonic acid, sodium salt-----	...	22	10	.45
Benzidine base-----	17	...	...	...
Benzidine hydrochloride and sulfate-----	1,413	...	...	...
Benzoin-----	50	11	11	1.00
o-Benzoylbenzoic acid-----	6,970	...	...	...
Benzyl ether (Dibenzyl ether)-----	65	67	29	.43
(4,4'-Bi-7-benz[de]anthracen)-7,7'-dione-----	512	...	...	...
1,4-Bis[1-anthraquinonylamino]anthraquinone-----	85	...	...	...

See footnotes at end of table.

TABLE 7A.--Synthetic organic chemicals: United States production and sales of cyclic intermediates, 1953--Continued

Chemical	Production	Sales		
		Quantity	Value	Unit value ¹
	1,000 pounds	1,000 pounds	1,000 dollars	Per pound
3,9-Bis[1-anthraquinonylamino]-7-benz[de]anthracen-7-one	259	...	...	...
4,4'-Bis[dimethylamino]benzhydrol (Michler's hydrol)	11	...	...	...
4,4'-Bis[dimethylamino]benzophenone (Michler's ketone)	141	...	...	...
3-Bromo-7-benz[de]anthracen-7-one (Bromobenzanthrone)	235	...	...	...
4-Bromobenzophenone	10	10	32	\$3.20
m-Chloroaniline	1,065	622	447	.72
1-Chloroanthraquinone	170	...	...	...
2-Chloroanthraquinone	629	...	...	...
Chlorobenzene, mono	377,184	50,184	4,235	.08
o-(p-Chlorobenzoyl)benzoic acid	852	...	...	...
1-Chloro-2,4-dinitrobenzene (Dinitrochlorobenzene)	4,695	...	...	...
1-Chloro-2-methylantraquinone	192	...	...	...
2-Chloro-4-nitroaniline (o-Chloro-p-nitroaniline)	415	...	...	...
4-Chloro-2-nitroaniline (p-Chloro-o-nitroaniline)	...	378	288	.76
4-Chloro-3-nitrobenzenesulfonamide	155	...	...	...
2-Chloro-5-nitrobenzenesulfonic acid	128	...	...	...
(p-Chlorophenyl)acetoneitrile	5	5	12	2.40
2-Chloroquinizarin	39	...	...	...
α-Chlorotoluene (Benzyl chloride)	10,491	5,173	1,048	.20
4-Chloro-o-toluidine [CH ₃ -1] (Red KB base)	81	...	...	...
4-Chloro-o-toluidine hydrochloride	31	...	...	...
4-Chloro-o-tolylmercaptoacetic acid	142	...	...	...
4-Chloro-2,5-xylylmercaptoacetic acid	27	...	...	...
Cresols, total ²	18,757	17,766	3,234	.18
Cresols, (o-), (m-), and (p-)	4,216	4,351	1,584	.36
Cresols (meta, para, and ³ ortho, meta, para) ³	14,541	13,415	1,650	.12
Cresylic acid, refined, total ²	50,647	47,325	4,117	.09
From coal tar	20,626	21,364	2,217	.10
From petroleum	30,021	25,961	1,900	.07
Cyclohexane	299,578	114,624	6,500	.06
1,4-Diaminoanthraquinone	59	...	...	...
2,6-Diaminoanthraquinone	251	...	...	...
2,4-Diaminobenzenesulfonic acid [SO ₃ H-1]	74	...	...	...
4,4'-Diamino-3,3'-biphenyldisulfonic acid	19	...	...	...
2,2'-Diamino-5,5'-bi-m-toluenesulfonic acid	24	...	...	...
4,4'-Diaminodiphenylamine-2-sulfonic acid	16	...	...	...
N,N'-Di(m-aminophenyl)oxamide	35	...	...	...
4,4'-Diamino-2,2'-stilbenedisulfonic acid	941	...	...	...
1,5-Dianilino-2,6-anthraquinonedicarboxylic acid	9	...	...	...
2,4-Dianilino-1-hydroxyanthraquinone	31	...	...	...
4,5'-Dibenzamido-1,1'-iminodianthraquinone	175	...	...	...
3,9-Dibromo-7-benz[de]anthracen-7-one	191	...	...	...
2,5-Dichloroaniline and hydrochloride [NH ₂ -1]	172	170	135	.79
1,5-Dichloroanthraquinone	47	...	...	...
1,5 (and 1,8)-Dichloroanthraquinone	38	...	...	...
1,8-Dichloroanthraquinone	59	...	...	...
o-Dichlorobenzene	26,230	20,424	2,013	.10
p-Dichlorobenzene	59,289	42,655	5,787	.14
3,3'-Dichlorobenzidine base and salts	1,086	...	...	...
1,4-Dichloro-2-nitrobenzene (Nitro-p-dichlorobenzene)	814	...	...	...
2,4-Dichlorophenol	15,436	...	...	...
1-(2,5-Dichloro-4-sulfophenyl)-3-methyl-5-pyrazolone	65	...	...	...
2,6-Dichlorotoluene	26	...	...	...
N,N-Diethyl-3-aminophenol	152	...	...	...
N,N-Diethylaniline	768	...	...	...
6,7-Dihydroxy-2-naphthalenesulfonic acid	276	...	753	3.55
16,17-Dihydroxyviolanthrone (Dihydroxydibenzanthrone)	470	...	...	...
3,3'-Dimethoxybenzidine	505	...	...	...
2,2'-Dimethyl-1,1'-bianthraquinone	128	...	...	...
4,4'-Dinitro-2,2'-stilbenedisulfonic acid and sodium salt	1,147	...	...	...
1,4-Di(p-toluidino)anthraquinone	79	...	...	...
Dodecylbenzenes ⁴	297,286	276,284	32,419	.12
2-(N-Ethylanilino)ethanol	150	...	...	...
α-(N-Ethylanilino)-p-toluenesulfonic acid	299	...	...	...
o-Formylbenzenesulfonic acid (o-Sulfobenzaldehyde)	125	...	...	...
p-Hydrazinobenzenesulfonic acid	165	...	...	...
3-Hydroxy-2-naphthoic acid (B.O.N.)	3,571	964	977	1.01
1,1'-Iminobis[4-aminoanthraquinone]	139	...	...	...
6,6'-Iminobis[1-naphthol-3-sulfonic acid] (I (or J) acid imide)	44	...	...	...
1,1'-Iminodianthraquinone (Dianthrimide)	152	...	...	...
Leuco-1,4-diaminoanthraquinone	170	...	...	...
Leuco quinizarin (1,4,9,10-Anthratretrol)	169	...	...	...
Metanilic acid (m-Aminobenzenesulfonic acid) and salt	1,114	...	...	...
o-Methoxyanilinoethanesulfonic acid, sodium salt	24	...	...	...
2-Methyl-1-nitroanthraquinone	210	...	...	...
3-Methyl-1-phenyl-5-pyrazolone (Developer Z)	228	...	...	...
3-Methyl-1-(p-sulfophenyl)-5-pyrazolone	99	...	...	...

See footnotes at end of table.

TABLE 7A. --Synthetic organic chemicals: United States production and sales of cyclic intermediates, 1953.--Continued

Chemical	Production	Sales		
		Quantity	Value	Unit value ¹
	1,000 pounds	1,000 pounds	1,000 dollars	Per pound \$0.12
Naphthalene solidifying at 79° C., or above (refined flake), total--	83,313	40,169	4,941	
From American crude naphthalene-----	68,140	33,552	4,216	.13
From imported crude naphthalene-----	15,173	6,617	725	.11
1,5-Naphthalenediol (1,5-Dihydroxynaphthalene)-----	62	21	92	4.38
1,5-Naphthalenedisulfonic acid-----	296	...	...	...
Naphthionic acid, sodium salt-----	1,222	...	...	...
1-Naphthol (α -Naphthol)-----	287	...	...	...
2-Naphthol-3,6-disulfonic acid and disodium salt-----	1,198	...	...	...
2-Naphthol-6,8-disulfonic acid (G acid)-----	1,075	...	...	...
1-Naphthol-4-sulfonic acid (Neville & Winther's acid)-----	157	...	...	...
1-Naphthol-5-sulfonic acid and sodium salt-----	62	...	...	...
2-Naphthol-6-sulfonic acid (Schaeffer's acid)-----	255	...	...	...
Naphth[1,2]oxadiazole-5-sulfonic acid-----	406	...	...	...
2-Naphthylmercaptosuccinic acid (β -Naphthylthioglycolic acid)-----	111	...	...	...
m-Nitrosaniline-----	197	109	112	1.03
2-Nitro-p-ansidine [NH ₂ =1]-----	56	...	...	...
4-Nitro-o-ansidine [NH ₂ =1]-----	132	33	70	2.12
5-Nitro-o-ansidine [NH ₂ =1]-----	266	...	...	...
1-Nitro-2-anthraquinonecarboxylic acid-----	44	...	...	...
5(and 8)-Nitro-1-anthraquinonesulfonic acid-----	24	...	...	...
6-(m-Nitrobenzamido)-1-naphthol-3-sulfonic acid (m-Nitrobenzoyl J acid)-----	21	...	...	...
6-(p-Nitrobenzamido)-1-naphthol-3-sulfonic acid (p-Nitrobenzoyl J acid)-----	45	...	...	...
Nitrobenzene-----	148,048	6,505	648	.10
m-Nitrobenzenesulfonic acid and sodium salt-----	932	392	159	.41
m- and p-Nitrobenzoic acids, total-----	1,178	...	...	...
p-Nitrosophenol-----	288	...	...	...
5-Nitro-o-toluenesulfonic acid-----	2,025	...	...	...
2-Nitro-p-toluidine [NH ₂ =1]-----	1,963	629	935	1.49
Nitroxylenes, mixed-----	983	...	...	...
Nonylphenol-----	4,448	2,532	1,127	.45
Phenol, total ² -----	382,433	199,543	33,531	.17
Natural, from coal tar and petroleum-----	25,596	20,210	3,143	.16
Synthetic-----	356,837	179,333	30,388	.17
Phenylacetic acid (α -Toluic acid)-----	420	407	297	.73
Phenylacetic acid, ethyl ester, all grades-----	284	...	...	...
Phenylacetic acid, potassium salt-----	2,306	2,451	1,084	.44
Phenylacetoneitrile (α -Tolunitrile)-----	1,030	...	...	...
p-Phenylazoaniline (p-Aminoazobenzene) and hydrochloride-----	170	...	...	...
m-Phenylenediamine-----	740	...	...	...
o- and p-Phenylenediamines, total-----	1,058	...	...	...
Phenylglycine, potassium and sodium salts, total-----	5,545	...	...	...
2,2'-(Phenylimino)diethanol-----	380	...	...	...
Phthalic anhydride-----	226,646	191,604	40,688	.21
Picolines ³ -----	1,264	1,208	750	.62
Primiline, base-----	246	...	...	...
Propiophenone-----	...	11	18	1.64
Pseudocumidine (Cumidine)-----	27	...	...	...
Quinaldine-----	27	...	...	...
Quinizarin-----	1,408	...	...	...
Salicylic acid, tech-----	...	1,583	555	.35
Styrene-----	798,433	470,066	77,509	.16
1,4,5,8-Tetrachloroanthraquinone-----	129	...	...	...
1,2,4,5-Tetrachlorobenzene-----	8,948	...	...	...
1,4,5,8-Tetrakis[1',1'',1''',1''''-anthraquinonylamino]anthraquinone (Pentaanthramide)-----	344	...	...	...
o-Tolidine and salts-----	315	...	...	...
Toluene-2,4-diamine (4-m-Tolylenediamine)-----	1,217	449	420	.94
6-p-Toluidinometanilic acid-----	44	...	...	...
m- and o-Toluidinomethanesulfonic acids, total-----	3	...	...	...
4-(o-Tolylazo)-o-toluidine (o-Aminoazotoluene)-----	529	...	...	...
6,6'-Ureylenebis[1-naphthol-3-sulfonic acid] (J acid urea)-----	368	...	...	...
Violanthrone (Dibenzanthrone)-----	530	...	...	...
Xylidine (original mixture)-----	682	...	...	...
2,3-, 2,4-, 2,5-, and 3,4-Xylidines, total-----	107	...	...	...

¹ Unit values calculated on rounded figures.² Includes data for coke ovens and gas-retort ovens, reported to the Coal Economics Division, U. S. Bureau of Mines, and for tar and petroleum refineries and other producers, reported to the U. S. Tariff Commission.³ Includes some mixed cresols.⁴ Includes keryl-type benzenes.⁵ Includes data for coke ovens and gas-retort ovens, reported to the Coal Economics Division, U. S. Bureau of Mines, and for tar refineries and other producers, reported to the U. S. Tariff Commission.

Dyes

Table 8A shows United States production and sales of dyes in 1953, total and by individual dyes, grouped by Colour Index number and by prototype number.² The total output of dyes in 1953 was 166 million pounds, or 14.2 percent more than the 145 million pounds produced in 1952. Sales in 1953 amounted to 152 million pounds, valued at 168 million dollars, compared with 149 million pounds, valued at 171 million dollars, in 1952--an increase of 2.1 percent in quantity and a decrease of 1.9 percent in value. The average unit value of all sales was \$1.10 per pound in 1953, compared with \$1.15 per pound in 1952.

Dyes for which separate statistics are given in table 8A represent 80 percent of the total quantity of all dyes produced in 1953. In 1953, as in previous years, dyes grouped by Colour Index number accounted for the greater part of the output of all dyes (71 percent). The production of Colour Index dyes was 117 million pounds in 1953, compared with 101 million pounds in 1952--an increase of 15.9 percent. Sales of Colour Index dyes totaled 108 million pounds, valued at 90 million dollars, in 1953, compared with 102 million pounds, valued at 84 million dollars, in 1952--an increase of 6.2 percent in quantity and 6.6 percent in value. The production of prototype dyes in 1953 was 33 million pounds, or 35.3 percent more than the 24 million pounds produced in 1952. Sales of these dyes increased to 30 million pounds, valued at 50 million dollars, in 1953, compared with 25 million pounds, valued at 47 million dollars, in 1952. Production of ungrouped dyes in 1953 was 16 million pounds, compared with 20 million pounds in 1952; sales of these dyes in 1953 totaled 14 million pounds, valued at 28 million dollars, compared with 22 million pounds, valued at 40 million dollars, in 1952. The increase in production and sales of prototype dyes and the decrease in the ungrouped category are due in part to the reclassification in 1953 of a large number of ungrouped dyes as prototype dyes.

Among the individual dyes for which statistics are given in table 8A, increases in production in 1953 as compared with that in 1952 were reported for many low- and medium-priced dyes. Production of synthetic indigo in 1953 was 17.8 million pounds, compared with 17.2 million in 1952. Output of sulfur black was 9.3 million pounds in 1953, compared with 8.9 million in 1952, and that of direct black EW (C.I. 581) was 6.2 million pounds in 1953, compared with 5.3 million in 1952. The output in 1953, as compared with that in 1952, increased also for sulfur brown (by 52 percent); anthraquinone vat blue GCD (C.I. 1113) (by 41 percent); methyl violet B and base (C.I. 680) (by 22 percent); auramine (C.I. 655) (by 21 percent); and algol yellow GC (Pr. 9) (by 16 percent). On the other hand, the output of chrome blue black R (C.I. 202) was 43 percent lower in 1953 than in 1952, and that of indanthrene khaki 2G (Pr. 122) was 19 percent lower.

² See also table 8B, part III, which lists these products and identifies the manufacturers, and part A (table 28) of the appendix, which shows imports of dyes during 1951-53.

TABLE 8A.--Synthetic organic chemicals: United States production and sales of coal-tar dyes, 1953

[Listed below are all coal-tar dyes for which any reported data on production or sales may be published. (Leaders are used where the reported data are confidential and may not be published or where no data were reported.) Table 8B in part III lists all dyes for which data on production or sales were reported and identifies the manufacturer of each]

Colour Index or Proto-type No.	Dye	Production	Sales		
			Quantity	Value	Unit value ¹
		1,000 pounds	1,000 pounds	1,000 dollars	Per pound
	Grand total-----	165,806	151,675	167,526	\$1.10
	Dyes for which separate statistics may not be shown---	32,962	26,160	39,539	1.51
	Dyes for which separate statistics are shown below---	132,844	125,515	127,987	1.02
	DYES GROUPED BY COLOUR INDEX NUMBER				
	Total-----	117,206	107,986	89,546	.83
	<i>Azo Dyes</i>				
	Monoazo Dyes				
17	Spirit yellow R-----	135	150	171	1.14
19	Oil yellow-----	148	138	140	1.01
20	Chrysoidine Y-----	480	439	283	.64
21	Chrysoidine R-----	161	153	103	.67
24	Sudan I-----	948	793	737	.93
27	Orange G-----	372	322	267	.83
31	Amido naphthol red G-----	446	372	260	.70
36	Chrome yellow 2G-----	...	61	51	.84
40	Chrome yellow R-----	74	55	55	1.00
53	Victoria violet 4BS-----	...	64	59	.92
57	Amido naphthol red 6B-----	105	110	93	.85
68	Fast scarlet G base-----	112	76	116	1.53
69	Fast red GL salt-----	320	306	287	.94
79	Ponceau R-----	246	241	180	.75
88	Fast red B-----	87	70	62	.89
98	Chrome brown R-----	138	115	130	1.13
114	Azo eosine G-----	45	46	60	1.30
117	Fast red B base-----	232	217	252	1.16
118	Fast scarlet R base-----	462	360	449	1.25
138	Metanil yellow-----	356	330	295	.89
145	Azoflavine RS-----	...	7	17	2.43
151	Orange II-----	933	868	426	.49
161	Orange R-----	371	308	177	.57
176	Fast red A-----	219	180	171	.95
179	Azo rubine-----	134	121	125	1.03
180	Fast red VR-----	...	34	31	.91
185	Cochineal red A-----	112	100	79	.79
202	Chrome blue black R-----	628	715	450	.63
203	Chrome black T-----	1,072	1,017	945	.93
204	Chrome black A-----	59	...	...	...
216	Acid chrome red B-----	...	13	13	1.00
219	Chrome flavine A-----	...	18	33	1.83
	<i>Di-azo Dyes</i>				
234	Resorcin brown-----	515	449	369	.82
235	Resorcin dark brown-----	338	319	308	.97
246	Acid black 10B-----	1,442	1,227	953	.78
247	Azo dark green A-----	...	32	36	1.13
252	Brilliant croceine M-----	379	344	539	1.57
274	Milling orange-----	...	14	11	.79
275	Cloth scarlet G-----	9	9	17	1.89
278	Direct fast red 8BL-----	315	271	545	2.01
280	Scarlet EC-----	...	10	16	1.60
288	Fast acid cyanine G-----	...	96	109	1.14
289	Fast acid cyanine 5R ex-----	328	264	248	.94
299	Acid chrome black F-----	162	137	134	.98
307	Fast acid cyanine black B-----	149	136	158	1.16
319	Direct fast heliotrope-----	41	39	111	2.85
324a	Roseanthrene-----	33	23	37	1.61
326	Direct fast scarlet-----	835	768	1,286	1.67
327	Direct fast scarlet 4BA-----	256	268	411	1.53
331	Bismarck brown G-----	145	128	73	.57
332	Bismarck brown R-----	954	849	677	.80
343	Chrome fast yellow C-----	...	30	33	1.10

See footnotes at end of table.

TABLE 8A.--Synthetic organic chemicals: United States production and sales of coal-tar dyes, 1953--Continued

Colour Index or Prototype No.	Dye	Production	Sales		
			Quantity	Value	Unit value ¹
DYES GROUPED BY COLOUR INDEX NUMBER--Continued					
Azo Dyes--Continued					
Disazo Dyes--Continued					
		1,000 pounds	1,000 pounds	1,000 dollars	Per pound
346	Direct fast yellow 5GL-----	24	25	54	\$2.16
353	Direct fast pink 2BL-----	56	58	150	2.59
364	Brilliant yellow-----	328	297	382	1.29
365	Chrysophenine G-----	938	635	623	.98
370	Congo red-----	...	178	147	.83
375	Congo corinth G-----	176	154	188	1.22
382	Direct scarlet B-----	207	150	259	1.73
387	Direct violet B-----	...	11	15	1.36
394	Direct violet N-----	...	26	41	1.58
401	Developed black BH-----	2,387	2,305	1,515	.66
406	Direct blue 2B-----	671	701	262	.37
415	Direct orange R-----	115	102	68	.67
419	Direct fast red F-----	235	172	184	1.07
420	Direct brown M-----	390	366	329	.90
430	Polar red-----	262	219	308	1.41
443	Milling red G-----	18	12	21	1.75
448	Benzopurpurine 4B-----	638	612	701	1.15
466	Benzo new blue 5B-----	31	30	61	2.03
477	Direct blue 3B-----	218	144	67	.47
487	Acid anthracene red 3B-----	66	77	118	1.53
495	Benzopurpurine 10B-----	...	6	9	1.50
499	Fast blue B salt-----	109	103	118	1.15
502	Direct azurine G-----	102	108	114	1.06
512	Direct blue RW-----	36	50	66	1.32
518	Direct sky blue FF-----	361	305	469	1.54
520	Direct pure blue-----	100	64	47	.73
Trisazo Dyes					
539	Direct fast black FF-----	208	186	152	.82
545	Plutoform black-----	155	194	118	.61
561	Direct brown BT-----	179	157	330	2.10
581	Direct black EW-----	6,183	6,180	3,034	.49
582	Direct black RX-----	247	288	168	.58
583	Direct green ET-----	317	225	167	.74
589	Chloramine green B-----	...	55	30	.55
593	Direct green B-----	702	637	415	.65
594	Direct green G-----	101	77	53	.69
596	Direct brown 3G0-----	795	679	441	.65
598	Congo brown G-----	85	66	54	.82
Stilbene Dyes					
620	Direct yellow R-----	910	736	625	.85
621	Chloramine orange G-----	134	114	110	.96
622	Stilbene yellow-----	658	661	717	1.08
Pyrazolone Dyes					
636	Fast light yellow G-----	78	70	110	1.57
639	Xylene light yellow-----	133	144	231	1.60
640	Tartrazine-----	420	364	427	1.17
642	Polar yellow-----	61	73	150	2.05
652	Chrome red B-----	86	90	135	1.50
653	Pyrazol orange-----	39	37	77	2.08
Ketonimine Dyes					
655	Auramine-----	1,442	1,362	1,876	1.38
Triphenylmethane and Diphenyl-naphthylmethane Dyes					
657	Malachite green-----	378	369	689	1.87
658	Rhoduline blue 6G-----	...	19	54	2.84
662	Brilliant green-----	116	97	235	2.42
666	Acid green B-----	155	156	135	.87
667	Fast acid green B-----	30	20	73	3.65
671	Acid glaucine blue-----	664	462	527	1.14
676	Para fuchsine-----	10	6	19	3.17
680	Methyl violet B and base-----	1,453	1,112	1,127	1.01
681	Crystal violet-----	825	791	1,525	1.93

See footnotes at end of table.

TABLE 8A.--Synthetic organic chemicals: United States production and sales of coal-tar dyes, 1953--Continued

Colour Index or Prototype No.	Dye	Production	Sales		
			Quantity	Value	Unit value ¹
DYES GROUPED BY COLOUR INDEX NUMBER--Continued					
Triphenylmethane and Diphenylnaphthylmethane Dyes--Continued					
		1,000 pounds	1,000 pounds	1,000 dollars	Per pound
682	Ethyl violet-----	...	17	46	\$2.71
698	Acid violet-----	139	116	182	1.57
707	Soluble blue-----	114	88	257	2.92
720	Acid chrome azuro B-----	102	118	252	2.14
722	Acid chrome cyanine R-----	...	22	62	2.82
729	Victoria blue B-----	143	139	315	2.27
735	Naphthalene green V-----	...	63	151	2.40
737	Wool green S-----	133	106	108	1.02
Xanthene Dyes					
766	Fluorescein-----	...	60	118	1.97
766	Uranine (Fluorescein, alkali salt)-----	38	35	49	1.40
768	Tetrabromofluorescein-----	607	...	...	...
Quinoline Dyes					
801	Quinoline yellow-----	68	55	137	2.49
Thiazole Dyes					
812	Primuline-----	277	247	242	.98
814	Direct fast yellow-----	417	400	572	1.43
Azine Dyes					
833	Wool fast blue-----	60	70	175	2.50
841	Sefranine-----	296	273	549	2.01
860	Induline, spirit-soluble-----	...	24	23	.96
861	Indulines, water-soluble-----	...	26	28	1.08
Thiazine Dyes					
922	Methylene blue-----	350	339	511	1.51
Sulfur or Sulfide Dyes					
	Total ² -----	20,838	20,594	6,349	.31
	Sulfur black-----	9,303	9,251	1,979	.21
	Sulfur blue-----	4,027	4,036	1,471	.36
	Sulfur brown-----	4,282	4,145	1,146	.28
	Sulfur green-----	1,972	1,932	1,146	.59
	Sulfur maroon-----	399	406	306	.75
	Sulfur olive-----	179	177	86	.49
	Sulfur yellow-----	472	441	163	.37
	All other-----	204	206	52	.25
Anthraquinone Dyes					
1027	Alizarin VI-----	...	186	345	1.85
1034	Alizarin red S-----	...	20	47	2.35
1053	Acid alizarin blue SE-----	34	32	115	3.59
1054	Acid alizarin blue B-----	504	473	1,266	2.68
1073	Alizarin irisol R-----	12	7	30	4.29
1078	Alizarin cyanine green-----	381	389	929	2.39
1085	Anthraquinone blue black B-----	142	107	240	2.24
1088	Acid anthraquinone sky blue B-----	61	38	196	5.16
Anthraquinone Vat Dyes					
1096	Anthraquinone vat golden orange G, 12%-----	674	221	385	1.74
1098	Anthraquinone vat scarlet G, 16-2/3%-----	530	405	950	2.35
1099	Anthraquinone vat dark blue B0, 25%-----	441	417	702	1.68
1100	Vat navy blue NTP-----	965	855	1,073	1.25
1101	Anthraquinone vat jade green, 6%-----	6,506	5,636	6,294	1.12
1102	Anthraquinone vat green B and black B, 12-1/2%-----	2,344	2,225	1,412	.63
1104	Anthraquinone vat violet 2R, 12-1/2%-----	376	275	620	2.25
1113	Anthraquinone vat blue GCD, 8-1/3%-----	2,475	2,074	3,251	1.57
1118	Anthraquinone vat yellow G, 12-1/2%-----	93	123	170	1.38
1150	Anthraquinone vat olive R, 12-1/2%-----	782	770	879	1.14
1151	Anthraquinone vat brown R, 12-1/2%-----	852	686	1,055	1.54
1152	Anthraquinone vat brown G, 12-1/2%-----	823	789	1,076	1.36
1163	Anthraquinone vat violet BN, 25%-----	162	123	699	5.68

See footnotes at end of table.

TABLE 8A.--Synthetic organic chemicals: United States production and sales of coal-tar dyes, 1953--Continued

Colour Index or Prototype No.	Dye	Production	Sales		
			Quantity	Value	Unit value ¹
DYES GROUPED BY COLOUR INDEX NUMBER--Continued					
Indigoid and Thioindigoid Dyes					
1177	Indigo, synthetic, 20%-----	17,839	19,289	5,090	\$0.26
1184	Bromindigo blue 2BD, 16%-----	1,041	744	518	.70
1212	Vat red 3B, 20%-----	190	169	250	1.48
1217	Vat orange R, 10%-----	529	518	663	1.28
Food, Drug, and Cosmetic Dyes					
Total-----		1,559	1,447	5,507	3.81
Food, Drug, and Cosmetic Colors					
Total-----		1,401	1,304	4,989	3.83
	Blue # 1-----	29	26	355	13.65
	Blue # 2-----	...	5	79	15.80
	Orange #1-----	169	216	615	2.85
	Red #1-----	117	108	556	5.15
	Red #2-----	414	339	1,081	3.19
	Red #3-----	21	20	399	19.95
	Red #4-----	39	32	144	4.50
	Yellow # 4-----	71	55	124	2.25
	Yellow # 5-----	274	252	804	3.19
	Yellow # 6-----	181	159	478	3.01
	All other-----	86	92	354	3.85
Drug and Cosmetic Colors					
Total ³ -----		158	143	518	3.62
	Red # 11-----	11	11	23	2.09
	Red # 19-----	30	29	103	3.55
	Red # 21-----	16	14	43	3.07
	All other-----	101	89	349	3.92
All Other Dyes Grouped by Colour Index Number					
Total-----		15,981	11,627	12,950	1.11
DYES GROUPED BY PROTOTYPE NUMBER					
Total-----		32,612	29,516	49,586	1.68
1	Acid alizarin flavine R-----	99	54	66	1.22
4	Acid anthracene brown PG-----	21	28	58	2.07
9	Algol yellow GC-----	2,269	2,030	3,033	1.49
12	Alizarin supra blue A-----	83	64	211	3.30
14	Anthracene chromate brown EB-----	125	106	140	1.32
19	Benzo Bordeaux 6B-----	31	24	32	1.33
20	Benzo chrome black blue B-----	...	85	111	1.31
24	Benzo fast black L-----	155	155	235	1.52
26	Benzo fast blue 4GL-----	95	90	223	2.48
32	Benzo rhoduline red 3B-----	...	7	9	1.29
35	Brilliant benzo violet B-----	78	70	104	1.49
43	Celliton orange GR-----	63	41	50	1.22
47	Chlorantine fast brown BRL-----	373	353	311	.88
53	Chlorantine fast yellow 4GL-----	203	188	299	1.59
67	Diamine Bordeaux B-----	109	103	126	1.22
70	Diamine catechine 3G-----	52	54	52	.96
71	Diamine fast blue FFB-----	172	178	368	2.07
72	Diamine fast orange EG-----	124	94	170	1.81
73	Diamine fast orange ER-----	65	56	99	1.77
74	Diaminogen blue N2B-----	279	251	489	1.95
77	Diazo Bordeaux 7B-----	101	98	193	1.97
78	Diazo brilliant green 3G-----	47	38	107	2.82
79	Diazo brilliant scarlet 2BL ex-----	124	90	290	3.22
80	Diazo brilliant scarlet ROA-----	88	99	242	2.44
84	Diazo fast red 5BL-----	...	18	35	1.94
85	Diazo fast red 7BL-----	54	45	95	2.11
89	Diazo rubine B-----	11	8	19	2.38
94	Fast scarlet 2G salt-----	193	180	151	.84
100	Guinea carmine B-----	...	11	12	1.09
101	Guinea fast red BL-----	50	42	65	1.55
109	Holindon pink R ex-----	1,019	1,005	1,487	1.48
118	Indanthrene brown BR-----	524	403	827	2.05
121	Indanthrene brown RRD-----	759	692	1,109	1.60
122	Indanthrene khaki 2G-----	2,591	2,626	3,585	1.37

See footnotes at end of table.

TABLE 8A.--Synthetic organic chemicals: United States production and sales of coal-tar dyes, 1953--Continued

Colour Index or Prototype No.	Dye	Production	Sales		
			Quantity	Value	Unit value ¹
DYES GROUPED BY PROTOTYPE NUMBER--Continued					
		1,000 pounds	1,000 pounds	1,000 dollars	Per pound
138	Milling yellow H5G	4	12	28	\$2.33
144	Neolan blue GG	197	208	338	1.62
147	Oxydiaminogen OE	474	436	604	1.39
148	Paper red A ex	134	108	241	2.23
152	Polar orange R	...	23	40	1.73
164	Rapidogen blue D	142	140	372	2.66
168	Rapidogen red GS	206	207	483	2.33
169	Rapidogen red RS	80	72	197	2.74
170	Rapidogen scarlet RS	123	112	199	1.78
171	Rapidogen yellow G	85	88	189	2.15
172	Rosanthrene fast Bordeaux 2BL	44	40	90	2.25
173	Rosanthrene orange R	...	122	257	2.11
187	Sulphon yellow R	13	20	30	1.50
197	Victoria fast violet 2R ex	93	76	87	1.14
198	Victoria pure blue B	167	129	423	3.28
201	Zambesi black D	...	17	26	1.53
202	Zambesi black V	...	256	294	1.15
206	Alizarin fast gray BBLW	61	78	332	4.26
223	Brilliant indocyanine G	...	7	37	5.29
228	Celliton fast blue FFR	700	1,040	1,474	1.42
230	Celliton fast brown 3R	40	45	79	1.76
234	Celliton fast pink B	122	117	246	2.10
235	Celliton fast pink FF3B	16	11	45	4.09
236	Celliton fast red GG	117	86	92	1.07
237	Celliton fast red violet RN	39	26	59	2.27
238	Celliton fast rubine B	36	26	27	1.04
239	Celliton fast rubine 3B	150	129	124	.96
242	Celliton fast yellow G	264	240	372	1.55
244	Celliton scarlet B	165	152	189	1.24
245	Celliton yellow 5G	25	18	52	2.89
246	Chlorantine fast red 5BRL	238	228	419	1.84
253	Erio chrome brown DKL	...	5	8	1.60
258	Fast blue EB base	...	14	79	5.64
260	Fast Bordeaux GP base	...	19	47	2.47
260	Fast Bordeaux GP salt	160	148	184	1.24
264	Fast orange GC salt	7	18	21	1.17
267	Fast red AL salt	142	134	200	1.49
269	Fast red 3GL salt	886	824	674	.82
270	Fast red KB base	121	100	281	2.81
270	Fast red KB salt	21	22	49	2.23
271	Fast red RC base	19	11	23	2.09
271	Fast red RC salt	10	14	34	2.43
273	Fast red TR salt	30	22	45	2.05
278	Sirius supra turquoise blue GL	214	188	416	2.21
291	Indanthrene golden yellow GK	833	513	1,198	2.34
293	Indanthrene olive green B	2,038	1,636	2,636	1.58
299	Monochrome black blue G	19	27	103	3.81
302	Naphthol AS	945	577	761	1.32
303	Naphthol AS-BO	31	24	95	3.96
304	Naphthol AS-BR	40	32	106	3.31
305	Naphthol AS-BS	255	62	148	2.39
306	Naphthol AS-D	237	69	142	2.06
309	Naphthol AS-G	26	10	48	4.80
310	Naphthol AS-ITR	23	20	87	4.35
311	Naphthol AS-OL	111	16	43	2.69
312	Naphthol AS-RL	11	7	22	3.14
313	Naphthol AS-SW	562	492	1,179	2.40
314	Naphthol AS-TR	...	4	17	4.25
316	Neolan yellow GR	20	...	...	...
326	Palatine fast pink BN	14	20	45	2.25
341	Rapidogen blue N	38	38	103	2.71
351	Rapidogen violet B	21	17	93	5.47
353	Rapidogen yellow 2G	25	...	...	...
372	Cotonarol	30	36	51	1.42
377	Diazo brilliant scarlet 5BLN	...	3	10	3.33
378	Fast red ITR base	...	11	42	3.82
379	Sirius supra gray VGL	...	12	23	1.92
421	Chlorantine fast Bordeaux 2E	...	5	16	3.20
428	Chlorantine fast red 6BLL	113	99	324	3.27
432	Chlorazol blue 5GKS	86	72	131	1.82
491	Chlorantine fast violet 2RL	55	57	135	2.37
501	Fast red PDC salt	57	...	...	...
533	Direct chinoline	97	95	344	3.62
547	Indanthrene olive T	1,354	1,368	1,868	1.37
556	Naphthol AS-MX	45	30	62	2.07

See footnotes at end of table.

TABLE 8A.--Synthetic organic chemicals: United States production and sales of coal-tar dyes, 1953--Continued

Colour Index or Prototype No.	Dye	Production	Sales		
			Quantity	Value	Unit value ¹
DYES GROUPED BY PROTOTYPE NUMBER--Continued					
		1,000 pounds	1,000 pounds	1,000 dollars	Per pound
557	Naphthol AS-PH-----	...	11	31	\$2.82
562	Neutral brown RX-----	...	13	30	2.31
569	Pontamine navy blue DB-----	121	103	97	.94
578	Solantine orange 4G-----	130	92	254	2.76
582	Sirius supra yellow R ex-----	180	144	357	2.48
	All other dyes grouped by prototype number-----	9,793	8,598	15,076	1.75
UNGROUPED DYES					
	Total-----	15,988	14,173	28,394	2.00
Acetate rayon dyes, total (see tables 10 and 11 for total of all acetate rayon dyes) ⁴ -----					
	Black, IV ex., B, BNF, DE, EC, G, 3G, GGN, GS, GX, J, LNB, NC, RB, RK, SDP, SS ⁵ -----	3,080	2,569	4,356	1.70
	Blue, #15, #40, A3-7, A3-45, AGF, B, 2B, BGLF, BN, BNN, BP, CR, EC, G, 2G, GBN, GE, GFD, GLF, GLT, GLT-NS, 2GN, GP, GR, LB, LD, M, MJ, NBN, NVC, NXY, RB, RDA, RG, R, 2R, 3R, WNEB ⁶ -----	739	769	671	.87
	Red III, VI-X, B, 2B, 4BL, 2B-GLF, C, FSI, G, GLF, LRB, NB, R, RP, WLF-40, Y, YP ⁷ -----	1,440	948	2,240	2.36
	Violet 2B, 7BC, BGF, BN, MB, 2R, 4R, 3RGFL, 5RLF-----	313	284	444	1.56
	Yellow 4RLF-----	106	93	231	2.48
	Yellow B, CW, FSI, G, 5G, 8GLF, GL, GN, GR, IX, M, N, RN, 4RL ⁸ -----	185	211	321	1.52
	All other acetate rayon dyes-----	179	141	259	1.84
		118	123	190	1.54
	Acid orange NR, R, 2R-----	18	...	...	...
	Acid violet NR, R, 2R, 3RL, RNL-----	8	...	...	...
	Anthraquinone vat gray BR, 2G, GFL, GNF, MEM, R-----	...	594	1,008	1.70
	Anthraquinone vat olive G, 2GL, 2GLD, T, TC, TR-----	1,250	1,130	1,909	1.69
	Azolic dyes and their components, total (see tables 10, 11, and 14 for data on all azolic dyes and their components) ⁹ -----	738	586	1,408	2.40
	Chrome yellow 2GN, LL, SW-----	...	10	8	.80
	Direct black CW, 3G, 5G, GN, 3CR, HH, RCW, RW-----	132	140	103	.74
	Direct blue B, BEL, BFL, BLU, 10 BLU, BWW, CF, CF2B, FBL ⁷ , 2GFL, GL, 3GL, 4GL, 8GLN, 4GU, 8GUF, LBLL, LDU, LGLL, NFC, NR, RDW, 2RCF, 3RCF, RFL, 2RFL, RL, RLU, 2RLU, 2RLGF, TRLL, VRS-----	690	638	1,121	1.76
	Direct brown CR, CWR, GB, 3GS, KRS, RB, 3RL, RY-----	60	57	81	1.42
	Direct fast blue BLL, 2BRN, CPL, GLFV, 7GLL, 8GLL, GSS, LSGA, LSR, RL, 3RL, SFGL, SPRL-----	49	39	130	3.33
	Direct fast brown 4GL, 5GLL, R, 4R, 2RL, 3RL, 4RL, 8RL, SKRL, 3YL-----	...	46	114	2.48
	Direct fast orange G, 2G, 5GC, GL, 2GL, 4GLL, L8GL, R-----	40	38	94	2.47
	Direct fast red 3BL, 8BLN, 7BNL, L4BL, RL, WL-----	120	109	229	2.10
	Direct fast yellow 5G, 3GL, 3GU, L2RX, L3RX, RL, S5CP-----	68	70	122	1.74
	Direct orange C, DB, F3R, GFL, 5GFL, 2GLL, 2GU, 6GUF, LR, 3LWF, 2R, RT-----	151	127	321	2.53
	Direct white, ACC, AW, B, 4B, 5B, 5BM, 2G, MR, M2R, 2R, 3R, RN, RW, SC, WT-----	1,739	1,521	5,174	3.40
	Oil orange, #30, MT-----	47	...	...	...
	Oil red, #322, DB, EGN, N-1700, O, OB, RO-----	610	564	703	1.25
	All other ungrouped dyes-----	7,188	5,935	11,513	1.96

¹ Unit values calculated on rounded figures.

² Does not include derivatives of carbazole (Colour Index No. 969).

³ Includes drug and cosmetic colors, external, data on which cannot be published separately without disclosing information received in confidence.

⁴ Excludes acetate rayon dyes that appear under "Dyes grouped by prototype number."

⁵ Includes developed black and diazo black.

⁶ Includes brilliant blue and navy blue.

⁷ Includes monocol red, rubine, and scarlet.

⁸ Includes fast yellow, golden yellow, and printing yellow.

⁹ Does not include azolic dyes and their components that appear under "Dyes grouped by Colour Index number," and "Dyes grouped by prototype number."

Table 9 shows production and sales of dyes in 1953, by chemical class. Four chemical classes of dyes accounted for 84.2 percent of the total quantity of all dyes produced in 1953: Azo dyes, for 34.5 percent; anthraquinone vat dyes, for 23.1 percent; sulfur dyes, for 13.6 percent; and indigoid and thioindigoid dyes, for 13.0 percent. The output of each of the four classes was greater in 1953 than in 1952. The production of sulfur dyes increased 19.2 percent; of azo dyes, 15.9 percent; of anthraquinone vat dyes, 6.8 percent; and of indigoid and thioindigoid dyes, 7.0 percent.

TABLE 9.--Synthetic organic chemicals: United States production and sales of coal-tar dyes, by chemical class, 1953

Chemical class	Production	Sales		
		Quantity	Value	Unit value ¹
	1,000 pounds	1,000 pounds	1,000 dollars	Per pound
Total-----	163,806	151,675	167,526	\$1.10
Azo-----	57,158	51,821	65,262	1.26
Anthraquinone vat ² -----	38,370	32,524	45,418	1.40
Indigoid and thioindigoid-----	21,623	22,729	9,138	.40
Sulfur or sulfide-----	22,489	21,910	7,073	.32
Triphenylmethane and diphenylnaphthylmethane-----	6,089	4,408	7,949	1.80
Anthraquinone-----	4,619	4,262	9,979	2.34
Stilbene-----	-3,540	3,118	6,798	2.18
Ketonimine-----	1,442	1,362	1,876	1.38
Pyrazolone-----	1,227	1,153	2,321	2.01
Xanthene-----	1,243	899	2,623	2.92
Thiazole-----	793	739	1,047	1.42
Thiazine-----	390	366	527	1.44
Quinoline-----	243	220	679	3.09
Aceridine-----	(³)	119	208	1.75
Phthalocyanine-----	254	221	582	2.63
All other ⁴ -----	6,326	5,824	6,046	1.04

¹ Unit value calculated on rounded figures.

² Includes carbazole vat dyes.

³ Included in "All other."

⁴ Includes naphthalimide, nitro, nitroso, aniline black and allied dyes, and oleate dyes; also includes rubber colors and miscellaneous mixtures. Statistics for these groups cannot be published separately without disclosing information received in confidence.

Table 10 shows the average annual production of dyes in the 5-year period 1947-51, together with annual production data for 1952 and 1953, by class of application. Table 11 gives corresponding data for sales. Two classes of dyes accounted for 55.8 percent of the total output of all dyes in 1953. They are vat dyes, which accounted for 36.8 percent, and direct dyes, which accounted for 19.0 percent. Three classes of dyes showed increases in production in 1953 over the 1947-51 average as follows: Vat dyes other than indigo, 11.5 percent; azoic dyes, 7.8 percent; and lake and spirit-soluble dyes, 7.6 percent. On the other hand, the output of mordant and chrome dyes declined 43.3 percent; that of acid dyes, 26.5 percent; and that of direct dyes, 22.6 percent.

Production and sales of ungrouped dyes (those having neither a Colour Index nor a prototype number) are shown by chemical class in table 12 and by class of application in table 13. Two chemical classes of ungrouped dyes accounted for 70.9 percent of the total output of these dyes in 1953: azo dyes accounted for 40.2 percent, and anthraquinone vat dyes accounted for 30.7 percent. Of the total output of ungrouped dyes, arranged by class of application, vat dyes accounted for 32.0 percent in 1953; direct dyes, for 29.8 percent; and acetate rayon dyes, for 19.3 percent.

TABLE 10.--Synthetic organic chemicals: United States production of coal-tar dyes, by class of application, average 1947-51, annual 1952 and 1953

Class of application	Average 1947-51	1952	1953
	Quantity (1,000 pounds)		
Total-----	187,173	145,209	165,806
Acetate rayon-----	7,435	5,449	6,263
Acid-----	21,103	12,037	15,510
Azoic-----	8,083	7,177	8,713
Basic-----	8,654	6,245	7,981
Direct-----	40,717	26,805	31,495
Lake and spirit-soluble-----	5,825	4,490	6,270
Mordant and chrome-----	6,776	4,564	3,844
Sulfur-----	24,999	18,847	22,489
Vat, total-----	60,280	57,189	60,957
Indigo-----	21,614	17,165	17,839
All other-----	38,666	40,024	43,118
All other coal-tar dyes-----	3,301	2,406	2,284
	Percent of total quantity		
Total-----	100.0	100.0	100.0
Acetate rayon-----	3.9	3.8	3.8
Acid-----	11.3	8.3	9.4
Azoic-----	4.3	4.9	5.2
Basic-----	4.6	4.3	4.8
Direct-----	21.8	18.5	19.0
Lake and spirit-soluble-----	3.1	3.1	3.8
Mordant and chrome-----	3.6	3.1	2.3
Sulfur-----	13.4	13.0	13.6
Vat, total-----	32.2	39.4	36.8
Indigo-----	11.5	11.8	10.8
All other-----	20.7	27.6	26.0
All other coal-tar dyes-----	1.8	1.6	1.3

NOTE.--The leuco vat esters are included with vat dyes in 1949-53, and with direct dyes in 1947 and 1948.

TABLE 11.--Synthetic organic chemicals: United States sales of coal-tar dyes, by class of application, average 1947-51, annual 1952 and 1953

Class of application	Average 1947-51	1952	1953
	Quantity (1,000 pounds)		
Total-----	175,322	148,603	151,675
Acetate rayon-----	6,628	6,244	5,927
Acid-----	19,246	12,479	13,231
Azoic-----	7,018	6,859	6,741
Basic-----	7,790	6,389	6,928
Direct-----	38,933	29,636	29,174
Lake and spirit-soluble-----	5,353	4,689	5,935
Mordant and chrome-----	6,599	4,870	3,845
Sulfur-----	25,097	19,475	21,910
Vat, total-----	55,608	55,593	55,853
Indigo-----	21,173	16,565	19,289
All other-----	34,435	39,028	36,564
All other coal-tar dyes-----	3,090	2,369	2,131
	Percent of total quantity		
Total-----	100.0	100.0	100.0
Acetate rayon-----	3.8	4.2	3.9
Acid-----	11.0	8.4	8.7
Azoic-----	4.0	4.6	4.4
Basic-----	4.4	4.3	4.6
Direct-----	22.2	19.9	19.3
Lake and spirit-soluble-----	3.1	3.2	3.9
Mordant and chrome-----	3.8	3.3	2.6
Sulfur-----	14.3	13.1	14.4
Vat, total-----	31.7	37.4	36.8
Indigo-----	12.1	11.1	12.7
All other-----	19.6	26.3	24.1
All other coal-tar dyes-----	1.7	1.6	1.4

See note at end of table.

TABLE 11.--Synthetic organic chemicals: United States sales of coal-tar dyes, by class of application, average 1947-51, annual 1952 and 1953--Continued

Class of application	Average 1947-51	1952	1953
	Value (1,000 dollars)		
Total-----	164,393	170,699	167,526
Acetate rayon-----	9,118	9,610	9,577
Acid-----	20,493	16,106	17,076
Azoic-----	13,968	13,372	12,254
Basic-----	10,644	9,376	10,645
Direct-----	36,128	38,912	37,462
Lake and spirit-soluble-----	4,586	5,216	6,435
Mordant and chrome-----	5,922	5,489	4,829
Sulfur-----	7,743	6,337	7,073
Vat, total-----	48,554	60,454	55,705
Indigo-----	4,645	4,383	5,090
All other-----	43,909	56,071	50,615
All other coal-tar dyes-----	7,237	5,827	6,470
	Percent of total value		
Total-----	100.0	100.0	100.0
Acetate rayon-----	5.5	5.6	5.7
Acid-----	12.5	9.4	10.2
Azoic-----	8.5	7.8	7.3
Basic-----	6.5	5.5	6.4
Direct-----	22.0	22.8	22.4
Lake and spirit-soluble-----	2.8	3.1	3.8
Mordant and chrome-----	3.6	3.2	2.9
Sulfur-----	4.7	3.7	4.2
Vat, total-----	29.5	35.4	33.2
Indigo-----	2.8	2.6	3.0
All other-----	26.7	32.8	30.2
All other coal-tar dyes-----	4.4	3.5	3.9

NOTE.--The leuco vat esters are included with vat dyes in 1949-53, and with direct dyes in 1947 and 1948. The statistics on sales of dyes in 1948-53 do not include the quantity and value of interplant transfers, as the statistics for 1947 and earlier years did. The sales statistics, therefore, are not strictly comparable with the sales statistics for earlier years. Before 1948, interplant transfers probably did not account for more than 10 percent of the total of sales plus transfers.

TABLE 12.--Synthetic organic chemicals: United States production and sales of ungrouped dyes, by chemical class, 1953

Chemical class	Production	Sales		
		Quantity	Value	Unit value ¹
Total-----	1,000 pounds 15,988	1,000 pounds 14,173	1,000 dollars 28,394	Per pound \$2.00
Azo-----	6,430	5,937	10,299	1.73
Anthraquinone vat-----	4,916	4,340	7,630	1.76
Stilbene-----	1,801	1,579	5,288	3.35
Anthraquinone-----	1,572	1,063	2,749	2.59
Indigoid and thioindigoid-----	1,206	207	381	1.84
Triphenylmethane and diphenylmethane-----	(2)	6	18	3.00
All other ³ -----	1,063	1,041	2,029	1.95

¹ Unit value calculated on rounded figures.

² Included in "All other."

³ Includes pyrazolone, xanthen, sulfur, acridine, quinoline, azine, oxazine, and miscellaneous dyes.

TABLE 13.--Synthetic organic chemicals: United States production and sales of ungrouped dyes, by class of application, 1953

Class of application	Production	Sales		
		Quantity	Value	Unit value ¹
	1,000 pounds	1,000 pounds	1,000 dollars	Per pound
Total-----	15,988	14,173	28,394	\$2.00
Acetate rayon-----	3,080	2,569	4,356	1.70
Acid-----	377	393	929	2.36
Azoic-----	738	586	1,408	2.40
Direct-----	4,771	4,313	10,362	2.40
Lake and spirit-soluble-----	1,178	1,077	2,458	2.28
Vat-----	5,122	4,547	8,011	1.76
All other ² -----	722	688	870	1.26

¹ Unit value calculated on rounded figures.

² Includes basic, sulfur, mordant and chrome, and miscellaneous dyes.

Table 14 shows production and sales of azoic dyes and their components in 1953. The output of these products totaled 8.7 million pounds in 1953, or 21.4 percent more than the 7.2 million pounds produced in 1952. Sales of these products in 1953 totaled 6.7 million pounds, valued at 12.3 million dollars, compared with 6.9 million pounds, valued at 13.4 million dollars, in 1952--a decrease of 2.7 percent in quantity and 8.4 percent in value of sales. The output of rapidogens was 1.4 million pounds in 1953--slightly more than the 1.3 million pounds produced in 1952; sales of rapidogens totaled 1.3 million pounds, valued at 3.5 million dollars, in 1953, compared with 1.4 million pounds, valued at 4.6 million dollars, in 1952. Among the azoic components, production of fast color bases was about the same in 1953 as in 1952; that of fast color salts increased 18.5 percent in 1953, compared with 1952; and that of Naphthol AS and derivatives increased 65.6 percent.

TABLE 14.--Synthetic organic chemicals: United States production and sales of azoic dyes and their components, 1953

Proto- type No.	Dye or component	Pro- duction	Sales		
			Quantity	Value	Unit value ¹
		1,000 pounds	1,000 pounds	1,000 dollars	Per pound
	Grand total ² -----	8,713	6,741	12,254	\$1.82
	Dyes and components for which separate statistics may not be shown ³ -----	51	50	107	2.14
	Dyes and components for which separate statistics are shown below-----	8,662	6,691	12,147	1.82
	DYES				
	Rapidogen, total-----	1,373	1,253	3,492	2.79
	Black-----	112	114	355	3.11
164	Blue D-----	142	140	372	2.66
341	Blue N-----	38	38	103	2.71
	Bordeaux-----	45	40	122	3.05
	Brown-----	93	85	395	4.65
	Orange-----	96	73	176	2.41
168	Red GS-----	206	207	483	2.33
169	Red RS-----	80	72	197	2.74
	Red, other ⁴ -----	118	73	219	3.00
170	Scarlet RS-----	123	112	199	1.78
	Scarlet, other-----	28	24	58	2.42
351	Violet B-----	21	17	93	5.47
171	Yellow G-----	85	88	189	2.15
353	Yellow 2G-----	25	(⁵)	(⁵)	(⁵)
	Yellow, other ⁶ -----	18	(⁵)	(⁵)	(⁵)
	All other-----	143	170	531	3.12
	COMPONENTS				
	Fast color bases, total-----	1,893	1,337	2,202	1.65
258	Blue BB-----	(⁵)	14	79	5.64
260	Bordeaux GP-----	(⁵)	19	47	2.47
7 117	Red B-----	232	217	252	1.16
378	Red ITR-----	(⁵)	11	42	3.82
270	Red KB-----	121	100	281	2.81
271	Red RC-----	19	11	23	2.09
7 68	Scarlet G-----	112	76	116	1.53
7 118	Scarlet R-----	462	360	449	1.25
	All other-----	947	529	913	1.73
	Fast color salts, total-----	2,757	2,601	2,980	1.15
7 499	Blue B-----	109	103	118	1.15
260	Bordeaux GP-----	160	148	184	1.24
264	Orange GC-----	7	18	21	1.17
267	Red AL-----	142	134	200	1.49
7 69	Red GL-----	320	306	287	.94
269	Red 3GL-----	886	824	674	.82
270	Red KB-----	21	22	49	2.23
501	Red PDC-----	57	(⁵)	(⁵)	(⁵)
271	Red RC-----	10	14	34	2.43
273	Red TR-----	30	22	45	2.05
94	Scarlet 2G-----	193	180	151	.84
	All other-----	822	830	1,217	1.47
	Naphthols, total-----	2,639	1,500	3,473	2.32
302	Naphthol AS-----	945	577	761	1.32
303	Naphthol AS-BO-----	31	24	95	3.96
304	Naphthol AS-BR-----	40	32	106	3.31
305	Naphthol AS-BS-----	255	62	148	2.39
306	Naphthol AS-D-----	237	69	142	2.06
309	Naphthol AS-G-----	26	10	48	4.80
310	Naphthol AS-ITR-----	23	20	87	4.35
	Naphthol AS-KB-----	29	(⁵)	(⁵)	(⁵)
556	Naphthol AS-MX-----	45	30	62	2.07
311	Naphthol AS-OL-----	111	16	43	2.69
557	Naphthol AS-PH-----	(⁵)	11	31	2.82
312	Naphthol AS-RL-----	11	7	22	3.14
313	Naphthol AS-SW-----	562	492	1,179	2.40
314	Naphthol AS-TR-----	4	4	17	4.25
	All other-----	324	146	732	5.01

¹ Unit values calculated on rounded figures.

² Totals shown represent all azoic dyes and their components. Totals shown in tables 8A and 13 represent ungrouped dyes and their components only.

³ Includes rapid fast and fur dyes.

⁴ Includes corinth and garnet.

⁵ Included in "All other."

⁶ Includes golden yellow.

⁷ Colour Index number.

Toners and Lakes

As the terms are used in this report, toners and lakes are synthetic organic pigments. Statistics on production and sales of all toners and lakes are given in table 15A.³ Statistics on the commercial forms of a few selected pigments (dry, flushed, or pulp) are given in table 16.

Synthetic organic pigments are used in paints and related products, printing inks, and plastics and resin materials. Toners are full-strength pigments; lakes and reduced toners are extended or diluted colors. Whenever possible, individual lakes and toners are identified by the Colour Index number or prototype number of the dyes from which they may be made.

The total output of organic pigments in 1953 was 44.1 million pounds, an increase of 13.6 percent over the 38.8 million pounds reported for 1952. Sales in 1953 were 36.7 million pounds, valued at 56.0 million dollars, compared with 35.7 million pounds, valued at 48.7 million dollars, in 1952.

TABLE 15A.--Synthetic organic chemicals: United States production and sales of toners and lakes, 1953

[Listed below are all toners and lakes for which any reported data on production or sales may be published. Table 15B in part III lists all toners and lakes for which data on production or sales were reported and identifies the manufacturer of each]

Product	Production	Sales		
		Quantity	Value	Unit value ¹
Grand total-----	1,000 pounds 44,056	1,000 pounds 36,661	1,000 dollars 56,031	Per pound \$1.53
TONERS OR FULL-STRENGTH COLORS				
Total-----	27,232	22,060	41,114	1.86
Products for which separate statistics may not be shown ² -----	38	41	175	4.27
Products for which separate statistics are shown below-----	27,194	22,019	40,939	1.86
Black toners-----	17	17	31	1.82
Blue toners, total-----	4,276	3,320	9,766	2.94
Alkali blue (C.I. 704)-----	1,297	1,132	2,269	2.00
Peacock blue R (C.I. 664), PMA and PTA-----	9	7	43	6.14
Phthalocyanine blue B (Pr. 481)-----	2,447	1,732	5,898	3.41
Setoglaucline (Peacock blue G) (C.I. 658), PMA-----	8	8	35	4.38
Setoglaucline (Peacock blue G) (C.I. 658), PTA-----	24	20	131	6.55
Victoria blue B (C.I. 729), PMA-----	20	20	48	2.40
Victoria blue B (C.I. 729), PTA-----	73	75	280	3.69
Victoria pure blue B (Pr. 198), PMA-----	60	52	212	4.08
Victoria pure blue B (Pr. 198), PTA-----	41	38	181	4.76
All other-----	297	236	669	2.83
Green toners, total-----	2,249	1,827	5,901	3.23
Brilliant green (C.I. 662), PMA-----	12	11	44	4.00
Brilliant green (C.I. 662), PTA-----	42	38	200	5.26
Malachite green (C.I. 657), PMA-----	15	15	34	4.25
Malachite green (C.I. 657), PTA-----	15	15	66	4.40
Pigment green B (Pr. 149)-----	906	647	822	1.27
All other-----	1,262	1,108	4,735	4.27
Maroon toners, total-----	750	616	2,079	3.37
β -Hydroxyphenothioic maroon (B.O.N. maroon) (Lithol maroon)-----	290	183	337	1.84
Toluidine maroon-----	96	92	320	3.48
All other-----	364	341	1,422	4.17
Orange toners, total-----	389	316	565	1.79
Benzidine orange-----	69	49	152	3.10
2,4-Dinitroaniline orange-----	172	154	211	1.37
o-Nitroaniline orange-----	56	53	62	1.17
All other-----	62	60	140	2.33

See footnotes at end of table.

³ See also table 15B, part III, which lists these products alphabetically and identifies the manufacturers.

TABLE 15A.--Synthetic organic chemicals: United States production and sales of toners and lakes, 1953--Continued

Product	Production	Sales		
		Quantity	Value	Unit value ¹
TONERS OR FULL-STRENGTH COLORS--Continued				
Red toners, total-----	15,548	13,049	16,541	\$1.27
o-Chloronitroaniline red (Chlorinated para red)-----	667	438	495	1.13
Eosine (Bromo acid toner) (C.I. 768)-----	761	236	363	1.54
Lithol red R (C.I. 189), total-----	5,193	4,857	3,905	.80
Barium toner-----	2,749	2,485	1,944	.78
Calcium toner-----	1,757	1,705	1,407	.83
Sodium toner-----	687	667	554	.83
Lithol rubine B (C.I. 163)-----	692	679	913	1.34
Naphthol AS (Fr. 302)-----	201	90	240	2.67
Naphthol AS-BS (Fr. 305)-----	79	59	215	3.64
Naphthol AS-D (Fr. 306)-----	66	50	147	2.94
C.I. 44, Para red, light-----	1,295	1,037	962	.93
Para red, dark-----	515	471	421	.89
Permanent red 2B-----	1,392	1,279	2,436	1.90
Pigment rubine 3G-----	6	7	13	1.86
Red lake C (C.I. 165)-----	1,092	961	1,128	1.17
Rhodamine B (C.I. 749), PMA-----	17	11	47	4.27
Rhodamine B (C.I. 749), PTA-----	28	22	135	6.14
Rhodamine 6G (C.I. 752), PMA-----	32	31	158	5.10
Rhodamine 6G (C.I. 752), PTA-----	72	70	421	6.01
C.I. 69, Toluidine red-----	2,577	1,980	2,911	1.47
Vulcan fast red B (Fr. 476)-----	185	96	343	3.57
All other-----	678	675	1,288	1.91
Violet toners:				
Methyl violet B (C.I. 680), PMA-----	282	267	552	2.07
Methyl violet B (C.I. 680), PTA-----	79	78	283	3.63
Methyl violet B (C.I. 680), fugitive-----	443	354	441	1.25
Yellow toners, total-----	3,191	2,175	4,780	2.20
Benzidine yellow-----	1,896	1,439	2,944	2.05
Pr. 103, Hansa yellow G-----	878	494	964	1.95
Pr. 105, Hansa yellow 10G-----	149	79	152	1.92
All other-----	268	163	720	4.42
LAKES OR LAKED COLORS				
Total-----	6,627	5,277	5,923	1.12
Products for which separate statistics may not be shown ³ -----	463	440	329	.75
Products for which separate statistics are shown below-----	6,164	4,837	5,594	1.16
Black lakes-----	112	89	69	.78
Blue lakes, total-----	2,660	1,774	2,126	1.20
Methylene blue (C.I. 922)-----	44	42	54	1.29
Peacock blue, fugitive (Patent blue) (C.I. 671)-----	2,165	1,379	1,312	.95
Victoria blue B (C.I. 729)-----	44	29	36	1.24
Victoria pure blue B (Fr. 198)-----	20	19	22	1.16
All other-----	387	305	702	2.30
Brown lakes, total-----	7	7	8	1.14
Bismarck brown R (C.I. 332)-----	3	4	5	1.25
All other-----	4	3	3	1.00
Green lakes, total-----	736	602	346	.57
Acid green B (C.I. 669)-----	5	5	7	1.40
Malachite green (C.I. 657)-----	10	9	10	1.11
All other-----	721	588	329	.56
Maroon lakes:				
Azo Bordeaux (C.I. 88)-----	217	199	107	.54
Helio fast rubine 4BL (Fr. 406)-----	186	178	404	2.27
Orange lakes: Persian orange (Acid orange Y) (Orange II) (C.I. 151)-----	256	219	117	.53
Red lakes, total-----	1,562	1,389	1,675	1.21
Alizarin red B (C.I. 1027)-----	253	151	379	2.51
Eosine (Bromo acid lake) (C.I. 768)-----	77	8	7	.88
Permanent red 2B-----	7	74	60	.81
Pigment scarlet 3B (C.I. 216)-----	250	249	341	1.37
Rhodamine B (C.I. 749)-----	6	6	9	1.50
Rhodamine 6G (Rhodamine Y) (C.I. 752)-----	32	27	34	1.26
Scarlet 2R (C.I. 79)-----	441	403	188	.47
All other-----	496	471	657	1.39

See footnotes at end of table.

TABLE 15A.--Synthetic organic chemicals: United States production and sales of toners and lakes, 1953--Continued

Product	Production	Sales		
		Quantity	Value	Unit value ¹
LAKES OR LAKED COLORS--Continued				
	1,000 pounds	1,000 pounds	1,000 dollars	Per pound
Violet lakes, total-----	175	162	517	\$3.19
Methyl violet B (C.I. 680)-----	76	75	74	.99
All other-----	99	87	443	5.09
Yellow lakes:				
Fast light yellow (C.I. 636)-----	50	15	23	1.53
Quinoline yellow (C.I. 801)-----	6	10	15	1.50
Tartrazine (C.I. 640)-----	197	193	187	.97
REDUCED OR EXTENDED TONERS				
Total-----	10,197	9,324	8,994	.96
Products for which separate statistics may not be shown ⁴ -----	6,383	5,747	5,035	.88
Products for which separate statistics are shown below-----	3,814	3,577	3,959	1.11
Blue toners, reduced:				
Peacock blue R (C.I. 664), PMA and PTA-----	21	18	26	1.44
Phthalocyanine blue B (Pr. 481)-----	1,324	1,148	1,647	1.43
Setoglucine (Peacock blue G) (C.I. 658), PMA-----	16	14	18	1.29
Setoglucine (Peacock blue G) (C.I. 658), PTA-----	12	10	22	2.20
Green toners, reduced:				
Brilliant green (C.I. 662), PMA and PTA-----	171	162	125	.77
Malachite green (C.I. 657), PMA and PTA-----	9	8	9	1.12
Orange toners, reduced: o-Nitroaniline orange-----	36	40	19	.48
Red toners, reduced, total-----	1,367	1,404	1,319	.94
Lithol red R (C.I. 189)-----	186	186	97	.52
Naphthol AS-BS (Pr. 305)-----	232	232	340	1.47
Para reds-----	85	94	25	.27
Rhodamine B (C.I. 749), PMA and PTA-----	72	74	64	.86
Rhodamine 6G (C.I. 752), PMA and PTA-----	112	110	86	.78
C.I. 69, Toluidine red-----	134	134	67	.50
All other-----	546	574	640	1.11
Violet toners, reduced:				
Ethyl violet (C.I. 682), PMA-----	300	259	308	1.19
Methyl violet B (C.I. 680), PMA and PTA-----	153	140	108	.77
Yellow toners, reduced: Benzidine yellow-----	405	374	358	.96

¹ Calculated on rounded figures.

² Includes all brown toners and unspecified violet toners.

³ Includes unspecified maroon, orange, and yellow lakes.

⁴ Includes all brown and maroon reduced toners and unspecified blue, green, orange, violet, and yellow reduced toners.

NOTE.--The C.I. and Pr. numbers stand for Colour Index and prototype numbers of the dyes from which the lakes or toners may be produced. When the number precedes the name of the toner, it signifies that the toner is the same as the dye described in the Colour Index or prototype listing.

The abbreviations PMA and PTA stand for phosphomolybdic and phosphotungstic acids, respectively. Pigments formerly listed as PTMA (phosphotungstomolybdic acid) are now included with PTA colors.

Production in 1953 of toners (full-strength colors) was 27.2 million pounds--5.4 million pounds more than the output in 1952. Sales of these colors in 1953 totaled 22.0 million pounds, valued at 41.1 million dollars, compared with 19.6 million pounds, valued at 34.2 million dollars, in 1952. About 57 percent of the output of full-strength toners in 1953 consisted of red toners (15.5 million pounds). Of the individual toners for which separate statistics may be shown, those produced in the largest quantities were lithol red R toners (C.I. 189), 5.2 million pounds; toluidine red (C.I. 69), 2.6 million pounds; phthalocyanine blue B (Pr. 481), 2.4 million pounds; benzidine yellow, 1.9 million pounds; and permanent red 2B, 1.4 million pounds.

The combined production of lakes and reduced toners in 1953 was 16.8 million pounds, compared with 16.9 million pounds in 1952. Combined sales of lakes and reduced toners in 1953 were 14.6 million pounds, valued at 14.9 million dollars, compared with 16.0 million pounds, valued at 14.6 million dollars, in 1952. Of the extended pigments for which separate statistics may be shown, blues constituted the leading group. Production of fugitive peacock blue lake (C.I. 671) in 1953 was 2.2 million pounds, and of phthalocyanine blue B reduced toner (Pr. 481), 1.3 million pounds.

TABLE 16.--Synthetic organic chemicals: United States production and sales of selected dry, flushed, and pulp colors, 1953¹

[Listed below are selected dry, flushed, and pulp colors for which data on production may be published]

Dry, flushed, and pulp forms	Production	Sales		
		Quantity	Value	Unit value ²
Alkali blue toner (C.I. 704):	1,000 pounds	1,000 pounds	1,000 dollars	Per pound
Dry form-----	99	98	191	\$1.95
Flushed form-----	2,685	2,698	2,929	1.09
Pulp form-----	581	519	654	1.26
Benzidine yellow toner:				
Dry form-----	1,460	1,236	2,237	1.81
Flushed form-----	2,337	2,309	1,321	.57
Pulp form-----	608	229	243	1.06
Eosine (C.I. 768) and phloxine (C.I. 774) toners: ³				
Dry form-----	250	144	218	1.51
Flushed form-----	1,735	1,008	772	.77
Lithol red R (C.I. 189), barium toner:				
Dry form-----	2,167	1,981	1,509	.76
Flushed form-----	1,695	1,538	650	.42
Pulp form-----	350	176	80	.45
Lithol red R (C.I. 189), calcium toner:				
Dry form-----	1,498	1,424	1,116	.78
Flushed form-----	650	700	357	.51
Pulp form-----	226	110	46	.42
Lithol red R (C.I. 189), sodium toner: ³				
Dry form-----	519	536	424	.79
Flushed form-----	402	297	151	.51
Methyl violet B (C.I. 680), fugitive:				
Dry form-----	250	225	290	1.29
Flushed form-----	553	478	312	.65
Pulp form-----	96	91	47	.52
Methyl violet B (C.I. 680), permanent (PMA and PTA): ³				
Dry form-----	312	291	599	2.06
Flushed form-----	226	222	233	1.05
Peacock blue (C.I. 671), fugitive: ³				
Dry form-----	905	519	519	1.00
Flushed form-----	2,668	2,048	1,185	.58
Toluidine red toner (C.I. 69):				
Dry form-----	2,182	1,660	2,408	1.45
Flushed form-----	632	415	324	.78
Pulp form-----	445	351	156	.44

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

² Calculated on rounded figures.

³ Data on the pulp form were received in confidence and may not be published.

Statistics on the selected dry, flushed, and pulp colors in table 16 show that in 1953 the quantity of production and sales of the toners alkali blue, benzidine yellow, fugitive methyl violet B, fugitive peacock blue, and eosine and phloxine toners in the flushed form exceeded the quantity of production and sales in the dry form. Production and sales, in the dry form, of permanent methyl violet B (PMA and PTA), toluidine red, and the barium, calcium, and sodium toners of lithol red R exceeded production and sales in the flushed form. In 1953, for most pigments, production and sales in the pulp form were smaller than those in either the flushed or the dry form.

Medicinals

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

Statistics on production of medicinals are in terms of 100-percent content of the medicinal itself, exclusive of all diluents or other materials used in mixing or compounding tablets, solutions, and suspensions for consumer use. Except for antibiotics, the statistics on sales include only that part of the original (primary) production which was sold in undiluted or uncompounded form, including that sold in bulk and that sold in packages (tablets, ampoules, etc.). Sales of antibiotics include all forms--diluted or undiluted, in bulk or in packages.

In 1953 the production of all medicinal chemicals covered in this report amounted to 67 million pounds (see table 17A⁴)--slightly less than the output reported for 1952. Sales in 1953 totaled 54 million pounds, valued at 409 million dollars, compared with 51 million pounds, valued at 430 million dollars, in 1952.

The output in 1953 of all cyclic medicinals was 51 million pounds, of which 37 million pounds consisted of benzenoid chemicals. Production of acyclic medicinals in 1953 was 16 million pounds, compared with 11 million pounds in 1952. In terms of quantity, acetylsalicylic acid (aspirin) was the most important medicinal produced in 1953. The output in that year was 14 million pounds, compared with 13 million pounds in 1952; sales in 1953 were 12 million pounds, valued at 6 million dollars. In 1953 the output of sulfa drugs totaled 4.7 million pounds, compared with 5.8 million pounds in 1952; sales in 1953 were 3.1 million pounds, valued at 16.8 million dollars, compared with 3.1 million pounds, valued at 15.9 million dollars, in 1952. Production of barbituric acid derivatives in 1953 totaled 634,000 pounds--an increase of 18.1 percent from the 537,000 pounds reported for 1952. Sales in 1953 totaled 427,000 pounds, valued at 2.8 million dollars.

As a group, the antibiotics were the most important medicinals produced in 1953, in terms of value. In 1953 the combined output of all antibiotics for human and veterinary use was 1,630,000 pounds--an increase of 143,000 pounds over the 1,487,000 pounds produced in 1952. Sales in 1953 totaled 1,467,000 pounds, valued at 231 million dollars, compared with 1,321,000 pounds, valued at 267 million dollars, in 1952, reflecting a decline in prices. Production of penicillin salts in 1953 totaled about 372 trillion international units, compared with 342 trillion international units in 1952. Sales in 1953 were about 354 trillion international units, valued at 58 million dollars, compared with sales of 287 trillion international units, valued at 83 million dollars, in 1952. Penicillin procaine was the most important penicillin salt produced in 1953. The output of dihydrostreptomycin in 1953 declined to 305,000 pounds from the 337,000 pounds reported for 1952. The output of streptomycin in 1953, however, was 125,000 pounds, compared with 50,000 pounds in 1952. The combined output of most of the broad-spectrum antibiotics in 1953 was 441,000 pounds, compared with 414,000 pounds in 1952. The output of antibiotics for animal feed supplements in 1953 was 434,000 pounds, compared with the 258,000 pounds reported for 1952.

Among the other important medicinals produced in 1953 were the vitamins. The combined output of vitamins as a group in 1953 was 4.7 million pounds, compared with an output of 4.9 million

⁴ See also table 17B, part III, which lists these products alphabetically and identifies the manufacturers.

TABLE 17A.--Synthetic organic chemicals: United States production and sales of medicinals, 1953

[Listed below are all synthetic organic medicinals for which any reported data on production or sales may be published. (Leaders are used where the reported data are confidential and may not be published or where no data were reported.) Table 17B in part III lists alphabetically all medicinals for which data on production or sales were reported and identifies the manufacturer of each]

Chemical	Production ¹	Sales ²		
		Quantity	Value	Unit value ³
Grand total-----	1,000 pounds 66,585	1,000 pounds 54,227	1,000 dollars 409,068	Per pound \$7.54
MEDICINALS, CYCLIC				
Total-----	51,003	41,080	380,914	9.27
Chemicals for which separate statistics may not be shown-----	10,505	8,496	22,036	2.59
Chemicals for which separate statistics are shown below-----	40,498	32,584	358,878	11.01
Benzenoid				
Total-----	37,232	28,942	37,926	1.31
Acetylsalicylic acid (Aspirin)-----	13,713	11,664	6,060	.52
Adrenaline (Epinephrine)-----	(4)	(4)	6	210.96
Amino acids-----	3	(5)	12	21.05
p-Aminobenzoic acid-----	45	43	104	2.43
p-Aminobenzoic acid derivatives, total-----	488	503	1,688	3.36
Benzocaine (Ethyl p-aminobenzoate)-----	40	63	192	3.05
Procaine base and hydrochloride-----	431	427	1,299	3.04
All other-----	17	13	197	14.92
p-Aminobenzoic acid salts-----	88	116	272	2.34
4-Aminosalicylic acid and salts-----	478	...	...	...
Bismuth subgallate-----	30	27	88	3.27
Bismuth subsalicylate-----	134	...	...	...
2, 2'-Diethyl-4,4'-stilbenediol (Diethylstilbestrol)-----	...	4	184	51.22
N-2-Dimethylphenethylamine base and hydrochloride-----	7	7	49	6.99
Dyes, medicinal-----	35	26	349	13.37
p-Hydroxybenzoic acid esters:				
Methyl p-hydroxybenzoate-----	100	109	195	1.80
Propyl p-hydroxybenzoate-----	100	30	65	2.18
α-Methylphenethylamine (Amphetamine) (Benzedrine) base-----	52	7	36	5.42
α-Methylphenethylamine salts-----	21	...	...	...
Phenylmercuric derivatives-----	1	1	14	21.40
Prostigmine (Neostigmine) methyl sulfate-----	(6)	(6)	7	268.52
Resorcinol monoacetate-----	...	4	8	1.98
Salicylamide-----	136	117	155	1.33
Salicylic acid-----	8,020	5,637	2,154	.38
Salicylic acid salts, total-----	819	764	488	.64
Calcium salicylate-----	...	2	3	1.64
Sodium salicylate-----	...	726	423	.58
All other-----	819	36	62	1.69
Silver picrate-----	(7)	(7)	15	126.25
Sodium ethylmercurithiosalicylate-----	...	(8)	20	72.88
Sulfa drugs-----	4,672	3,061	16,760	5.48
Thymol iodide-----	19	21	155	7.25
3-o-Toloxyl-1,2-propanediol (o-Cresyl α-glyceryl ether)-----	...	277	482	1.74
Vitamin K and derivatives-----	1	1	21	28.13
All other benzenoid medicinals-----	8,340	6,523	8,539	1.31
Alicyclic and Heterocyclic				
Total-----	13,771	12,138	34,298	28.26
Alkaloids, total-----	7	...	...	...
Berberine and salts-----	2	1	31	25.03
Homatropine and salts-----	1	1	199	85.67
All other-----	4	...	...	...
Amino acids-----	(9)	...	...	...
Antibiotics for human or veterinary use, total-----	1,630	1,467	231,484	157.79
Bacitracin-----	6	4	1,520	358.14
Dihydrostreptomycin-----	305	297	24,547	82.68
Penicillin salts, total ^{10 11} -----	753	708	57,752	(12)
Dipenicillin G dibenzylethylenediamine-----	37	32	4,183	(12)
Penicillin potassium-----	132	144	24,170	(12)
Penicillin procaine-----	556	509	26,851	(12)
Penicillin sodium-----	28	23	2,548	(12)
Streptomycin-----	125	104	10,785	104.08
All other-----	441	354	136,880	386.67

See footnotes at end of table.

TABLE 17A.--Synthetic organic chemicals: United States production and sales of medicinals, 1953--Continued

Chemical	Production ¹	Sales ²		
		Quantity	Value	Unit value ³
MEDICINALS, CYCLIC--Continued				
<i>Alicyclic and Heterocyclic--Continued</i>				
Antibiotics for animal feed supplements-----	1,000 pounds 13 434	1,000 pounds 13 391	1,000 dollars 19,423	Per pound \$49.68
Antihistamines-----	114	43	1,195	27.69
Barbituric acid derivatives, total-----	634	427	2,757	6.45
5-Allyl-5-(1-methylbutyl)barbituric acid (Secobarbital) and salt-----	52	8	84	10.12
5,5-Diethylbarbituric acid (Barbital) and salt-----	9	16	66	4.05
5-Ethyl-5-(1-methylbutyl)barbituric acid (Pentobarbital) and salts-----	128	35	316	9.16
5-Ethyl-5-phenylbarbituric acid (Phenobarbital) (Luminal)-----	303	306	1,160	3.79
5-Ethyl-5-phenylbarbituric acid salts-----	32	16	77	4.75
All other-----	110	46	1,054	23.17
Bile acids and salts, total-----	279	167	2,516	15.02
Cholic acid-----	83	34	333	9.70
Dehydrocholic acid-----	37	26	462	17.65
Desoxycholic acid-----	57	42	615	14.68
All other-----	102	65	1,106	16.99
Bromocephor, mono-----	16	13	32	2.44
Caffeine, natural and synthetic-----	1,554	1,580	4,913	3.11
Caffeine citrate-----	10	12	32	2.61
Caffeine sodium benzoate-----	...	1	5	4.38
Camphoric acid-----	8	6	22	3.58
5-Chloro-7-iodo-8-quinolinol (Iodochlorohydroxyquinoline)-----	12	7	36	5.11
Dihydrocodeinone bitartrate-----	...	1	254	253.76
5,7-Diiodo-8-quinolinol-----	26	11	57	5.05
5,5-Diphenylhydantoin and sodium salt-----	28	33	115	3.50
Hormones, total-----	15	4	4,644	1,154.92
Estrone-----	(14)	...	...	...
17-Hydroxy-11-dehydrocorticosterone (Cortisone)-----	10	...	...	...
Progesterone-----	(15)	...	...	...
All other-----	5	4	4,644	1,154.92
8-Hydroxy-7-iodo-5-quinolinesulfonic acid (Yatren acid) and salt-----	4	2	12	5.60
Phenothiazine-----	3,700	3,370	1,637	.49
Piperazine-----	21	21	59	2.77
Rutin-----	9	...	...	...
Terpinol hydrate-----	74	49	29	.58
Theobromine and derivatives-----	164	131	369	2.81
Theophylline base and derivatives, total-----	167	118	499	4.23
Theophylline base (1,3-Dimethylxanthine)-----	61	44	163	3.73
Theophylline ethylenediamine (Aminophylline)-----	96	...	...	...
All other-----	10	74	336	4.54
Vitamins, total-----	2,700	2,309	59,171	25.63
A (Alcohol and esters), ¹⁶ from all sources-----	113	85	10,808	(17)
B ₁ (Thiamin derivatives)-----	277	194	10,988	56.69
B ₂ (Riboflavin) for human and for animal and poultry con- sumption, 100%-----	266	192	7,673	39.89
B ₆ (Pyridoxine)-----	18	18	4,267	232.64
B ₁₂ , all grades-----	(18)	(18)	14,270	74,709.47
D ₂ (Irradiated ergosterol) ¹⁹ -----	1	1	540	(17)
D ₃ (Irradiated animal sterol) ²⁰ -----	1	1	1,364	(17)
Niacin (Nicotinic acid), niacinamide, and niacinamide hydrochloride-----	1,893	1,660	6,037	3.64
All other-----	131	158	3,224	20.54
All other alicyclic and heterocyclic medicinals-----	2,165	1,973	13,497	6.84
MEDICINALS, ACYCLIC				
Total-----	15,582	13,147	28,154	2.14
Chemicals for which separate statistics may not be shown-----	8,486	7,239	4,353	.60
Chemicals for which separate statistics are shown below-----	7,096	5,908	23,801	4.03
Acetylcholine chloride-----	(21)	(21)	8	17.36
Acetyl-β-methylcholine chloride-----	(22)	(22)	26	69.62

See footnotes at end of table.

TABLE 17A.--Synthetic organic chemicals: United States production and sales of medicinals, 1953--Continued

Chemical	Production ¹	Sales ²		
		Quantity	Value	Unit value ³
MEDICINALS, ACYCLIC--Continued				
	1,000 pounds	1,000 pounds	1,000 dollars	Per pound
Amino acids, total-----	1,759	1,466	3,636	\$2.48
β-Alanine-----	197	150	448	2.99
l(+)-Glutamic acid-----	92	134	305	2.28
All other-----	1,470	1,182	2,883	2.44
Betaine hydrochloride-----	23	23	51	2.20
Calcium succinate-----	57	50	37	.73
Choline bitartrate-----	108	108	158	1.46
Choline chloride, for poultry feed and for use as a chemical intermediate-----	3,108	2,301	1,138	.49
Choline chloride, medicinal grade-----	53	40	62	1.55
Methylene iodide-----	11	11	81	7.67
Methyl iodide-----	6	4	16	3.79
Sodium succinate-----	12	8	8	.95
Tartaric acid, calcium salt-----	1	1	1	1.48
Vitamins, total-----	1,958	1,896	18,579	9.80
Ascorbic acid and derivatives-----	1,672	1,770	15,865	8.96
Pantothenic acid and derivatives, total-----	286	126	2,714	21.54
Pantothenic acid, d-calcium salt-----	161	...	...	...
Pantothenic acid, dl-calcium salt-----	105	...	...	...
All other-----	20	126	2,714	21.54

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

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

³ Calculated on the exact (i.e., unrounded) figures.

⁴ Production of adrenaline totaled 136 pounds; sales totaled 27 pounds.

⁵ Sales of benzenoid amino acids totaled 571 pounds.

⁶ Production and sales of prostigmine methyl sulfate each totaled 27 pounds.

⁷ Production and sales of silver picrate each totaled 116 pounds.

⁸ Sales of sodium ethylmercurithiosalicylate totaled 279 pounds.

⁹ Production of alicyclic and heterocyclic amino acids totaled 281 pounds.

¹⁰ Penicillin salts, in terms of international units, were reported as follows:

Chemical	Production	Sales		
		Quantity	Value	Unit value
Total-----	Billion international units 371,589	Billion international units 354,024	1,000 dollars 57,752	Per billion international units \$163.13
Dipenicillin G dibenzylethylenediamine-----	19,099	16,787	4,183	249.18
Penicillin potassium-----	92,518	100,979	24,170	239.36
Penicillin procaine-----	239,764	219,495	26,851	122.33
Penicillin sodium-----	20,208	16,763	2,548	152.00

¹¹ Excludes minor quantities of miscellaneous penicillin salts for which data cannot be shown separately. These data are included with "All other" antibiotics.

¹² Commercial sales are based on international units.

¹³ Quantities reported in units have been converted to pounds, using as a factor the average units per pound of the medicinal grade as determined by the U. S. Food and Drug Administration.

¹⁴ Production of estrone totaled 25 pounds.

¹⁵ Production of progesterone totaled 100 pounds.

¹⁶ Production of vitamin A alcohol and esters made from lemon-grass oil and fish oil totaled 106,946 billion U.S.P. units; sales totaled 82,368 billion U.S.P. units. Quantities in pounds shown in the table have been calculated from the U.S.P. units reported for each vitamin A compound, using the theoretical weight per unit.

¹⁷ Commercial sales are based on U.S.P. units.

¹⁸ Production of vitamin B₁₂, all grades, totaled 387 pounds; sales totaled 191 pounds.

¹⁹ Production of vitamin D₂ totaled 25,824 billion U.S.P. units; sales totaled 23,147 billion. Calculated at the rate of 18.14 billion units per pound, production totaled 1,424 pounds and sales totaled 1,276 pounds.

²⁰ Production of vitamin D₃ totaled 24,244 billion U.S.P. units; sales totaled 21,713 billion. Calculated at the rate of 18.14 billion units per pound, production totaled 1,337 pounds and sales totaled 1,197 pounds.

²¹ Production of acetylcholine chloride totaled 440 pounds. Sales totaled 447 pounds.

²² Production of acetyl-s-methylcholine chloride totaled 379 pounds. Sales totaled 369 pounds.

pounds in 1952. Sales in 1953 were 4.2 million pounds, valued at 78 million dollars. In terms of quantity, the output in 1953 of some of the more important vitamins was as follows: Niacin, niacinamide, and niacinamide hydrochloride, 1.9 million pounds; ascorbic acid and derivatives, 1.7 million pounds; thiamin derivatives, 277,000 pounds; riboflavin, 266,000 pounds; and vitamin A alcohol and esters, 107 trillion U.S.P. units, or 113,000 pounds (as calculated from the data reported in U.S.P. units, using the theoretical weight per unit as a basis).

Flavor and Perfume Materials

Flavor and perfume materials, which are chemicals with desirable flavors or odors, are used in the manufacture of food, beverages, cosmetics, and soaps, and to disguise unpleasant odors in industrial products. This report covers flavor and perfume materials derived from natural products by actual chemical processes, and from coal tar. It does not cover purely natural products, such as floral essences, essential oils, and other perfume materials obtained by simple extraction or by distillation from natural vegetable and animal sources.

On the basis of their chemical structure, the flavors and perfumes covered in this report are grouped as either cyclic or acyclic materials. Cyclic materials are further classified as (1) benzenoid and naphthalenoid, and (2) terpenoid, heterocyclic, and alicyclic. Statistics on the production and sales of flavor and perfume materials in 1953 are given in table 18A.⁵

Production of flavor and perfume materials as a group totaled 34 million pounds in 1953, compared with the 28 million pounds reported for 1952. Sales in 1953 were 31 million pounds, valued at 47 million dollars, compared with 26 million pounds, valued at 40 million dollars, in 1952.

The output of benzenoid and naphthalenoid flavor and perfume materials in 1953 was 11 million pounds, an increase of 14.2 percent from the 10 million pounds reported for 1952. Sales in 1953 were 10 million pounds, valued at 13 million dollars, compared with 9 million pounds, valued at 11 million dollars, in 1952. Methyl salicylate (synthetic wintergreen oil) is the chemical in this group produced in greatest volume; in 1953 production totaled 3.2 million pounds--an increase of 28.5 percent from the output in 1952. Two important chemicals in this group for which statistics may not be shown are benzyl benzoate and vanillin.

In 1953 the output of terpenoid, heterocyclic, and alicyclic flavor and perfume materials was 7.3 million pounds, compared with 5.8 million pounds in 1952--an increase of 26.0 percent. Sales in 1953 were 6.1 million pounds, valued at 8.7 million dollars, compared with 5.1 million pounds, valued at 8.1 million dollars, in 1952. In volume of production, the most important chemicals in this group in 1953 were the alpha and beta terpineols (2,013,000 pounds) and geraniol (551,000 pounds).

⁵ See also table 18B, part III, which lists these products alphabetically and identifies the manufacturers.

TABLE 18A.--Synthetic organic chemicals: United States production and sales of flavor and perfume materials, 1953

[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 confidential and may not be published, or where no data were reported.) Table 18B in part III lists alphabetically all flavor and perfume materials for which data on production or sales were reported and identifies the manufacturer of each]

Material	Pro- duction	Sales		
		Quantity	Value	Unit value ¹
Grand total-----	1,000 pounds 33,871	1,000 pounds 31,080	1,000 dollars 46,528	Per pound \$1.50
FLAVOR AND PERFUME MATERIALS, CYCLIC				
Total-----	18,458	16,512	21,419	1.30
Materials for which separate statistics may not be shown-----	6,828	5,742	9,886	1.72
Materials for which separate statistics are shown below-----	11,630	10,770	11,533	1.07
<i>Benzenoid and Naphthalenoid</i>				
Total-----	11,153	10,402	12,690	1.22
<i>α</i> -Amylcinnamaldehyde-----	203	201	297	1.48
Amyl salicylate (Isocamyl salicylate)-----	282	...	...	...
Anethole-----	531	787	462	.59
Anisaldehyde-----	193	186	347	1.86
Benzophenone-----	150	157	179	1.14
Benzyl acetate-----	597	567	309	.55
Benzyl alcohol ² -----	775	684	328	.48
Benzyl butyrate-----	2	...	...	...
Benzyl cinnamate-----	...	2	6	3.18
Benzyl formate-----	2	...	...	...
Benzyl isoeugenyl ether-----	1	1	7	7.75
Benzyl propionate-----	7	5	7	1.25
Benzyl salicylate-----	56	34	47	1.37
Cinnamyl acetate-----	1	1	2	3.09
Ethyl anthranilate-----	(³)	(³)	1	5.60
Ethyl <i>α, β</i> -epoxy- <i>β</i> -methylhydrocinnamate (Ethyl methylphenyl- glycidate)-----	8	7	34	5.01
Eugenol-----	102	76	185	2.43
Eugenyl methyl ether-----	6	...	...	...
Isobutyl benzoate-----	...	4	3	.87
Isoeugenol-----	48	45	152	3.34
2-Methoxynaphthalene (Methyl <i>β</i> -naphthyl ether)-----	6	5	10	2.01
Methyl salicylate (Synthetic wintergreen oil)-----	3,174	2,802	1,290	.46
Phenethyl acetate-----	56	54	74	1.37
Phenethyl alcohol-----	775	733	948	1.29
p-Tolyl acetate (p-Cresyl acetate)-----	...	1	2	1.77
p-Tolyl phenylacetate (p-Cresyl <i>α</i> -toluate)-----	...	1	4	3.81
All other benzenoid and naphthalenoid materials-----	4,218	4,049	7,996	1.97
<i>Terpenoid, Heterocyclic, and Alicyclic</i>				
Total-----	7,305	6,110	8,729	1.43
Cedryl acetate-----	53	46	102	2.24
Citral (Geraniol)-----	53	48	139	2.91
Citronellal-----	...	1	1	1.68
Citronellol-----	183	165	250	1.51
Citronellyl acetate-----	...	3	7	2.25
Citronellyl propionate-----	3	3	16	5.23
Coumarin-----	359	397	1,053	2.65
Geraniol-----	551	521	436	.84
Geranyl acetate-----	30	27	35	1.32
Geranyl formate-----	2	2	8	4.02
Hydroxycitronellal-----	148	118	472	4.00
<i>α</i> -Ionone-----	10	9	47	5.36
<i>β</i> -Ionone-----	111	69	290	4.18
Ionone (<i>α</i> - and <i>β</i> -)-----	38	34	101	2.95
Linalool-----	251	48	238	4.93
Linalyl acetate-----	120	89	449	5.02
Linalyl benzoate-----	(³)	(³)	1	13.87
Linalyl formate-----	(³)	(³)	3	9.78
Linalyl propionate-----	(³)	(³)	2	12.41
Menthol, synthetic, tech. and U.S.P-----	...	255	1,137	4.46
Methyl- <i>α</i> -ionone-----	77	66	321	4.88
Methylionone (<i>α</i> - and <i>β</i> -)-----	52	59	264	4.47
Nerol-----	2	2	19	9.32
Piperonal (Heliotropin)-----	240	243	615	2.53

See footnotes at end of table.

TABLE 18A.--Synthetic organic chemicals: United States production and sales of flavor and perfume materials, 1953--Continued

Material	Pro- duction	Sales		
		Quantity	Value	Unit value ¹
FLAVOR AND PERFUME MATERIALS, CYCLIC--Continued				
<i>Terpenoid, Heterocyclic, and Alicyclic--Continued</i>				
Rhodinol-----	1,000 pounds 8	1,000 pounds 6	1,000 dollars 159	Per pound \$25.73
Rhodinyl acetate-----	(³)	(³)	7	26.36
Safrrole-----	138	115	87	.75
Santalol-----	1	...	...	...
Terpineols (α -, β -, and α - + β -)-----	2,013	1,833	368	.20
Terpinyl acetate-----	245	255	118	.46
Vetiveryl acetate-----	7	3	94	29.03
All other terpenoid, heterocyclic, and alicyclic materials ⁴ -----	2,610	1,693	1,890	1.12
FLAVOR AND PERFUME MATERIALS, ACYCLIC				
Total-----	15,413	14,568	25,109	1.72
Materials for which separate statistics may not be shown-----	418	295	510	1.72
Materials for which separate statistics are shown below-----	14,995	14,273	24,599	1.72
Allyl caproate-----	5	4	9	2.30
n-Butyl butyrate-----	...	1	1	1.31
Ethyl butyrate-----	214	198	138	.69
Ethyl caprate (Ethyl decylate)-----	2	2	2	1.09
Ethyl caproate (Ethyl hexoate)-----	1	1	2	1.87
Ethyl caprylate (Ethyl octoate)-----	...	1	1	1.03
Ethyl pelargonate-----	1	1	2	2.70
Glutamic acid, monosodium salt (Monosodium glutamate)-----	14,738	14,029	24,419	1.74
Isocamyl butyrate (Amyl butyrate)-----	30	30	21	.69
Isocamyl formate (Amyl formate)-----	2	1	1	1.02
Isocamyl propionate (Amyl propionate)-----	...	1	1	1.01
Isobutyl acetate-----	2	4	2	.55

¹ Calculated on the exact (i.e., unrounded) figures.

² Includes some technical and medicinal benzyl alcohol.

³ Less than 500 pounds.

⁴ Includes chemically modified essential oils.

Production of acyclic flavor and perfume materials in 1953 totaled 15.4 million pounds--an increase of 26.6 percent over the 12.2 million pounds produced in 1952. By far the most important material in this group in 1953 was monosodium glutamate, production of which amounted to 14.7 million pounds--or more than 95 percent of the total output of acyclic perfume and flavoring materials.

Plastics and Resin Materials

The products covered in this section of the report are synthetic plastics and resin materials which are formed by the condensation or polymerization of organic chemicals together with certain additives which are necessary to impart certain qualities to the resins or to improve their physical properties. Some types of these materials may be molded, cast, or extruded into semifinished or finished forms. Others are used for adhesives, for the treatment of textiles and paper, and for protective coatings. Some plastics are made into sheets of film of varying thicknesses, which are used in the production of rainwear, shower curtains, draperies, and wrapping materials. Cellulose plastics, being derived from natural raw materials, are not included in this section. (See appendix D.) Except for the data on vinyl resins, which are shown on the basis of resin content, the statistics on plastics and resin materials in this report are given on the basis of the total weight of the materials, excluding liquids.

Statistics on the production and sales of plastics and resins in 1953 are given in table 19A⁶ according to the chemical composition of the materials and in table 20 according to their uses. In 1953 the total output of all synthetic plastics and resin materials (except cellulose) amounted to 2,777 million pounds, or 19.0 percent more than the 2,333 million pounds reported for 1952. Sales in 1953 amounted to 2,372 million pounds, valued at 838 million dollars, compared with 2,045 million pounds, valued at 727 million dollars, in 1952. Production of cellulose plastics in 1953 (table 30) was 129 million pounds.

TABLE 19A.--Synthetic organic chemicals: United States production and sales of plastics and resin materials, grouped according to chemical composition, 1953

[Quantities and values are given in terms of the total weight of the materials (dry basis). Listed below are all synthetic plastics and resin materials for which any reported data on production or sales may be published. (Leaders are used where the reported data are confidential and may not be published or where no data were reported.) Table 19B in part III lists all plastics and resin materials for which data on production or sales were reported and identifies the manufacturer of each]

Material	Production	Sales		
		Quantity	Value	Unit value ¹
Grand total-----	1,000 pounds, dry basis ² 2,776,627	1,000 pounds, dry basis ² 2,371,980	1,000 dollars 837,536	Per pound \$0.35
PLASTICS AND RESIN MATERIALS, BENZENOID				
Total-----	1,605,447	1,317,069	362,958	.28
Materials for which separate statistics may not be shown ³ -----	15,371	12,840	6,270	.49
Materials for which separate statistics are shown below-----	1,590,076	1,304,229	356,688	.27
Coumarone-indene and petroleum polymer resins-----	206,645	201,978	19,544	.10
Phenolic and other tar-acid resins, total-----	484,942	426,349	114,326	.27
Unmodified, total-----	433,757	380,939	100,995	.27
p-tert-Butylphenol-bisphenol-formaldehyde-----	2,604	2,245	870	.39
p-tert-Butylphenol-formaldehyde-----	5,276	5,130	2,019	.39
Cresols-formaldehyde-----	6,724	6,280	2,265	.36
Cresylic acid-formaldehyde-----	4,234	...	...	...
Phenol-cresols-formaldehyde-----	13,203	...	...	...
Phenol-cresols-xylene-formaldehyde-----	7,885	1,363	447	.33
Phenol-cresylic acid-formaldehyde-----	2,545	1,143	380	.33
Phenol-formaldehyde-----	373,136	338,281	85,265	.25
Phenol-furfural-----	1,254	...	...	...
Phenol-resorcinol-formaldehyde-----	2,023	1,493	994	.67
Phenylphenol-formaldehyde-----	3,271	3,287	1,852	.56
Resorcinol-formaldehyde-----	628	601	560	.93
Xylenols-formaldehyde-----	299	236	89	.38
All other-----	10,715	20,880	6,254	.30
Modified, total-----	51,185	45,410	13,331	.29
Except rosin and rosin ester modified, total-----	15,379	10,266	4,368	.43
Phenol-formaldehyde-aniline-----	5,581	3,915	1,262	.32
Phenol-formaldehyde, oil modified-----	1,813	1,626	726	.45
All other-----	7,985	4,725	2,380	.50
Rosin and rosin ester modified, total-----	35,806	35,144	8,963	.26
Bisphenol-formaldehyde-rosin and rosin ester-----	7,322	7,249	1,622	.22
p-tert-Butylphenol-formaldehyde-rosin and rosin ester-----	4,517	4,571	1,120	.25
Phenol-formaldehyde-rosin and rosin ester-----	10,689	10,489	2,879	.27
All other-----	13,278	12,835	3,342	.26
Phthalic alkylid resins, total-----	390,527	207,663	63,664	.31
Unmodified, total-----	287,606	138,425	43,332	.31
Phthalic anhydride-glycerol-----	142,374	64,369	20,857	.32
Phthalic anhydride-glycerol-glycol-----	6,104	3,801	1,283	.34
Phthalic anhydride-glycerol-pentaerythritol-----	37,500	13,215	3,813	.29
Phthalic anhydride-glycerol-sorbitol-----	1,973	1,718	470	.27
Phthalic anhydride-glycol-pentaerythritol-----	25,132	19,476	5,981	.31
Phthalic anhydride-glycol-sorbitol-----	71,822	33,851	9,949	.29
Phthalic anhydride-pentaerythritol-----	2,701	1,995	979	.49
All other-----	102,921	69,238	20,332	.29
Modified, total-----	102,921	69,238	20,332	.29
Except rosin and rosin ester and styrene modified, total-----	38,703	25,288	8,491	.34
Phthalic anhydride-adipic acid-glycol-----	309	...	...	...
Phthalic anhydride-benzoic acid-glycerol-----	703	346	195	.56

See footnotes at end of table.

⁶ See also table 19B, part III, which lists these products according to chemical composition, and identifies the manufacturers.

TABLE 19A.--Synthetic organic chemicals: United States production and sales of plastics and resin materials, grouped according to chemical composition, 1953--Continued

Material	Production	Sales		
		Quantity	Value	Unit value ¹
PLASTICS AND RESIN MATERIALS, BENZENOID--Continued				
Phthalic alkyl resins--Continued				
Modified--Continued				
Except rosin and rosin ester and styrene modified--Con.	1,000 pounds, dry basis ²	1,000 pounds, dry basis ²	1,000 dollars	Per pound
Phthalic anhydride-fumaric acid-glycerol-----	1,730	489	223	\$0.46
Phthalic anhydride-glycerol-phenol-formaldehyde-----	3,447	1,006	339	.34
Phthalic anhydride-maleic anhydride-glycerol-----	14,260	8,732	2,822	.32
Phthalic anhydride-maleic anhydride-glycerol- pentaerythritol-----	9,409	8,715	2,949	.34
Phthalic anhydride-maleic anhydride-pentaerythritol-----	1,166	938	226	.24
All other-----	7,679	5,062	1,737	.34
Rosin and rosin ester modified, total-----	64,218	43,950	11,841	.27
Phthalic anhydride-fumaric acid-glycerol-rosin and rosin ester-----	502	...	...	...
Phthalic anhydride-glycerol-pentaerythritol-phenol- formaldehyde-rosin ester-----	476	...	...	...
Phthalic anhydride-glycerol-pentaerythritol-rosin and rosin ester-----	6,187	3,360	738	.22
Phthalic anhydride-glycerol-phenol-formaldehyde-rosin and rosin ester-----	7,289	...	...	...
Phthalic anhydride-glycerol-rosin and rosin ester-----	29,247	24,067	5,919	.25
Phthalic anhydride-maleic anhydride-glycerol- pentaerythritol-rosin ester-----	97	48	10	.21
Phthalic anhydride-maleic anhydride-glycerol-rosin and rosin ester-----	1,432	605	249	.41
Phthalic anhydride-maleic anhydride-pentaerythritol-rosin ester-----	1,661	1,341	344	.26
Phthalic anhydride-maleic anhydride-pentaerythritol-tall oil-----	1,755	...	...	...
Phthalic anhydride-pentaerythritol-rosin and rosin ester-----	4,747	1,742	491	.28
Phthalic anhydride-pentaerythritol-tall oil-----	2,213	499	145	.29
All other-----	8,612	12,288	3,945	.32
Styrene and styrene derivative polymer and copolymer resins, total-----	507,962	468,239	159,154	.34
Polystyrene-----	320,694	298,626	95,823	.32
Styrene-alkyl polyesters, total-----	39,421	32,479	14,590	.45
Phthalic anhydride-glycerol-pentaerythritol-styrene-----	130	...	...	...
Phthalic anhydride-glycerol-styrene-----	8,788	...	...	...
Phthalic anhydride-maleic anhydride-glycol-styrene-----	22,154	17,940	7,860	.44
All other-----	8,349	14,539	6,730	.46
Styrene-butadiene copolymer-----	101,041	94,697	32,947	.35
Styrene-divinyl benzene copolymer-----	21,180	19,587	8,002	.41
All other styrene resins-----	25,626	22,850	7,792	.34
PLASTICS AND RESIN MATERIALS, NONBENZENOID				
Total-----	1,171,180	1,054,911	474,578	.45
Materials for which separate statistics may not be shown ⁴ -----	252,765	227,397	166,259	.73
Materials for which separate statistics are shown below-----	918,415	827,514	308,319	.37
Alkyd resins, except phthalic, total-----	75,973	57,593	17,478	.30
Unmodified, total-----	15,931	14,376	7,632	.53
Maleic anhydride-glycerol-----	118	...	...	...
All other-----	15,813	14,376	7,632	.53
Modified, total-----	60,042	43,217	9,846	.23
Fumaric acid-glycerol-rosin and rosin ester-----	1,337	1,086	222	.20
Fumaric acid-pentaerythritol-rosin and rosin ester-----	3,358	2,544	754	.30
Maleic anhydride-glycerol-pentaerythritol-rosin and rosin ester-----	2,765	2,335	521	.22
Maleic anhydride-glycerol-rosin and rosin ester-----	18,275	15,386	3,438	.22
Maleic anhydride-glycol-rosin and rosin ester-----	1,755	...	...	...
Maleic anhydride-pentaerythritol-rosin and rosin ester-----	23,635	18,214	3,751	.21
Maleic anhydride-pentaerythritol-tall oil-----	5,868	113	27	.24
All other-----	3,049	3,539	1,133	.32
Rosin and terpene adduct resins, total-----	10,430	10,121	2,898	.29
Fumaric acid-rosin-----	2,848	2,582	684	.26
Maleic anhydride-rosin-----	1,006	667	150	.22
All other-----	6,576	6,872	2,064	.30
Rosin esters, unmodified, total-----	56,271	55,714	9,241	.17
Rosin-glycerol-----	24,053	23,149	4,169	.18
Rosin-glycerol-pentaerythritol-----	1,459	1,631	271	.17
Rosin-pentaerythritol-----	15,555	15,575	2,319	.15
All other-----	15,204	15,359	2,482	.16
Silicone resins-----	2,558	1,466	4,484	3.06

See footnotes at end of table.

TABLE 19A.--Synthetic organic chemicals: United States production and sales of plastics and resin materials, grouped according to chemical composition, 1953--Continued

Material	Production	Sales		
		Quantity	Value	Unit value ¹
PLASTICS AND RESIN MATERIALS, NONBENZENOID--Continued				
Urea and melamine resins, total-----	1,000 pounds, dry basis ² 257,310	1,000 pounds, dry basis ² 238,467	1,000 dollars 74,854	Per pound \$.31
Urea-formaldehyde type, total-----	194,387	178,975	44,883	.25
Butylurea-formaldehyde-----	13,109	8,178	3,610	.44
Urea-formaldehyde-----	171,685	161,480	37,724	.23
All other-----	9,593	9,317	3,549	.38
Melamine-formaldehyde type ³ -----	62,923	59,492	29,971	.50
Vinyl and vinyl copolymer resins (resin content), total-----	515,873	464,153	199,364	.43
Polyvinyl acetate-----	42,182	37,697	14,566	.39
Polyvinyl chloride and copolymers, total-----	434,796	393,698	152,679	.39
Polyvinyl chloride-----	203,879	180,153	69,030	.38
All other-----	230,917	213,545	83,649	.39
All other vinyl resins ⁶ -----	38,895	32,758	32,119	.98

¹ Calculated on rounded figures.

² Dry basis, for the purpose of this report, is defined as the total weight of the material, including resin, plasticizers, fillers, extenders, colors, and stabilizers, and excluding the weight of water, solvents, and other liquid diluents.

³ Includes data for aniline-formaldehyde, epichlorohydrin-phenol, and toluenesulfonamide resins.

⁴ Includes data for acrylic, polyamida (nylon), polyethylene, and other nonbenzenoid plastics and resins.

⁵ Includes data for materials containing both urea and melamine.

⁶ Includes data for polyvinyl alcohol, butyral, and formal, and for some latices and unspecified materials.

The total production of benzenoid plastics and resins in 1953 was 1,605 million pounds; an increase of 18.8 percent over the output in 1952. Sales in 1953 were 1,317 million pounds, valued at 363 million dollars, compared with 1,113 million pounds, valued at 310 million dollars, in 1952. In 1953, as in 1952, styrene resins were the benzenoid materials produced in the largest quantity. Production of styrene resins in 1953 amounted to 508 million pounds, compared with 425 million pounds in 1952 and 394 million pounds in 1951. Sales in 1953 were 468 million pounds, valued at 159 million dollars, compared with 392 million pounds, valued at 133 million dollars, in 1952. Phenolic and other tar-acid resins ranked second in the benzenoid group in volume of production in 1953, production totaling 485 million pounds, an increase of 23.3 percent over the 393 million pounds reported for 1952. Sales of phenolic and other tar-acid resins in 1953 amounted to 426 million pounds, valued at 114 million dollars. The phthalic alkyd resins, used principally in the manufacture of protective coatings, were third in volume of production in the benzenoid group; in 1953 the output of these resins was 391 million pounds; sales were 208 million pounds, valued at 64 million dollars.

Production of nonbenzenoid plastics and resin materials in 1953 amounted to 1,171 million pounds, compared with 982 million pounds in 1952--an increase of 19.3 percent. Sales of nonbenzenoid plastics and resins in 1953 were 1,055 million pounds, valued at 475 million dollars, compared with 932 million pounds, valued at 417 million dollars, in 1952. Of the nonbenzenoid plastics and resins, vinyl resins were produced in the largest volume in 1953, as they were also in 1952 and 1951. Production of these resins in 1953 amounted to 516 million pounds, an increase of 22.8 percent over the 420 million pounds reported for 1952. Sales of vinyl resins in 1953 were 464 million pounds, valued at 199 million dollars, compared with 400 million pounds, valued at 174 million dollars,

TABLE 20.--Synthetic organic chemicals: United States production and sales of plastics and resin materials, grouped according to classes and uses, 1953

[In thousands of pounds, dry basis¹]

Material	Production	Sales
Phenolic and other tar-acid resins:		
Molding materials-----	224,364	203,986
Bonding and adhesive resins for--		
Laminating (except plywood)-----	71,083	47,430
Coated and bonded abrasives-----	13,255	12,124
Friction materials (brake linings, clutch facings, etc.)-----	18,457	15,724
Thermal insulation (rock wool, fiber glass)-----	20,801	20,556
Plywood-----	36,075	34,489
All other bonding and adhesive uses-----	17,981	17,617
Protective-coating resins, unmodified and modified, except by rosin-----	28,210	25,930
Resins for all other uses-----	34,484	27,823
Urea and melamine resins:		
Textile-treating and textile-coating resins-----	39,579	34,883
Paper-treating and paper-coating resins-----	22,121	21,652
Bonding and adhesive resins for--		
Plywood-----	52,453	50,781
All other bonding and adhesive uses, including laminating-----	43,739	43,386
Protective-coating resins, straight and modified-----	30,364	22,801
Resins for all other uses, including molding-----	69,060	64,969
Styrene resins:		
Molding materials-----	324,157	298,384
Protective-coating resins, straight and modified ² -----	84,247	81,904
Resins for all other uses-----	99,555	87,949
Vinyl and vinyl copolymer resins (resin content), total-----	515,753	464,067
Polyvinyl chloride and copolymer resins (50 percent or more polyvinyl chloride) for--		
Film (under 0.010 gage)-----	...	64,076
Sheeting (0.010 gage and over)-----	...	59,417
Molding and extrusion-----	...	119,696
Textile and paper treating and coating-----	...	46,247
Flooring-----	...	21,893
Protective coatings-----	...	22,315
All other uses-----	...	28,035
All other vinyl resins for--		
Adhesives-----	...	24,227
All other uses-----	...	78,161
Alkyd resins:		
For protective coatings:		
Phthalic anhydride types:		
Unmodified-----	286,578	138,241
Modified-----	102,593	68,921
Polybasic acid types:		
Unmodified-----	11,360	10,055
Modified-----	9,531	4,809
For all other uses-----	8,883	4,509
Rosin modifications:		
Rosin esters for protective coatings:		
Unmodified (ester gums)-----	39,396	39,979
Modified (hard resins)-----	63,996	56,005
All other modifications for protective coatings and other uses-----	30,666	30,775
Coumarone-indene and petroleum polymer resins-----	206,645	201,978
Miscellaneous synthetic plastics and resins: ³		
Molding materials-----	153,568	128,356
Protective-coating resins-----	17,515	12,488
Resins for all other uses-----	99,507	119,820

¹ Dry basis, for the purpose of this report, is defined as the total weight of the material, including resin, plasticizers, fillers, extenders, colors, and stabilizers, and excluding the weight of water, solvents, and other liquid diluents.

² Includes data for styrene-alkyd polyester resins.

³ Includes data for acrylic, epichlorohydrin, polyamide (nylon), polyethylene, silicone, and other synthetic plastics and resin materials.

NOTE.--The figures in the above table are based on the Commission's monthly reports on the production and sales of synthetic plastics and resin materials. They are partially estimated, and may not be correlated exactly with those given in table 1. The data given in the above table are in substantial agreement with those given in the Commission's release for January 1954 which gave a summation of the data reported by months for 1953. Changes in classification and a minor increase in coverage on some products result in some differences in the detail figures given in this table from those given in the January 1954 report.

in 1952. Production of urea and melamine resins in 1953 was 257 million pounds, compared with 228 million pounds in 1952. Sales in 1953 were 238 million pounds, valued at 75 million dollars. Other important nonbenzenoid plastics produced in 1953 were acrylics, polyamide, and polyethylene.

Statistics on the production and sales of plastics and resins by uses, given in table 20, are compiled for the most part from the Tariff Commission's monthly surveys on the production and sales of synthetic plastics and resin materials. In 1953, as in previous years, the largest single use of plastics and resins was for molding and extruding into finished products; the second largest use for these materials was in the production of protective coatings.

Rubber-Processing Chemicals

Rubber-processing chemicals are organic compounds added to natural and synthetic rubbers to give them qualities necessary for their conversion into finished rubber goods. In this report, cyclic and acyclic compounds are listed by use--such as accelerators, antioxidants, and peptizers. Statistics on the production and sales of rubber-processing chemicals in 1953 are given in table 21A.⁷

TABLE 21A.--Synthetic organic chemicals: United States production and sales of rubber-processing chemicals, 1953

[Listed below are all rubber-processing chemicals for which any reported data on production or sales may be published. Table 21B in part 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-----	144,784	103,221	60,055	\$0.58
RUBBER-PROCESSING CHEMICALS, CYCLIC				
Total-----	121,532	85,495	47,592	.56
Accelerators, total-----	61,013	30,894	16,562	.54
Butyraldehyde-aniline-----	374	333	187	.56
Guanidines-----	6,167	5,206	2,620	.50
Thiazole derivatives, total-----	52,769	23,974	11,603	.48
2,2'-Dithiobis[benzothiazole] (2,2'-Benzothiazyl disulfide)-----	14,860	10,053	4,609	.46
2-Mercaptobenzothiazole-----	15,915	2,745	1,069	.39
All other-----	21,994	11,176	5,925	.53
All other accelerators-----	1,703	1,381	2,152	1.56
Antioxidants, total-----	55,531	50,266	27,560	.55
Amino or hydroxy compounds-----	23,893	22,419	12,756	.57
All other-----	31,638	27,847	14,804	.53
Peptizers, tackifiers, and inhibitors-----	4,988	4,335	3,470	.80
RUBBER-PROCESSING CHEMICALS, ACYCLIC				
Total-----	23,252	17,726	12,463	.70
Accelerators, total-----	16,159	10,544	8,874	.84
Dithiocarbamic acid derivatives, total ² -----	6,273	2,914	2,657	.91
Diethylidithiocarbamic acid, zinc salt-----	766	637	600	.94
Diethylidithiocarbamic acid, zinc salt-----	1,278	1,038	977	.94
Dimethyldithiocarbamic acid, potassium salt-----	145	125	63	.50
All other-----	4,084	1,114	1,017	.91
Tetramethylthiuram sulfides, total ³ -----	5,466	3,780	4,100	1.08
Tetramethylthiuram disulfide-----	4,719	2,995	3,214	1.07
Tetramethylthiuram monosulfide-----	747	785	886	1.13
All other ⁴ -----	4,420	3,850	2,117	.55
Peptizers, lubricating and conditioning agents, total-----	7,093	7,182	3,589	.50
Dodecyl mercaptans-----	6,118	6,413	3,244	.51
All other-----	975	769	345	.45

¹ Calculated on rounded figures.

² Data for dithiocarbamates included in this table are for material used exclusively in the processing of natural and synthetic rubbers. Data on dithiocarbamates which are used as fungicides are reported in the section "Pesticides and Other Organic Agricultural Chemicals."

³ Includes data for small amounts of tetramethylthiuram sulfides for uses other than in the processing of natural and synthetic rubbers.

⁴ Includes a small amount of tetramethylthiuram tetrasulfide.

⁷ See also table 21B, part III, which lists these products alphabetically and identifies the manufacturers.

Production of rubber-processing chemicals as a group in 1953 amounted to 145 million pounds--an increase of 13.7 percent from the 127 million pounds reported for 1952. The increase in the production of rubber-processing chemicals reflects the increased consumption of rubber in 1953. Sales of rubber-processing chemicals in 1953 were 103 million pounds, valued at 60 million dollars, compared with 94 million pounds, valued at 54 million dollars, in 1952.

The output of cyclic rubber-processing chemicals in 1953 amounted to 122 million pounds, or 12.6 percent more than the 108 million pounds reported for 1952. Sales in 1953 were 85 million pounds, valued at 48 million dollars, compared with 78 million pounds, valued at 42 million dollars, in 1952. Of the total production of cyclic rubber-processing chemicals in 1953, accelerators accounted for about 50 percent, antioxidants for 46 percent, and other uses for about 4 percent. Included are statistics for the guanidines and certain benzothiazole derivatives used as accelerators.

Production of acyclic rubber-processing chemicals in 1953 amounted to 23.3 million pounds, or 19.9 percent more than the 19.4 million pounds reported for 1952. Sales in 1953 were 17.7 million pounds, valued at 12.5 million dollars, compared with 16.6 million pounds, valued at 11.7 million dollars, in 1952. Accelerators, principally dithiocarbamic acid derivatives and tetramethylthiuram sulfides, accounted for approximately 70 percent of the production of acyclic rubber-processing chemicals in 1953. Peptizers, and modifiers, chiefly dodecyl mercaptans, together with lubricating and conditioning agents, accounted for approximately 30 percent of the output in the acyclic group.

Elastomers (Synthetic Rubbers)

The total output of elastomers (synthetic rubbers) in 1953 amounted to 1,958 million pounds, an increase of 69 million pounds over the production reported for 1952. Sales in 1953 were 1,909 million pounds, valued at 529 million dollars, compared with 2,003 million pounds, valued at 549 million dollars, in 1952. Statistics on the production and sales of elastomers are given in table 22A.⁸

Production in 1953 of cyclic elastomers, consisting entirely of the polybutadiene-styrene type (GR-S, Buna S), amounted to 1,415 million pounds, slightly more than the 1,394 million pounds produced in 1952. Sales in 1953 were 1,387 million pounds, valued at 319 million dollars, compared with the 1,514 million pounds, valued at 361 million dollars, reported for 1952. The major part of the GR-S type of synthetic rubber in 1953 was produced in Government-owned plants for the account of the Reconstruction Finance Corporation. The GR-S material is used principally in the production of tire casings.

The output of acyclic elastomers in 1953 amounted to 543 million pounds, or 9.7 percent more than the 495 million pounds produced in 1952. Sales in 1953 amounted to 522 million pounds, valued at 210 million dollars, compared with 489 million pounds,

⁸ See also table 22B, part III, which lists these products alphabetically and identifies the manufacturers.

TABLE 22A.--Synthetic organic chemicals: United States production and sales of elastomers (synthetic rubbers),¹ 1953

[Listed below are all synthetic elastomers for which reported data on production or sales may be published. (Leaders are used where the reported data are confidential and may not be published or where no data were reported.) Table 22B in part III lists alphabetically all elastomers for which data on production or sales were reported and identifies the manufacturer of each]

Product	Production ²	Sales ³		
		Quantity	Value	Unit value ⁴
Grand total-----	1,000 pounds 1,958,350	1,000 pounds 1,908,793	1,000 dollars 529,364	Per pound \$.28
ELASTOMERS, CYCLIC				
Polybutadiene-styrene type (GR-S, Buna S), total-----	1,414,944	1,387,198	319,056	.23
Produced at Government plants-----	1,413,097	...	...	...
Produced at private plants-----	1,847	...	...	...
ELASTOMERS, ACYCLIC				
Total-----	543,406	521,595	210,308	.40
Products for which separate statistics may not be shown ⁵ ----	23,567	22,819	16,762	.73
Products for which separate statistics are shown below-----	519,839	498,776	193,546	.39
Polybutadiene-acrylonitrile type (N-type)-----	45,244	42,758	21,586	.50
Polychloroprene type (GR-M, Neoprene)-----	180,308	168,502	69,086	.41
Polyisobutylene-isoprene type (GR-I, Butyl)-----	175,923	174,576	37,500	.21
Polyvinyl type ⁶ -----	118,364	112,940	65,374	.58

¹ An elastomer is defined as a material which can be stretched repeatedly to 150 percent or more of normal length and will return rapidly and with force to its approximate original state.

² Statistics on production, except for polyvinyl and miscellaneous elastomers, are as reported to the Reconstruction Finance Corporation and to the U. S. Department of Commerce.

³ The quantities of sales of polybutadiene-styrene, polychloroprene, and polyisobutylene-isoprene types of elastomers, shown above, are calculated from data on consumption, foreign trade, and inventories as published by the Department of Commerce. Values of sales of elastomers produced for the Reconstruction Finance Corporation are derived from the base prices as established by that Office. The quantities and values of sales of polyisobutylene, polyvinyl, and miscellaneous elastomers were reported to the U. S. Tariff Commission.

⁴ Calculated on rounded figures.

⁵ Includes data for chlorinated rubber, polyisobutylene, silicone, and thokol elastomers.

⁶ Includes data for polyvinyl butyral, polyvinyl alcohol, and polyvinyl chloride elastomers.

valued at 188 million dollars, in 1952. The acyclic group of elastomers includes oil-resistant types such as neoprene, GR-I, or butyl rubber (used almost entirely in the manufacture of inner tubes for tires), vinyl elastomers, and silicones.

Plasticizers

Plasticizers are organic chemicals which are used with plastic materials to extend or modify the natural properties of the resins and to impart improved properties that are not inherent in the resins themselves. Statistics on the production and sales of plasticizers in 1953 are given in table 23A.⁹

The output of all plasticizers in 1953 amounted to 293 million pounds. This is the largest output on record, despite the fact that certain esters of lauric, oleic, and stearic acids included as part of the plasticizers group in previous years were reclassified and transferred to the section on surface-active agents in 1953. The production of these transferred items in 1953 amounted to approximately 17 million pounds. Sales of all plasticizers in 1953 were 235 million pounds, valued at 83 million dollars.

⁹ See also table 23B, part III, which lists these products alphabetically and identifies the manufacturers.

TABLE 23A.--Synthetic organic chemicals: United States production and sales of plasticizers, 1953

[Listed below are all plasticizers for which reported data on production or sales may be published. (Leaders are used where the reported data are confidential and may not be published or where no data were reported.) Table 23B in part III lists all plasticizers for which data on production or sales were reported and identifies the manufacturer of each.]

Chemical	Production	Sales		
		Quantity	Value	Unit value ¹
	1,000 pounds	1,000 pounds	1,000 dollars	Per pound
Grand total-----	292,898	235,066	83,335	\$0.35
PLASTICIZERS, CYCLIC				
Total-----	223,810	180,137	59,955	.33
Chemicals for which separate statistics may not be shown ² -----	29,046	22,893	7,360	.32
Chemicals for which separate statistics are shown below-----	194,764	157,244	52,595	.33
Phosphoric acid esters:				
Tricresyl phosphate ³ -----	22,109	21,043	6,866	.33
Triphenyl phosphate-----	7,418	3,289	1,206	.37
Phthalic anhydride esters, total-----	165,237	132,912	44,523	.33
Dibutyl phthalate-----	23,280	18,256	5,372	.29
Diacryl phthalate-----	7,762	9,398	3,091	.33
Diethyl phthalate-----	17,584	12,307	3,096	.25
Di(2-methoxyethyl) phthalate (Di(methyl cellosolve) phthalate)-----	2,240	...	...	...
Dimethyl phthalate-----	2,508	2,734	696	.25
Dioctyl phthalates, total-----	84,813	66,423	23,193	.35
Di(2-ethylhexyl) phthalate-----	51,281	38,640	13,704	.35
Di-n-octyl phthalate, diiso-octyl phthalate, and mixtures-----	33,532	27,783	9,489	.34
Octyl decyl phthalate-----	8,678	8,130	2,938	.36
All other-----	18,372	15,664	6,137	.39
PLASTICIZERS, ACYCLIC				
Total-----	69,088	54,929	23,380	.43
Chemicals for which separate statistics may not be shown ⁴ -----	28,500	28,168	11,328	.40
Chemicals for which separate statistics are shown below-----	40,588	26,761	12,052	.45
Adipic acid esters, total-----	9,177	6,060	2,722	.45
Di(2-ethylhexyl) adipate-----	3,497	2,045	896	.44
Diiso-octyl adipate-----	1,511	1,276	589	.46
All other-----	4,169	2,739	1,237	.45
Lauric acid esters-----	113	106	42	.40
Oleic acid esters, total-----	7,952	5,628	1,756	.31
Butyl oleate-----	1,372	...	...	...
Glyceryl trioleate ⁵ -----	3,214	3,323	838	.25
All other-----	3,366	2,305	918	.41
Phosphoric acid esters-----	8,534	6,398	2,898	.45
Ricinoleic and acetylricinoleic acid esters-----	4,572	...	...	...
Sebacic acid esters, total-----	5,701	4,419	3,545	.80
Dibutyl sebacate-----	2,186	...	...	...
Di(2-ethylhexyl) sebacate-----	2,498	2,432	1,736	.71
All other-----	1,017	1,987	1,809	.91
Stearic acid esters, total-----	4,539	4,150	1,089	.26
Butyl stearate-----	2,417	2,121	471	.22
All other-----	2,122	2,029	618	.30

¹ Calculated on rounded figures.

² Includes data for phosphoric acid esters, synthetic camphor, toluenesulfonamides, tetrahydrofurfuryl oleate, and other cyclic plasticizers.

³ Includes data for material reported for use as motor-fuel additive.

⁴ Includes data for palmitic, citric and acetylcitric, azelaic, pelargonic, and tartaric acid esters, and for butyl myristate, glyceryl and glycol esters of certain fatty acids, glyceryl tripropionate, and complex polymeric plasticizers.

⁵ Includes data for material reported for use as surface-active agent.

NOTE.--Because of changes in major use in recent years, data for certain esters of lauric, oleic, and stearic acids which were classified as plasticizers in 1952 are classified as surface-active agents in 1953 and data on their production and sales will be included in the section of the report covering surface-active agents.

Production of all plasticizers in 1953 would have been 17 million pounds larger--5.8 percent of the total output--if the data had included production of the same lauric, stearic, and oleic acid esters as were included in 1952.

Production of cyclic plasticizers in 1953 (consisting principally of esters of phosphoric acid and phthalic anhydride) amounted to 224 million pounds, or 29.4 million pounds more than the 194 million pounds reported for 1952. Sales of cyclic plasticizers in 1953 were 180 million pounds, valued at 60 million dollars, compared with 145 million pounds, valued at 51 million dollars, in 1952. Because of their versatility and relative economy, the phthalic anhydride esters are by far the most important plasticizers in the cyclic group. In 1953 this group accounted for more than half the total domestic production of plasticizers.

Production of acyclic plasticizers in 1953, consisting mainly of esters of adipic, oleic, phosphoric, ricinoleic, sebacic, and stearic acids, amounted to 69 million pounds; sales were 55 million pounds, valued at 23 million dollars. In previous years some esters of lauric, oleic, and stearic acids that are now reported as surface-active agents were included in the plasticizers group. The statistics for 1953 on acyclic plasticizers, therefore, are not strictly comparable with those for earlier years. Of the acyclic plasticizers, the adipic acid esters were produced in the largest volume in 1953; production of them amounted to 9 million pounds.

Surface-Active Agents

The surface-active agents covered in this report include synthetic organic detergents, wetting agents, and emulsifying agents; soaps are not included. As the data are given in terms of 100-percent active material, they exclude all inorganic salts, water, and other diluents.

Although they were originally developed as soap substitutes, surface-active agents have proved valuable in many other applications because of their varied and specific properties. They are especially valuable as detergents in hard water, since they do not form insoluble precipitates, as some soaps do. For certain industrial purposes, surface-active agents are used as emulsifying and wetting agents for agricultural, leather, and textile chemicals. They are also used in dentifrices and shampoos.

Statistics on production and sales of surface-active agents in 1953 are given in table 24A.¹⁰ In 1953 production of surface-active agents as a group totaled 922 million pounds, or 24.3 percent more than the 741 million pounds reported for 1952. Sales in 1953 were 732 million pounds, valued at 145 million dollars, compared with 612 million pounds, valued at 120 million dollars, in 1952.

In 1953 the production of anionic surface-active agents (sulfated and sulfonated cyclic and acyclic compounds and acyclic salts of fatty acids) amounted to 752 million pounds, or 116 million pounds more than the output in 1952. Sales in 1953 totaled 580 million pounds, valued at 93 million dollars, compared with 532 million pounds, valued at 88 million dollars, in 1952. In volume of production, in 1953, the principal items in this group were the following: The dodecylbenzenesulfonic acid type of surface-active agent (364 million pounds); sulfonated petroleum aromatic compounds (129 million pounds); and sulfated and sulfonated alcohols (127 million pounds).

¹⁰ See also table 24B, part III, which lists these products alphabetically and identifies the manufacturers.

TABLE 24A.--Synthetic organic chemicals: United States production and sales of surface-active agents,¹ 1953

[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 confidential and may not be published or where no data were reported.) Table 24B in part III lists all surface-active agents for which data on production or sales were reported and identifies the manufacturer of each]

Chemical	Production	Sales		
		Quantity	Value	Unit value ²
		1,000 pounds	1,000 dollars	Per pound
Grand total-----	921,594	732,104	144,972	\$0.20
SURFACE-ACTIVE AGENTS, CYCLIC				
Total-----	594,089	438,491	73,301	.17
Esters and ethers, nonsulfonated ³ -----	41,991	30,923	11,800	.38
Nitrogen-containing surface-active agents, nonsulfonated, total ⁴ -----	5,158	4,686	3,225	.82
Benzyl-lauryldimethylammonium chloride-----	1,383	1,329	998	.75
All other-----	3,775	3,357	2,827	.84
Sulfated and sulfonated cyclic surface-active agents, total-----	546,940	402,882	57,676	.14
Alkyl benzenoid compounds, sulfated and sulfonated: Dodecylbenzenesulfonic acid type-----	364,241	249,057	36,034	.14
Naphthalene derivatives, sulfonated, total-----	5,970	4,819	1,780	.37
Amylnaphthalenesulfonic acid, mono and di-----	111	87	48	.55
Butylnaphthalenesulfonic acid, mono and di-----	1,194	1,270	598	.47
Isopropyl-naphthalenesulfonic acid, mono-----	293	209	81	.39
Isopropyl-naphthalenesulfonic acid, di-----	2,527	2,132	798	.37
All other-----	1,845	1,121	255	.23
Petroleum aromatic compounds, sulfonated, total-----	129,070	101,799	14,607	.14
Acid-layer-type petroleum sulfonate, sodium salt-----	12,299	10,812	642	.06
Oil-layer-type petroleum sulfonate, sodium salt-----	59,580	50,304	7,182	.14
All other-----	57,191	40,683	6,783	.17
All other sulfated and sulfonated cyclic surface-active agents ⁵ -----	47,659	47,207	5,255	.11
SURFACE-ACTIVE AGENTS, ACYCLIC				
Total-----	327,505	293,613	71,671	.24
Esters and ethers, nonsulfonated, ⁶ total-----	69,885	65,649	20,082	.31
Diethylene glycol monolaurate-----	694	474	178	.38
Diethylene glycol mono-oleate-----	482	333	116	.35
Diethylene glycol monostearate-----	642	480	131	.27
Ethylene glycol monostearate-----	326	323	115	.36
Glyceryl mono-oleate-----	2,524	2,495	687	.28
Glyceryl monostearate-----	11,876	10,808	3,066	.28
Polyethoxyethyl castor oil ester-----	544	...	...	...
Polyethoxyethyl coconut oil ester-----	247	86	34	.40
Polyethoxyethyl dioleate-----	147	137	53	.39
Polyethoxyethyl laurate, mono and di-----	764	553	194	.35
Polyethoxyethyl mono-oleate-----	1,410	834	336	.40
Polyethoxyethyl stearate, mono and di-----	5,479	4,898	1,776	.36
1,2-Propylene glycol monostearate-----	360	348	101	.29
All other-----	44,390	43,880	13,295	.30
Nitrogen-containing surface-active agents, nonsulfonated, total N-(Aminoethyl)-N-(hydroxyethyl)stearamide (Stearamide of aminoethyl-ethanolamine)-----	52,804	50,372	16,183	.32
Coconut oil amide of mono(diethanolamine) (Diethanol lauramide)-----	1,043	951	938	.99
Coconut oil amide of bis(diethanolamine)-----	4,357	4,124	1,836	.45
N,N-Di(2-hydroxyethyl)oleamide (Diethanol oleamide) (Diethanolamine oleate)-----	4,767	3,583	1,654	.46
N,N-Di(2-hydroxyethyl)stearamide (Diethanol stearamide)-----	934	928	372	.40
Stearamide of diethylenetriamine-----	290	255	124	.49
Stearamide of tetraethylenepentamine-----	196	188	137	.73
All other ⁷ -----	34	32	32	1.00
Phosphorus-containing surface-active agents, nonsulfonated-----	41,183	40,311	11,090	.28
Phosphorus-containing surface-active agents, nonsulfonated-----	773	685	382	.56
Salts of fatty acids, nonsulfonated, total-----	6,881	6,939	1,101	.16
Coconut oil, potassium salt-----	131	131	34	.26
Potassium oleate-----	603	529	106	.20
Potassium resinate-----	319	408	183	.45
Potassium tallate-----	85	78	10	.13
Sodium oleate-----	704	697	150	.22
All other-----	5,039	5,096	618	.12

See footnotes at end of table.

TABLE 24A.--Synthetic organic chemicals: United States production and sales of surface-active agents,¹ 1953--Continued

Chemical	Production	Sales		
		Quantity	Value	Unit value ²
SURFACE-ACTIVE AGENTS, ACYCLIC--Continued				
Sulfated and sulfonated acyclic surface-active agents, total---	1,000 pounds 197,162	1,000 pounds 169,968	1,000 dollars 33,923	Per pound \$.20
Acids, sulfated and sulfonated, total-----	5,461	5,190	1,322	.25
Oleic acid, sulfonated (Sulfonated red oil)-----	2,469	2,050	673	.33
All other-----	2,992	3,140	649	.21
Alcohols and esters, sulfated and sulfonated, total-----	126,742	117,135	23,355	.20
Glycerol tri(sulfo-oleate)-----	390	173	50	.29
Isopropyl sulfo-oleate-----	719	699	378	.54
Lauryl sulfate, triethanolamine salt-----	2,522	2,628	822	.31
n-Propyl sulfo-oleate-----	1,820	1,643	357	.22
All other-----	121,291	111,992	21,748	.19
Nitrogen-containing surface-active agents, sulfated and sulfonated, total-----	7,250	4,961	2,179	.44
Coconut oil amide of monoethanolamine, sulfated, sodium salt-----	528	505	351	.70
N-Methylolscyltaurine, sodium salt-----	...	2,817	1,243	.44
All other-----	6,722	1,639	585	.36
Oils, fats, and waxes, sulfated and sulfonated, total-----	57,709	42,682	7,067	.17
Animal fats and oils, sulfated and sulfonated:				
Neat's-foot oil, sulfonated-----	1,733	1,579	280	.18
Tallow, sulfonated-----	12,382	10,711	1,285	.11
Fish and marine-animal oils, sulfated and sulfonated:				
Cod oil, sulfonated-----	5,923	4,316	589	.14
Herring oil, sulfonated-----	3,734	722	90	.12
Menhaden oil, sulfonated-----	609	555	66	.12
Sperm oil, sulfonated-----	5,852	2,747	443	.16
Tall oil, sulfonated-----	808	703	104	.15
Vegetable oils, sulfated and sulfonated, total-----	13,765	8,798	2,195	.25
Castor oil, sulfonated-----	7,115	5,294	1,336	.25
Coconut oil, sulfonated-----	586	456	122	.27
Corn oil, sulfonated-----	672	...	...	...
Peanut oil, sulfonated-----	1,536	1,252	362	.29
Rice-bran oil, sulfonated-----	1,049	283	89	.31
Soybean oil, sulfonated-----	1,250	557	151	.27
All other-----	1,557	956	135	.14
All other oils, fats, and waxes, sulfated and sulfonated ³ ---	12,903	12,551	2,015	.16

¹ Data are given in terms of bulk surface-active agents, that is, in terms of 100-percent content of surface-active agents, exclusive of all inorganic salts, water, or other ingredients.

² Calculated on rounded figures.

³ Includes polyhydric alcohol ethers and esters.

⁴ Includes quaternary ammonium compounds.

⁵ Includes sulfated and sulfonated phenyl ethers, substituted biphenyls, sulfonated lignin derivatives, and a small amount of sulfated and sulfonated alkyl benzenoid compounds.

⁶ Includes certain lauric, oleic, and stearic acid esters reported as plasticizers for 1952.

⁷ Includes amine salts of fatty acids; esters of hydroxyamines; fatty acid amines; quaternary ammonium compounds; salts of nitrilo acids; and fatty acid derivatives of guanidine, glycine, polypeptides, and others.

⁸ Includes sodium salt of petroleum sulfonate, sulfonated recovered grease, sulfonated lanolin, sulfonated lard oil, sulfonated wool grease, and others.

Production in 1953 of cationic surface-active agents (all cyclic and certain acyclic nitrogen-containing compounds, nonsulfonated) was 8 million pounds; sales totaled 8 million pounds, valued at 6 million dollars. Because of changes in classification in 1953, data on production and sales of cationic and nonionic surface-active agents in that year are not comparable with the data on production and sales in 1952 or earlier years.

In 1953 the output of all polyhydric alcohol esters and ethers and those acyclic nonsulfonated nitrogen-containing compounds generally considered to be nonionic materials totaled 161 million pounds. Sales in 1953 totaled 144 million pounds, valued at 46 million dollars.

Pesticides and Other Organic Agricultural Chemicals

The pesticides and other organic agricultural chemicals covered in this section include such materials as fungicides, seed disinfectants, herbicides, plant hormones, insecticides, rodenticides, fumigants, and soil conditioners. As in other sections of this report, the data (except where otherwise indicated) are given in terms of 100-percent active material, thus excluding such materials as wetting agents, emulsifiers, and diluents. Statistics on production and sales of pesticides and other organic agricultural chemicals in 1953 are given in table 25A.¹¹

TABLE 25A.--Synthetic organic chemicals: United States production and sales of pesticides and other organic agricultural chemicals, 1953

[Listed below are all pesticides and other organic agricultural chemicals for which any reported data on production or sales may be published. (Leaders are used where the reported data are confidential and may not be published or where no data were reported.) Table 25B in part III lists all pesticides and other organic agricultural chemicals for which data on production or sales were reported and identifies the manufacturer of each.]

Product	Production	Sales		
		Quantity	Value	Unit value ¹
	1,000 pounds	1,000 pounds	1,000 dollars	Per pound
Grand total	355,953	334,146	118,517	\$0.35
PESTICIDES AND OTHER ORGANIC AGRICULTURAL CHEMICALS, CYCLIC				
Total	297,054	281,652	98,572	.35
Fungicides and seed disinfectants, total	44,832	37,618	12,424	.33
Naphthenic acid, copper salt	3,268	2,964	652	.22
Phenyl mercuric oleate	47	62	245	3.95
8-Quinolinol (8-Hydroxyquinoline), copper salt	...	166	388	2.34
All other	41,517	34,426	11,139	.32
Herbicides and plant hormones, total	64,349	49,235	31,498	.64
Naphthalene- and naphthoxyacetic acid derivatives	50	37	121	3.27
Phenoxyacetic acid, salts and derivatives:				
2,4-Dichlorophenoxyacetic acid (2,4-D)	25,928	...	...	...
2,4-Dichlorophenoxyacetic acid esters	18,826	14,554	7,603	.52
2,4-Dichlorophenoxyacetic acid salts	4,836	4,968	2,120	.43
2,4,5-Trichlorophenoxyacetic acid (2,4,5-T)	5,281	...	...	...
2,4,5-Trichlorophenoxyacetic acid derivatives	5,386	4,005	5,800	1.45
Phenyl mercuric acetate	154	139	518	3.73
All other ²	3,888	25,532	15,336	.60
Insecticides, total	187,873	194,799	54,650	.28
Hexachlorocyclohexane (Benzene hexachloride) ³	57,363	60,934	6,888	.11
Parathion (O,O-Diethyl O-(p-nitrophenyl) thiophosphate)	2,999	...	...	...
1,1,1-Trichloro-2,2-bis(p-chlorophenyl)ethane (DDT)	84,366	85,758	21,357	.25
All other ⁴	43,145	48,107	26,405	.55
PESTICIDES AND OTHER ORGANIC AGRICULTURAL CHEMICALS, ACYCLIC				
Total	58,899	52,494	19,945	.38
Fumigants, fungicides, seed disinfectants, and herbicides, total	55,054	49,183	16,676	.34
Fumigants: Bromomethane (Methyl bromide)	6,167	5,750	2,771	.48
Fungicides and seed disinfectants:				
Dimethyldithiocarbamic acid, sodium salt	538	539	342	.63
Dimethyldithiocarbamic acid, zinc salt (Ziram)	1,152	1,176	694	.59
All other	47,197	41,718	12,869	.31
Insecticides and soil conditioners, total	3,845	3,311	3,269	.99
Tetraethyl pyrophosphate (TEPP) ⁵	229	716	611	.85
All other ⁶	3,616	2,595	2,658	1.02

¹ Calculated on rounded figures.

² Includes such materials as dinitro compounds, isopropylphenylcarbamate, malic hydrazide, and a small amount of phenoxyacetic acid derivatives.

³ Production of the gamma isomer content in benzene hexachloride totaled 8.8 million pounds; sales amounted to 8.9 million pounds.

⁴ Includes aldrin, allethrin, chlordane, dieldrin, DDD, EPN, lindane, toxaphene, and a small amount of rodenticides.

⁵ TEPP is 40% tetraethyl pyrophosphate.

⁶ Includes a small amount of rodenticides.

¹¹ See also table 25B, part III, which lists these products alphabetically and identifies the manufacturers.

In 1953 production of all pesticides and other organic agricultural chemicals amounted to 356 million pounds, a decline of 14.8 percent from the 418 million pounds reported for 1952. The decline was due in part to the existence of large stocks on hand at the end of 1952. Sales in 1953 amounted to 334 million pounds, valued at 119 million dollars, compared with 331 million pounds, valued at 133 million dollars, in 1952.

Production of all insecticides (both cyclic and acyclic) in 1953 was about 192 million pounds, or 53.9 percent of the total output of all organic pesticides. Sales in 1953 totaled 198 million pounds, valued at 58 million dollars.

In 1953 the output of cyclic pesticides and other cyclic chemicals in this group totaled 297 million pounds, or 20.1 percent less than the 372 million pounds produced in 1952. Sales in 1953 were 282 million pounds, valued at 99 million dollars, compared with 289 million pounds, valued at 111 million dollars, in 1952.

Production of cyclic insecticides in 1953 amounted to 188 million pounds, or 63.2 percent of the total output of cyclic pesticides. The chemical in this subgroup that was produced in the greatest quantity in 1953 was the insecticide DDT, production of which amounted to 84 million pounds.

Production of acyclic pesticides and other acyclic organic agricultural chemicals in 1953 amounted to 59 million pounds, compared with the 46 million pounds reported for 1952. Sales in 1953 were 52 million pounds, valued at 20 million dollars, compared with 42 million pounds, valued at 23 million dollars, in 1952.

Miscellaneous Synthetic Organic Chemicals

As used in this report, the term "miscellaneous synthetic organic chemicals" includes products such as halogenated hydrocarbons, paint driers, photographic chemicals, solvents, and tanning materials that are not included in the use groups covered in the other sections of this report. In 1953 the production of these miscellaneous chemicals as a group was 17,669 million pounds, an increase of 11.2 percent from the 15,894 million pounds reported for 1952. Sales in 1953 totaled 7,804 million pounds, valued at 1,236 million dollars, compared with 7,289 million pounds, valued at 1,146 million dollars, in 1952. Statistics on production and sales of miscellaneous chemicals in 1953 are given in table 26A.¹²

In 1953 the output of cyclic miscellaneous chemicals as a group totaled 402 million pounds, an increase of 10.9 percent from the 363 million pounds reported for 1952. Hexamethylenetetramine, used in phenolic resins, is one of the most important chemicals in this group; in 1953 the output of this product totaled 56 million pounds. Sales of cyclic miscellaneous chemicals as a group in 1953 totaled 262 million pounds, valued at 83 million dollars, compared with 243 million pounds, valued at 78 million dollars, in 1952.

Production of acyclic miscellaneous chemicals as a group in 1953 totaled 17,267 million pounds, an increase of 11.2 percent compared with the output of 15,531 million pounds reported for 1952.

¹² See also table 26B, part III, which lists these products alphabetically and identifies the manufacturers.

TABLE 26A.--Synthetic organic chemicals: United States production and sales of miscellaneous chemicals, 1953

[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 confidential and may not be published or where no data were reported.) Table 26B in part 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-----	17,669,436	7,803,865	1,236,004	\$0.16
MISCELLANEOUS CHEMICALS, CYCLIC				
Total-----	402,309	262,315	82,566	.31
Chemicals for which separate statistics may not be shown-----	152,742	117,993	33,914	.29
Chemicals for which separate statistics are shown below-----	249,567	144,322	48,652	.34
Benzoic acid salts: Sodium benzoate, tech. and U.S.P-----	5,169	4,460	1,641	.37
Benzoyl peroxide-----	1,792	1,084	747	.69
Centralite (N,N'-Diethyl-N,N'-diphenylurea)-----	2,076	2,167	1,900	.88
Chemical reagents-----	15	14	94	6.71
Chlorophyll and chlorophyllins-----	21	24	1,360	56.67
Cyclopropane-----	106	90	1,611	17.90
Flotation reagents, total-----	3,733	2,981	1,151	.39
Thiocarbamide (Diphenylthiourea)-----	386	...	...	...
All other-----	3,347	2,981	1,151	.39
Hexamethylenetetramine, tech-----	55,854	47,315	9,212	.19
Lubricating oil additives-----	115,194	23,090	9,357	.41
4-Methylumbelliferone-----	194	177	289	1.63
Naphthenic acid salts, total ^{2 3} -----	19,540	19,198	6,919	.36
Calcium naphthenate-----	1,339	1,275	431	.34
Cobalt naphthenate-----	4,287	3,993	2,518	.63
Iron naphthenate-----	278	...	...	...
Lead naphthenate-----	9,864	9,722	2,623	.27
Manganese naphthenate-----	2,375	2,484	783	.32
Zinc naphthenate-----	1,136	1,240	378	.30
All other-----	261	484	186	.38
Organic mercury compounds ⁴ -----	86	66	312	4.73
Photographic chemicals, total-----	4,003	3,924	5,598	1.42
p-Diazo-N,N-diethylaniline, zinc chloride salt-----	45	25	92	3.68
p-Diazo-N,N-dimethylaniline, zinc chloride salt-----	27	27	78	2.89
p-Diazo-N-ethyl-N-hydroxyethylaniline, zinc chloride salt-----	17	17	76	4.47
All other ⁵ -----	3,914	3,855	5,352	1.39
n-Propyl gallate-----	66	...	...	...
Rosin acid salts, total ² -----	1,018	1,105	266	.24
Calcium resinate-----	39	32	7	.22
Manganese resinate-----	224	240	61	.25
All other-----	755	833	198	.24
Tall oil salts, total ² -----	4,907	4,817	1,533	.32
Cobalt tallate-----	2,112	2,027	825	.41
Iron tallate-----	51	70	14	.20
Lead tallate-----	1,754	1,688	425	.25
Manganese tallate-----	557	641	176	.27
All other-----	433	391	93	.24
Tanning materials, total-----	35,793	33,810	6,662	.20
Naphthalene condensates, total-----	24,784	23,011	3,693	.16
2-Naphthalenesulfonic acid, formaldehyde condensate and salt-----	22,187	20,626	3,342	.16
All other-----	2,597	2,385	351	.15
All other tanning materials ⁶ -----	11,009	10,799	2,969	.27
MISCELLANEOUS CHEMICALS, ACYCLIC				
Total-----	17,267,127	7,541,550	1,153,438	.15
Chemicals for which separate statistics may not be shown-----	4,490,084	2,011,974	566,188	.28
Chemicals for which separate statistics are shown below-----	12,777,043	5,529,576	587,250	.11
Acetaldehyde-----	...	34,008	2,881	.08
Acetic acid, synthetic, 100% ⁷ -----	477,728	149,397	11,699	.08

See footnotes at end of table.

TABLE 26A.--Synthetic organic chemicals: United States production and sales of miscellaneous chemicals, 1953--Continued

Chemical	Production	Sales		
		Quantity	Value	Unit value ¹
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued				
Acetic acid salts, total-----	1,000 pounds 15,420	1,000 pounds 14,345	1,000 dollars 2,422	Per pound \$.17
Aluminum acetate-----	432	385	154	.40
Cobalt acetate-----	122	...	...	...
All other-----	14,866	13,960	2,268	.16
Acetic anhydride, 100%, from all sources-----	803,540	...	...	...
Acetone, total-----	518,992	244,956	19,112	.08
From isopropyl alcohol-----	468,491	198,296	15,678	.08
By fermentation and other sources-----	50,501	46,660	3,434	.07
Acrylonitrile-----	56,980	51,245	19,260	.38
Amines, total-----	155,189	32,024	10,035	.31
n-Butylamine, mono-----	274	171	97	.57
Methylamine, mono-----	1,723	...	...	...
All other-----	153,192	31,853	9,938	.31
Amyl acetates, 90%-----	8,302	8,178	1,256	.15
Amyl alcohols, 100%-----	20,777	5,873	1,044	.18
Bis(2-chloroethyl) ether (Dichlorodiethyl ether), all grades-----	9,212	4,624	288	.06
Butyl acetates, 90%-----	61,545	60,276	7,377	.12
Butyl alcohols, 100%, total-----	392,208	118,029	14,358	.12
Primary, normal-----	155,272	92,982	11,816	.13
All other-----	236,936	25,047	2,542	.10
Caprylic acid salts-----	95	77	63	.82
Carbon disulfide-----	501,168	480,017	23,536	.05
Cellulose esters and ethers, total-----	626,493	203,985	77,741	.38
Cellulose acetate-----	435,417	82,754	27,772	.34
Sodium carboxymethylcellulose, 100%-----	21,669	20,005	8,512	.43
All other-----	169,407	101,226	41,457	.41
Chloral (Trichloroacetaldehyde)-----	20,836	...	...	...
Chloroacetic acid, mono-----	37,504	...	...	...
Citric acid salts-----	6,135	...	...	...
Diethylene glycol-----	47,436	33,778	6,054	.18
Diethyl malonate (Malonic ester)-----	665	162	122	.75
2-Dimethylaminoethanol-----	225	...	...	...
Dipropylene glycol-----	4,227	4,453	673	.15
Ethanolamines, total-----	53,363	47,985	12,003	.25
Monoethanolamine-----	19,870	19,054	5,307	.28
Di- and triethanolamines-----	33,493	28,931	6,696	.23
Ethyl acetate, 85%-----	80,768	69,065	7,126	.10
Ethyl alcohol, synthetic ² -----	1,060,283	324,323	15,329	.05
α-Ethylcaproic (2-Ethyl-1-hexoic) acid salts, total-----	1,201	1,109	499	.45
Calcium α-ethylcaproate-----	206	194	77	.40
Cobalt α-ethylcaproate-----	271	275	140	.51
Lead α-ethylcaproate-----	...	402	182	.45
Zinc α-ethylcaproate-----	67	62	19	.31
All other-----	657	176	81	.46
Ethylene glycol-----	624,324	224,522	32,207	.14
Ethylene oxide-----	489,535	85,879	15,261	.18
Ethyl ether, total-----	47,326	31,220	4,648	.15
Absolute and U.S.P.-----	6,192	...	...	...
Tech-----	41,134	...	...	...
Ethyl formate-----	215	198	68	.34
Fatty acid esters, not included with plasticizers-----	3,057	2,213	724	.33
Fatty and synthetic higher alcohols (C ₁₀ and higher)-----	36,710	23,776	9,566	.40
Flotation reagents ³ -----	19,254	19,489	5,527	.28
Formaldehyde (37% HCHO by weight)-----	1,118,715	612,659	20,623	.03
Formic acid, 90%-----	16,213	13,820	2,097	.15
Formic acid salts, total-----	20,734	15,002	1,040	.07
Sodium formate, crude and refined-----	18,770	13,096	573	.05
All other-----	1,964	1,906	467	.25
Fumaric acid-----	3,829	...	...	...

See footnotes at end of table.

TABLE 26A.--Synthetic organic chemicals: United States production and sales of miscellaneous chemicals, 1953--Continued

Chemical	Production	Sales		
		Quantity	Value	Unit value ¹
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued				
Halogenated hydrocarbons, total-----	3,167,184	1,326,542	159,867	\$0.12
Carbon tetrachloride-----	259,705	236,501	16,000	.07
Chlorinated paraffins-----	33,382	32,122	3,935	.12
Chloroethane (Ethyl chloride), tech. and U.S.P-----	520,078	...	...	...
Chloroethylene (Vinyl chloride monomer)-----	401,701	...	...	...
Chloroform, tech. and U.S.P-----	25,537	...	...	...
Chloromethane (Methyl chloride), all grades-----	40,520	32,184	3,871	.12
1,2-Dichloroethane (Ethylene dichloride)-----	528,646	63,882	4,366	.07
Dichloromethane (Methylene chloride), all grades-----	63,629	58,782	6,601	.11
Tetrachloroethylene (Perchloroethylene)-----	152,917	136,378	13,015	.10
Trichloroethylene-----	323,313	287,665	27,850	.10
All other-----	817,756	479,028	84,229	.18
Isopropyl alcohol ¹⁰ -----	900,699	397,724	21,336	.05
Isopropyl ether-----	4,977	4,314	180	.04
Lactic acid, 100%, total-----	4,621	4,398	1,624	.37
Edible and medicinal-----	3,143	3,067	1,275	.42
Tech-----	1,478	1,331	349	.26
Lactic acid salts: Sodium lactate-----	40	45	19	.42
Linoleic acid salts, total ² -----	1,181	957	292	.31
Calcium linoleate-----	654	494	70	.14
Cobalt linoleate-----	349	264	153	.58
Manganese linoleate-----	61	70	24	.34
All other-----	117	129	45	.35
Lubricating oil additives-----	49,358	23,266	6,389	.27
Methanol, synthetic ¹¹ -----	1,115,770	688,522	27,943	.04
1- and 2-Octanol-----	7,750	5,912	1,058	.18
Oleic acid salts, total ¹² -----	199	188	67	.37
Lead oleate-----	92	73	28	.38
All other-----	107	115	39	.34
Oxalic acid-----	18,636	18,766	3,048	.16
Oxalic acid salts-----	3,839	3,350	836	.25
Palmitoyl chloride-----	110	...	...	...
Pentaerythritol-----	56,325	47,820	16,149	.34
Pentaerythritol tetranitrate-----	1,329	1,236	931	.75
Propionic acid-----	9,779	1,065	233	.22
Propylene glycol (1,2-Propanediol)-----	59,646	53,958	9,182	.17
Sequestering agents: (Ethylenedinitrilo)tetraacetic acid (Ethylenediaminetetraacetic acid), tetrasodium salt-----	3,407	3,443	2,146	.62
Sodium formaldehydesulfoxylate-----	4,814	4,688	1,216	.26
Stearic acid salts, total ¹³ -----	22,025	21,656	7,340	.34
Aluminum stearates, total-----	7,361	7,323	2,403	.33
Aluminum distearate-----	5,246	5,223	1,711	.33
All other-----	2,115	2,100	692	.33
Barium stearate-----	209	197	72	.37
Cadmium stearate-----	17	15	17	1.13
Calcium stearate-----	3,921	3,875	1,363	.35
Lead stearates-----	1,698	1,440	593	.41
Lithium stearate-----	231	223	137	.61
Magnesium stearate-----	534	539	205	.38
Zinc stearate-----	6,475	6,355	2,264	.36
All other-----	1,579	1,689	286	.17
Succinic anhydride-----	266	120	92	.77
Thioglycolic acid salt: Ammonium thioglycolate-----	1,414	1,405	1,896	1.35
Zinc formaldehydesulfoxylate-----	3,470	3,514	767	.22

¹ Unit values calculated on rounded figures.

² Quantities are given on the basis of solid naphthenate, resinates, tallates, or linoleate content.

³ Statistics exclude production and sales of copper naphthenate. Statistics on copper naphthenate are given in the section "Pesticides and Other Organic Agricultural Chemicals."

⁴ Does not include medicinal mercury compounds or phenyl mercuric acetate used as a pesticide. Statistics on phenyl mercuric acetate are given in the section "Pesticides and Other Organic Agricultural Chemicals."

⁵ Includes hydroquinone, p-methylaminophenol sulfate, catechol, and others.

⁶ Includes lignosulfonic acid salts, styrene-maleic anhydride interpolymers, and others.

⁷ In addition, production of natural acetic acid totaled 20,387,000 pounds.

⁸ Statistics on production of ethyl alcohol from natural sources by fermentation are issued by the Alcohol Tax Unit, U. S. Bureau of Internal Revenue.

⁹ Includes dithiophosphates, fatty amine salts, xanthates, and others.

¹⁰ Data which were reported on the basis of 91 percent isopropyl alcohol have been converted to a 100-percent basis.

¹¹ In addition, production of methanol from natural sources totaled 13,173,760 pounds.

¹² Statistics exclude production and sales of potassium and sodium oleates. Statistics on these oleates are given in the section "Surface-Active Agents."

¹³ Statistics exclude production and sales of sodium stearate. Statistics on sodium stearate are given in the section "Surface-Active Agents."

Sales in 1953 totaled 7,542 million pounds, valued at 1,153 million dollars, compared with 7,046 million pounds, valued at 1,068 million dollars, in 1952. This group consists chiefly of solvents, refrigerants, and acyclic intermediates.¹³

In 1953 the output of halogenated hydrocarbons (a group consisting of chlorine, bromine, fluorine, and iodine derivatives of hydrocarbons) totaled 3,167 million pounds, compared with 2,610 million pounds in 1952. This subgroup includes such chemicals as carbon tetrachloride, ethylene dichloride, perchloroethylene, and vinyl chloride monomer.

The output of most of the acyclic miscellaneous chemicals that are produced in large volume increased in 1953 compared with 1952. Production of formaldehyde was 1,119 million pounds in 1953, compared with 1,022 million pounds in 1952; of synthetic methanol, 1,116 million pounds, compared with 1,099 million pounds; of synthetic ethyl alcohol,¹⁴ 1,060 million pounds, compared with 858 million pounds; of isopropyl alcohol, 901 million pounds, compared with 846 million pounds; of acetic anhydride, 804 million pounds, compared with 686 million pounds; and of carbon disulfide, 501 million pounds, compared with 476 million pounds. The production of ethylene glycol decreased to 624 million pounds in 1953 from the 761 million pounds reported for 1952. Production of ethylene oxide in 1953, given for the first time, totaled 490 million pounds (excluding the production that is not withdrawn from the reaction system).

¹³ The large difference between production and sales indicates that a substantial part of the output of acyclic miscellaneous chemicals is consumed at the producing plants in the manufacture of other more advanced products. Acyclic miscellaneous chemicals so used are, therefore, acyclic intermediates. They correspond in function to cyclic intermediates, although no group of acyclic miscellaneous chemicals is commonly recognized by the chemical industry as intermediates.

¹⁴ This report does not include statistics on the production of ethyl alcohol from natural sources by fermentation. The Alcohol Tax Unit, U. S. Bureau of Internal Revenue, issues such statistics monthly and annually.



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

Part III of this 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. Those tables whose numbers include the letter "B" supplement the tables in part I or part II whose numbers include the letter "A"; for example, table 8B in part III supplements table 8A in part II.

Each table in part III lists alphabetically the individual items in each group for which data on production or sales were reported for 1953. Where an asterisk (*) precedes the name of an item in the tables in part III, separate statistics for the item are given in the tables in part I or part II. The manufacturers of each product are indicated by identification numbers, which are listed in the Directory of Manufacturers (table 27). A few companies, however, have specifically requested the Tariff Commission to withhold such information on certain items. These manufacturers are indicated by the letter "X" in the tables.

Tar Crudes

TABLE 4B.--Organic chemicals: Tar crudes for which United States production or sales were reported, identified by manufacturer, 1953

[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 confidential and may not be published. Manufacturers' identification numbers shown below are taken from table 27. Table 27 identifies all United States producers of tar crudes (except producers who report to the Coal Economics Division, U. S. Bureau of Mines)]

Product	Manufacturers' identification numbers (according to list in table 27)
*Crude light oil-----	45, 107, 155, 158, 375, 430.
Light-oil distillates:	
*Benzene, specification and industrial grades:	
1°-----	323, 464, 488, 536.
2°-----	215, 536.
90%-----	158, 536.
All other-----	157.
*Toluene:	
Nitration grade, 1°-----	323, 464, 536.
Pure commercial grade, 2°-----	157, 158, 215, 488, 536.
*Xylene:	
3°-----	158, 464.
10°-----	323.
Commercial-----	157, 215, 464, 488, 536.
*Solvent naphtha-----	134, 157, 158, 323, 327, 372, 373, 464, 536.
*All other light-oil distillates-----	134, 215, 323, 488, 536.
Pyridine:	
Crude bases-----	323, 536.
Semirefined or denaturing grade-----	323, 536.
*Naphthalene, crude, solidifying at--	
Less than 74° C-----	61, 107, 134, 157, 372.
74° C. to less than 76° C-----	160, 327, 372.
76° C. to less than 79° C-----	323, 372, 375, 536, 538.
*Crude tar-acid oils, having a tar-acid content of--	
5% to less than 24%-----	155, 160, 323, 372, 464, 536.
24% to 50%-----	155, 323, 327, 372, 375, 536.
*Cresylic acid, crude-----	323, 372, 373, 536, 538.
*Creosote oil (Dead oil):	
*Sold or consumed as such-----	18, 45, 61, 107, 157, 160, 323, 372, 373, 375, 464, 536, 585.
*Sold or consumed in coal-tar solution-----	160, 323, 372, 375, 528, 536.
*Coal tar sold or consumed in coal-tar solution-----	160, 323, 372, 375, 536.
*All other distillate products-----	134, 155, 157, 323, 327, 372, 373, 536, 585.

TABLE 4B.--Organic chemicals: Tar crudes for which United States production or sales were reported, identified by manufacturer, 1953--Continued

Product	Manufacturers' identification numbers (according to list in table 27)
*Tar, road-----	155, 156, 157, 160, 323, 372, 373, 528, 536, 585.
*Tar for other uses:	
Crude-----	33, 158, 160, 323, 372, 373, 430, 536.
Refined-----	107, 155, 323, 372, 373, 375, 536, 585.
Pitch of tar:	
*Soft (Water softening point less than 110° F.)-----	61, 157, 373, 536.
*Medium (Water softening point 110° F. to 160° F.)-----	18, 45, 107, 160, 323, 372, 373, 375, 528, 536, 585.
*Hard: Water softening point of--	
161° F. to 230° F.-----	323, 372, 373, 536.
231° F. to 291° F. and over-----	157, 323, 372, 373, 536, 585.
*Pitch of tar coke and pitch emulsion-----	323, 372, 373, 528.

Crude Products From Petroleum and Natural Gas for Chemical Conversion

TABLE 5B.--Organic chemicals: Crude products from petroleum and natural gas for chemical conversion for which United States production or sales were reported, identified by manufacturer, 1953

[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 confidential and may not be published. Manufacturers' identification numbers shown below are taken from table 27]

Product	Manufacturers' identification numbers (according to list in table 27)
AROMATICS AND NAPHTHENES	
*Alkyl aromatics, distillates, and solvents-----	321, 333, 430, 441, 443, 473, 481, 484, 549.
*Benzene (except motor grade):	
*1°-----	31, 258, 278, 283, 404.
*2°-----	62, 223, 234, 306, 311, 392, 473, 481, 497, 555, 560.
Benzene, motor grade-----	311, 592.
*Cresylic acid, crude-----	210, 223, 232, 538, 555, 560.
Dicyclopentadiene-----	481.
*Naphthenic acids:	
Acid number less than 150-----	404, 405.
Acid number 150-199-----	221, 404, 555.
Acid number 200-224-----	209, 305, 555.
*Acid number 225-249-----	221, 223, 305, 318, 555.
Acid number 250 and over-----	305.
Petroleum phenols-----	232, 441.
Sodium carbolate and phenolats, crude-----	210.
*Toluene:	
*Nitration grade, 1°-----	223, 278, 283, 306, 404.
*Pure commercial grade, 2°-----	62, 223, 245, 247, 441, 448.
Solvent grade-----	392, 560.
All other-----	311, 441, 555, 560.
*Xylene:	
Aviation grade-----	247, 555.
Nitration grade, 3°-----	223.
All other-----	223, 234, 278, 283, 311, 441, 560.
All other aromatics and naphthenes-----	311, 321, 443.
ALIPHATIC HYDROCARBONS	
C ₁ hydrocarbons: Methane-----	252, 413, 443, 560.
*C ₂ hydrocarbons:	
Acetylene-----	245.
*Ethane-----	252, 405, 413, 481, 484, 560, 592.
*Ethylene-----	62, 209, 245, 258, 321, 323, 333, 392, 405, 413, 426, 448, 481, 484, 560, 592.
*C ₃ hydrocarbons:	
*Propane-----	210, 223, 234, 247, 252, 413, 430, 443, 473, 560, 592.
*Propylene-----	62, 223, 323, 392, 413, 443, 448, 481, 484, 560, 605.
*Propane-propylene mixture-----	405.
*C ₄ hydrocarbons:	
*1,3-Butadiene, grade for rubber (elastomers)-----	90, 105, 213, 258, 323, 392, 441, 443, 448, 481, 518.

TABLE SB. --Organic chemicals: Crude products from petroleum and natural gas for chemical conversion for which United States production or sales were reported, identified by manufacturer, 1953--Continued

Product	Manufacturers' identification numbers (according to list in table 27)
ALIPHATIC HYDROCARBONS--Continued	
*C ₄ hydrocarbons--Continued	
Butadiene and butylene fractions-----	62, 278, 283, 321, 323, 448, 555, 605.
Butane-butylene-----	473.
*n-Butane-----	223, 247, 252, 413, 430, 443, 473, 592.
*1-Butene, 2-butene, and mixtures-----	209, 210, 213, 223, 234, 247, 405, 413, 441, 443, 473, 481.
Butylene concentrate-----	443.
*Isobutane-----	252, 413, 430, 443, 473, 592.
Isobutylene-----	318, 441, 481.
*C ₅ hydrocarbons:	
Isopentane-----	443, 473.
Isoprene-----	481.
Methyl butenes-----	443.
Neopentane-----	443.
n-Pentane-----	443.
1-Pentene, 2-pentene, and mixtures-----	430, 443, 580, 592.
C ₆ hydrocarbons:	
Diisopropyl (2,3-Dimethylbutane)-----	443.
Hexane-----	441, 443.
Hexene-2-----	443.
Isohexane-----	443.
Methylpentanes-----	443.
Methylpentenes-----	443.
Neohexane-----	443.
C ₇ hydrocarbons:	
n-Heptane-----	441, 443.
Heptenes-----	443.
Isoheptane and isoheptene-----	443.
All other-----	443, 481.
C ₈ hydrocarbons:	
*Diisobutylene-----	210, 258, 318.
n-Octane-----	441, 443.
2,2,4-Trimethylpentane (Iso-octane)-----	443.
All other-----	443.
Hydrocarbons, C ₉ and above:	
*Dodecene (Tetrapropylene)-----	223, 404, 443, 473, 481, 518.
Eicosane-----	210.
*Nonene (Tripropylene)-----	210, 234, 404, 405, 473, 481.
Polybutene-----	555, 560.
Triisobutylene-----	210.
All other-----	62, 247, 322, 404, 443.
*Hydrocarbon derivatives:	
tert-Butyl mercaptan-----	443.
Di-tert-butyl disulfide-----	443.
Di-tert-butyl polysulfide-----	443.
Ethyl mercaptan-----	278, 423.
Methyl mercaptan-----	423.
All other-----	210, 443, 477, 555.

Cyclic Intermediates

TABLE 7B.--Synthetic organic chemicals: Cyclic intermediates for which United States production or sales were reported, identified by manufacturer, 1953

[Cyclic intermediates for which separate statistics are given in table 7A are marked below with an asterisk (*); cyclic intermediates not so marked do not appear in table 7A because the reported data are confidential and may not be published. Manufacturers' identification numbers shown below are taken from table 27. An X signifies that the manufacturer did not consent to the publication of his identification number with the designated product. (Part C in the appendix lists alphabetically all the important common names of cyclic intermediates usually encountered in the trade and gives the corresponding standard (Chemical Abstracts) name under which the manufacturers' identification numbers are given in this table)]

Chemical	Manufacturers' identification numbers (according to list in table 27)
Acenaphthylene	372.
6(and 7)-(2-Acetamido-4-aminophenylazo)-1-naphthalene-sulfonic acid.	495.
3-Acetamido-5-amino-p-toluenesulfonic acid	550.
2-Acetamido-3-chloroanthraquinone	550.
2-Acetamido-p-cresol	495.
1-Acetamido-2-ethoxynaphthalene	495.
1-Acetamido-2-methoxynaphthalene	495.
1-Acetamido-2-naphthol	495.
1-Acetamido-7-naphthol	495, 527.
8-Acetamido-1-naphthol-3,5-disulfonic acid	550.
3-Acetamido-5-nitro-p-toluenesulfonic acid	550.
5-Acetamidosalicylic acid	565.
*Acetanilide, tech.	245, 448, 483, 495, 521.
o-Acetanilide	527.
Acetoacetanilide	392, 463.
Acetoaceto-1-naphthylamide	463, 550.
o-Acetoacetotoluidide	392, 463.
p-Acetoacetotoluidide	550.
o-Acetoacetyluidide	333, 527.
p-Acetoacetyluidide	464, 521.
21-Acetoxy-4-bromo-17-hydroxy-3,11,20-triketopregnane	X.
N-Acetylthranilic acid	333.
α-Acetylhydrocinnamic acid, ethyl ester	123.
3-Acetyl-4-hydroxycoumarin	464.
Acetylphenyl benzoate	376.
Acetylsulfadiazine	464.
Acetylsulfamerazine	464.
Acetylsulfamethazine	464.
*N-Acetylsulfanilyl chloride	245, 376, 464, 515.
Acetylsulfathiazole	245.
Aoridine	333, 372.
Acridine yellow	527.
Alkyl benzene (high molecular weight)	210.
*p-Aminosacetanilide	245, 333, 480, 495, 527, 550.
m-Aminosacetophenone	376.
5-Amino-2-(p-aminocanilino)benzenesulfonic acid	333.
1-Amino-4-(4'-amino-3'-sulfoanilino)-2-anthraquinone-sulfonic acid.	495.
5-Amino-2-anilinobenzenesulfonic acid	333, 495, 527, 550.
*2-(p-Aminocanilino)-5-nitrobenzenesulfonic acid	294, 495, 527, 559, 576.
6-(3-Aminoanisamido)-1-naphthol-3-sulfonic acid, sodium salt.	333.
*1-Aminoanthraquinone and salt	268, 333, 365, 366, 464, 527, 550, 552, 576.
*2-Aminoanthraquinone and salt	333, 464, 527, 550.
1-Aminoanthraquinone-2-sulfonic acid and salt	333, 550.
1-Aminoanthraquinone-5(and 8)-sulfonic acid	495.
N-(4-Amino-1-anthraquinonyl)anthranilic acid	550.
N-(5-Amino-1-anthraquinonyl)anthranilic acid	333.
N-(5(and 8)-Amino-1-anthraquinonyl)anthranilic acid	333.
N-(8-Amino-1-anthraquinonyl)anthranilic acid	333.
4-Aminoantipyrene	379.
*6-Amino-3,4'-azobis[benzenesulfonic acid]	294, 495, 527, 550, 559, 569, 576.
4-Aminosotoluene-4'-sulfonic acid	569.
8-Aminobenz[a]acridin-7(12)-one	527.
*1-Amino-4-benzamidoanthraquinone	333, 464, 550.
1-Amino-5-benzamidoanthraquinone	333, 527, 550.
5-Amino-2-benzamido-1,4-dihydroxybenzene	559.
*6-(m-Aminobenzamido)-1-naphthol-3-sulfonic acid	268, 333, 495, 527, 559, 576.
*6-(p-Aminobenzamido)-1-naphthol-3-sulfonic acid	294, 333, 495, 527, 550, 559, 576.
*2-Amino-p-benzenedisulfonic acid [SO ₃ H=1]	333, 550, 559.
p-Aminobenzoic acid, tech.	333, 527.
p-Aminobenzoic acid, ethyl ester (Benzocaine, non-medicinal grade).	379.
m-Aminobenzoyl-m-phenylenediamine	495.
p-Aminobenzoyl-m-phenylenediamine	495, 527.
m-Aminobenzyl alcohol	333.
1-Amino-4-bromoanthraquinone-2,5-disulfonic acid	495.
*1-Amino-4-bromo-2-anthraquinoneulfonic acid and salt	333, 365, 527, 550.
1-Amino-2-bromo-4-(p-toluidino)anthraquinone	365, 550.
*1-Amino-5-chloroanthraquinone	333, 366, 464, 527.
1-Amino-5(and 8)-chloroanthraquinone	464, 527.
1-Amino-8-chloroanthraquinone	333, 366, 527.

TABLE 7B.--Synthetic organic chemicals: Cyclic intermediates for which United States production or sales were reported, identified by manufacturer, 1953.-Continued

Chemical	Manufacturers' identification numbers (according to list in table 27)
2-Amino-1-chloroanthraquinone-----	333, 550.
2-Amino-3-chloroanthraquinone-----	550.
3-Amino-6-chlorobenzoic acid-----	550, 559.
1-Amino-5-chlorobenzothiazole hydrochloride-----	333.
o-(3-Amino-4-chlorobenzoyl)benzoic acid-----	550.
2-Amino-5-chloro-4-ethylbenzenesulfonic acid-----	464.
1-Amino-5-chloro-4-hydroxyanthraquinone-----	333, 550.
2-Amino-6-chloro-4-nitrophenol-----	550, 559.
*2-Amino-4-chlorophenol-----	333, 424, 495, 527, 550, 559.
2-Amino-4-chloro-1-phenol-6-sulfonic acid-----	294, 495, 527, 550.
2-Amino-4-chlorophenyl benzyl ether-----	559.
*2-Amino-5-chloro-p-toluenesulfonic acid [SO ₃ H-1]-----	376, 388, 464, 521, 531, 569.
3-Amino-5-chloro-p-toluenesulfonic acid [SO ₃ H-1]-----	376.
6-Amino-4-chloro-m-toluenesulfonic acid [SO ₃ H-1]-----	333, 521, 550.
4'-Amino-5'-chloro-p-toluenesulfono-o-toluidide-----	559.
1-Amino-2,4-dibromoanthraquinone-----	333, 527, 550.
1-Amino-4,5-dichloroanthraquinone-----	333.
4'-Amino-2',5'-diethoxybenzanilide-----	550.
5-Amino-2-(2(3-dihydro-2-oxo-5-benzimidazolyl)benzenesulfonic acid.	333.
1-Amino-2,5-dimethoxybenzotrile-----	550.
2-Amino-4,6-dimethylpyrimidine-----	464.
2-Amino-3,5-dinitrobenzenesulfonethylamide-----	483.
5-Amino-6-ethoxy-2-naphthalenesulfonic acid-----	333, 495, 559.
p-Amino-N-ethyl-N-1-naphthylbenzamide-----	550.
m-Aminofornilide-----	333.
5-Amino-8-(p-hydroxyanilino)-2-naphthalenesulfonic acid-----	333.
5-(and 8)-Amino-8-(and 5)-(p-hydroxyanilino)-2-naphthalenesulfonic acid.	333.
*1-Amino-4-hydroxyanthraquinone-----	333, 527, 550.
3-Amino-2-hydroxyanthraquinone-----	527, 550.
2-Amino-4-hydroxybenzenearsonic acid-----	379.
3-Amino-6-hydroxy-2-methylphenazine (Tolazine base)-----	495, 527.
6-Amino-2,4-lutidine-----	372.
6-Amino-2-mercaptobenzothiazole-----	498.
1-Amino-4-methoxyanthraquinone-----	333.
5-Amino-6-methoxy-2-naphthalenesulfonic acid-----	495, 527.
m-(4-Amino-3-methoxyphenylazo)benzenesulfonic acid-----	333, 495.
8-Amino-6-methoxyquinoline (Amichin)-----	132.
7-(4-Amino-5-methoxy-o-tolylazo)-1,3-naphthalenedisulfonic acid.	495.
4-(4'-Amino-5'-methoxy-o-tolylazo)-2,7-naphthalenedisulfonic acid, 5-phenylsulfone ester.	495.
1-Amino-2-methoxy-4-(p-tolylsulfonamido)anthraquinone-----	333.
4-Amino-N-methylacetanilide-----	527, 550.
1-Amino-2-methylanthraquinone-----	333, 365.
6-(3-Amino-4-methylbenzamido)-1-naphthol-3-sulfonic acid-----	333.
4'-Amino-6'-methylbenzamisidide-----	550.
2-Amino-5-(6-methyl-2-benzothiazolyl)benzenesulfonic acid.	550.
2-Amino-4-methyldiazine-----	464.
8-Amino-7-methyl-2-phenazinol-----	333, 550.
4-Amino-4'-(3-methyl-5-pyrazolone)-2,2'-stilbenedisulfonic acid.	495.
2-Amino-5-methyl-1,3,4-thiadiazole-----	464.
1-Amino-2-methyl-4-(p-toluidino)anthraquinone-----	365.
1-Aminonaphth[2,3-c]acridine-5,8,14(13)-trione-----	333.
4-Aminonaphth[2,3-c]acridine-5,8,14(13)-trione-----	333.
2-Amino-1,5-naphthalenedisulfonic acid-----	376, 464.
1-Amino-3,6-naphthalenedisulfonic acid, 8-phenylsulfone ester.	495.
2-Amino-1,5-(and 1,8)-naphthalenedisulfonic acid-----	495.
*3-Amino-1,5-naphthalenedisulfonic acid (Cassella acid)-----	333, 495, 521, 527, 550.
3-Amino-2,7-naphthalenedisulfonic acid-----	495, 527.
4-Amino-1,5-naphthalenedisulfonic acid-----	333, 527.
4-Amino-1,6-naphthalenedisulfonic acid-----	333, 527.
5-Amino-2,7-naphthalenedisulfonic acid (F acid)-----	268, 569.
*6-Amino-1,3-naphthalenedisulfonic acid (Amino I acid)-----	268, 333, 464, 495, 527, 550, 559, 576.
7-Amino-1,3-naphthalenedisulfonic acid (Amino G acid)-----	333, 464, 495, 527, 550.
8-Amino-1,6-naphthalenedisulfonic acid-----	527, 550.
1-Amino-2-naphthalenesulfonic acid (o-Naphthonic acid)-----	333, 464.
*2-Amino-1-naphthalenesulfonic acid (Tobias acid)-----	376, 464, 495, 521, 531, X.
4-(and 5)-Amino-1-naphthalenesulfonic acid-----	464.
5-Amino-1-naphthalenesulfonic acid (Laurent's acid)-----	294, 333, 495, 527, 559.
5-Amino-2-naphthalenesulfonic acid (1,6-Cleve's acid)-----	333, 495, 527, 550, 559.
*5-(and 8)-Amino-2-naphthalenesulfonic acid (Cleve's acid, mixed).	333, 495, 527, 550.
*6-Amino-2-naphthalenesulfonic acid (Broenner's acid)-----	495, 521, 527, 537, X.
*8-Amino-1-naphthalenesulfonic acid (Peri acid)-----	333, 495, 527, 550.
2-Amino-2-naphthalenesulfonic acid (1,7-Cleve's acid)-----	333, 495, 527, 550, 559.
7-Amino-1,3,6-naphthalenetrisulfonic acid-----	333.

TABLE 7B.--Synthetic organic chemicals: Cyclic intermediates for which United States production or sales were reported, identified by manufacturer, 1953--Continued

Chemical	Manufacturers' identification numbers (according to list in table 27)
8-Amino-1,3,5-naphthalenetrilsulfonic acid-----	550.
8-Amino-1,3,6-naphthalenetrilsulfonic acid (Koch's acid)---	333, 527.
4-Amino-1,3,5-naphthalenetrilsulfonic acid-4,5-sultam, trisodium salt.	333.
5-Amino-1-naphthol-----	527.
*8-Amino-2-naphthol-----	333, 495, 550.
7-Amino-1-naphthol-3,6-disulfonic acid (2R acid), monosodium salt.	333, 527.
8-Amino-1-naphthol-3,5-disulfonic acid (K acid)-----	550.
*8-Amino-1-naphthol-3,6-disulfonic acid (H acid), monosodium salt.	245, 333, 527.
*8-Amino-1-naphthol-5,7-disulfonic acid (Chicago acid) (2S acid), monosodium salt.	333, 495, 527.
8-Amino-1-naphthol-3,6-disulfonic acid, p-toluene- sulfonate.	569.
*1-Amino-2-naphthol-4-sulfonic acid (1,2,4-Acid)-----	333, 464, 495, 527, 550, 559, 569.
*6-Amino-1-naphthol-3-sulfonic acid (I acid), sodium salt-	268, 294, 333, 464, 495, 523, 527, 550, 559, 576.
*7-Amino-1-naphthol-3-sulfonic acid (Gamma acid), sodium salt.	333, 495, 527, 550.
*8-Amino-1-naphthol-5-sulfonic acid (S acid), sodium salt-	333, 495, 527.
m-(4-Amino-1-naphthylazo)benzenesulfonic acid-----	464.
Aminonaphthylene isocyanate-----	245.
5-Amino-2-(p-nitroanilino)benzenesulfonic acid-----	569.
3-Amino-5-(m-nitrobenzamido)-p-toluenesulfonic acid-----	550.
3-Amino-4'-nitrobenzanilide-----	495.
*2-Amino-5-nitrobenzenesulfonic acid [SO ₃ H=1]-----	333, 464, 495, 527, 550.
*2-Amino-4-nitrophenol-----	294, 333, 527, 550.
2-Amino-5-nitrophenol-----	550, 559.
2-Amino-4-nitro-1-phenol-6-sulfonic acid-----	294, 495.
8-Amino-4-(m-nitrophenylazo)-2-naphthol-----	333.
4-Amino-4'-nitro-2,2'-stilbenedisulfonic acid-----	495.
2-Amino-5-nitrothiazole-----	245.
3-Amino-5-nitro-p-toluenesulfonic acid [SO ₃ H=1]-----	550.
3-Amino-4-octadecylaminobenzenesulfonic acid, sodium salt.	550.
m-Aminooxanilic acid-----	333.
p-Aminooxanilic acid-----	333, 569.
(6-Aminophenethylmercapto)acetic acid-----	333.
*m-Aminophenol-----	268, 434, 464, 498, 550.
o-Aminophenol-----	460.
p-Aminophenol and salts-----	333, 460, 464, 498.
*2-Amino-1-phenol-4-sulfonamide-----	333, 495, 527, 550.
2-Amino-1-phenol-4-sulfonantranilide-----	495.
*2-Amino-1-phenol-4-sulfonic acid-----	333, 434, 495, 527, 569, 576.
m-(p-Aminophenylazo)benzenesulfonic acid-----	333, 495, 576.
*p-(p-Aminophenylazo)benzenesulfonic acid-----	294, 464, 495, 527, 550, 559, 569.
5-(and 8)-Amino-8-(and 5)-phenylazo-2-naphthalenesulfonic acid.	495.
5-(p-Aminophenylazo)salicylic acid-----	495.
4-Amino- <i>o</i> -phenyl- <i>m</i> -cresol hydrochloride-----	498.
2-(p-Aminophenyl)-6-methylbenzothiazole-----	333, 527.
2-(p-Aminophenyl)-6-methyl-7-benzothiazolesulfonic acid and salt.	333.
1-(m-Aminophenyl)-5-oxo-2-pyrazoline-3-carboxylic acid---	333, 495.
2-Amino-3-picoline-----	372.
6-Amino-2-picoline-----	372.
6-Amino-3-picoline-----	372.
2-Aminopyridine-----	205, 372.
2-Aminopyrimidine-----	464.
4-Aminosalicylic acid-----	569.
5-Aminosalicylic acid-----	495, 527, 576.
2-(4-Amino-3-sulfophenyl)-6-methylbenzothiazolesulfonic acid.	495.
2-Aminothiazole-----	464, 515.
1-Amino-4-(p-toluenesulfonamido)-2-anthraquinonesulfonic acid.	333.
5-Amino- <i>o</i> -toluenesulfonanilide-----	550.
*4-Amino- <i>m</i> -toluenesulfonic acid [SO ₃ H=1]-----	333, 464, 521, 527, 559.
*4-Amino- <i>o</i> -toluenesulfonic acid [SO ₃ H=1]-----	376, 495.
*5-Amino- <i>o</i> -toluenesulfonic acid [SO ₃ H=1]-----	333, 537, 550.
6-Amino- <i>m</i> -toluenesulfonic acid [SO ₃ H=1]-----	333.
7-(4-Amino- <i>o</i> -tolylazo)-1,5-naphthalenedisulfonic acid---	495.
4-(4-Amino- <i>m</i> -tolylazo)- <i>m</i> -toluenesulfonic acid-----	527, 559.
N-(4-Amino- <i>m</i> -tolyl)- <i>p</i> -quinone imine-----	333.
16-Aminoviolanthrone-----	464, 550.
4-Aminoxanthopurpurin-----	550.
*2-Amino-3,5-xylenebisulfonic acid [SO ₃ H=1]-----	333, 355, 376.
Amylnaphthalenes-----	580.
o-Amylphenol-----	580.
p-sec-Amylphenol-----	580.
p-tert-Amylphenol-----	580.

TABLE 7B.--Synthetic organic chemicals: Cyclic intermediates for which United States production or sales were reported, identified by manufacturer, 1953--Continued

Chemical	Manufacturers' identification numbers (according to list in table 27)
2-n-Amylpyridine-----	372.
4-n-Amylpyridine-----	372.
*Aniline (Aniline oil)-----	245, 333, 378, 448, 464, 527.
Aniline salt-----	464, 504.
Aniline sulfate-----	464.
1-Anilino-2-anthraquinonecarboxylic acid-----	527.
2-Anilinoethanol (Phenylethanolamine)-----	392.
8-Anilino-5-(p-hydroxyanilino)-1-naphthalenesulfonic acid.	333.
1-Anilino-4-hydroxyanthraquinone-----	333.
4-Anilino-4'-hydroxydiphenylamine-----	495.
2-Anilino-4-(8'-hydroxy-3',6'-disulfo-1'-naphthylamino)-6-(4-p-anilinosalicylazo)-s-triazine.	495.
*Anilinomethanesulfonic acid and salt-----	294, 333, 464, 495, 527, 550, 559, 569.
6-Anilino-2-methoxymethanilic acid-----	495.
*8-Anilino-1-naphthalenesulfonic acid (Phenyl peri acid)---	294, 333, 495, 527, 550.
*6-Anilino-1-naphthol-3-sulfonic acid (Phenyl J acid)---	268, 294, 333, 495, 523, 527, 550, 559, 569, 576.
*7-Anilino-1-naphthol-3-sulfonic acid (Phenyl gamma acid)---	294, 333, 464, 495, 527, 559.
2-Anilino-5-nitrobenzenesulfonic acid-----	495, 550.
N-(p-Anilinophenyl)-p-quinone imine-----	333.
Anisic acid-----	397, 431.
o-Anisidine-----	245, 333.
p-Anisidine-----	245, 333.
o-Anisidine nitrate-----	550.
Anisole, tech-----	333, 582.
o-(p-Anisyl)-o-ethyl-p-methoxyacetophenone-----	442.
o-(p-Anisyl)-p-methoxyacetophenone-----	176, 442.
N-(p-Anisyl)-4-nitroanthranilic acid-----	550.
N-(p-Anisyl)-p-phenylenediamine sulfate-----	550.
Anthracene, refined-----	323, 372.
Anthracene, scintillation grade-----	372.
Anthracelic acid (2,6-Dihydroxyanthraquinone)-----	495, 550.
*Anthranilic acid (o-Aminobenzoic acid)-----	301, 333, 434, 448, 527, 550.
Anthra[1,9]pyrazol-6(2)-one (Pyrazolanthrone)-----	333, 365, 550.
Anthraquinone, 100%-----	333, 464, 550.
2-Anthraquinonecarboxylic acid-----	464.
N,N'-(1,5-Anthraquinone)dioxamic acid-----	495, 550.
1,5-Anthraquinonedisulfonic acid-----	333, 365, 366, 464, 527, 550.
1,5-(and 1,8)-Anthraquinonedisulfonic acid and salt-----	333, 365, 495.
*1,8-Anthraquinonedisulfonic acid-----	333, 365.
1,8-Anthraquinonedisulfonic acid, potassium salt-----	366, 550.
*2,6-Anthraquinonedisulfonic acid and salt-----	333, 365, 456, 464, 527, 550.
1-Anthraquinonesulfonic acid and salt-----	333, 365, 366, 464, 495, 527, 550, 552, 576.
2-Anthraquinonesulfonic acid and salt (Silver salt)-----	333, 527, 576.
3-(1-Anthraquinonylamino)-7-benz[de]anthracen-7-one-----	456, 464, 550, 552.
N,N'-(1,5-Anthraquinonylene)dianthranilic acid-----	333.
1,1'-[1,5-(and 1,8)-Anthraquinonylenedimino]bis-[naphth[2,3-c]acridine-5,8,14(13)-trione].	333.
1-(1-Anthraquinonyl)-1,2-hydrazinedisulfonic acid, disodium salt.	333, X.
*Anthraquinone (1,5-Dihydroxyanthraquinone)-----	294, 464, 527, 550.
Arsenic acid and salt, tech-----	132, 565.
Azobenzene-----	527.
4',4''-Azobis[4-biphenylcarboxylic acid]-----	333.
1,1'-(Azobis[p-phenylene-carbonyl])-2-bis[1-nitro-2-anthraquinonylcarbonyl]hydrazide.	333.
Azoxybenzene-----	434.
m,m-Azoxydianiline-----	495, 559.
Benzaldehyde, tech-----	331, 343, 397.
Benzamide-----	365, 498.
1-Benzamido-4-aminoanthraquinone-----	527.
4-(4-Benzamido-1-anthraquinonylamino)naphth[2,3-c]-acridine-5,8,14(13)-trione.	333.
1-Benzamido-4-chloroanthraquinone-----	333, 550.
*1-Benzamido-5-chloroanthraquinone-----	333, 464, 527, 550.
1-Benzamido-5-chloro-4-methoxyanthraquinone-----	333, 550.
4-Benzamido-5-chloro-o-toluidine [NH ₂ =1]-----	559.
5-Benzamido-4-chloro-o-toluidine [NH ₂ =1]-----	559.
2-Benzamido-p-cresol (OH=1)-----	495.
2-[3-(4-Benzamido-2,5-diethoxyphenyl)-1-methyldiazoamino]ethanesulfonic acid.	550.
2-[3-(4-Benzamido-2,5-dimethoxyphenyl)-1-methyldiazoamino]ethanesulfonic acid.	550.
[3-(4-Benzamido-6-methoxy-m-tolyl)-1-methyldiazoamino]-acetic acid.	376, 550.
2-[3-(4-Benzamido-6-methoxy-m-tolyl)-1-methyldiazoamino]-ethanesulfonic acid.	550.
8-Benzamido-1-naphthol-3,5-disulfonic acid-----	550.
6-Benzamido-1-naphthol-3-sulfonic acid (Benzoyl J acid)---	294, 495.
2-Benzamido-5-nitro-1,4-diethoxybenzene-----	559.
1-Benzamido-5-(p-tolylsulfonamido)anthraquinone-----	333.

TABLE 7B.--Synthetic organic chemicals: Cyclic intermediates for which United States production or sales were reported, identified by manufacturer, 1953--Continued

Chemical	Manufacturers' identification numbers (according to list in table 27)
*7-Benz[de]anthracen-7-one (Benzanthrone)	114, 294, 333, 365, 366, 456, 464, 527, 550, 552, 576.
Benzenesulfonamide	549.
Benzenesulfonic acid	377.
Benzenesulfonic acid, isopropyl ester	333.
Benzenesulfonic acid, n-propyl ester	549.
*Benzenesulfonic acid, sodium salt	377, 536, 549.
Benzenesulfonyl chloride	495, 549.
Benzhydrol (Diphenylmethanol)	582.
*Benzidine base	333, 495, 527.
*Benzidine hydrochloride and sulfate	333, 434, 495, 527, 550, 591.
Benzil (Bibenzoyl)	389, 397.
Benzilic acid	343, 397.
2-Benzofuryl cyanomethyl ketone	498.
Benzoic acid, tech.	245, 331, 338, 343, 397.
*Benzoïn	343, 389, 397, 515.
Benzonitrile	362.
Benzotriazole	376, 599.
2(3)-Benzoxazolone	550.
*o-Benzoylbenzoic acid	333, 464, 527, 550.
Benzoyl chloride	331, 338.
Benzylamine	431.
o-Benzyl-p-chlorophenol	245.
Benzyl disulfide	123, 591.
Benzyl ether (Dibenzyl ether)	331, 343, 562, 582.
4-(N-Benzyl-N-ethylamino)-o-toluenesulfonic acid	527.
N-Benzyl-N-ethyl-m-toluidine	527.
4-Benzylideneaminoantipyrine	379.
p,p'-Benzylidenebis[N,N-diethylaniline]	76.
p,p'-Benzylidenebis[N,N-dimethylaniline]	76.
Benzyl polysulfide	338.
2-Benzylpyridine	372.
4-Benzylpyridine	372.
4,4'-Biacetoacetanilide	559.
N,N-Biacetoacet-o-tolidine	434.
(3,3'-Bianthra[1,9]pyrazolone)-6,6'-dione, potassium salt.	333.
(3,3'-Bi-7-benz[de]anthracen)-7,7'-dione	333.
*(4,4'-Bi-7-benz[de]anthracen)-7,7'-dione	294, 333, 365, 366, 456, 527, 550, 552.
sindo-cis-Bicyclo[2,2,1]-5-heptene-2,3-dicarboxylic anhydride.	527.
Bicyclohexyl	245.
1,1'-Bisnaphthalene)-8,8'-dicarboxylic acid	333, 527, 550.
1,1'-Bi-2-naphthol	176, 493.
Biphenyl	245, 448.
p-Biphenyl isocyanate	245.
*1,4-Bis[1-anthraquinonylamino]anthraquinone	333, 366, 464, 527, 550, 552.
1,5-Bis[1-anthraquinonylamino]anthraquinone	333.
*3,9-Bis[1-anthraquinonylamino]-7-benz[de]anthracen-7-one	365, 366, 456, 464, 527, 550, 552.
Bis[1-anthraquinonylamino]violanthrone	550.
3,3'-Bis[7-benz[de]anthracen-7-one] sulfide	366.
N,N'-Bis[1-chloro-2-anthraquinonyl]-4,4'-ezobis[4-biphenylcarboximide].	550.
4,4'-Bis[diethylamino]benzhydrol	495.
4,4'-Bis[diethylamino]benzophenone (Ethyl ketone base)	76, 333.
2,7-Bis[dimethylamino]acridine hydrochloride	559.
*4,4'-Bis[dimethylamino]benzhydrol (Michler's hydrol)	76, 333, 376, 550.
*4,4'-Bis[dimethylamino]benzophenone (Michler's ketone)	76, 333, 376, 527, 550.
Bis[p-dimethylaminophenyl]methanesulfonic acid and salt	527.
1-Bis[p-dimethylaminophenyl]methyl-2,7-naphthalenedi-sulfonic acid.	495.
1,5-Bis[2,4-dinitrophenoxy]-4,8-dinitroanthraquinone	333.
1,8-Bis[2,4-dinitrophenoxy]-4,5-dinitroanthraquinone	333.
m-Bis[2,3-epoxypropoxy]benzene	483.
a-Bis[(N-ethyl-N-3'-sulfofenyl)-4'-amino-2'-tolyl]-p-toluenesulfonic acid.	495.
1,2-Bis[1-nitro-2-anthraquinonylcarbonyl]hydrazine	333.
m-Bromoacetylphenyl benzozate	376.
p-Bromoanisole	431.
*3-Bromo-7-benz[de]anthracen-7-one (Bromobenzanthrone)	333, 365, 366, 456, 464, 527, 550, 552, 576.
Bromobenzene, mono	181, 448, 494.
*4-Bromobenzophenone	229, 431, 494.
12-Bromo-3,9-epoxy-11-ketocholanic acid, methyl ester	122.
5-Bromoisatin	550.
1-Bromo-4-(N-methylacetamido)anthraquinone	550.
4-Bromo-1-methylaminoanthraquinone	365.
2-Bromo-3-methylanthraquinone	333.
6-Bromo-3-methyl-7-dibenz(f,i)isoquinoline-2,7(3)-dione	365, 550.
1-Bromonaphthalene	368, 498.
a-Bromo-p-nitrosacetophenone	245, 550.
1-(9-Bromo-7-oxo-7-benz[de]anthracen-3-ylamino)anthraquinone.	333.

TABLE 7B.--Synthetic organic chemicals: Cyclic intermediates for which United States production or sales were reported, identified by manufacturer, 1953--Continued

Chemical	Manufacturers' identification numbers (according to list in table 27)
p-Bromophenol	498.
2-Bromopyridine	372.
Bromoquinizarin	576.
o-(3-Bromo-p-tolyl)benzoic acid	333.
1-Bromo-2,4,6-triethylbenzene	333.
N-Butylacetanilide	574.
N-Butylaniline	574.
p-n-Butylaniline	333.
2-tert-Butylanthraquinone	333.
n-Butylbenzene	443.
sec-Butylbenzene	323, 443.
tert-Butylbenzene	431, 443.
Butyl-m-cresol	323.
3-tert-Butyl-p-cymene	229.
6-tert-Butyl-2,4-dimethylacetophenone	229.
N ¹ -Butyl-4-methoxymetanilamide	550.
2-tert-Butyl-5-methylanisole	229.
p-tert-Butylphenol	448, 487.
5-tert-Butyl-m-xylene	229.
Carbazole, refined	333, 372.
p-(3-Carbazolylamino)phenol	333.
o,o'-Carbonyldioxydibenzoic acid, diethyl ester	448.
2 (and 6)-Carboxybenzene-4 (and 2)-diazamine	333.
5-(o-Carboxybenzoyl)-2-chlorooxanilic acid	550.
3-Carboxy-2 (and 4)-hydroxybenzenedisodium sulfate	527, 550.
3-Carboxymethyl-1-(5-chloro-o-anisyl)-3-methyltriazene	333.
3-Carboxymethyl-1-(5-chloro-o-tolyl)-3-methyltriazene	333.
Chelidamic acid	379, 515, 597.
o-Chloroacetoacetanilide	392, 463.
Chloroacetylacetol	379.
*m-Chloroaniline	245, 333, 345, 527, 550.
o-Chloroaniline	245, 460.
p-Chloroaniline	245, 333.
2-(Chloroanilino)ethanol	483.
5-Chloro-o-anisidine [NH ₂ =1] (4-Chloro-o-anisidine) [OCH ₃ =1].	333, 460.
2-[3-(5-Chloro-2-anisyl)-1-methylidiazomino]ethane- sulfonic acid.	550.
3-Chloro-2-anthracenecarboxylic acid	550.
4-Chloroanthranilic acid	333.
*1-Chloroanthraquinone	333, 365, 366, 464, 527, 550, 552, 576.
*2-Chloroanthraquinone	464, 527, 550.
Chloroanthraquinones, mixed	333.
1-Chloro-2-anthraquinonecarboxylic acid	333.
o-Chlorobenzaldehyde	397, 527.
p-Chlorobenzaldehyde	397.
Chloro-7-benz[de]anthracen-7-one (Chlorobenzanthrone)	464.
*Chlorobenzene, mono	236, 245, 333, 338, 387, 390, 391, 448.
N-Chlorobenzenesulfonamide, sodium salt	549.
p-Chlorobenzenesulfonic acid	550, 569.
m-Chlorobenzoic acid	550.
o-Chlorobenzoic acid	397.
p-Chlorobenzoic acid	397.
4-Chlorobenzophenone	520.
5-Chloro-2(3)-benzoxazolone	550.
o-(m-Chlorobenzoyl)benzoic acid	464.
*o-(p-Chlorobenzoyl)benzoic acid	333, 527, 550.
p-Chlorobenzoyl chloride	397.
7-Chlorocymene	333.
N-(3-Chloro-9,10-dihydroxy-2-anthranyl)acetamidebis- [acid sulfate].	550.
5-Chloro-2,4-dimethoxyaniline	550.
5-Chloro-4,7-dimethyl-3(2)-thianaphthenone	333.
*1-Chloro-2,4-dinitrobenzene (Dinitrochlorobenzene)	245, 333, 464, 527, 550, 576.
2-Chloro-3,5-dinitrobenzenesulfonmethyleamide	483.
2-Chloro-3,5-dinitrobenzenesulfonic acid	483.
2-Chloro-3,5-dinitrobenzenesulfonyl chloride	483.
6-Chloro-2,4-dinitrophenol	559.
2-Chloro-N-ethyl-5-nitrobenzenesulfonamide	550.
5-Chloro-2-formylbenzenesulfonic acid	550.
4-Chloro-3-hydrazinobenzenesulfonic acid	550.
4-Chlorometanilic acid	333, 550.
5-Chlorometanilic acid	527.
6-Chlorometanilic acid	333, 527, 550.
[3-(5-Chloro-2-methoxyphenyl)-1-methylidiazomino]scatic acid.	550.
*1-Chloro-2-methylanthraquinone	333, 366, 464, 527, 550.
6-Chloro-4-methylbenzo-1,3-thiazs-2-thionum chloride	333.
Chloronaphthsiene	487.
8-Chloro-1-naphthalenesulfonic acid, sodium salt	550.
8-Chloro-1-naphthalenesulfonyl chloride	550.
8-Chloro-1-naphthol-3,6-disulfonic acid (Chloro H acid)	527, 550.

TABLE 7B.--Synthetic organic chemicals: Cyclic intermediates for which United States production or sales were reported, identified by manufacturer, 1953--Continued

Chemical	Manufacturers' identification numbers (according to list in table 27)
9-Chloronaphtho[1,2-b]thiophen-3(2)-one-----	550.
8-Chloro-1-naphthylmercaptoacetic acid-----	550.
*2-Chloro-4-nitroaniline (o-Chloro-p-nitroaniline)-----	333, 448, 464, 531, 537, 576.
*4-Chloro-2-nitroaniline (p-Chloro-o-nitroaniline)-----	333, 448, 460, 527.
4-Chloro-2-nitroanisole-----	460.
1-Chloro-5-nitroanthraquinone-----	333, 366, 527.
1-Chloro-5(and 8)-nitroanthraquinone-----	527.
1-Chloro-8-nitroanthraquinone-----	333, 366, 527.
1-Chloro-2-nitrobenzene-----	245, 333.
1-Chloro-2(and 4)-nitrobenzene-----	333.
1-Chloro-3-nitrobenzene-----	245, 333.
1-Chloro-4-nitrobenzene-----	245, 333, 576.
Chloronitrobenzenes, mixed-----	550.
*4-Chloro-3-nitrobenzenesulfonamide-----	333, 483, 495, 550, 576.
*2-Chloro-5-nitrobenzenesulfonic acid-----	294, 464, 483, 495, 527, 550, 576.
2-Chloro-5-nitrobenzenesulfonic acid, magnesium salt-----	333.
2-Chloro-5-nitrobenzenesulfonic acid, sodium salt-----	483.
4-Chloro-3-nitrobenzenesulfonic acid-----	527, 550, 559, 569, 576.
2-Chloro-5-nitrobenzenesulfonyl chloride-----	483.
4-Chloro-3-nitrobenzenesulfonyl chloride-----	333, 483.
2-Chloro-4-nitrobenzoic acid-----	527.
2-Chloro-5-nitrobenzoic acid-----	559.
5-Chloro-6-nitro-2(3)-benzoxazolone-----	550.
o-(4-Chloro-3-nitrobenzoyl)benzoic acid-----	527.
4-Chloro-2-nitrophenol-----	333, 424, 550.
4-Chloro-2-nitro-1-phenol-6-sulfonic acid-----	495, 550.
6-(2-Chloro-2-nitro-1-phenol-6-sulfonic acid)-----	559.
6-(2-Chloro-4-nitrophenylazo)-4-methyl-m-anisidine-----	550.
4-Chloro-2-nitrophenyl benzyl ether-----	559.
4-Chloro-2-nitrophenyl ether-----	559.
2-Chloro-4-nitrotoluene-----	333, 550.
4-Chloro-2-nitrotoluene-----	333, 527, 550.
4-Chloro-3-nitrotoluene-----	576.
5-Chloro-2-nitrotoluene-----	333.
Chloronitrotoluenes, mixed-----	333.
4-Chloro-5-nitro-p-toluenesulfono-o-toluidide-----	559.
o-Chlorophenol-----	245, 448.
p-Chlorophenol-----	245, 448.
5-Chloro-2-phenoxyaniline-----	559.
*p-Chlorophenylacetone-----	266, 431, 562.
(o-Chlorophenyl)hydroquinone-----	550.
(o-Chlorophenyl)quinone-----	550.
4-Chlorophthalic acid-----	333.
4-Chlorophthalic acid, sodium salt-----	550.
Chlorophthalic anhydride-----	245.
2-Chloropyridine-----	133.
6-Chloroquinoline-----	333.
*2-Chloroquinizarin-----	365, 424, 495, 527.
5-Chloro-8-quinolinol-----	495.
2-Chloro-5-sulfobenzoic acid-----	559.
1-(6-Chloro-3-sulfophenyl)-3-methyl-5-pyrazolone-----	333, 550.
m-Chlorotoluene-----	338.
o-Chlorotoluene-----	397, 527.
p-Chlorotoluene-----	397.
*o-Chlorotoluene (Benzyl chloride)-----	245, 331, 338, 343, 397.
3-Chloro-p-toluenesulfonic acid and salt [SO ₃ H=1]-----	245.
5-Chloro-o-toluenesulfonic acid and salt [SO ₃ H=1]-----	550.
5-Chloro-p-toluenesulfono-o-toluidide-----	559.
3-Chloro-o-toluidide-----	333.
3-Chloro-p-toluidide-----	333, 550.
*4-Chloro-o-toluidide [CH ₃ =1] (Red KB base)-----	464, 527, 550, 576.
5-Chloro-o-toluidide [CH ₃ =1] (Fast red TR base)-----	333, 464, 527.
*4-Chloro-o-toluidide hydrochloride-----	333, 464, 550, 569.
5-Chloro-o-toluidide hydrochloride-----	552.
5-Chloro-o-toluidide sulfate-----	527.
*4-Chloro-o-tolylmercaptoacetic acid-----	333, 464, 527, 563.
2-[3-(5-Chloro-o-tolyl)-1-methyldiazomino]ethanesulfonic acid-----	550.
1-(5-Chloro-o-tolyl)-3-methyl-3-triazenoacetic acid-----	550.
2-Chloro-p-xylene-----	333, 550.
4-Chloro-2,5-xylenesulfonyl chloride-----	550.
*4-Chloro-2,5-xylolmercaptoacetic acid-----	333, 550, 563.
Chrysoazin-----	333, 550.
s-Collidine (2,4,6-Trimethylpyridine)-----	536.
*Cresols: ¹	
m-Cresol-----	323, 372.
o-Cresol-----	323, 372, 538.
p-Cresol-----	521, 536, 562.
*Cresols, mixed: ¹	
Cresol (meta, para)-----	323, 372, 373, 536, 538.
Cresol (ortho, meta, para)-----	372, 373, 536, 538.
2,3-Cresotic acid-----	448.

See footnote at end of table.

TABLE 7B.--Synthetic organic chemicals: Cyclic intermediates for which United States production or sales were reported, identified by manufacturer, 1953--Continued

Chemical	Manufacturers' identification numbers (according to list in table 27)
*Cresylic acid, refined-----	88, 223, 232, 323, 362, 372, 373, 464, 536, 538, 555, 595. ¹
Cumene-----	448.
p-(2-Cyanoethyl)methylaminobenzaldehyde-----	330.
8-Cyano-1-naphthalenesulfonic acid, sodium salt-----	333.
Cyanuric chloride-----	10, 464.
*Cyclohexane-----	223, 305, 333, 441, 443.
Cyclohexanol-----	333, 338, 448.
Cyclohexanone-----	333.
Cyclohexanone oxime-----	333.
Cyclohexene-----	448.
4-Cyclohexene-1,2-dicarboximide-----	527.
Cyclohexylamine-----	245.
Cyclohexyl-2-propanone-----	229.
p-Cymene-----	285, 395.
Decylbenzene-----	245.
1,5-(and 1,8)-Diacetamidoanthraquinone-----	576.
*1,4-Diaminoanthraquinone-----	268, 333, 366, 527, 550.
1,5-Diaminoanthraquinone-----	333, 366.
1,5-(and 1,8)-Diaminoanthraquinone-----	333, 495, 576.
*2,6-Diaminoanthraquinone-----	333, 365, 366, 464, 527, 550, 576.
1,4-Diamino-2,3-anthraquinonedicarbonitrile-----	333.
1,4-Diamino-2,3-anthraquinonedicarboxamide-----	333.
1,4-Diamino-2,3-anthraquinonedisulfonic acid-----	333.
4,8-Diaminoanthrarufin-----	333, 527.
4,4'-Diaminobenzamido diphenylurea-3,3'-disulfonic acid-----	559.
4,4'-Diaminobenzanilide-----	550.
*2,4-Diaminobenzenesulfonic acid [SO ₃ H=1]-----	333, 495, 527, 550.
2,5-Diaminobenzenesulfonic acid [SO ₃ H=1]-----	294, 495.
4,4'-Diamino-2,2'-biphenyldisulfonic acid-----	550.
*4,4'-Diamino-3,3'-biphenyldisulfonic acid-----	434, 464, 495, 559, 576.
*2,2'-Diamino-5,5'-bi-m-toluenesulfonic acid-----	495, 527, 559, 576.
3,3'-Diaminocarbaniide-----	550.
3,7-Diaminodibenzothiohenedisulfonic acid-5,5-dioxide, disodium salt-----	464.
1,4-Diamino-2,3-dichloroanthraquinone-----	333.
4,4'-Diamino-5,5'-dimethyl-2,2'-biphenyldisulfonic acid-----	411, 550.
4,4'-Diamino-3,3'-dimethyltriphenylmethane-----	464.
4,4'-Diaminodiphenylamine sulfate-----	559.
*4,4'-Diaminodiphenylamine-2-sulfonic acid-----	294, 495, 527, 550, 559, 569, 576.
4,4'-Diaminodiphenyl sulfone-----	527.
5,6-Diamino-1-naphthalenesulfonic acid-----	550.
1,4-Diamino-5-nitroanthraquinone-----	550.
*N,N'-Di(m-aminophenyl)oxamide-----	294, 495, 527, 559.
N,N'-Di(p-aminophenyl)oxamide-----	559.
2,6-Diaminopyridine-----	205, 372.
*4,4'-Diamino-2,2'-stilbenedisulfonic acid-----	333, 342, 464, 495, 527, 550, 559.
4,6-Diamino-m-toluenesulfonic acid [SO ₃ H=1]-----	333.
2,4-Di-sec-amyphenol-----	580.
2,4-Di-tert-amyphenol-----	580.
*1,5-Dianilino-2,6-anthraquinonedicarboxylic acid-----	365, 527, 550.
*2,4-Dianilino-1-hydroxyanthraquinone-----	365, 495, 550.
4-Diazo-2,5-dichlorobenzenesulfonic acid-----	495.
N-Di-2-azodiphenol-----	559.
1,5-Dibenzamidoanthraquinone-----	333, 550.
4,4'-Dibenzamido-1,1'-iminodanthraquinone-----	456.
*4,5'-Dibenzamido-1,1'-iminodanthraquinone-----	333, 456, 464, 527, 550.
5,5'-Dibenzamido-1,1'-iminodanthraquinone-----	456, 550.
4,5'-Dibenzamido-8'-methoxy-1,1'-iminodanthraquinone-----	333.
Dibenzofuran-----	372.
1,5-Dibenzocynaphthalene-----	365, 550.
N,N'-Dibenzylethylenediamine diacetate-----	343, 431.
N,N-Dibenzylsulfanilic acid and sodium salt-----	550.
*3,9-Dibromo-7-benz[de]anthracen-7-one-----	294, 333, 365, 366, 456, 464, 527, 550, 552.
p-Dibromobenzene-----	448.
7,16-Dibromoindanthrene-----	333.
5,5'-Dibromoindigotin-----	550.
2,6-Dibromo-1,5-naphthalenediol-----	498.
Dibromo-8,16-pyranthrene-dione-----	333.
Dibromoviolanthrene-----	550.
Di-n-butylaniline-----	574.
4,6-Di-tert-butyl-m-cresol-----	323, 591.
*2,5-Dichloroaniline and hydrochloride [NH ₂ =1]-----	333, 376, 460, 527, 550, 576.
3,4-Dichloroaniline-----	333.
*1,5-Dichloroanthraquinone-----	333, 365, 527, 550.
*1,5-(and 1,8)-Dichloroanthraquinone-----	333, 365, 527, 550.
*1,8-Dichloroanthraquinone-----	333, 365, 366, 550.
4,8-(and 4,5)-Dichloro-1,5-(and 1,8)-anthraquinonedisulfonic acid-----	550.
2,6-Dichlorobenzaldehyde-----	550.
*o-Dichlorobenzene-----	159, 197, 236, 245, 333, 338, 391, 448.
o-(and p)-Dichlorobenzene-----	387, 390.

See footnote at end of table.

TABLE 7B.--Synthetic organic chemicals: Cyclic intermediates for which United States production or sales were reported, identified by manufacturer, 1953--Continued

Chemical	Manufacturers' identification numbers (according to list in table 27)
*p-Dichlorobenzene-----	159, 197, 236, 245, 333, 338, 391, 448.
*3,3'-Dichlorobenzidine base and salts-----	333, 376, 434, 495, 550, 563, X.
2,4-Dichlorobenzoic acid-----	397.
2,5-Dichlorobenzoic acid-----	559.
2,4-Dichlorobenzoyl chloride-----	397.
N,N'-(2,5-Dichloro-3,6-dioxo-p-phenylene)bis[6-(2(3)-oxo-5-benzimidazolylamino)metanilic acid].	333.
Dichlorodiphenylsilane-----	315.
2,5-Dichloro-4-hydrazinobenzenesulfonic acid-----	550.
2,6-Dichloro-4-nitroaniline-----	483, 550.
4,5-Dichloro-1-nitroanthraquinone-----	333, 550.
1,2-Dichloro-4-nitrobenzene-----	333.
*1,4-Dichloro-2-nitrobenzene-----	245, 333, 460, 527, 550, 576.
*2,4-Dichlorophenol-----	245, 448, 456.
2-[3-(2,5-Dichlorophenyl)-1-ethylidiazamino]-5-sulfobenzoic acid.	550.
2,5-Dichlorophenylhydrazine-----	559.
Dichlorophenylphosphine sulfide-----	208.
4,7-Dichloroquinoline-----	77, 550.
o-(3,5-Dichlorosalicyloyl)benzoic acid-----	365, 527.
2,5-Dichlorosulfanilic acid [SO ₂ H-1]-----	527, 559, 569.
*1-(2,5-Dichloro-4-sulphenyl)-3-methyl-5-pyrazolone-----	294, 464, 495, 550, 559, 569.
p,o-Dichlorotoluene-----	397.
a,o-Dichlorotoluene (Benzal chloride)-----	338.
2,4-Dichlorotoluene-----	397.
*2,6-Dichlorotoluene-----	333, 338, 550.
3,4-Dichlorotoluene-----	397.
Dicyclohexylamine-----	245.
p-Diethylaminobenzaldehyde-----	527, 550.
*N,N-Diethyl-3-aminophenol-----	333, 464, 550.
*N,N-Diethylaniline-----	76, 333, 376, 464, 527.
Diethylbenzene-----	323, 448.
N,N-Diethylcyclohexylamine-----	333.
N,N-Diethylmetanilic acid-----	333.
N ⁴ ,N ⁴ -Diethyl-4-methoxymetanilamide-----	550.
N,N-Diethyl-1-naphthylamine-----	333.
N,N-Diethyl-p-nitrosaniline-----	550.
N,N-Diethyl-p-phenylenediamine-----	527.
Diethylstilbestrol, dimethyl ether-----	442.
5-Diethylsulfamyl-p-acetamidide-----	550.
2-(3-[5-(N,N-Diethylsulfamyl)-o-anisyl]-1-ethylidiazamino)-5-sulfobenzoic acid.	550.
Diethylterephthaloyl diacetate-----	550.
N,N-Diethyl-m-toluidine-----	333.
N-(2,2-Difluoroethyl)aniline-----	483.
2-(N-2,2-Difluoroethylamino)ethanol-----	483.
2,3-Dihydropyran-----	333.
1,5 (and 1,8)-Dihydroxyanthraquinone-----	333.
4,5-Dihydroxy-2,7-naphthalenedisulfonic acid (Chromotropic acid).	333, 424, 527.
4,5-Dihydroxy-1-naphthalenesulfonic acid (Dioxo S acid)-----	495, 527, 550, 576.
4,6-Dihydroxy-2-naphthalenesulfonic acid-----	550.
*6,7-Dihydroxy-2-naphthalenesulfonic acid-----	133, 461, 527, 540, 550, 599.
3,5-Dihydroxy-2-naphthoic acid-----	333, 376, 550.
*16,17-Dihydroxyviolanthrone (Dihydroxydibenzanthrone)-----	294, 333, 365, 366, 456, 527, 550, 552.
Diisobutyl-o-cresol-----	493.
2,5-Dimethoxyacetophenone-----	431.
2,5-Dimethoxyaniline-----	333, 550.
m-Dimethoxybenzene-----	333, X.
p-Dimethoxybenzene-----	74, 333, 431.
*3,3'-Dimethoxybenzidine-----	333, 434, 495.
2,4-Dimethoxybenzoic acid-----	464.
2,5-Dimethoxybenzoic acid-----	431.
1,1'-(3,3'-Dimethoxy-4,4'-biphenylene)bis[3-glycyl-3-methyltriazene].	333.
2,2'-(3,3'-(3,3'-Dimethoxy-4,4'-biphenylene)bis[1-methylidiazamino]di(ethansulfonic acid).	550.
1,1'-(3,3'-Dimethoxy-4,4'-biphenylene)bis[3-methyl-3-(2-sulfoethyl)triazene].	333.
4,4'-Dimethoxy-6,6'-bis[benzo-1,3-thiazia-2-thionium chloride].	333.
1,4-Dimethoxy-2-nitrobenzene-----	333, 483.
16,17-Dimethoxyviolanthrone-----	552.
p-Dimethylaminobenzaldehyde-----	527, 591.
o-(Dimethylaminomethyl)-p-butylphenol-----	493.
o-(Dimethylaminomethyl)-p-ocetylphenol-----	493.
o-(Dimethylaminomethyl)phenol-----	493.
N,N-Dimethyl-7-amino-1-naphthol-3-sulfonic acid-----	527.
N-(p-Dimethylaminophenyl)-1,4-naphthoquinone imine-----	527.
N,N-Dimethylaniline-----	76, 333, 376, 464, 527.
N,N-Dimethylbenzylamine-----	493.
*2,2'-Dimethyl-1,1'-bianthraquinone-----	333, 366, 464, 527, 550.

TABLE 7B.--Synthetic organic chemicals: Cyclic intermediates for which United States production or sales were reported, identified by manufacturer, 1953--Continued

Chemical	Manufacturers' identification numbers (according to list in table 27)
Dimethyl-1,3-cyclohexanedione	483.
2',7'-Dimethylfluoran	168.
2,7-Dimethyl-N-glyceryltetrahydroquinoline	483.
5,5-Dimethylhydantoin	333.
2,8-Dimethyl-13 β -hydroxy-9(13 β)-ceroxonone	168.
2,3-Dimethylindole	333.
Dimethylnaphthalene	372.
N,N-Dimethyl-1-naphthylamine	498.
N,N-Dimethyl-p-nitrosoaniline	133, 464, 527, 550.
N,N-Dimethyl-3-nitro-p-toluenesulfonamide	550.
N,N-Dimethyl-p-phenylenediamine and salts	527.
2-[3-(5-Dimethylsulfamyl-o-tolyl)-1-methyldiazoamino]-5-sulfobenzoic acid.	550.
N,N-Dimethylsulfanilic acid	550.
2,7-Dimethyltetrahydroquinoline	483.
N,N-Dimethyl-p-toluidine	498.
2,4-Dinitroacetanilide	550.
2,4-Dinitroaniline	245, 464, 550.
p-(2,4-Dinitroanilino)phenol	527, 550.
2,4-Dinitroanisole	460.
1,5(and 1,8)-Dinitroanthraquinone	333.
N,N'-(2,4-Dinitroanthraquinone)-1,5-dioxamic acid	495.
3,3'-Dinitrobenzamide	495.
4,4'-Dinitrobenzamide	550.
m-Dinitrobenzene	333, 527.
2,4-Dinitrobenzenesulfonic acid	495, 550.
3,5-Dinitrobenzoic acid	333, 498.
Dinitro(3,3'-bi-7-benz[de]anthracen)-7,7'-dione	333.
4,5-Dinitrochrysazin	333, 550.
4,5-Dinitrochrysazin-2,7-disulfonic acid, disodium salt	333.
1,5(and 1,8)-Dinitronaphthalene	550.
2,4-Dinitrophenol, tech	333, 527.
N,N'-Di(p-nitrophenyl)oxamide	569.
p-Dinitrosobenzene	591.
*4,4'-Dinitro-2,2'-stilbenedisulfonic acid	294, 333, 495, 527, 550.
2,4-Dinitrotoluene	333, 527.
Dinitrotoluenes, mixed	527.
3,5-Dinitro-p-toluenesulfonic acid	550.
Dipentene (Limonene)	285.
1,5-Diphenoxanthraquinone	333.
1,8-Diphenoxanthraquinone	333.
Diphenylacetic acid	266, 343.
Diphenylacetone	132.
Diphenylamine	245, 333, 448, 527.
8-Diphenylamino-1,6-naphthalenedisulfonic acid (Diphenyl epsilon acid).	495.
6,8-Diphenylamino-1-naphthalenesulfonic acid	527, 550.
1,4-Diphenyl-1,4-butanedione	527.
sym-N,N'-Diphenylethylenediamine	333.
Diphenylolpropane	493.
1,3-Diphenyltriazine	333, 527.
Dithiodibenzoic acid	301.
*1,4-Di(p-toluidino)anthraquinone	333, 365, 495, 527, 550.
1,5-Di(p-toluidino)anthraquinone	365.
Divinylbenzene	323, 448.
*Dodecylbenzene (includes keryl-type benzenes)	210, 245, 473, 527, 555, 560.
6-Ethoxy-2-mercaptobenzothiazole	333.
3(and 4)-Ethoxy-4(and 3)-methoxybenzaldehyde	245.
2-Ethoxynaphthalene	333.
6-Ethoxy-2-naphthalenesulfonic acid	559.
2-Ethoxy-1-naphthylamine	333, 550.
2-Ethoxy-1-nitronaphthalene	333.
6-Ethoxy-5-nitro-2-naphthalenesulfonic acid	559.
3-Ethylamino-p-cresol	333.
3-Ethylamino-p-toluenesulfonic acid [SO ₃ H =]	333.
o-Ethylaniline	245.
N-Ethylaniline:	
Crude	464.
Refined	333, 464, 527.
*2-(N-Ethylanilino)ethanol	333, 392, 483, 495, 550.
*a-(N-Ethylanilino)-p-toluenesulfonic acid	333, 355, 376, 464, 495, 527, 550, 559.
N-Ethyl-p-anisidine	483.
Ethylbenzene	62, 323, 392, 448.
N-Ethylidibenzylamine	520.
N-Ethylidibenzylamine diacetate	520.
2-[1-Ethyl-3-(2-methoxy-5-nitrophenyl)diazoamino]-5-sulfobenzoic acid.	550.
N-Ethyl-1-naphthylamine	76, 333.
N-Ethyl-N-1-naphthyl-o-nitrobenzamide	550.
1-Ethyl-4-nitrobenzene	245.
N-Ethyl-N-phenylbenzylamine (N,N-Ethylbenzylaniline)	333, 376, 527.
Ethylphenylmalonic acid, diethyl ester	231, 266, 343, 379.

TABLE 7B.--Synthetic organic chemicals; Cyclic intermediates for which United States production or sales were reported, identified by manufacturer, 1953--Continued

Chemical	Manufacturers' identification numbers (according to list in table 27)
3-Ethyl-4-picoline-----	74.
5-Ethyl-2-picoline (2-Methyl-5-ethylpyridine)-----	74, 392.
1-Ethylpiperidine-----	515.
α -(N-Ethyl-3-sulfanilino)-p-toluenesulfonic acid-----	495.
N-Ethyl-5-sulfantranilic acid-----	550.
N-Ethyl-m-toluidine-----	333, 527.
N-Ethyl-o-toluidine-----	333, 527.
Fluorene-----	372.
Formanilide-----	333.
o-Formotoluidide-----	333.
4-Formyl-m-benzenedisulfonic acid-----	550.
m-Formylbenzenesulfonic acid-----	550.
*o-Formylbenzenesulfonic acid-----	376, 550, 559.
5-Formyl-6-hydroxy-2-naphthalenesulfonic acid-----	550.
Furan-----	333.
Furfuryl alcohol-----	338, 475.
3-Glycyl-3-methyl-1-(6-methoxy-m-tolyl)triazene-----	333.
Hexachlorobenzene-----	594.
Hexachlorocyclopentadiene-----	338.
Hexachlorodiphenyl oxide-----	448.
1,6-Hexane diisocyanate-----	333.
Homoveratric acid-----	245, 442.
Homoveratronitrile-----	442.
Homoveratroylhomoveratrylamine (HVA)-----	442.
Homoveratrylamine-----	245, 431, 442.
Homoveratrylamine homoveratrate-----	431.
*p-Hydrazinobzenesulfonic acid-----	330, 355, 464, 527, 550, 559.
4-Hydrazino-m-toluenesulfonic acid-----	550.
Hydrazobenzene-----	434.
Hydroabietyl alcohol-----	222.
Hydroquinone, tech-----	240, 483.
m-Hydroxyacetophenone-----	376.
o-Hydroxyacetophenone-----	266, 591.
p-Hydroxyacetophenone-----	266, 448.
3-Hydroxy-2-anthracenecarboxylic acid-----	550.
1-Hydroxyanthraquinone-----	495, 527.
N-(3-Hydroxy-2-anthraquinonyl)-1-nitro-2-anthraquinone-carboxamide.	550.
p-Hydroxybenzenearsonic acid-----	565.
2-Hydroxy-11-benzo-a-carbazole-3-carboxylic acid-----	550.
p-Hydroxybenzoic acid-----	397, 434.
p-Hydroxybenzoic acid, methyl ester-----	397, 431.
2-Hydroxy-3-carbazolecarboxylic acid-----	550.
4-Hydroxycoumarin-----	464.
2-Hydroxy-3-dibenzofuran-carboxylic acid, potassium salt-----	550.
N-(2-Hydroxyethyl)phenylacetamide-----	442.
1-Hydroxy-4-(α -hydroxy-m-toluidino)anthraquinone-----	333.
3 α -Hydroxy-12-keto-9,11-cholenic acid-----	122.
3 α -Hydroxy-12-methoxy-9,11-cholenic acid, methyl ester-----	122.
3-Hydroxy-2'-methylnaphthanilide-----	521.
2-Hydroxy-1-naphthaldehyde-----	550.
3-Hydroxy-2-naphthanilide-----	521, 550.
1-Hydroxy-2-naphthoic acid-----	527, 550.
*3-Hydroxy-2-naphthoic acid (B.O.N.)-----	333, 397, 434, 483, 486, 521, 527, 531, 550, 563, 578.
2-Hydroxy-1,4-naphthoquinone-----	527.
2-(2-Hydroxynaphthyl)-3-thianaphthenol-----	495.
1-Hydroxy-4-nitroanthraquinone-----	495.
4-Hydroxy-3-nitro-1-benzenearsonic acid-----	565.
Hydroxynitroviolanthrone-----	464.
2-Hydroxyphenetole-----	245.
N-(p-Hydroxyphenyl)-2-naphthylamine-----	550.
N-(β -Hydroxypropyl)-o-toluidine-----	483.
3-Hydroxy-5-sulfo-2-naphthoic acid-----	333.
1-Hydroxy-4-(p-toluidino)anthraquinone-----	365.
*1,1'-Iminol[4-aminoanthraquinone]-----	294, 333, 365, 366, 464, 527, 550, 552.
1,1'-Iminobis[4-benzamidoanthraquinone]-----	464, 552.
1,1'-Iminobis[5-benzamidoanthraquinone]-----	333.
*6,6'-Iminobis[1-naphthol-3-sulfonic acid]-----	294, 333, 495, 527, 550, 559, 576.
1,1'-Iminobis[4-nitroanthraquinone]-----	333, 365, 552.
*1,1'-Iminodianthraquinone-----	333, 365, 366, 464, 527, 550, 552.
2,2'-Iminodipyridine-----	372.
2,2'-(1,3-Indandione)quinoline-----	333.
Indolineacetaldehyde (Fisher's aldehyde)-----	333.
Isatin-----	527.
Isacytosine (2-Amino-4(3)-pyrimidone)-----	464.
Isonicotinic acid-----	372, 536, 550.
Isophorone-----	392.
Isophthalic acid-----	550.
4,4'-Isopropylidenediphenol-----	77, 448, 550.
Isopropylphenol (o, m, p and separated isomers)-----	323.
Isoquinoline-----	372.

TABLE 7B.--Synthetic organic chemicals: Cyclic intermediates for which United States production or sales were reported, identified by manufacturer, 1953.-Continued

Chemical	Manufacturers' identification numbers (according to list in table 27)
Isocolanthrone (Isodibenzanthrone)-----	333, 365, 366, 550.
Lepidine-----	372.
*Leuco-1,4-diaminoanthraquinone-----	333, 365, 366, 434, 464, 483, 550, 563.
*Leuco quinizarin (1,4,9,10-Anthratetrol)-----	333, 424, 495, 527, 576.
Leuco tetrahydroxyanthraquinone-----	365, 550.
2,3-Lutidine-----	372.
2,4-Lutidine-----	323, 372, 536.
2,6-Lutidine-----	372.
Melamine-----	245, 464.
o-Mercaptobenzenesulfonic acid-----	442.
*Metanilic acid-----	294, 333, 464, 495, 527, 550.
*o-Methoxyanilinomethanesulfonic acid, sodium salt-----	294, 333, 527, 559.
2-(o-Methoxyanilino)-5-nitrobenzenesulfonic acid-----	495, 550.
o-Methoxyanilino-p-sulfonic acid-----	569.
1-Methoxyanthraquinone-----	333, 550.
4-Methoxymetanilic acid-----	333.
6-Methoxy-8-(1-methyl-4-diethylaminobutylamino)quinoline-----	379.
1-Methoxy-4-nitroanthraquinone-----	333.
4-Methoxy-6-nitrometanilic acid-----	333.
p-Methoxyphenol-----	74.
5-Methoxy-m-phenylenediamine-----	460, 464.
[3-(6-Methoxy-m-tolyl)-1-methyldiazoamino]acetic acid-----	550.
5-Methyl-o-acetanilidene-----	559.
1-Methylaminoanthraquinone-----	333, 365, 550.
1-Methylamino-4-(p-toluidino)anthraquinone-----	550.
N-Methylaniline-----	333.
2-(N-Methylanilino)ethanol-----	550.
β -(N-Methylanilino)propionitrile-----	333.
4-Methyl-m-anisidine-----	550.
5-Methyl-o-anisidine (Cresidine)-----	333, 495.
N-(5-Methyl-o-anisyl)benzenesulfonamide-----	559.
N-Methylantranilic acid-----	576.
2-Methylantraquinone-----	464, 527.
1-(3-Methyl-2-anthraquinonylamino)-5-(7-oxo-7H-benz- [de]anthracen-3-ylamino)anthraquinone-----	333.
3-Methylbenzo[f]quinoline-----	550.
2-Methylbenzoxazole-----	133, 498.
Methylcyclohexane-----	443, 448.
N-Methylcyclohexylamine-----	333.
N-Methylethaniline-----	333.
3,3'-Methylenebis[1-aminophenyl-2-phenylether]-3- triazenemethylacetic acid-----	559.
p,p'-Methylenebis[N,N-diethylaniline] (Methane base)-----	464, 495.
p,p'-Methylenebis[N,N-dimethylaniline]-----	333, 376, 495, 527.
p,p'-Methylenebis[N,N-dimethyl-2-nitroaniline]-----	550.
4,4'-Methylenebis[β -hydroxy-2-naphthoic acid], sodium salt-----	379.
5,5'-Methylenebis[toluene-2,4-diamine]-----	527.
p,p'-Methylenedianiline-----	550.
Methylanadi-p-phenylane isocyanate (4,4'-Methylenedi- phenyl isocyanate)-----	245, 333.
2-Methyleneindoline-----	333.
1-Methylnaphthalene-----	372.
1 (and 2)-Methylnaphthalene-----	372.
2-Methylnaphthalene-----	372.
Methylnaphthalene, crude-----	311, 323.
N-Methyl-p-nitroacetanilide-----	550.
N-Methyl-p-nitroaniline-----	550.
5-Methyl-4-nitro-o-anisidine-----	559.
4-Methyl-o-nitroanisole-----	333.
*2-Methyl-1-nitroanthraquinone-----	333, 365, 366, 527, 550.
4-Methyl-m-phenylene diisocyanate (Toluene-2,4-diiso- cyanate)-----	245, 333.
*3-Methyl-1-phenyl-5-pyrazolone (Developer Z)-----	294, 333, 379, 448, 495, 526, 559.
Methylpiperazine-----	565.
Methylpropylcarbonylbarbituric acid-----	442.
4-(3-Methyl-5-pyrazolone)-m-toluenesulfonic acid-----	495.
1-Methylpyrrole-----	X.
1-Methyl-2-pyrrolidone-----	550.
α -Methylstyrene-----	448.
3-Methyl-1-(m-sulfamidophenyl)-5-pyrazolone-----	495.
N-Methyl-5-sulfoanthranilic acid-----	550.
o-Methylsulfonyl-p-nitroaniline-----	483.
3-Methyl-1-(m-sulfophenyl)-5-pyrazolone-----	559.
*3-Methyl-1-(p-sulfophenyl)-5-pyrazolone-----	294, 333, 464, 495, 550, 559, 569, 576.
Methyl-2-thienyl ketone-----	132.
3-Methyl-6-(p-toluidino)-7-dibenz[f,i]isoquinolina- 2,7(3)-dione-----	550.
(1-Methyl-3-p-tolyldiazoamino)acetic acid-----	550.
1-Naphthaldehyde-----	597.

TABLE 7B.--Synthetic organic chemicals: Cyclic intermediates for which United States production or sales were reported, identified by manufacturer, 1953--Continued

Chemical	Manufacturers' identification numbers (according to list in table 27)
Naphthalene, solidifying at 79° C., or above (refined flake)	
*From American crude naphthalene-----	323, 333, 372, 464, 521, 536.
*From imported crude naphthalene-----	179, 323, 464, 521, 536.
1-Naphthaleneacetone trile-----	597.
1,4-Naphthalenediol-----	527.
*1,5-Naphthalenediol-----	483, 527, 550, 578.
2,3-Naphthalenediol-----	550.
*1,5-Naphthalenedisulfonic acid-----	333, 495, 527, 550.
1,5-Naphthalenedisulfonic acid, sodium salt-----	333, 483.
2,6-Naphthalenedisulfonic acid-----	495.
2,7-Naphthalenedisulfonic acid-----	333, 495, 527.
1-Naphthalenesulfonic acid, sodium salt-----	495.
2-Naphthalenesulfonic acid-----	527, 591.
2-Naphthalenesulfonic acid, sodium salt-----	464, 495.
2-Naphthalenesulfonyl chloride-----	333, 550.
1,3,6-Naphthalenetrisulfonic acid-----	550.
Naphthalic anhydride-----	550.
Naphthalimide-----	550.
Naphthionic acid-----	333, 464.
*Naphthionic acid, sodium salt-----	333, 376, 495, 527.
*1-Naphthol (α -Naphthol)-----	333, 495, 527, 550.
2-Naphthol, tech. (β -Naphthol)-----	376, 464, 521, 572.
1-Naphthol-3,6-disulfonic acid-----	527.
1-Naphthol-3,8-disulfonic acid-----	333.
*2-Naphthol-3,6-disulfonic acid (R acid)-----	333, 495, 527.
*2-Naphthol-3,6-disulfonic acid, disodium salt-----	355, 464, 550.
*2-Naphthol-6,8-disulfonic acid (G acid)-----	333, 495, 527, 550.
2-Naphthol-6,8-disulfonic acid, disodium salt-----	464.
2-Naphthol-6-sulfonamide-----	333.
2-Naphthol-6-sulfonamide, p-toluenesulfonate-----	333.
*1-Naphthol-4-sulfonic acid (Neville & Winther's acid)-----	333, 495, 527.
*1-Naphthol-5-sulfonic acid and sodium salt-----	333, 495, 527, 550.
1-Naphthol-8-sulfonic acid-----	550, 559, 569.
*2-Naphthol-6-sulfonic acid (Schaeffer's acid)-----	333, 464, 495, 527.
2-Naphthol-6-sulfonic acid, sodium salt-----	355, 521.
2-Naphthol-6-sulfonic acid, p-toluenesulfonate, sodium salt-----	333.
2-Naphthol-7-sulfonic acid and sodium salt-----	333, 521.
2-Naphthol-8-sulfonic acid-----	495.
1-Naphthol-3,6,8-trisulfonic acid-----	333.
1,4-Naphthoquinone-----	527.
Naphthostyryl-----	333, 527.
1,8-Naphthosultone-----	294, 464, 495.
*Naphth[1,2]oxadiazole-5-sulfonic acid-----	294, 333, 495, 527, 550, 576.
Naphth[1,2]oxadiazole-6-sulfonic acid-----	550.
1-Naphthylamine (α -Naphthylamine)-----	333, 527, 550, 591.
2-Naphthylamine (β -Naphthylamine)-----	333, 527.
1-(2-Naphthylamino)-2-anthraquinonecarboxylic acid-----	527.
1-Naphthyl isocyanate-----	245, 333, 498.
2-Naphthyl isocyanate-----	498.
*2-Naphthylmercaptoacetic acid-----	333, 495, 527, 550, 559.
Nicotinic acid, n-butyl ester-----	205.
Nicotinic acid, methyl ester-----	562.
Nicotinonitrile (3-Cyanopyridine)-----	205.
p-Nitroacetanilide-----	495.
2-Nitro-p-acetanisidide-----	333, 550.
4-Nitro-o-acetanisidide-----	376.
4(and 5)-Nitro-o-acetanisidide-----	550.
m-Nitroacetophenone-----	376.
5-Nitro-o-acetotolidide-----	333.
*m-Nitroaniline-----	333, 460, 464, 495, 527.
o-Nitroaniline-----	245, 333, 576.
p-Nitroaniline-----	245, 333, 527, 576.
6-(3-Nitroanisamido)-1-naphthol-3-sulfonic acid-----	333.
3-Nitroanisic acid-----	333.
*2-Nitro-p-anisidide [NH ₂ =1]-----	376, 527, 550, 552.
3-Nitro-o-anisidide [NH ₂ =1]-----	527.
*4-Nitro-o-anisidide [NH ₂ =1]-----	333, 376, 464, 527, 550, 552, 559.
*5-Nitro-o-anisidide [NH ₂ =1]-----	333, 550, 552, 559, 576.
o-Nitroanisole-----	245, 333.
p-Nitroanisole-----	333.
3-Nitro-p-anisoyl chloride [CH ₃ O=1]-----	333.
4-Nitroanthranilic acid-----	333.
1-Nitro-2-anthraquinonecarbonyl chloride-----	333.
*1-Nitro-2-anthraquinonecarboxylic acid-----	333, 527, 550.
1-Nitro-2-anthraquinonecarboxylic acid, hydrazide-----	333.
5-Nitro-1-anthraquinonesulfonic acid-----	333, 527.
*5(and 8)-Nitro-1-anthraquinonesulfonic acid-----	366, 495, 527.
8-Nitro-1-anthraquinonesulfonic acid-----	333.
2-(1'-Nitro-2'-anthraquinonyl)anthr[2,3]oxazole-5,10-dione-----	550.

TABLE 7B.--Synthetic organic chemicals: Cyclic intermediates for which United States production or sales were reported, identified by manufacturer, 1953--Continued

Chemical	Manufacturers' identification numbers (according to list in table 27)
m-Nitrobenzaldehyde-----	464.
*6-(m-Nitrobenzamido)-1-naphthol-3-sulfonic acid-----	333, 495, 559, 569.
*6-(p-Nitrobenzamido)-1-naphthol-3-sulfonic acid-----	333, 550, 559, 569.
*Nitrobenzene-----	245, 333, 378, 464, 527, 550.
2-Nitro-p-benzenedisulfonic acid-----	495.
*m-Nitrobenzenesulfonic acid-----	245, 294, 333, 495, 527, 550, 559, 576.
p-Nitrobenzenesulfonic acid-----	464.
4'-Nitro-o-benzenesulfonotoluidide-----	333.
p-Nitrobenzenesulfonyl chloride-----	527.
5-Nitro-2(3)-benzimidazolone-----	333.
*m-Nitrobenzoic acid-----	333, 338, 342.
*p-Nitrobenzoic acid-----	333, 527, 550.
p-Nitrobenzoic acid, ethyl ester-----	379, 431.
p-Nitrobenzoic acid, isobutyl ester-----	431.
p-Nitrobenzoic acid, n-propyl ester-----	431.
6-Nitro-2(3)-benzoxazolone-----	550.
m-Nitrobenzoyl chloride-----	333, 338.
p-Nitrobenzoyl chloride-----	333, 338, 550.
m-Nitrobenzyl alcohol-----	333.
2-Nitrobiphenyl-----	245.
4-Nitrobiphenyl-----	245.
4-Nitrobiphenyl-4'-carboxylic acid and sodium salt-----	333, 550.
2-Nitro-p-cresol-----	333, 495.
5-Nitro-o-cresol-----	550.
Nitrodiphenylamine-----	464.
m-Nitroformanilide-----	333.
1-Nitronaphthalene-----	333, 527, 550.
3-Nitro-1,5-naphthalenedisulfonic acid-----	333, 495.
8-Nitro-1-naphthalenesulfonic acid-----	550.
8(and 5)-Nitro-1(and 2)-naphthalenesulfonic acid-----	590.
7(and 8)-Nitronaphth[1,2]oxadiazole-5-sulfonic acid-----	495, 527, 550.
p-Nitrooxanilic acid-----	333.
p-Nitrophenetole-----	333.
o-Nitrophenol-----	333, 460, 494.
p-Nitrophenol and sodium salt-----	245, 333, 460, 527.
2-Nitro-1-phenol-4,6-disulfonic acid-----	295.
2-Nitro-1-phenol-4-sulfonamide-----	550.
p-(p-Nitrophenyl)acetophenone-----	333.
4-Nitro-o-phenylenediamine-----	133, 333.
2-Nitrophenyl ether-----	559.
p-Nitrophenylhydrazine-----	498.
p-Nitrophenyl isocyanate-----	245.
p-(p-Nitrophenylmercapto)aniline-----	333.
1-(m-Nitrophenyl)-5-oxo-2-pyrazoline-3-carboxylic acid-----	333, 559.
4-Nitrophthalimide-----	333.
3(and 5)-Nitrosalicylic acid-----	550.
5-Nitrosalicylic acid-----	569.
4-Nitrosodiphenylamine-----	550.
1-Nitroso-2-naphthol-----	498, 591.
*p-Nitrosophenol-----	333, 464, 495, 527, 578.
5-(4-Nitro-2-sulfoanilino)-2(3)-benzimidazolone-----	333.
m-Nitrotoluene-----	333, 464, 527.
o-Nitrotoluene-----	333, 527, 550.
p-Nitrotoluene-----	333, 527, 550.
Nitrotoluene mixtures-----	527, 550.
5-Nitro-o-toluenesulfonanilide-----	550.
3-Nitro-p-toluenesulfonic acid [SO ₃ H=1]-----	294, 464, 495, 550, 559, 576.
*5-Nitro-o-toluenesulfonic acid-----	333, 495, 527, 550.
4'-Nitro-p-toluenesulfono-o-toluidide-----	559.
5-Nitro-o-toluenesulfonyl chloride-----	550.
*2-Nitro-p-toluidine [NH ₂ =1]-----	333, 376, 464, 521, 563.
4-Nitro-o-toluidine [NH ₂ =1]-----	333, 464.
5-Nitro-o-toluidine [NH ₂ =1]-----	333, 376, 550, 559.
16-Nitroviolanthrone-----	464.
2-Nitro-p-xylene-----	333.
4-Nitro-m-xylene-----	333.
ar-Nitro-o-xylene-----	333.
*Nitroxylene, mixed-----	333, 464, 527.
Nonyl- and dodecylbenzenes, mixed-----	210.
*Nonylphenol-----	321, 323, 493, 550.
2-(Nonylphenoxy)ethanol-----	550.
Octylphenol-----	493.
6-Oxo-6H-anthr[9,1]isothiazole-3-carbonyl chloride-----	333.
6-Oxo-6H-anthr[9,1]isothiazole-3-carboxylic acid-----	333.
1-(7-Oxo-7H-benz[de]anthracen-3-ylamino)anthraquinone-----	333.
1,Y-(7-Oxo-7H-benz[de]anthracen-3,9-ylenediimino)- dianthraquinone-----	333.
7-Oxo-7H-benz[de]anthracen-3-ylsulfanylacetic acid-----	333, 550.
5-Oxo-1-phenyl-2-pyrazoline-3-carboxylic acid-----	495.
5-Oxo-1-phenyl-2-pyrazoline-3-carboxylic acid, ethyl ester-----	550, 563.

TABLE 7B.--Synthetic organic chemicals: Cyclic intermediates for which United States production or sales were reported, identified by manufacturer, 1953--Continued

Chemical	Manufacturers' identification numbers (according to list in table 27)
5-Oxo-1-(p-sulfophenyl)-2-pyrazoline-3-carboxylic acid (Pyrazolone T).	559, 569, 576.
m-(n-Pentadecyl)phenol-----	339.
5-(n-Pentadecyl)resorcinol-----	339.
3,4,9,10-Perylene-tetracarboxylic acid-----	550.
3,4,9,10-Perylene-tetracarboxylic diimide-----	550.
Phenanthrene-----	372.
Phenethylamine-----	338, 343, 520, 562, 582.
o-Phenetidine-----	245, 333.
p-Phenetidine-----	245, 333, 576.
*Phenol:	
*Natural:	
From coal tar: ¹	
U.S.P.-----	372.
39° C., m.p.-----	323, 536.
82%-84%-----	323, 372, 536.
All other-----	323, 372, 373, 536, 538.
From petroleum:	
U.S.P.-----	538.
Other-----	372, 538.
*Synthetic:	
By caustic fusion:	
U.S.P.-----	245, 536, 568.
39° C., m.p.-----	536.
82%-84%-----	536.
All other-----	536.
From chlorobenzene by liquid-phase hydrolysis: U.S.P.	448.
From chlorobenzene by vapor-phase hydrolysis: U.S.P.	387, 487.
1-Phenol-2(and 4)-sulfonic acid-----	377.
1-Phenol-4-sulfonic acid-----	245, 324.
Phenolsulfonic acid, ammonium salt-----	324.
Phenolsulfonic acid, sodium salt-----	324.
Phenoxathin-----	448.
o-Phenoxyaniline-----	559.
*Phenylacetic acid (α-Toluic acid)-----	229, 245, 266, 343, 379, 562, 582.
*Phenylacetic acid, ethyl ester, all grades-----	266, 343, 379, 562, 565, 582.
*Phenylacetic acid, methyl ester, tech-----	343, 562.
*Phenylacetic acid, potassium salt-----	245, 266, 343, 520, 562, 582.
*Phenylacetic acid, sodium salt-----	266, 582.
*Phenylacetone-trile (α-Tolunitrile)-----	245, 266, 343.
p-Phenylacetophenone-----	550.
2-Phenylanthr[2,3]oxazole-5,10-dione-----	550.
*p-Phenylazobenzene (p-Aminoazobenzene) and hydrochloride-----	333, 464, 495, 527, 550.
Phenylcyclohexane-----	245, 498.
N,N'-p-Phenylenebis[acetamide]-----	464.
2,2'-p-Phenylenebis[5-(1-nitro-2-anthraquinonyl)-1,3,4-oxadiazole].	333.
*m-Phenylenediamine-----	11, 333, 464, 495, 527, 550.
*o-Phenylenediamine-----	133, 515, 550, 599.
*p-Phenylenediamine-----	464, 521.
Phenyl ether (Diphenyl oxide)-----	448.
*Phenylglycine salts:	
Potassium salt-----	448.
Sodium salt-----	333, 527.
Phenylhydrazine-----	448, 591.
Phenyl-1,2-hydrazinedisulfonic acid, disodium salt-----	333.
Phenylhydrazine hydrochloride-----	550, 591.
*2,2'-(Phenylimino)diethanol-----	333, 392, 483, 495, 550.
Phenyl isocyanate-----	245, 338.
Phenylmalonic acid, diethyl ester-----	343, 379.
o-Phenylphenol-----	245, 448.
o-Phenylphenol, chlorinated-----	448.
o-Phenylphenol, sodium salt-----	448.
p-Phenylphenol-----	448.
N-Phenyl-p-phenylenediamine-----	333, 550.
Phenyl-2-propanone-----	308, 343.
Phloroglucinol-----	599.
Phthalic acid-----	266, 550.
Phthalic anhydride-----	245, 323, 456, 464, 521, 527, 536, 555, 568.
Phthalic anhydride residue-----	245, 536.
Phthalimide-----	333, 434, 448, 550.
Phthalimide, potassium salt-----	434.
Phthaloyl chloride (Phthalyl chloride)-----	245.
*Picolines: ²	
2-Picoline (α-Picoline)-----	74, 323, 372, 464, 536.
3-Picoline (β-Picoline)-----	372.
4-Picoline (γ-Picoline)-----	372, 392.
Picoline (3,4-mixture)-----	323, 536.
Picramic acid and salt-----	333, 527.
Picric acid (Trinitrophenol)-----	333, 527.
2-Pipecoline (α-Pipecoline)-----	333.
Piperidine-----	245, 333, 338.

See footnote at end of table.

TABLE 7B.--Synthetic organic chemicals: Cyclic intermediates for which United States production or sales were reported, identified by manufacturer, 1953.--Continued

Chemical	Manufacturers' identification numbers (according to list in table 27)
3-(Piperidyl)-1,2-propanediol-----	289.
<i>β</i> -Piperidylpropiofenone-----	442.
Poly-sec-amyphenol-----	580.
Polychlorobiphenyl-----	245.
Polydodecylbenzene-----	473.
Polyethylbenzene (80% Diethylbenzene)-----	74, 323.
*Primuline base-----	333, 495, 527.
*Primulinesulfonic acid-----	114, 550.
*Propiofenone-----	323, 431, 582.
*Pseudocumidine (Cumidine)-----	151, 376, 527.
Pyrazole anthrone yellow-----	365, 550.
Pyridine (refined)-----	74, 323, 372, 536. ¹
2-Pyridinepropanol-----	372.
3-Pyridol-----	205.
2-Pyrrolidone-----	550.
*Quinaldine-----	323, 333, 372, 464, 527, 536.
Quinaldine yellow, base-----	464.
*Quinizarin-----	294, 320, 333, 365, 366, 424, 434, 464, 483, 495, 527, 550, 563, 576.
2-Quinizarinsulfonic acid-----	434, 563.
Quinoline:	
Quinoline, 1° and 2°-----	323, 536.
Other grades-----	372, 498, 536.
2,4-Quinolinediol-----	333.
Quinoline yellow, base-----	527, 550.
Quinolinic acid-----	495.
Resorcinol, tech-----	323, 397.
*Resorcylic acid-----	323.
Salicylanilide-----	333.
*Salicylic acid, tech-----	245, 376, 397, 448.
Salicylideneaminoguanidine oleate-----	333.
Saligenin benzoate, calcium salt-----	565.
Sodium phenolate-----	333.
Styphnic acid, lead salt-----	X.
*Styrene (Vinylbenzene)-----	62, 245, 323, 392, 448.
4'-Sulfamoylacetanilide-----	464.
p-Sulfamylbenzoic acid-----	245.
Sulfanilamide-----	515.
Sulfanilic acid (p-Aminobenzoic acid) and salt-----	464, 495, 527.
7-(p-Sulfamoylimino)-1-naphthol-3-sulfonic acid, disodium salt-----	333.
4-Sulfoanthranilic acid-----	294, 495, 550.
o-Sulfobenzoic anhydride-----	498.
4-Sulfo-o-benzoylbenzoic acid (Sulfo BB acid)-----	333.
p,p'-Sulfonyldiphenol (4,4'-Dihydroxydiphenylsulfone)-----	377, 550.
4-Sulfophthalic acid-----	434.
Terephthalic acid-----	333.
Terephthalic acid, dimethyl ester-----	153, 333.
Terphenyl (Phenylbiphenyl)-----	245.
Tetrabromo-8,16-pyranthrene-dione-----	550.
*1,4,5,8-Tetrachloroanthraquinone-----	333, 365, 366, 527, 550.
*1,2,4,5-Tetrachlorobenzene-----	245, 338, 448.
Tetrachloronitrobenzene-----	376.
Tetrachlorophthalic anhydride-----	145.
α,α,2,6-Tetrachlorotoluene-----	333.
Tetrahydrofuran-----	333.
Tetrakisaminophthalocyanine, copper salt-----	333.
*1,4,5,8-Tetrakis[1',1'',1''',1''''-anthraquinonylamino]-anthraquinone (Pentaanthramida)-----	333, 365, 456, 527, 550.
Tetrakisnitrophthalocyanine, copper salt-----	333.
2-(2-Thienylmethyl)aminopyridine-----	565.
3,3'-Thiobis[7-benz[de]anthracen-7-one]-----	333, 365, 550.
p,p'-Thiodianiline-----	527.
p,p'-Thiodianiline dihydrochloride-----	464.
p,p'-Thiodianiline disulfate-----	333.
6,6'-Thiodimethanilic acid-----	527.
Thiophene-----	362.
Thiophene aldehyde-----	565.
*o-Tolidine and salts-----	333, 495, 527.
*Toluene-2,4-diamine (4-m-Tolylenediamine)-----	333, 464, 495, 527, 550.
Toluene-2,5-diamine sulfonate-----	464.
o-Toluenesulfonamide-----	245.
p-Toluenesulfonamide-----	245.
o (and p)-Toluenesulfonic acid-----	245, 377, 521.
o (and p)-Toluenesulfonic acid, sodium salt-----	549.
p-Toluenesulfonic acid, ethyl ester-----	460, 493.
p-Toluenesulfonic acid, isopropyl ester-----	333, 493.
p-Toluenesulfonic acid, methyl ester-----	365, 460.
p-Toluenesulfonic acid monohydrate-----	377.
p-Toluenesulfono-o-anisidide-----	559.
p-Toluenesulfono-o-toluidide-----	333, 550, 559.
o-Toluenesulfonyl chloride-----	245.

See footnote at end of table.

TABLE 7B.--Synthetic organic chemicals: Cyclic intermediates for which United States production or sales were reported, identified by manufacturer, 1953--Continued

Chemical	Manufacturers' identification numbers (according to list in table 27)
p-Toluenesulfonyl chloride-----	245.
m-Toluidine-----	323, 333, 550.
o-Toluidine-----	333, 527, 550, 576.
p-Toluidine-----	333, 527.
Toluidines, mixed-----	464.
*6-p-Toluidinomethanilic acid-----	333, 495, 527.
m-Toluidinomethanesulfonic acid-----	559, 569.
o-Toluidinomethanesulfonic acid-----	527, 569.
8-(p-Toluidino)-1-naphthalenesulfonic acid-----	333, 527.
2-(p-Toluidino)-5-nitrobenzenesulfonic acid-----	495.
o-(p-Tolyl)benzoic acid-----	333, 464.
*4-(o-Tolylazo)-o-toluidine (o-Aminoazotoluene)-----	333, 495, 527, 550.
N-(o-Tolyl)benzenesulfonamide-----	559.
o-(p-Tolyl)benzoic acid-----	527.
2,2'-(m-Tolylimino)diethanol-----	333, 483, 495.
2,4,6-Tribromophenol-----	448.
1,2,3(and 1,2,4)-Trichlorobenzene-----	430, 448, 594.
1,2,4-Trichlorobenzene-----	245, 338.
Trichlorophenylsilane-----	315.
a,a,α-Trichlorotoluene (Benzotrichloride)-----	338, 397.
a,3,4-Trichlorotoluene-----	397.
a,2,4(and a,2,6)-Trichlorotoluene-----	343.
Triphenylmethyl isocyanate-----	245.
2,4,6-Trinitrobenzoic acid-----	599.
1,3,5-Triphenylhexahydro-s-triazine-----	464.
2,4,6-Tris(dimethylaminomethyl)phenol-----	493.
*6,6'-Ureylenebis[1-naphthol-3-sulfonic acid]-----	268, 294, 333, 464, 495, 527, 550, 559, 569, 576.
Vanillic acid-----	494.
o-Vanillin (2-Hydroxy-3-methoxybenzaldehyde)-----	245.
Veratraldehyde (3,4-Dimethoxybenzaldehyde)-----	245, 442.
o-Veratraldehyde (2,3-Dimethoxybenzaldehyde)-----	245, 431.
Veratrole-----	245.
Veratryl alcohol-----	442.
5-Vinyl-2-picoline (MVP)-----	443.
2-Vinylpyridine-----	372.
4-Vinylpyridine-----	372.
1-Vinyl-2-pyrrolidone-----	550.
*Violanthrone (Dibenzanthrone)-----	114, 333, 365, 366, 456, 464, 550, 576.
Xenylamine (4-Biphenylamine)-----	245.
m-Xylene-----	229.
o-Xylene-----	555.
o(and p)-Xylene-----	333.
p-Xylene-----	278, 441, 443, 555.
Xylenesulfonic acid-----	377, 549.
Xylenesulfonic acid, sodium salt-----	377, 549.
Xylenol crystals-----	536.
Xylenols:	
Low b.p.-----	538.
Medium b.p.-----	456, 538.
Not classified as to b.p.-----	464.
*Xylidines:	
2,3-Xylidine (o-Xylidine)-----	333.
2,4-Xylidine (m-Xylidine)-----	333, 527, 550.
2,5-Xylidine (p-Xylidine)-----	335, 527, 576.
3,4-Xylidine-----	515.
Xylidines, mixed:	
*Original mixture-----	333, 464, 527.
Xylidine (ortho, para)-----	333, 464.
2,4-Xylidine acetate-----	464.
2,5-Xylidine hydrochloride-----	527.
4-(2,4-Xylidylazo)-o-toluidine-----	464, 527.
4-(2,4-Xylidylazo)-2,5-xylidine-----	527, 576.
4-(3,5-Xylidylazo)-3,5-xylidine-----	550.
All other intermediates-----	320, 482.

¹Does not include manufacturers' identification numbers for producers who report to the Coal Economics Division, U. S. Bureau of Mines.

Dyes

TABLE 8B. --Synthetic organic chemicals: Coal-tar dyes for which United States production or sales were reported, identified by manufacturer, 1953

[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 confidential and may not be published. Manufacturers' identification numbers shown below are taken from table 27. An X signifies that the manufacturer did not consent to the publication of his identification number with the designated product.]

Colour Index or Proto-type No.	Dye	Manufacturers' identification numbers (according to list in table 27)
DYES GROUPED BY COLOUR INDEX NUMBER		
<i>Nitroso Dyes</i>		
5	Naphthol green B-----	464.
<i>Nitro Dyes</i>		
10	Naphthol yellow S-----	464.
11	Amido yellow E-----	550.
<i>Azo Dyes</i>		
Monoazo Dyes		
15	Spirit yellow G-----	464, 550.
16	Acid yellow G-----	464.
17	*Spirit yellow R-----	12, 333, 464, 527, 550, 576.
19	*Oil yellow-----	12, 333, 464, 527, 550, 576.
20	*Chrysoidine Y-----	464, 527, 550.
21	*Chrysoidine R-----	464, 527, 550.
24	*Sudan I-----	12, 333, 464, 495, 527, 550, 576.
26	Croceine orange G-----	495, 527.
27	*Orange G-----	333, 376, 464, 495, 527, 550.
29	Chromotrope 2R-----	527.
30	Fast acid fuchsine B-----	411, 527.
31	*Amido naphthol red G-----	333, 376, 455, 464, 495, 527, 550, 559, 576.
32	Brilliant sulphon red-----	411, 527.
36	*Chrome yellow 2G-----	464, 495, 550, 576.
40	*Chrome yellow R-----	464, 495, 550, 576.
44	Fast red GG salt-----	550, 576.
52	Azo alizarin yellow GP-----	527, 576.
53	*Victoria violet 4BS-----	333, 464, 495, 550, 527.
56	Chromotrope 6B-----	527.
57	*Amido naphthol red 6B-----	294, 333, 455, 464, 495, 527, 550, 576.
68	*Fast scarlet G base-----	333, 376, 464, 550, 559, 576.
68	Fast scarlet G salt-----	576.
69	Fast red GL base-----	333.
69	*Fast red GL salt-----	376, 527, 550, 552, 559, 576, 583.
73	Sudan II-----	12, 464, 527, 550.
79	*Ponceau R-----	333, 464, 495, 527, 550.
84	Double ponceau-----	550.
88	*Fast red B-----	464, 495, 527, 550.
90	Chromotrope 10B-----	333.
98	*Chrome brown R-----	11, 333, 495, 527, 550.
99	Chrome green 2G-----	550.
101	Chromate brown B-----	11.
105	Acid chrome brown R-----	11, 333.
110	Chrome flavine G-----	11, 550.
114	*Azo eosine G-----	294, 333, 495, 550.
117	*Fast red B base-----	333, 527, 550, 552, 559, 576.
117	Fast red B salt-----	376.
118	*Fast scarlet R base-----	333, 376, 464, 527, 550, 559, 569, 576, 583.
118	Fast scarlet R salt-----	576.
119	Eosamine G-----	333.
122	Chrome yellow 5C-----	495.
126	Direct pink 2GN-----	333.
128	Direct pink-----	527, 550.
130	Direct fast pink EBN-----	333.
138	*Metanil yellow-----	333, 376, 495, 527, 550.
142	Methyl orange-----	333, 376.
145	*Azoflavine RS-----	495, 550, 559, 576.
146	Azo yellow-----	527, 576.
148	Resorcin yellow-----	527.
151	*Orange II-----	411, 464, 495, 527, 550.
161	*Orange R-----	333, 464, 527.
163	Pigment rubine B-----	333.
165	Lake red C-----	464.
167	Acid chrome brown B-----	527.
168	Acid chrome garnet R-----	495, 527, 550.
169	Acid chrome violet N-----	11, 495, 527.
170	Chrome black PV-----	527.
175	Naphthylamine brown-----	550.
176	*Fast red A-----	333, 464, 495, 527, 550.
179	*Azo rubine-----	333, 376, 495, 527, 550.

TABLE 8B.--Synthetic organic chemicals: Coal-tar dyes for which United States production or sales were reported, identified by manufacturer, 1953--Continued

Colour Index or Proto-type No.	Dye	Manufacturers' identification numbers (according to list in table 27)
DYES GROUPED BY COLOUR INDEX NUMBER--Continued		
Azo Dyes--Continued		
Monoazo Dyes--Continued		
180	*Fast red VR-----	333, 495, 527, 550.
183	Croceine scarlet 3BX-----	495.
184	Amaranth-----	495, 527.
185	*Cochineal red A-----	376, 464, 495, 527, 550.
195	Mordant yellow O-----	527, 550.
197	Chrome yellow RN-----	495, 527, 550.
201	Chrome blue black B-----	495, 527, 550.
202	*Chrome blue black R-----	333, 495, 527, 550.
203	*Chrome black T-----	495, 527, 550.
204	*Chrome black A-----	495, 527, 550.
208	Fast acid blue R-----	495, 527, 550.
209	Fast acid blue B-----	333, 527, 550.
216	*Acid chrome red B-----	464, 495, 527, 550.
219	*Chrome flavine A-----	333, 495, 527, 550.
225	Direct pink 2B-----	333.
Disazo Dyes		
234	*Resorcin brown-----	333, 411, 464, 495, 527, 550, 559.
235	*Resorcin dark brown-----	333, 376, 411, 464, 495, 527, 550, 576.
238	Chrome brown G-----	333, 527.
246	*Acid black 10B-----	333, 376, 411, 464, 495, 527, 550, 576.
247	*Azo dark green A-----	333, 495, 527.
252	*Brilliant croceine M-----	333, 376, 464, 495, 527, 550.
253	Ponceau SS ex-----	527.
258	Sudan IV-----	12, 333, 527.
262	Cloth red B-----	495, 527.
267	Neutral gray G-----	333.
274	*Milling orange-----	464, 495, 550.
275	*Cloth scarlet G-----	411, 464, 495, 576.
278	*Direct fast red 8BL-----	268, 294, 333, 411, 455, 464, 495, 523, 527, 550, 559, 569, 576.
280	*Scarlet EC-----	495, 527, 550, 576.
288	*Fast acid cyanine G-----	495, 527, 550.
289	*Fast acid cyanine 5R ex-----	333, 527, 550, 569.
292	Acid chrome verdone A-----	527.
294	Acid black B-----	527.
299	*Acid chrome black F-----	333, 495, 527, 550.
302	Acid chrome green SS-----	464, 550.
304	Fast acid black 2BN-----	333, 495, 527, 550.
306	Fast acid black F-----	550.
307	*Fast acid cyanine black B-----	333, 527, 550.
308	Naphthylamine black D-----	550.
316	Developed blue NA-----	550, 559, 569.
317	Developed blue B-----	495, 527, 550.
318	Naphthylamine black V-----	333.
319	*Direct fast heliotrope-----	333, 495, 527, 559.
324a	*Rosanthrene-----	333, 527, 559, 569.
325	Direct brilliant violet-----	576.
326	*Direct fast scarlet-----	294, 333, 464, 495, 523, 527, 550, 559, 569, 576.
327	*Direct fast scarlet 4BA-----	268, 333, 464, 495, 550.
331	*Bismarck brown G-----	333, 464, 495, 527, 550.
332	*Bismarck brown R-----	333, 464, 495, 527, 550.
343	*Chrome fast yellow C-----	333, 464, 527.
346	*Direct fast yellow 5GL-----	333, 455, 464, 523, 527, 550, 569.
349	Direct fast yellow 4GL ex-----	294, 455.
353	*Direct fast pink 2BL-----	294, 333, 464, 527, 550, 559.
364	*Brilliant yellow-----	333, 464, 495, 527, 550.
365	*Chrysofenine G-----	333, 495, 527, 550.
370	*Congo red-----	333, 495, 527.
375	*Congo corinth G-----	411, 464, 495, 527, 550, 576.
376	Congo rubine-----	495, 523.
377	Direct orange G-----	527.
382	*Direct scarlet B-----	411, 464, 495, 527, 550, 569, 576.
385	Direct violet-----	495.
387	*Direct violet B-----	333, 495, 527, 550.
393	Benzo violet O-----	550.
394	*Direct violet N-----	333, 495, 527, 550, 576.
395	Direct black RO-----	576.
400	Direct brilliant Bordeaux R-----	527.
401	*Developed black BH-----	333, 411, 464, 495, 527, 550, 569.
403	Diphenyl fast gray B-----	495.
405	Direct cyanine R-----	527.
406	*Direct blue 2B-----	333, 411, 464, 495, 527, 550, 569, 576.
411	Cresotine yellow G-----	495, 527.

TABLE 8B.--Synthetic organic chemicals: Coal-tar dyes for which United States production or sales were reported, identified by manufacturer, 1953.--Continued

Colour Index or Proto-type No.	Dye	Manufacturers' identification numbers (according to list in table 27)
DYES GROUPED BY COLOUR INDEX NUMBER--Continued		
Azo Dyes--Continued		
Disazo Dyes--Continued		
415	*Direct orange R-----	333, 495, 527, 550.
419	*Direct fast red F-----	294, 320, 333, 411, 455, 464, 495, 527, 550, 569, 576.
420	*Direct brown M-----	333, 411, 455, 464, 495, 523, 527, 550, 576.
423	Direct brown B-----	411, 464, 495.
430	*Polar red-----	294, 333, 411, 464, 495, 523, 527, 550, 559.
431	Acid chrome red-----	333.
436	Direct brilliant red 8B-----	495.
441	Chrome fast yellow RD-----	550, 559.
443	*Milling red G-----	464, 495, 550, 559, 576.
446	Direct orange R-----	527, 576.
448	*Benzopurpurine 4B-----	333, 495, 527.
464	Direct blue 3R-----	333.
466	*Benzo new blue 5B-----	333, 411, 495, 527, 550.
471	Direct blue 4R-----	495, 527.
472	Direct blue 6K-----	495, 527, 550.
477	*Direct blue 2B-----	333, 495, 527.
478	Direct orange G-----	495, 527, 576.
487	*Acid anthracene red 3B-----	464, 495, 527, 550, 559, 569, 576.
495	*Benzopurpurine 10B-----	333, 411, 495, 527.
499	Fast blue B base-----	333, 464, 576.
499	*Fast blue B salt-----	320, 527, 550, 552, 559, 576, 583.
502	*Direct azurine G-----	333, 411, 495, 527, 550, 569, 576.
508	Direct brilliant blue G-----	333.
512	*Direct blue RW-----	294, 333, 495, 527, 550, 569, 576.
515	Direct blue B-----	333.
516	Chicago blue B-----	495.
518	*Direct sky blue FF-----	294, 333, 411, 464, 478, 495, 527, 550, 559, 569, 576.
520	*Direct pure blue-----	333, 495, 527, 550.
Trisazo Dyes		
533	Direct fast blue FR-----	333, 576.
539	*Direct fast black FF-----	333, 495, 527, 550, 569.
545	*Plutoform black-----	294, 495, 527, 559, 576.
552	Disazo blue black RS-----	333, 527.
561	*Direct brown BT-----	333, 411, 495, 523, 527, 550, 576.
567	Direct fast blue R-----	495.
576	Direct fast blue B-----	495.
581	*Direct black EW-----	333, 411, 464, 495, 527, 550, 569.
582	*Direct black RX-----	333, 411, 464, 495, 527, 550.
583	*Direct green ET-----	333, 411, 464, 495, 527, 550, 569, 576.
589	*Chloramine green B-----	333, 411, 495, 527, 550.
590	Direct steel blue G-----	333.
593	*Direct green B-----	333, 411, 464, 495, 527, 550, 576.
594	*Direct green G-----	333, 411, 495, 527.
595	Direct olive G-----	550, 576.
596	*Direct brown 3GO-----	333, 411, 464, 495, 527, 550.
598	*Congo brown G-----	333, 495, 523, 527, 550, 569.
Tetrakisazo Dyes		
606	Direct brown G-----	411, 550.
Stilbene Dyes		
620	*Direct yellow R-----	333, 464, 495, 527, 550.
621	*Chloramine orange G-----	333, 464, 495, 527, 550.
622	*Stilbene yellow-----	333, 464, 527, 550.
628	Diphenyl catechine G-----	527.
631	Diphenyl chrysoine G-----	495.
Pyrazolone Dyes		
636	*Fast light yellow G-----	333, 527, 550, 559.
639	*Xylene light yellow-----	294, 333, 376, 464, 495, 527, 550, 559, 569.
640	*Tartrazine-----	376, 455, 464, 495, 527, 550, 559, 569, 576.
642	*Polar yellow-----	294, 495, 527, 550, 559.
652	*Chrome red B-----	11, 294, 333, 464, 495, 527, 550, 559.
653	*Pyrazol orange-----	455, 495, 523, 527, 550, 559, 569, 576.
Ketonimine Dyes		
655	*Auramine-----	333, 464, 527.

TABLE 8B. --Synthetic organic chemicals: Coal-tar dyes for which United States production or sales were reported, identified by manufacturer, 1953--Continued

Colour Index or Proto-type "b.	Dye	Manufacturers' identification numbers (according to list in table 27)
DYES GROUPED BY COLOUR INDEX NUMBER--Continued		
<i>Triphenylmethane and Diphenyl-naphthylmethane Dyes</i>		
657	*Malachite green-----	76, 376, 464, 527.
658	*Rhoduline blue 6G-----	76, 333, 376, 527, 550.
662	*Brilliant green-----	76, 333, 376, 464, 527.
663	Setocyanine-----	333, 527, 550.
666	*Acid green B-----	333, 376, 464, 495, 527, 550, 559.
667	*Fast acid green B-----	333, 376, 464, 527, 550, 559.
670	Acid light green-----	550.
671	*Acid glaucine blue-----	376, 464, 527, 550, 559.
672	Xylene blue VS-----	527, 550.
673	Xylene blue AS-----	527, 550.
676	*Para fuchsine-----	464, 519, 531.
677	Magenta-----	464, 519, 521.
680	*Methyl violet B and base-----	76, 333, 464, 527, 531, 550.
681	*Crystal violet-----	76, 333, 376, 527, 550.
682	*Ethyl violet-----	76, 333, 550.
683	Benzyl violet-----	76.
689	Spirit blue 2B-----	519.
692	Acid magenta-----	550.
695	Acid violet 4BN-----	527.
696	Fast acid violet 10B-----	333, 495.
697	Wool violet-----	376, 527.
698	*Acid violet-----	333, 464, 495, 550.
699	Acid fast violet BG-----	333.
704	Alkali blue-----	519, 531.
706	Methyl cotton blue-----	550.
707	*Soluble blue-----	464, 519, 531, 550.
710	Brilliant sky blue 5G-----	550.
714	Patent blue A-----	464.
720	*Acid chrome azuril B-----	333, 495, 527, 550, 576.
722	*Acid chrome cyanine R-----	333, 495, 527, 550, 559.
724	Aurine-----	333.
728	Victoria blue R-----	76, 276.
729	*Victoria blue B-----	76, 333, 376, 527, 550.
735	*Naphthalene green V-----	333, 376, 495, 527, 550.
737	*Wool green S-----	333, 376, 464, 550, 559.
<i>Xanthene Dyes</i>		
748	Xylene red B-----	550.
749	Rhodamine B 20%-----	550.
749	Rhodamine B conc., 100%-----	333, 464, 527.
752	Rhodamine 6G conc., 100%-----	333.
758	Fast acid violet AZR-----	2, 527.
766	*Fluorescein-----	2, 376, 464, 519, 527, 537.
766	*Uranine (Fluorescein, alkali salt)-----	376, 464, 519.
768	Eosine G (Tetrabromofluorescein, alkali salt)-----	464, 519.
768	*Tetrabromofluorescein-----	369, 376, 464, 519.
771	Dinitrodibromofluorescein-----	376.
773	Erythrosine bluish-----	519.
778	Phloxine B-----	376, 519.
779	Rose bengale B-----	464, 519.
<i>Acridine Dyes</i>		
788	Acridine orange NO-----	333, 527, 550, 559.
789	Brilliant phosphine G-----	333, 559.
793	Phosphine-----	464, 495, 527.
794	Phosphine 2G-----	559.
<i>Quinoline Dyes</i>		
800	Quinoline yellow, spirit-soluble-----	464, 527, 550.
801	*Quinoline yellow-----	333, 464, 527, 550.
802	Quinoline yellow KT-----	333.
<i>Thiazole Dyes</i>		
812	*Primuline-----	333, 495, 527.
813	Direct pure yellow M-----	333.
814	*Direct fast yellow-----	114, 333, 495, 527, 550.
815	Thioflavine T-----	333.
816	Direct brilliant flavine S-----	114.
<i>Azine Dyes</i>		
833	*Wool fast blue-----	495, 527, 550.
841	*Safranin-----	333, 376, 527, 550.

TABLE 8B.--Synthetic organic chemicals: Coal-tar dyes for which United States production or sales were reported, identified by manufacturer, 1953--Continued

Colour Index or Prototype No.	Dye	Manufacturers' identification numbers (according to list in table 27)
DYES GROUPED BY COLOUR INDEX NUMBER--Continued		
Azine Dyes--Continued		
842	Methylene violet-----	527.
853	Acid cyanine-----	550.
860	*Induline, spirit-soluble-----	464, 527, 550.
861	*Induline, water-soluble-----	464, 527, 550.
864	Nigrosine, spirit-soluble-----	464, 527, 550.
865	Nigrosine, water-soluble-----	464, 527, 550.
Aniline Black and Allied Dyes		
871	Diphenyl black base-----	464.
873	New fast gray-----	464.
875	Fur black-----	464.
Oxazine Dyes		
883	Gallocyanine-----	424.
909	New blue R-----	464, 527.
913	Nile blue A-----	550.
Thiazine Dyes		
922	*Methylene blue-----	76, 464, 527, 550.
924	Methylene green B-----	464.
Sulfur or Sulfide Dyes		
Derivatives of Carbazole		
969	Carbazole vat blue R-----	250, 333.
Other Sulfur or Sulfide Dyes		
	*Sulfur black-----	250, 333, 464, 527, 550.
	*Sulfur blue-----	250, 333, 461, 464, 495, 527, 550.
	*Sulfur brown-----	250, 333, 461, 464, 495, 527, 550, 587.
	*Sulfur green-----	250, 333, 461, 464, 527, 550.
	*Sulfur maroon-----	333, 464, 527, 550.
	*Sulfur olive-----	250, 333, 461, 464, 527, 550, 578.
	*Sulfur yellow-----	250, 333, 461, 464, 495, 527, 550, 578.
	All other-----	250, 333, 461, 527, 550, 578.
Anthraquinone Dyes		
1027	*Alizarin VI-----	464, 527, 576.
1034	*Alizarin red S-----	365, 464, 527, 550, 576.
1035	Alizarin brown-----	424, 527.
1040	Alizarin SX-----	527.
1053	*Acid alizarin blue SE-----	333, 464, 495, 527, 550.
1054	*Acid alizarin blue B-----	268, 294, 333, 464, 495, 527, 550.
1060	Anthracene blue SWGG-----	365.
1062	Anthracene blue WR-----	294, 527.
1073	*Alizarin irisol R-----	333, 365, 424.
1075	Alizarin astrol B-----	333, 365, 550.
1076	Cyananthrol R-----	333, 365.
1078	*Alizarin cyanine green-----	294, 333, 365, 424, 464, 467, 495, 527, 550, 576.
1080	Acid anthraquinone violet-----	365, 527.
1085	*Anthraquinone blue black B-----	365, 424, 464, 495, 527, 550, 576.
1088	*Acid anthraquinone sky blue B-----	333, 365, 527, 550.
1089	Anthraquinone blue SR-----	365.
1091	Acid alizarin rubine-----	365, 550.
Anthraquinone Vat Dyes		
1096	*Anthraquinone vat golden orange G, 12%-----	333, 464, 527, 550.
1098	*Anthraquinone vat scarlet G, 16-2/3%-----	333, 464, 527, 550.
1099	*Anthraquinone vat dark blue BO, 25%-----	114, 250, 268, 333, 365, 366, 464, 527, 576.
1100	*Vat navy blue NTP-----	333, 365, 366, 464, 550.
1101	*Anthraquinone vat jade green, 6%-----	68, 294, 333, 365, 366, 455, 456, 483, 527, 550, 552, 576.
1102	*Anthraquinone vat green B and black B, 12-1/2%-----	114, 250, 268, 333, 366, 464, 527, 550.
1104	*Anthraquinone vat violet 2R, 12-1/2%-----	333, 365, 527, 550.
1105	Anthraquinone vat violet B, 25%-----	333.
1106	Anthraquinone vat blue RS, 10%-----	333, 464, 527, 550.
1109	Anthraquinone vat blue 3G, 10%-----	333.
1112	Anthraquinone vat blue GCS, 8-1/3%-----	333, 527, 550.
1113	*Anthraquinone vat blue GCD, 8-1/3%-----	333, 464, 527, 550.

TABLE 8B.--Synthetic organic chemicals: Coal-tar dyes for which United States production or sales were reported, identified by manufacturer, 1953--Continued

Colour Index or Proto-type No.	Dye	Manufacturers' identification numbers (according to list in table 27)
DYES GROUPED BY COLOUR INDEX NUMBER--Continued		
<i>Anthraquinone Vat Dyes--Continued</i>		
1118	*Anthraquinone vat yellow G, 12-1/2%-----	250, 333, 527.
1120	Anthraquinone vat brown B, 2%-----	333, 456.
1132	Anthraquinone vat yellow GK, 12-1/2%-----	333, 527, 576.
1135	Anthraquinone vat brilliant violet RK, 12-1/2%-----	333, 527, 550.
1150	*Anthraquinone vat olive R, 12-1/2%-----	294, 333, 365, 366, 456, 464, 527, 550, 552.
1151	*Anthraquinone vat brown R, 12-1/2%-----	333, 366, 456, 464, 527, 550.
1152	*Anthraquinone vat brown G, 12-1/2%-----	333, 366, 456, 464, 527.
1161	Anthraquinone vat red violet RRN, 12-1/2%-----	333, 527.
1162	Anthraquinone vat red BN, ex., 12-1/2%-----	527, 550.
1163	*Anthraquinone vat violet BN, 2%-----	333, 365, 527, 550.
1167	Anthraquinone vat olive G-----	250.
1170	Anthraquinone vat yellow R, 12-1/2%-----	114, 333.
1173	Anthraquinone vat blue 3G, 12-1/2%-----	527, 550.
<i>Indigoid and Thioindigoid Dyes</i>		
1177	*Indigo, synthetic, 20%-----	333, 448, 527, 550.
1180	Indigotin IA-----	333, 527.
1183	Tribromindigo RB, 20%-----	333, 448, 527.
1184	*Bromindigo blue 2BD, 16%-----	68, 448, 527, 550.
1185	Indigo blue 6B-----	68, 527, 550.
1207	Ciba pink B, 20%-----	448, 550.
1212	*Vat red 3B, 20%-----	68, 333, 464, 527, 550.
1217	*Vat orange R, 10%-----	68, 333, 464, 550, 576.
<i>Food, Drug, and Cosmetic Dyes</i>		
<i>Food, Drug, and Cosmetic Colors</i>		
*Blue #1-----		87, 151, 355, 376, 527.
Blue #1, aluminum lake-----		87.
*Blue #2-----		87, 151, 330, 527.
Green #1-----		151, 355, 527.
Green #2-----		151, 355, 527.
Green #3-----		355.
*Orange #1-----		87, 151, 330, 376, 527.
Orange #2-----		376, 464, 527.
*Red #1-----		87, 151, 376, 527.
*Red #2-----		87, 151, 330, 355, 376, 527.
*Red #3-----		87, 151, 330, 527.
Red #3, aluminum lake-----		87.
*Red #4-----		87, 330, 355, 376, 527.
Red #32-----		464, 527.
Violet #1-----		527.
Yellow #1-----		87.
Yellow #3-----		87, 464, 472, 527.
*Yellow #4-----		87, 464, 472, 527.
*Yellow #5, #6-----		87, 151, 330, 355, 376, 527.
Yellow #5, aluminum lake-----		87.
<i>Drug and Cosmetic Colors</i>		
Black #1-----		464, 527.
Blue #1-----		87.
Blue #4-----		527.
Blue #6, #9-----		87, 527.
Brown #1-----		527.
Green #1-----		87.
Green #5, #6, #7-----		527.
Orange #3-----		87, 527.
Orange #4-----		87, 527, 537.
Orange #5-----		87, 277, 376.
Orange #10, #11, #16-----		527.
Orange #15, #17-----		87, 537.
Red #1, #2, #3, #30, #38-----		87.
Red #5-----		376.
Red #6-----		87, 527, 537.
Red #7, #8, #10, #31, #35, #36-----		87, 537.
Red #9, #12, #13, #34-----		87, 277, 537.
*Red #11-----		87, 277, 537.
Red #17, #18, #28, #33, #37, #39-----		527.
*Red #19-----		87, 277, 527, 537.
*Red #21-----		87, 277, 369, 376, 464, 519, 537.
Red #22-----		376, 464, 527.
Red #27-----		277.
Violet #1-----		87, 527.
Yellow #1, #10-----		87, 527.

TABLE 8B.--Synthetic organic chemicals: Coal-tar dyes for which United States production or sales were reported, identified by manufacturer, 1953--Continued

Colour Index or Prototype No.	Dye	Manufacturers' identification numbers (according to list in table 27)
DYES GROUPED BY COLOUR INDEX NUMBER--Continued		
<i>Food, Drug, and Cosmetic Dyes--Continued</i>		
Drug and Cosmetic Colors--Continued		
	Yellow #5-----	87, 537.
	Yellow #6-----	87.
	Yellow #7, #8-----	87, 464, 519, 527.
	Yellow #11-----	527.
Drug and Cosmetic Dyes, External		
	Blue #1-----	527.
	Green #1-----	527.
	Orange #1-----	87.
	Red #1, #10, #11-----	527.
	Red #8, #13-----	87, 527.
	Violet #2-----	87, 527.
	Yellow #1, #3-----	87.
	Yellow #5-----	87, 537.
DYES GROUPED BY PROTOTYPE NUMBER		
1	*Acid alizarin flavine R-----	333, 464, 527, 550, 559.
2	Acid anthracene brown B-----	464, 495, 527, 550.
4	*Acid anthracene brown PG-----	11, 294, 333, 411, 495, 523, 527, 550, 559.
7	Acid chrome blue 2R-----	495, 527, 550.
9	*Algol yellow GC-----	268, 333, 365, 366, 456, 464, 527, 550, 576.
10	Alizarin direct blue A2G-----	527, 550.
11	Alizarin direct blue AR-----	527, 550.
12	*Alizarin supra blue A-----	294, 333, 527, 550.
13	Alkali fast green 10G-----	527, 550.
14	*Anthracene chromate brown EB-----	294, 333, 411, 464, 495, 527, 550.
16	Artificial silk black C-----	495, 527, 550.
19	*Benzo Bordeaux 6B-----	495, 527, 550, 576.
20	*Benzo chrome black blue B-----	333, 495, 527, 550.
22	Benzo copper blue B-----	527, 550.
24	*Benzo fast black I-----	333, 495, 527, 550, 576.
26	*Benzo fast blue 4GL-----	294, 333, 527, 550, 559.
27	Benzo fast blue 8GL-----	333, 559.
28	Benzo fast brown 3GL-----	527, 550, 569.
30	Benzo red 12B-----	333, 527.
31	Benzo rhoduline red B-----	320, 550.
32	*Benzo rhoduline red 3B-----	320, 527, 550.
33	Brilliant acid blue 3B-----	527, 576.
35	*Brilliant benzo violet B-----	333, 495, 527, 550, 576.
36	Brilliant benzo violet 2R-----	559.
37	Brilliant milling blue B-----	330, 527, 550.
39	Brilliant wool blue FFB-----	527.
40	Brilliant wool blue FFR-----	527, 550.
43	*Celliton orange OR-----	320, 333, 495, 550.
46	Chlorantine fast blue 2GL-----	495.
47	*Chlorantine fast brown BRL-----	294, 333, 411, 455, 464, 478, 495, 509, 523, 527, 550, 559, 569, 576.
50	Direct fast red 5BL-----	495.
53	*Chlorantine fast yellow 4GL-----	333, 495, 523, 527, 550, 559, 569.
54	Chlorantine fast yellow RL-----	478, 495, 523, 559.
55	Chrome yellow DS-----	495.
56	Chrome yellow G-----	464, 527.
57	Cibacete brilliant blue 2B-----	569.
58	Cibacete diazo black B-----	333, 495.
59	Cibacete diazo black GN-----	495.
62	Cibacete sapphire blue C-----	333, 495, 550.
63	Cibacete scarlet C-----	320.
64	Cotton black 3G-----	550.
65	Cross dye green B-----	333, 411, 464, 550.
67	*Diamine Bordeaux B-----	333, 411, 527, 550, 576.
68	Diamine catechins B-----	333, 527.
69	Diamine catechins G-----	333, 527, 576.
70	*Diamine catechins 3G-----	333, 527, 550, 576.
71	*Diamine fast blue FFB-----	294, 333, 478, 495, 527, 550, 559, 569.
72	*Diamine fast orange EG-----	294, 333, 461, 464, 495, 550, 569.
73	*Diamine fast orange ER-----	294, 333, 461, 464, 550.
74	*Diaminogen blue N2B-----	333, 478, 495, 550, 569.
77	*Diazo Bordeaux 7B-----	294, 333, 495, 527, 550, 559, 576.
78	*Diazo brilliant green 3G-----	333, 495, 527, 550, 559.
79	*Diazo brilliant scarlet 2BL ex-----	294, 333, 495, 527, 550, 559.
80	*Diazo brilliant scarlet ROA-----	333, 550, 559, 576.
81	Diazo brown 6G-----	527, 550.
82	Diazo brown NR-----	550.

TABLE 8B.--Synthetic organic chemicals: Coal-tar dyes for which United States production or sales were reported, identified by manufacturer, 1953--Continued

Colour Index or Prototype No.	Dye	Manufacturers' identification numbers (according to list in table 27)
DYES GROUPED BY PROTOTYPE NUMBER--Continued		
83	Diazo brown 3RB-----	527, 550.
84	*Diazo fast red 5BL-----	294, 333, 527.
85	*Diazo fast red 7BL-----	294, 333, 527, 559, 569, 576.
86	Diazo indigo blue 4GL-----	550.
87	Diazo indigo blue 4RL-----	550.
89	*Diazo rubine B-----	294, 550, 559.
90	Diazo sky blue B-----	550.
91	Diazo sky blue 3GL-----	550.
93	*Fast mordant blue B-----	424, 527.
94	Fast scarlet 2G base-----	333, 552, 583.
94	*Fast scarlet 2G salt-----	376, 527, 550, 552, 559, 576.
95	Sirius supra brown 3R-----	550.
96	Sirius supra gray R-----	550.
97	Sirius supra orange 5G-----	550.
99	Sirius supra yellow 5G-----	527, 550.
100	*Guinea carmine B-----	333, 495, 550.
101	*Guinea fast red BL-----	294, 333, 495, 527, 550.
102	Guinea fast red 4BL-----	333, 527, 550.
107	Holindon fast scarlet G-----	576.
108	Holindon pink B ex-----	464.
109	*Holindon pink R ex-----	68, 333, 464, 550, 576.
116	Indanthrene brilliant orange RK-----	294, 333, 527, 550.
118	*Indanthrene brown RR-----	333, 464, 527, 550, 552.
121	*Indanthrene brown RRD-----	333, 464, 495, 527, 550, 559, 576.
122	*Indanthrene khaki 2G-----	333, 365, 527, 550.
124	Indanthrene rubine R-----	333, 527, 550.
125	Indanthrene yellow brown 3G-----	527.
126	Indo carbon CL-----	250, 550.
129	Katigen chrome blue 5G-----	550.
135	Metachrome red G-----	424.
137	Milling orange G-----	576.
138	*Milling yellow H5G-----	455, 495, 527, 550, 559, 576.
139	Milling yellow O-----	527, 550.
140	Monochrome blue black B-----	495.
141	Naphthol blue black S-----	527, 550.
143	Noolan black WA-----	495, 527, 550.
144	*Noolan blue GG-----	294, 320, 333, 464, 495, 527, 550, 559, 576.
145	Noolan Bordeaux R-----	294, 495, 527, 559.
146	Noolan orange R-----	333, 495, 527.
147	*Oxydiaminogen OB-----	411, 455, 478, 495, 527, 550, 559, 569, 576.
148	*Paper red A ex-----	333, 495, 527, 550.
149	Pigment green B-----	550.
151	Polar orange GS-----	495.
152	*Polar orange R-----	294, 333, 495, 527, 550.
157	Pyrogene orange G-CF-----	495.
158	Pyrogene violet brown X-----	495.
162	Pyrogene yellow brown 2RS-CF-----	495.
163	Rapidogen blue BN-----	68, 320, 550, 559.
164	*Rapidogen blue D-----	68, 333, 550, 559.
165	Rapidogen Bordeaux R-----	320, 550, 559.
166	Rapidogen brown GN-----	550, 559.
168	*Rapidogen red GS-----	68, 320, 333, 464, 495, 527, 550, 559.
169	*Rapidogen red RS-----	68, 320, 333, 464, 550, 559.
170	*Rapidogen scarlet RS-----	68, 320, 333, 464, 527, 550, 559.
171	*Rapidogen yellow G-----	320, 333, 464, 527, 550, 559.
172	*Rosanthere fast Bordeaux 2BL-----	268, 294, 333, 495, 527, 550, 559, 576.
173	*Rosanthere orange R-----	333, 495, 527, 550, 559.
178	Sudan brown 5B-----	550.
181	Sudan orange RT-----	550.
182	Sudan red BB-----	550.
186	Sulphon orange G-----	550, 576.
187	*Sulphon yellow R-----	294, 464, 495, 550, 559, 576.
188	Supra light rubine BL-----	527, 550.
189	Supramine black BR-----	550, 576.
191	Supramine Bordeaux E-----	550.
193	Supramine red 3B-----	550, 576.
194	Supramine red 2G-----	550.
195	Supramine yellow R-----	550.
197	*Victoria fast violet 2R ex-----	333, 464, 495, 527, 550.
198	*Victoria pure blue B-----	76, 333, 376, 550.
201	*Zambesi black D-----	495, 527, 550.
202	*Zambesi black V-----	333, 495, 527, 550.
203	Acid anthracene brown KE-----	550, 559.
205	Acid anthracene brown WSG-----	550.
206	*Alizarin fast gray BBLW-----	294, 333, 365, 464, 527, 550.
207	Alizarin supra sky R-----	527, 550.
208	Alphanol brown B-----	550.
209	Amido naphthol brown 3G-----	550.
210	Anthralan red B-CF-----	550.

TABLE 8B.--Synthetic organic chemicals: Coal-tar dyes for which United States production or sales were reported, identified by manufacturer, 1953--Continued

Colour Index or Prototype No.	Dye	Manufacturers' identification numbers (according to list in table 27)
DYES GROUPED BY PROTOTYPE NUMBER--Continued		
211	Azosol fast orange G-----	550.
213	Azosol fast red 3B-----	550.
214	Azosol fast scarlet CR-----	550.
215	Azosol fast scarlet CCG-----	550.
216	Azosol fast yellow GR-----	550.
217	Benzo fast Bordeaux 6BL-----	550.
218	Benzo fast brown RL-----	527.
222	Brilliant indocyanine 6B-CF-----	527, 550.
223	*Brilliant indocyanine G-----	495, 527, 550.
224	Brilliant sulpho flavine FFA-----	527.
227	Celliton fast blue FR-----	320, 550.
228	*Celliton fast blue FFR-----	320, 424, 483, 495, 527, 550, 576.
229	Celliton fast blue green B-----	320, 333, 550.
230	*Celliton fast brown 3R-----	483, 550, 576.
231	Celliton fast brown 5R-----	550.
232	Celliton fast navy blue B-----	576.
234	*Celliton fast pink B-----	320, 495, 527, 576.
235	*Celliton fast pink FF3B-----	320, 333, 550, 576.
236	*Celliton fast red GG-----	320, 333, 550, 576.
237	*Celliton fast red violet RN-----	320, 333, 550, 576.
238	*Celliton fast rubine B-----	320, 333, 550.
239	*Celliton fast rubine 3B-----	320, 333, 483, 495, 527, 550, 576.
241	Celliton fast violet 6B-----	320, 333, 550.
242	*Celliton fast yellow G-----	320, 333, 480, 483, 495, 550, 569, 576.
243	Celliton fast yellow RR-----	576.
244	*Celliton scarlet B-----	320, 333, 483, 495, 527, 550, 576.
245	*Celliton yellow 5G-----	320, 483, 550, 576.
246	*Chlorantine fast red 5BRL-----	294, 455, 527, 550, 559, 569.
247	Chrome fast orange 3RL-----	550, 559.
249	Dianil yellow 5G-----	527, 550.
250	Diazo brown 3R-----	550.
251	Diazo fast yellow 2G-----	527, 550, 559.
252	Diazo fast yellow 3G-----	550.
253	*Erio chrome brown DKL-----	495, 527, 550.
254	Erio chrome olive BL-----	495.
255	Fast black B salt-----	527, 550, 559.
256	Fast black K salt-----	550.
257	Fast black LB base-----	550.
258	*Fast blue BB base-----	320, 376, 550, 583.
258	Fast blue BB salt-----	320, 550, 583.
259	Fast Bordeaux RD salt-----	550.
260	*Fast Bordeaux GP base-----	376, 527, 550, 552.
260	*Fast Bordeaux GP salt-----	333, 376, 550, 552, 559, 576.
261	Fast corinth V salt-----	550.
264	Fast orange GC base-----	376, 527, 550, 552.
264	*Fast orange GC salt-----	376, 550, 552, 576.
265	Fast orange GR base-----	527.
265	Fast orange GR salt-----	376, 550, 552.
266	Fast orange RD salt-----	376, 550.
267	*Fast red AL salt-----	527, 550, 559, 576.
269	Fast red 3GL base-----	552, 576.
269	*Fast red 3GL salt-----	376, 527, 550, 552, 559, 576, 583.
270	*Fast red KB base-----	376, 464, 527, 550, 552, 576, 578, 583.
270	Fast red KB salt-----	320, 333, 576.
271	*Fast red RC base-----	376, 550, 552, 576.
271	*Fast red RC salt-----	320, 376, 550, 552, 576.
272	Fast red RL base-----	376, 550.
272	Fast red RL salt-----	376, 550.
273	Fast red TR base-----	552.
273	*Fast red TR salt-----	527, 550, 576.
274	Fast violet B base-----	320, 550.
274	Fast violet B salt-----	527, 550, 576, 583.
275	Fast yellow GC base-----	552.
275	Fast yellow GC salt-----	550, 552.
276	Sirius supra orange GG-----	550.
277	Sirius supra red violet RL-----	333, 550.
278	*Sirius supra turquoise blue GL-----	268, 294, 320, 333, 527, 550.
285	Immedial new blue FBL ex-----	550.
288	Indanthrene brilliant violet 3B-----	550.
289	Indanthrene direct black RB-----	527, 550.
290	Indanthrene golden orange 3C-----	333, 366, 527, 550.
291	*Indanthrene golden yellow GK-----	68, 333, 365, 527, 550, 559.
292	Indanthrene golden yellow RK-----	365, 527, 550.
293	*Indanthrene olive green B-----	268, 333, 365, 366, 456, 464, 527, 550, 552, 576.
295	Indanthrene printing black BL-----	527, 550.
296	Indanthrene red FBB-----	527, 550.
298	Metomega chrome brown RLL-----	495.
299	*Monochrome black blue G-----	294, 333, 495, 527, 550.

TABLE 8B.--Synthetic organic chemicals: Coal-tar dyes for which United States production or sales were reported, identified by manufacturer, 1953--Continued

Colour Index or Prototype No.	Dye	Manufacturers' identification numbers (according to list in table 27)
DYES GROUPED BY PROTOTYPE NUMBER--Continued		
300	Monochrome red FG-----	11, 550.
301	Monochrome violet FB-----	550.
302	*Naphthol AS-----	333, 376, 464, 486, 527, 550, 559, 563, 576, 578.
303	*Naphthol AS-BO-----	333, 376, 464, 486, 527, 550, 576, 578.
304	*Naphthol AS-BR-----	376, 486, 505, 527, 559, 576, 578.
305	*Naphthol AS-BS-----	333, 376, 464, 486, 527, 550, 559, 563, 576, 578, X.
306	*Naphthol AS-D-----	333, 376, 464, 486, 527, 550, 559, 563, 576, 578, X.
307	Naphthol AS-DB-----	376, 550.
308	Naphthol AS-E-----	376, 486, 527, 550.
309	*Naphthol AS-G-----	333, 376, 464, 486, 494, 527, 550, 559, 576.
310	*Naphthol AS-ITR-----	376, 486, 550, 578, 583.
311	*Naphthol AS-OL-----	333, 376, 464, 486, 527, 550, 559, 563, 576, X.
312	*Naphthol AS-RL-----	333, 376, 486, 527, 550, 576.
313	*Naphthol AS-SW-----	333, 376, 464, 486, 527, 550, 559, 576, 578.
314	*Naphthol AS-TR-----	486, 527, 550, 552, 576.
315	Neolan orange G-----	495, 550, 559.
316	*Neolan yellow GR-----	294, 333, 495, 527, 550, 559.
317	Omega chrome yellow ME-----	495.
318	Palatine fast blue BN-----	464, 550, 559.
319	Palatine fast blue RRN-----	294, 569.
321	Palatine fast green BLN-----	495, 527, 550, 559.
322*	Palatine fast marine blue REN-----	294, 320, 527, 559.
324	Palatine fast orange GN-----	464.
325	Palatine fast orange RN-----	294, 550.
326	*Palatine fast pink BN-----	294, 320, 333, 464, 550, 559.
327	Palatine fast red RN-----	550.
328	Palatine fast violet 3RN-----	550.
329	Palatine fast violet 5RN-----	464, 550.
330	Palatine fast yellow ELN-----	294, 495, 550, 559.
332	Pluto black G-----	411.
333	Pyrazol fast orange CL-----	495.
334	Rapid fast orange RH-----	464, 550.
335	Rapid fast red FGH-----	550.
336	Rapid fast red RH-----	550.
337	Rapid fast scarlet ILM-----	550.
339	Rapidogen black MG-----	550.
340	Rapidogen black brown IT-----	550.
341	*Rapidogen blue N-----	320, 333, 464, 527, 550, 559.
342	Rapidogen blue R-----	550.
343	Rapidogen brown IB-----	550.
344	Rapidogen brown IPT-----	550, 559.
345	Rapidogen golden yellow R-----	464, 527, 550.
347	Rapidogen green B-----	550, 559.
348	Rapidogen orange G-----	550, 559.
349	Rapidogen orange R-----	320, 527, 550.
350	Rapidogen red violet RR-----	550, 559.
351	*Rapidogen violet B-----	68, 320, 550, 559.
352	Rapidogen yellow G-----	68, 550.
353	*Rapidogen yellow 2G-----	68, 320, 333, 464, 550.
357	Variamine blue BD salt-----	550, 552, 583.
358	Variamine blue RT salt-----	550.
360	Acid chrome red B-----	550.
361	Alizarin rubinol 3G-----	550.
364	Benzochrome brown B-----	550.
365	Benzochrome brown G-----	550.
366	Benzo fast heliotrope RRL-----	527, 550.
367	Brilliant benzo fast violet BL-----	527, 550.
368	Brilliant benzo green B-----	527, 550.
369	Celliton brilliant yellow FF-----	527, 550.
370	Celliton fast pink RF-----	333, 550.
371	Chrome leather fast black S-----	550.
372	*Cotonerol-----	320, 333, 550.
375	Diamond black P2B-----	550.
376	Diazo brilliant orange GR-----	550.
377	*Diazo brilliant scarlet 5BLN-----	333, 550, 559.
378	*Fast red ITR base-----	320, 376, 550.
379	*Sirius supra gray VCL-----	294, 527, 550.
381	Indanthrene orange 4R-----	333, 550.
383	Janus black G-----	550.
385	Naphthol AS-EG-----	376, 550.
386	Naphthol AS-GR-----	550.
387	Naphthol AS-LB-----	550.
388	Naphthol AS-SO-----	376, 550, 559.
389	Noolan pink B-----	495, 527, 550.
391	Neolan red GRE-----	294, 495.
393	Oxamine brilliant red B-----	527, 550.

TABLE 8B.--Synthetic organic chemicals: Coal-tar dyes for which United States production or sales were reported, identified by manufacturer, 1953--Continued

Colour Index or Proto-type No.	Dye	Manufacturers' identification numbers (according to list in table 27)
DYES GROUPED BY PROTOTYPE NUMBER--Continued		
394	Palatine fast claret BN-----	550.
397	Para brown V-----	550.
398	Permanent carmine FB-----	550.
400	Rapid fast brown IRH-----	550.
401	Rapid fast scarlet RH-----	550.
402	Rapidogen red ITR-----	550.
403	Rapidogen scarlet IL-----	550.
404	Rosanthere Bordeaux B-----	333, 495, 550.
408	Acid chrome blue 3G-----	550.
409	Algol scarlet B-----	550.
412	Azo rubinol 3GP-----	495.
413	Azosol fast blue HL-----	550.
414	Azosol fast green HL-----	550.
416	Benzo fast gray BL-----	527.
417	Brilliant congo blue BFL-----	527, 550.
418	Brilliant wool blue G-----	527.
420	Celliton fast yellow 7G-----	550.
421	*Chlorantine fast Bordeaux 2B-----	455, 495, 527.
422	Chlorantine fast Bordeaux BLL-----	527.
423	Chlorantine fast brown 8RLL-----	527, 569.
424	Chlorantine fast gray RLN-----	524.
425	Chlorantine fast green BLL-----	333, 495, 550.
426	Chlorantine fast orange T4RLL-----	495, 527.
427	Chlorantine fast orange T5RLL-----	527.
428	*Chlorantine fast red 6BLL-----	294, 320, 333, 478, 495, 527, 559, 569.
429	Chlorantine fast violet 5BL-----	495, 527.
430	Chlorantine fast violet RLL-----	527.
432	*Chlorazol blue 5GKS-----	333, 464, 478, 495, 527, 550.
433	Derma brown G-----	495.
435	Diazanil orange RR-----	550.
436	Diazo brilliant blue 2BL-----	527, 550.
438	Diazo fast Bordeaux FBL-----	550.
442	Fast scarlet TR base-----	550.
443	Sirius light blue FBGL-----	550, 569.
446	Indanthrene orange F3R-----	527.
447	Indanthrene red brown R-----	576.
448	Indanthrene red brown 5RF-----	333, 527, 550.
449	Indanthrene scarlet R-----	527, 550.
450	Indanthrene yellow FFRK-----	527.
451	Indanthrene yellow GF-----	527.
452	Indanthrene yellow 3R-----	333, 527.
453	Kiton fast red 4BLN-----	495.
456	Metomega chrome brown 3GL-----	495.
457	Metomega chrome orange ML-----	495, 527.
458	Metomega chrome red GM-----	495.
459	Monochrome olive FBEL-----	550.
460	Naphthol AS-LC-----	550.
461	Naphthochrome violet R-----	527, 550.
462	Neolan blue 2R-----	495, 527.
463	Neolan orange GRE-----	333, 495.
467	Rapidogen golden yellow IFG-----	550.
468	Rapidogen red IGG-----	550.
469	Rapidogen yellow I4G-----	550.
470	Diphenyl fast blue green BL-----	495, 527.
471	Sudan red GG-----	550.
472	Sudan yellow GRN-----	550.
474	Supramine yellow 3GL-----	550.
484	Chromoxane brilliant violet SB-----	550.
485	Alizarin light blue 4GL-----	495, 527.
488	Azoel fast red BE-----	550.
489	Brilliant indo blue 5GL-----	550.
490	Chloramine fast orange 2RN-----	495.
491	*Chlorantine fast violet 2RL-----	333, 478, 495, 523.
492	Cloth fast yellow 3G-----	495, 527.
494	Diazo brilliant scarlet ROL-----	550.
495	Diazo fast yellow 3GL-----	495.
496	Diphenyl fast blue red R-----	527.
497	Erganil gray BG-----	550.
498	Fast blue RR base-----	550.
498	Fast blue RR salt-----	550.
499	Fast corinth LB salt-----	376, 550.
500	Fast red FR salt-----	550.
501	Fast red PDC base-----	376, 550, 583.
501	*Fast red PDC salt-----	550, 559, 583.
503	Indanthrene red violet RRN-----	333, 550.
504	Leather brown ET-----	550.
505	Naphthol AS-LC-----	550.
506	Naphthol AS-LT-----	550.
509	Neolan red BRE-----	495.

TABLE 8B.--Synthetic organic chemicals: Coal-tar dyes for which United States production or sales were reported, identified by manufacturer, 1953--Continued

Colour Index or Prototype No.	Dye	Manufacturers' identification numbers (according to list in table 27)
DYES GROUPED BY PROTOTYPE NUMBER--Continued		
511	Rapidogen corinth IB-----	550.
512	Sirius supra rubine BB-----	455, 527, 550.
513	Xylene fast orange PO-----	527.
514	Acid alizarin black KGW-----	495.
515	Acid leather brown EGB-----	550.
516	Alizarin saphirol WSA-----	333, 550.
519	Buffalo black 3G-----	527.
520	Calcocast spirit orange RN-----	464, 550.
522	Caledon dark blue G-----	333.
523	Cellitazol AZN-----	333, 483, 550.
524	Chloramine copper blue 3G-----	495, 550.
526	Chlorantine fast yellow 2GLL-----	495.
527	Chrome fast green G-----	495, 527.
529	Diaminogen blue NA-----	333, 527.
530	Diazo fast green GF-----	550.
531	Diazo fast violet BL-----	527, 550, 559.
533	*Direct chinoline-----	464, 527, 550.
534	Dispersol fast yellow 2G-----	333.
535	Durazol fast blue 3RS-----	333.
536	Durazol fast orange R-----	333.
537	Eastman fast yellow GLF-----	320, 483.
538	Eastone blue BGF-----	483.
539	Erie fast rubine B-----	333, 527, 569.
540	Fast brown salt VA-----	550.
543	Guinea brown RD-----	550.
545	Immedial black brown A-----	550.
547	*Indanthrene oliva T-----	268, 294, 333, 365, 366, 456, 527, 550, 576.
549	Indanthrene yellow 3GF-----	527.
551	Interchem acetata orange 4R-----	320.
552	Leather brown 5RTX-----	550.
553	Luxol brilliant green BL-----	333, 550.
554	Luxol fast blue MBS-----	527, 554.
555	Naphthol AS-L3G-----	550.
556	*Naphthol AS-MX-----	376, 486, 550, 576, 578.
557	*Naphthol AS-PH-----	333, 376, 486, 550, 578.
560	Naolan dark green B-----	495.
562	*Neutral brown RX-----	294, 333, 495, 527.
565	Pontamina black AWG-----	333, 527.
566	Pontamina diazo brown R-----	333, 550.
567	Pontamina diazo orange-----	333, 527.
568	Pontamina diazo orange 3G-----	333.
569	*Pontamine navy blue DB-----	333, 411, 464, 495, 527.
571	Rapidogen black 3G-----	550.
572	Rapidogen blue FBN-----	550.
575	Sirius supra brown 2RL-----	550.
576	Sirius supra orange RRL-----	550.
577	Sirius supra scarlet CG-----	527.
578	*Solantine orange 4G-----	320, 455, 478, 495, 527.
579	Supranol brown 3GL-----	550.
581	Wool black GRF-----	495.
582	*Sirius supra yellow R ex-----	268, 294, 320, 455, 495, 527, 550, 559, 569.
598	Direct brown RG-----	495.
622	Direct fast yellow 3GP-----	495.
UNGROUPED DYES		
*Acetate rayon dyes: ¹		
	*Black, IV ex., B, BNF, DB, EC, G, 3G, OGN, GS, GX, J, LNB, NC, RB, RK, SDF, SS. ²	320, 333, 411, 483, 495, 527, 550, 576.
	*Blue, #15, #40, A8-7, A8-45, AGF, B, 2B, BGLF, BN, BNN, BP, CR, EC, G, 2G, GBN, GE, GFD, GLF, GLT, GLT-NS, 2GN, GP, GR, LB, LD, M, MJ, NBN, NVC, NVY, RB, RDA, RG, R, 2R, 3R, WNB. ³	320, 333, 483, 527, 550, 576, 578.
	Brown #8, JG, R-----	320, 483.
	Orange, I, III, FSI, GR, GRN, R, 2R, 3R, RD-GLF, ZRP. ⁴	320, 333, 411, 483, 527, 569, 576.
	Pink MBS-----	527.
	*Red III, VI-X, B, 2B, 4BLL, 2B-GLF, C, FSI, G, GLF, LRB, NB, R, RP, WLF-40, Y, YP. ⁵	320, 333, 411, 483, 495, 527, 569, 576.
	*Violet 2B, 7BC, BGF, BN, MB, 2R, 4R, 3RGFL, 5RLF.	320, 333, 483, 495, 527.
	*Yellow 4RLF-----	320, 483, 576.
	*Yellow B, CW, FSI, G, 5G, 8GLF, GL, GN, GR, IX, M, N, RN, 4RL. ⁶	320, 333, 483, 495, 527, 550, 576.
	Acid alizarin Bordeaux BLT-----	550.
	Acid alizarin brown RLL-----	550.
	Acid anthracene brown TBL-----	550.
	Acid black AR, 8B, GRF, N, RB-----	333, 527, 550.

See footnotes at end of table.

TABLE 8B.--Synthetic organic chemicals: Coal-tar dyes for which United States production or sales were reported, identified by manufacturer, 1953--Continued

Colour Index or Proto-type No.	Dye	Manufacturers' identification numbers (according to list in table 27)
UNGROUPED DYES--Continued		
	Acid blue G-----	333.
	Acid blue black A-----	550.
	Acid Bordeaux NB-----	550.
	Acid brilliant blue RR-----	333.
	Acid brilliant red 3B-----	559.
	Acid brown GR1A, 3G, GR, ITGA, M130, NY, PQMA, 2R, RD.	333, 550.
	Acid dark brown B-----	333.
	Acid dark green B-----	333.
	Acid fast brown CGS-----	333.
	Acid green G-----	11.
	Acid leather brown-----	464.
	Acid metalized blue NB-----	550.
	Acid milling orange 4R-----	464.
	Acid navy B, FN-----	411.
	Acid navy blue-----	464.
	*Acid orange NR, R, 2R-----	333, 550, 559.
	Acid red B, 2B, 3B, BR, G, RB, 3RB-----	333, 527, 559.
	Acid sapphire G-----	523.
	Acid scarlet GN-----	559.
	*Acid violet NR, R, 2R, 3RL, RNL-----	11, 333, 411, 424, 550.
	Acid yellow 3G, 6G, NR, NW, 3RD-----	333, 550, 559.
	Alizarin blue GS-----	527.
	Alizarin sapphire EMM-----	527.
	Alizarin violet NRR-----	527.
	Alphazurine B-----	527.
	Anthracene chrome brown RL-----	424.
	Anthraquinone blue BGA, 3G, 2GA, 4GL, RA-----	333.
	Anthraquinone vat black EBN, 2G, J, R-----	464, 527, 576.
	Anthraquinone vat black brown VA-----	550.
	Anthraquinone vat blue BCL, GR-----	527, 550.
	Anthraquinone vat blue green 3B, FFB, Y-----	333, 550, 576.
	Anthraquinone vat brilliant red B-----	333.
	Anthraquinone vat brilliant violet 3R-----	333.
	Anthraquinone vat brilliant yellow 3G, 4G, 5G-----	333, 550.
	Anthraquinone vat brown BN, NR, VR-----	333, 527.
	Anthraquinone vat copper brown-----	464.
	Anthraquinone vat direct black DB, 3G, 3GA, HP-----	333, 550, 576.
	Anthraquinone vat fast yellow-----	464.
	Anthraquinone vat golden orange 4G-----	333.
	*Anthraquinone vat gray BR, 2G, GFL, GNF, MBM, R.	333, 464, 527, 550, 576.
	Anthraquinone vat navy blue BN-----	576.
	*Anthraquinone vat olive G, 2GL, 2GLD, T, TC, TR.	333, 464, 552.
	Anthraquinone vat orange RK-----	576.
	Anthraquinone vat printing black BBD, PG, R-----	527, 576.
	Anthraquinone vat red FG, RL, RRB-----	333.
	Anthraquinone vat red brown N, RB-----	333.
	Anthraquinone vat scarlet 3GA, GL-----	333, 550.
	Anthraquinone vat yellow 8G, 5GLL, K, LN, PG-----	333, 527.
	Anthraquinone vat, other-----	250.
	Anthraquinone violet A-----	333.
	Aviation blue-----	464.
	Azo black NV-----	523.
	Azo blue G-----	523.
	Azo brilliant blue RS-----	523.
	Azo brilliant violet O-----	523.
	Azo brown BY, RRK-----	523, 559.
	Azo cardinal WF-----	523.
	Azo cerisine B-----	464.
	Azo dark brown DW-----	523.
	Azo eosine 2B-----	333.
	Azo fast yellow G-----	523.
	Azo golden orange R-----	523.
	Azo green FB, FFW, G-----	523, 559.
	Azo navy BR, CW, LN-----	523.
	Azo oil black-----	527.
	Azo oil blue black B-----	527.
	Azo olive green BLN-----	559.
	Azo orange BRS, GR, RNC, RXA-----	559.
	Azo royal blue L, S-----	523.
	Azo rubine B, S-----	523.
	Azo scarlet O-----	523.
	Azo turquoise B-----	523.
	Azo violet R-----	559.
	Azo wine WF-----	523.
	Azo yellow DW, S-----	523.

TABLE 8B.--Synthetic organic chemicals: Coal-tar dyes for which United States production or sales were reported, identified by manufacturer, 1953--Continued

Colour Index or Proto-type No.	Dye	Manufacturers' identification numbers (according to list in table 27)
	UNGROUPED DYES--Continued	
	*Azotic dyes and their components: ⁷	
	Dyes, rapidogen:	
	Black BR, DM, ITA, MR-----	333, 550, 559.
	Blue B, 2B, FBN, PBR, R-----	376, 550, 559.
	Bordeaux AF, MR-----	320, 333, 559.
	Brown INR, Y-----	550, 559.
	Dark brown AR-----	333.
	Fast red B-----	464.
	Garnet G-----	376.
	Golden yellow MRS-----	333.
	Gray R-----	550, 559.
	Midnight blue-----	550.
	Navy blue F, FFR-----	550, 559.
	Orange FFR, MG, N-----	333, 550, 559.
	Red 3B, 2BN, C, FB, FFBB, FFG, FFR, KBS, RC, SW-----	320, 333, 376, 550, 559.
	Scarlet FFG, FFR, 2G, 2R-----	376, 550, 559.
	Violet B, SW-----	320, 376.
	Yellow AGL-----	333.
	Components:	
	Fast color bases:	
	Blue BE-----	333.
	Garnet GBCEP, GC-----	12, 376, 552.
	Ponceau L-----	576.
	Red FB-----	455.
	Fast color salts:	
	Blue RBN-----	559.
	Ponceau L-----	576.
	Variamine blue FG-----	550.
	Fur dyes: Fur #2, #4, BCA, NZA, NZF-----	294.
	Naphthols:	
	Naphthol AS-AAP-----	333.
	Naphthol AS-BCN-----	376.
	Naphthol AS-BN-----	550.
	Naphthol AS-EL-----	376.
	Naphthol AS-HB-----	376.
	Naphthol AS-KB-----	376, 486, 550, 559.
	Naphthol AS-OP-----	559.
	Naphthol AS-PN-----	464.
	Naphthol AS-RO-----	527.
	Naphthol AS-ST-----	550.
	Azocol brilliant blue B-----	550.
	Azocol fast brilliant red BN-----	550.
	Basic blue OB-----	333.
	Basic red 4G-----	333.
	Basic yellow OL-----	333.
	Benzo fast copper brown BRL-----	550.
	Benzo fast copper yellow 2GL-----	550.
	Benzo fast gray BL-----	333.
	Brilliant cyanine green 5G-----	365.
	Brilliant oil blue BMA-----	527.
	Brilliant rayon blue J-----	523.
	Brilliant violet R-----	576.
	Canary lake yellow FL-----	527.
	Celliton yellow 6D-----	550.
	Chloramine brilliant orange RS-----	495.
	Chlorentine fast green 5GLL-----	495.
	Chromate brown R, RL-----	294, 424.
	Chrome black 3C-----	527.
	Chrome blue G-----	11.
	Chrome brilliant pink 3B-----	333.
	Chrome brown B-----	527.
	Chrome cyanine BLL-----	527.
	Chrome garnet GR-----	11.
	Chrome gray BL-----	424.
	Chrome green B, CB, SP-----	424, 527.
	Chrome orange 2G, LC, 3R-----	333, 464, 527.
	*Chrome yellow 2GN, LL, SW-----	333, 523, 527.
	Chromolan gray G-----	527.
	Chromolan violet 2R-----	527.
	Cupramine brown B-----	523.
	Cupramine orange RB-----	523.
	Cupramine red EX-----	523.
	Dark brown B-----	333.
	Developed blue BR-----	576.
	Developed brown CBS-----	527.
	Developed orange RFW, WD-----	527.
	Developed red BFW-----	527.
	Developed scarlet FW, GFW-----	527.

See footnotes at end of table.

TABLE 8B.--Synthetic organic chemicals: Coal-tar dyes for which United States production or sales were reported, identified by manufacturer, 1953.-Continued

Colour Index or Proto-type No.	Dye	Manufacturers' identification numbers (according to list in table 27)
UNGROUPED DYES--Continued		
	Developed violet BRD-----	576.
	Diamine catechine ER, 6GA-----	550.
	Diazo blue 3G, 6G, 5GL-----	333.
	Diazo Bordeaux RIN-----	333.
	Diazo brilliant orange GGA-----	550.
	Diazo brilliant scarlet 2GA-----	550.
	Diazo brown 6G-----	333.
	Diazo fast violet EL-----	333.
	Diazo green EL, 2GL-----	333.
	Diazo orange G, GR, LGA, N, RG, RR, WD-----	333, 550, 569.
	Diazo scarlet P-----	333.
	Diazo violet RR-----	333.
	Diazo yellow 2GL-----	333.
	Diazophen red BTB-----	464.
	Diazophen yellow BTP-----	464.
	*Direct black CW, 3G, 5G, GN, 3GR, HH, RGW, RW-----	411, 495, 523.
	*Direct blue B, BBL, BFL, BLU, 10BLU, BVW, CF, CF2B, FBLL, 2CFL, GL, 3GLL, 4GLL, 8GLN, 4GU, 8GUF, 1BLL, LDU, LGLL, NPC, NR, RDW, 2RCF, 3RCF, RFL, 2RFL, RL, RLU, 2RLU, 2RLCF, TRILL, VRS.	320, 464, 478, 495, 509, 523, 527, 559, 576.
	Direct blue green CW-----	527.
	Direct Bordeaux B, BH-----	320, 527.
	Direct brilliant blue 10BLL, 12BLL, 16BLL-----	523.
	Direct brilliant brown S-----	527.
	Direct brilliant corise-----	464.
	Direct brilliant violet 4B, R-----	464, 576.
	*Direct brown CR, CWR, GB, 3GS, KRS, RB, 3RLL, RY.	333, 411, 464, 523, 527, 576.
	Direct catechine 2BAC-----	527.
	Direct copper black brown-----	527.
	Direct diazo blue NA-----	569.
	Direct diazo orange RG-----	569.
	Direct fast black CRNX-----	569.
	*Direct fast blue BLL, 2BRN, CFL, GLFV, 7GLL, 8GLL, GSS, L5GA, L5R, RL, 3RL, SFGL, SFRL.	294, 333, 527, 550, 569.
	Direct fast brilliant blue L8GA-----	550.
	*Direct fast brown 4GL, 5GLL, R, 4R, 2RL, 3RL, 4RL, 5RL, SKRL, 3YL.	333, 527, 569.
	Direct fast copper blue EG, R-----	527.
	Direct fast gray 3BL, 2GL, 3GL-----	294, 333.
	Direct fast heliotrope B, FFB-----	320, 333.
	*Direct fast orange G, 2G, 5GC, GL, 2GL, 4GLL, L8GL, R.	294, 333, 527, 550, 569.
	*Direct fast red 3BL, 5BLN, 7BNL, L4BL, RL, WL-----	294, 333, 411, 455, 523, 550, 576.
	Direct fast rubine BELL, WL-----	411, 569.
	Direct fast violet BL, 4BL, R-----	333, 527.
	*Direct fast yellow 5G, 3GL, 3GU, L2RX, L3RX, RL, 55GP.	333, 509, 527, 559, 569.
	Direct garnet RB, RD-----	527, 576.
	Direct gray BBC, GL, 2GLU, 3LUF, LVL, LVLU, UFLL.	320, 523, 527.
	Direct green B, GB, 5GSC, 2Y-----	333, 464, 527, 576.
	Direct lumisol blue GL, L, RL-----	495.
	Direct lumisol gray G-----	495.
	Direct lumisol violet 4RL-----	495.
	Direct maroon LFS, LFVS-----	523.
	*Direct orange C, DB, F3R, GFL, 5GFL, 2GLL, 2GU, 6GUF, 1R, 3LWF, 2R, RT.	333, 464, 478, 509, 523, 559, 569.
	Direct red 7B, 9B, 5BL, 8BLN, 5BLU, 3BW-----	320, 523, 559.
	Direct rubine BB, SB-----	523, 559.
	Direct scarlet B, BCW, C-----	523, 576.
	Direct silk blue NR-----	550.
	Direct sky blue FF-----	333.
	Direct violet BCW, 2R-----	320, 527, 559, 576.
	Direct violet black-----	495.
	*Direct white, ACC, AW, B, 4B, 5B, 5BM, 2G, MR, MZR, 2R, 3R, RN, RW, SC, WT.	117, 333, 376, 464, 527, 550, 559.
	Direct yellow EFC, G, 3G-----	523, 559.
	Euchry sine 2GA-----	550.
	Fast acid orange RW-----	495.
	Fast acid red-----	569.
	Fast acid yellow GS, RL-----	333, 527.
	Fast black FTC, G-----	464, 576.
	Fast blue 2B-----	294.
	Fast Bordeaux BN, RB-----	464.
	Fast brilliant crimson RB-----	527.
	Fast brown FN, MF-----	464.
	Fast crimson R-----	527.

TABLE 8B.--Synthetic organic chemicals; Coal-tar dyes for which United States production or sales were reported, identified by manufacturer, 1953--Continued

Colour Index or Proto-type No.	Dye	Manufacturers' identification numbers (according to list in table 27)
UNGROUPED DYES--Continued		
	Fast olive brown G-----	464.
	Fast orange LW, YF-----	464, 576.
	Fast spirit black RB-----	464.
	Fast spirit brown GN-----	464.
	Fast spirit yellow C, 2RN-----	464.
	Fast wool yellow GL-----	527.
	Fast yellow G, 2G, N-----	294, 464, 569.
	Fiber black V-----	495.
	Fluorescent green HW-----	168.
	Fluorescent yellow HEB-----	464.
	Fluorol 5G, 7GA, OBR-----	550.
	Formaldehyde scarlet Y-----	495.
	Formalide brown RD-----	411.
	Formalide deep blue R-----	411.
	Casoline yellow-----	464.
	Indigo blue-----	576.
	Ink blue ASB, PP-----	527, 550.
	Iosol black-----	527.
	Iosol blue, 6G-----	527.
	Iosol green-----	527.
	Iosol orange-----	527.
	Iosol red-----	527.
	Iosol violet-----	527.
	Iosol yellow-----	527.
	Jot black APX-----	333.
	Leather brown 5RT-----	527.
	Levelling blue 2R-----	576.
	Methyl violet base oleate-----	464.
	Milling blue BL-----	333.
	Milling orange RN-----	333.
	Milling red brown-----	527.
	Milling yellow GN, XN-----	333, 527.
	Naphthol navy blue M-----	495.
	Navy blue G-----	576.
	Neutral black BSS-----	527.
	Neutral brown RD-----	527.
	Neutral dark brown H-----	411.
	Neutral red 3G-----	576.
	Neutral silk brown G, O, R, RG-----	523.
	Neutral silk yellow CGA, SX-----	294, 523.
	Nydye blue GB-----	523.
	Nydye brilliant red 3B-----	523.
	Nydye orange 2R-----	523.
	Nydye scarlet G-----	523.
	Nydye violet BX-----	523.
	Oil blue A, NE-----	333, 464.
	Oil brown #79, #102, D, M, Y-----	12, 527.
	Oil fast blue R-----	576.
	*Oil orange, #30, MT-----	12, 464, 467.
	Oil pink B-----	527.
	*Oil red, #322, DE, EGN, N-1700, O, OB, RO-----	12, 464, 467, 527, 576.
	Oil yellow, PHW-----	464, 467.
	Olive brown RL-----	576.
	Palatine fast blue 5RNA-----	550.
	Palatine fast yellow 5GN-----	550.
	Permanent brown FR-----	550.
	Pluto orange GRA-----	550.
	Quinoline yellow P-----	333.
	Resin brilliant red R-----	527.
	Resin brown Z-----	527.
	Resin dark red Z-----	527.
	Resin scarlet 2R-----	527.
	Rhodamine B stearate-----	464.
	Rosanthere orange R-----	333.
	Silk red 4B-----	495.
	Soga yellow A-----	550.
	Spirit-soluble blue-----	424.
	Spirit-soluble brown 2RS-----	527.
	Spirit-soluble fast black-----	527.
	Spirit-soluble fast blue B-----	527.
	Spirit-soluble fast green B-----	527.
	Spirit-soluble fast orange A-----	527.
	Spirit-soluble fast red M, Y-----	527.
	Spirit-soluble fast yellow 3G-----	527.
	Spirit-soluble green-----	424.
	Spirit-soluble orange M, RS-----	527.
	Spirit-soluble red MS-----	527.
	Spirit-soluble red brown NR-----	527.
	Spirit-soluble scarlet MC-----	527.

TABLE 8B.--Synthetic organic chemicals: Coal-tar dyes for which United States production or sales were reported, identified by manufacturer, 1953--Continued

Colour Index or Prototype No.	Dye	Manufacturers' identification numbers (according to list in table 27)
UNGROUPED DYES--Continued		
	Spirit-soluble violet MR-----	527.
	Spirit-soluble yellow GR, MGS-----	527.
	Stilbene orange E3G-----	464.
	Sudan corinth 3B-----	550.
	Sudan dark brown BG-----	550.
	Sudan orange FL-----	550.
	Sudan yellow GRA-----	550.
	Synlan black-----	495.
	Toluylene fast brown 3GA-----	550.
	Vat black-----	448.
	Vat maroon 3N-----	550.
	Vat pink FG-----	333.
	Vat printing black GR-----	527.
	Vat red 2B-----	448.
	Vat scarlet G, GX, GXS-----	333.
	Water black SR-----	464.
	All other-----	333.

¹ Excludes acetate rayon dyes that appear under "Dyes Grouped by Prototype Number."

² Includes developed black and diazo black.

³ Includes brilliant blue and navy blue.

⁴ Includes golden orange and monocol orange.

⁵ Includes monocol red rubine and scarlet.

⁶ Includes fast yellow, golden yellow, and printing yellow.

⁷ Does not include azoic dyes and their components that appear under "Dyes Grouped by Colour Index Number," and "Dyes Grouped by Prototype Number."

Toners and Lakes

TABLE 15B.--Synthetic organic chemicals: Toners and lakes for which United States production or sales were reported, identified by manufacturer, 1953

[Toners and lakes for which separate statistics are given in table 15A are marked below with an asterisk (*); those not so marked do not appear in table 15A because the reported data are confidential and may not be published. Manufacturers' identification numbers shown below are taken from table 27. An X signifies that the manufacturer did not consent to the publication of his identification number with the designated product]

Product	Manufacturers' identification numbers (according to list in table 27)
TONERS OR FULL-STRENGTH COLORS	
*Black toners:	
Aniline black-----	537.
PMA black-----	406, 471, 500, 570.
PTA black-----	406, 471, 570.
*Blue toners:	
*Alkali blue (C.I. 704)-----	87, 172, 388, 464, 519, 521, 531.
Dianisidine blue-----	333, 376, 563.
Indanthrene blue-----	288.
Indanthrene blue GCD (C.I. 1113)-----	288, 333, 563.
PTA Peacock blue GG-----	525.
*PMA Peacock blue R (C.I. 664)-----	471, 500.
*PTA Peacock blue R (C.I. 664)-----	119, 471, 525, 587, X.
*Phthalocyanine blue B (Pr. 481)-----	63, 87, 268, 277, 333, 376, 388, 424, 458, 464, 521, 525, 531, 537, 550, 563.
Phthalocyanine blue B, resinated (Pr. 481)-----	410.
Phthalocyanine blue G (Pr. 482)-----	87.
Phthalocyanine blue R-----	388.
Pigment blue WNL-----	550.
*PMA Setoglaucine (Peacock blue G) (C.I. 658)-----	119, 282, 471, 500, 525.
*PTA Setoglaucine (Peacock blue G) (C.I. 658)-----	119, 282, 376, 439, 464, 471, 500, 525, 570, 587.
*PMA Victoria blue B (C.I. 729)-----	103, 471, 500, 521.
*PTA Victoria blue B (C.I. 729)-----	87, 333, 406, 410, 464, 471, 521, 537.
PMA Victoria blue R (C.I. 728)-----	406.
PTA Victoria blue R (C.I. 728)-----	376.
*PMA Victoria pure blue B (Pr. 198)-----	119, 172, 282, 291, 388, 458, 471, 500, 525, 567, 570, 587.
*PTA Victoria pure blue B (Pr. 198)-----	87, 119, 291, 376, 388, 439, 458, 471, 500, 525, 531, 563, 570, 587.
All other-----	424, 464, 471.
Brown toners:	
Bismarck brown-----	570.
PMA Brown-----	63.
Gun metal brown-----	424.
Havana brown-----	103.
Para brown-----	288, 376.
Toner browns-----	424.
*Green toners:	
*PMA Brilliant green (C.I. 662)-----	103, 388, 471, 500, 525, 570.
*PTA Brilliant green (C.I. 662)-----	119, 237, 282, 376, 464, 471, 500, 521, 525, 570, 587.
PMA Brilliant green (C.I. 662) and thioflavine (C.I. 815).-----	172, 291, 406, 439, 458, 471, 500, 525, 537, 570.
PTA Brilliant green (C.I. 662) and thioflavine (C.I. 815).-----	87, 119, 172, 282, 291, 376, 388, 439, 458, 471, 500, 521, 525, 537, 567, 570, 587.
*PMA Malachite green (C.I. 657)-----	172, 291, 388, 439, 471, 570.
*PTA Malachite green (C.I. 657)-----	87, 119, 282, 291, 388, 471, 500, 525, 537, 570, 587.
PMA Malachite green (C.I. 657) and thioflavine (C.I. 815).-----	471.
PTA Malachite green (C.I. 657) and thioflavine (C.I. 815).-----	376, 567, 587.
PTA Malachite green (C.I. 657) and auramine (C.I. 655).-----	570.
PMA Peacock blue GG and thioflavine (C.I. 815)-----	525.
Pr. 483, Phthalocyanine green-----	87, 333, 388, 525, 537, 550, 568.
*Pr. 149, Pigment green B-----	63, 87, 333, 521, 525, 537, 550, 567.
All other-----	471.
*Maroon toners:	
Helio Bordeaux (C.I. 84)-----	87, 424, 525.
Helio Bordeaux BL (Pr. 110)-----	119, 282.
Helio fast rubine-----	288.
* β -Hydroxynaphtholic maroon (B.O.N. maroon) (Lithol maroon).-----	87, 288, 333, 391, 521, 525, 531, 537, 563.
Indanthrene maroon-----	563.
Lithol red 30, manganese toner-----	333.
Naphthol AS-D (Pr. 306)-----	521, 525.
C.I. 82, α -Naphthylamine maroon-----	525.
*Toluidine maroon-----	87, 288, 333, 521, 525, 563, 567, 568.
All other-----	333.
*Orange toners:	
*Benzidine orange-----	87, 333, 458, 464, 521, 525, 563, 587.
Dianisidine orange-----	333, 521, 525, 563.
*2,4-Dinitroaniline orange-----	87, 424, 464, 521, 525, 531, 537, 567.
Hansa orange-----	87.
Lithoel fast orange R-----	87.
Lithoel orange OTP-----	333.
*o-Nitroaniline orange-----	288, 376, 439, 458, 521, 525, 531, 587.

TABLE 15B.--Synthetic organic chemicals: Toners and lakes for which United States production or sales were reported, identified by manufacturer, 1953--Continued

Product	Manufacturers' identification numbers (according to list in table 27)
TONERS OR FULL-STRENGTH COLORS--Continued	
*Orange toners--Continued	
Vulcan fast orange GRN	550.
*Red toners:	
Bona arylamine	333, 521.
Brilliant red N (Red lake R)	563.
*o-Chloronitroaniline red (Chlorinated para red)	87, 282, 376, 388, 410, 424, 439, 458, 464, 521, 525, 531, 537, 567, 568, 587.
p-Chloronitroaniline red	333, 410, 521.
*Eosine (Bromo acid toner) (C.I. 768)	172, 369, 439, 458, 464, 519, 537, 587.
Helio fast pink RLA	550.
Helio fast rubine 4BLA (Pr. 406)	471.
Helio red RMTA (Pr. 112)	550.
*Lithol red R (C.I. 189):	
*Barium toner	87, 103, 172, 282, 333, 376, 388, 439, 458, 464, 521, 525, 531, 537, 567, 568, 587.
*Calcium toner	87, 103, 172, 282, 333, 376, 388, 391, 439, 478, 464, 521, 525, 531, 537, 567, 568, 587.
*Sodium toner	87, 376, 388, 439, 464, 521, 531, 568, 587.
All other	388.
Lithol red 2G (C.I. 166)	388, 521, 525.
*Lithol rubine B (C.I. 163)	87, 288, 333, 376, 388, 439, 458, 471, 500, 521, 525, 537, 563, 570, 587.
Lithosol red GSP	333.
Nephtolic red C	464.
*Nephtol AS (Pr. 302)	87, 282, 388, 439, 464, 521, 525, 567, 570.
*Nephtol AS-BS (Pr. 305)	87, 388, 439, 458, 464, 521, 525, 537.
*Nephtol AS-D (Pr. 306)	87, 282, 439, 458, 464, 521, 525, 587.
Nephtol AS-G (Pr. 309)	87.
Nephtol AS-ITR (Pr. 310)	87, 458, 521.
Nephtol AS-OL (Pr. 311)	288.
*C.I. 44, Para red, light	87, 103, 288, 376, 388, 391, 439, 464, 471, 521, 525, 531, 537, 563, 567.
*Para red, dark	87, 103, 172, 237, 288, 333, 376, 388, 391, 410, 439, 464, 471, 521, 525, 531, 537, 563, 567, 587.
*Permanent red 2B	87, 282, 288, 333, 376, 388, 391, 439, 471, 521, 525, 537, 563, 568, 587.
Permanent red FKB	550.
Permanent red FKR ex	550.
*Pigment rubine 3G	87, 282, 288, 471, 521, 550, 570.
Pigment scarlet 3B (C.I. 216)	282, 388, 471.
Pyrazolone red	333, 563.
*Red lake C (C.I. 165)	87, 103, 172, 282, 369, 376, 388, 439, 458, 464, 521, 525, 531, 537, 563, 568, 587.
Red lake D (C.I. 214)	172.
*PMA Rhodamine B (C.I. 749)	87, 119, 172, 471, 525, 570.
*PTA Rhodamine B (C.I. 749)	87, 103, 119, 282, 333, 388, 439, 458, 464, 471, 500, 521, 525, 570, 587.
*PMA Rhodamine 6G (Rhodamine Y) (C.I. 752)	87, 119, 471, 525, 537, 570, 587.
*PTA Rhodamine 6G (Rhodamine Y) (C.I. 752)	87, 119, 282, 333, 388, 439, 458, 471, 500, 521, 525, 537, 567, 570, 587.
PMA Rhodamine 6GDN	464.
Rubine 3G	525.
Sulfanil red	464.
*C.I. 69, Toluidine red	87, 103, 172, 237, 282, 288, 333, 376, 388, 391, 410, 439, 458, 464, 521, 525, 531, 537, 563, 567, 568, 587.
p-Toluidine-m-sulfonic acid-azo- β -nephtol	333.
*Vulcan fast red B (Pr. 476)	376, 550, 563.
Vulcan fast red BBE	550.
All other	87, 282, 424, 439, 471, 521, 550.
Violet toners:	
Indanthrene brilliant violet RR	333.
*PMA Methyl violet B (C.I. 680)	87, 103, 119, 172, 388, 391, 406, 410, 458, 464, 471, 500, 521, 525, 531, 537, 567, 570, 587.
*PTA Methyl violet B (C.I. 680)	87, 119, 282, 333, 376, 388, 458, 464, 471, 521, 525, 537, 563, 570, 587.
*Methyl violet B (C.I. 680), fugitive	76, 87, 172, 282, 376, 388, 458, 464, 471, 519, 525, 531, 570, 587.
All other	550.
*Yellow toners:	
PMA Acetocetanilid yellow	537.
*Benzidine yellow	87, 119, 172, 282, 333, 376, 388, 424, 439, 458, 464, 519, 521, 525, 531, 537, 563, 587.
Centex yellowe	550.
Hansa orange	563.
*Pr. 103, Hansa yellow G	87, 103, 282, 333, 376, 388, 391, 424, 439, 458, 464, 521, 525, 537, 563, 567, 568, 587.
Pr. 104, Hansa yellow 5G	87, 388, 424, 525, 567.
*Pr. 105, Hansa yellow 10G	87, 282, 388, 424, 458, 521, 525, 563, 567.
Hansa yellow 13G	563, 567.

TABLE 15B.--Synthetic organic chemicals: Toners and lakes for which United States production or sales were reported, identified by manufacturer, 1953--Continued

Product	Manufacturers' identification numbers (according to list in table 27)
TONERS OR FULL-STRENGTH COLORS--Continued	
*Yellow toners--Continued	
Pr. 280, Hansa yellow 3R	388, 521, 550.
Hansa yellow 4R	424.
Hansa yellow, other	521, 531.
Lithol fast yellow 3GD	333.
Lithol yellow G	550.
Lithosol fast yellow 3GD	333.
Vulcan fast yellows	550.
All other	388.
LAKES OR LAKED COLORS	
*Black lakes:	
Logwood black (C.I. 1253)	87, 420, 519, 567.
Nigrosine (C.I. 864)	83, 420.
True black	424.
All other	119.
*Blue lakes:	
Alkali blue	570.
Brilliant blue FCF	87.
Brilliant wool blue FFR (Pr. 40)	63.
Indanthrene blue GCD (C.I. 1113)	525.
Indanthrene blue RS (C.I. 1106)	333.
*Methylene blue (C.I. 922)	119, 471, 567, 570, 587.
*Peacock blue, fugitive (Patent blue) (C.I. 671)	87, 103, 119, 172, 282, 291, 369, 376, 410, 458, 464, 471, 500, 525, 537, 567, 570, 587.
Peacock blue, permanent	500.
Phthalocyanine blue, sulfonated	63, 83, 282.
Setoglaurine (Peacock blue G) (C.I. 658)	471, 570.
Turquoise blue (C.I. 661)	83, 420, 500, 567.
*Victoria blue B (C.I. 729)	87, 119, 464, 471, 500, 567.
*Victoria pure blue B (Pr. 198)	119, 282, 420, 471, 567.
All other	471.
*Brown lakes:	
Bismarck brown G (C.I. 331)	282.
*Bismarck brown R (C.I. 332)	87, 471, 537, 570.
Indanthrene brown RY	570.
All other	420, 550.
*Green lakes:	
*Acid green B (C.I. 669)	87, 282, 471, 500, 567.
Acid green G (C.I. 666)	567.
Brilliant green (C.I. 662)	119, 471, 500, 537.
Brilliant green (C.I. 662) and auramine (C.I. 655).	119.
Brilliant green (C.I. 662) and thioflavine (C.I. 815).	119, 406, 570.
Green lake C.P.S.	237.
Light green SF (C.I. 670)	420.
*Malachite green (C.I. 657)	119, 471, 567.
Malachite green (C.I. 657) and auramine (C.I. 655).	570.
Malachite green (C.I. 657) and fast light yellow (C.I. 636).	119.
Naphthol yellow (C.I. 10) and peacock blue (C.I. 671).	333.
Phthalocyanine green	63.
Pigment green B (Pr. 149)	63, 83, 521, 567, 570.
Shamrock green	521.
All other	439, 471, 525, 567.
*Maroon lakes:	
Alizarin maroon (C.I. 1041)	282, 424.
Amaranth (C.I. 184)	87, 521.
*Azo Bordeaux (C.I. 88)	282, 333, 391, 406, 410, 464, 471, 521, 525, 537, 567, 568.
*Hello fast rubine 4BL (Pr. 406)	282, 288, 333, 388, 391, 410, 458, 467, 471, 521, 525, 537, 563.
Hypernic (C.I. 1243)	525.
Naphthol AS-OL (Pr. 311)	63.
Patent fast rubine FF	467.
All other	63, 420, 587.
*Orange lakes:	
Acid orange R (C.I. 161)	103, 500, 525.
β -Naphthol	63.
Naphthol AS-OL (Pr. 311)	103.
Orange lake	237.
*Pereian orange (Acid orange Y) (Orange II) (C.I. 151).	87, 119, 172, 282, 369, 376, 420, 458, 464, 500, 525, 537, 567, 570, 587.
*Red lakes:	
*Alizarin red B (C.I. 1027)	87, 119, 282, 333, 406, 424, 521, 525, 537, 563, 587.
Carmine (C.I. 1239)	87, 180.

TABLE 15B.--Synthetic organic chemicals: Toners and lakes for which United States production or sales were reported, identified by manufacturer, 1953--Continued

Product	Manufacturers' identification numbers (according to list in table 27)
LAKES OR LAKED COLORS--Continued	
*Red lakes--Continued	
Crocein scarlet 3EX (Cochineal lake) (C.I. 183)---	87.
*Eosine (Bromo acid lake) (C.I. 768)---	103, 282, 464, 525, 567.
Fuchsine (Magenta) (C.I. 677)---	471, 567.
Lithol rubine B (C.I. 163)---	87, 521.
Naphthol AS (Fr. 302)---	63, 282, 567, 570.
Naphthol AS-D (Fr. 306)---	63, 521.
*Permanent red 2B-----	282, 406, 471, 500, 567.
Phloxine (C.I. 774)-----	376.
*Pigment scarlet 3B (C.I. 216)-----	87, 119, 282, 333, 410, 424, 471, 537, 570.
Polar red (C.I. 430)-----	570.
*Rhodamine B (C.I. 749)-----	458, 471, 500, 521, 570.
*Rhodamine 6G (Rhodamine Y) (C.I. 752)-----	63, 471, 525, 537, 567, 570.
Rose lake-----	103, 237.
*Scarlet 2R (C.I. 79)-----	87, 103, 282, 288, 333, 406, 410, 420, 464, 471, 521, 525, 537, 567.
Scarlet lake-----	237.
Sodium red lake C-----	464.
Toluidine red-----	63.
Vat pink (C.I. 1211)-----	87, 282, 570.
All other-----	63, 471.
*Violet lakes:	
Acid violet (C.I. 698)-----	388, 420, 471, 570.
Crystal violet (C.I. 681)-----	471.
Indanthrene red violet RH (C.I. 1212)-----	63, 563.
Methyl violet-----	525.
*Methyl violet B (C.I. 680)-----	87, 119, 282, 420, 439, 458, 464, 471, 500, 537, 567, 570.
Purple lake R-----	424.
Violet lake-----	237, 458.
All other-----	388, 471.
Yellow lakes:	
Auramine (C.I. 655)-----	119, 570.
Benzidine yellow-----	500, 521.
*Fast light yellow (C.I. 636)-----	83, 87, 388, 458, 464, 500, 537.
Hansa yellow-----	63.
Naphthol yellow S (C.I. 10)-----	87, 500.
Quercitron (Flewine) (C.I. 1251)-----	525.
*Quinoline yellow (C.I. 801)-----	87, 172, 369, 458, 500, 525, 587.
*Tartresine (C.I. 640)-----	87, 103, 119, 282, 369, 376, 458, 464, 500, 525, 567, 587.
Thioflavine (C.I. 815)-----	525.
All other-----	525.
REDUCED OR EXTENDED TONERS	
Blue toners, reduced:	
Haloponts-----	333.
Indanthrene blue RS (C.I. 1106)-----	333.
Indanthrene blue, other-----	563.
Indanthrene brilliant violet RR-----	333.
*PMA Peacock blue R (C.I. 664)-----	119, 388, 471, 525, 570.
*PTA Peacock blue R (C.I. 664)-----	471, 500, 525, 570, 587.
*Pr. 481, Phthalocyanine blue B-----	87, 277, 333, 406, 410, 464, 521, 525, 537, 563, 567, 570.
Pr. 482, Phthalocyanine blue G-----	567.
Phthalocyanine blue R-----	333.
Phthalocyanine blue, other-----	87.
*PMA Setoglaucine (Peacock blue G) (C.I. 658)-----	119, 471, 519, 570.
*PTA Setoglaucine (Peacock blue G) (C.I. 658)-----	471, 525, 537, 570, 587.
PMA Victoria blue B (C.I. 729)-----	471, 570.
PTA Victoria blue B (C.I. 729)-----	87, 471, 537.
Victoria blue B, tannic-----	406.
PMA Victoria blue R (C.I. 728)-----	525.
PTA Victoria blue R (C.I. 728)-----	525.
PMA Victoria pure blue B (Pr. 198)-----	119, 388, 458, 471, 519, 525, 570.
PTA Victoria pure blue B (Pr. 198)-----	87, 420, 471.
All other-----	388, 471.
Brown toners, reduced: Para brown-----	119, 521.
Green toners, reduced:	
*PMA Brilliant green (C.I. 662)-----	119, 333, 471, 519, 525, 570.
*PTA Brilliant green (C.I. 662)-----	471, 519, 525.
PMA Brilliant green (C.I. 662) and auramine (C.I. 655).-----	119.
PMA Brilliant green (C.I. 662) and benzidine yellow.-----	458.
PMA Brilliant green (C.I. 662) and thioflavine (C.I. 815).-----	119, 537.
PTA Brilliant green (C.I. 662) and thioflavine (C.I. 815).-----	119, 333, 410, 537, 567, 570.
*PMA Malachite green (C.I. 657)-----	420, 471.

TABLE 15B.--Synthetic organic chemicals: Toners and lakes for which United States production or sales were reported, identified by manufacturer, 1953--Continued

Product	Manufacturers' identification numbers (according to list in table 27)
REDUCED OR EXTENDED TONERS--Continued	
Green toners, reduced--Continued	
*PTA Malachite green (C.I. 657)	87, 471, 500, 570.
PMA Malachite green (C.I. 657) and thioflavine (C.I. 815).	525, 570.
PTA Malachite green (C.I. 657) and thioflavine (C.I. 815).	420, 570.
Pr. 483, Phthalocyanine green	87, 333, 406, 537, 563, 567, 570.
Pigment green B (Pr. 149)	333, 550.
Shamrock green	521, 567.
All other	525.
Maroon toners, reduced:	
Bona arylamine	333.
β -Hydroxynaphthoic maroon (B.O.N. maroon) (Lithol maroon).	333.
Lithol red 3G, manganese	333.
Paraphenetidin maroon	410.
Orange toners, reduced:	
Dianisidine orange	333.
2,4-Dinitroaniline orange	570.
*o-Nitroaniline orange	410, 521, 525, 570.
*Red toners, reduced:	
c-Chloronitroaniline red (Chlorinated para red)	567.
Eosine (Bromo acid toner) (C.I. 768)	282.
Haloponts	333.
Lithol red 2G (C.I. 166)	388.
*Lithol red R (C.I. 189):	
Barium toner	87, 282, 406, 439, 458, 537, 570, 587.
Calcium toner	87, 439, 458, 570.
Sodium toner	410, 439.
Lithol rubine B (C.I. 163)	333, 471, 500, 525, 537, 587.
*Naphthol AS-BS (Pr. 305)	388, 464, 537, 567.
*C.I. 44, Para red, light	87, 103, 391, 471, 525, 567, 570.
*Para red, dark	87, 103, 172, 247, 391, 406, 410, 439, 471, 525.
Permanent red 2B	87, 333, 388, 410, 439, 471, 537.
Red lake C (C.I. 165)	282, 410, 439.
*PMA Rhodamine B (C.I. 749)	119, 471, 500, 519, 570.
*PTA Rhodamine B (C.I. 749)	119, 333, 471, 537.
PMA Rhodamine B (C.I. 749) and auramine (C.I. 655).	458.
PMA Rhodamine B (C.I. 749) and 6G (C.I. 752)	458.
Rhodamine B, tannic	406.
*PMA Rhodamine 6G (C.I. 752)	119, 471, 519, 570, 587.
*PTA Rhodamine 6G (C.I. 752)	87, 333, 420, 471, 525, 537, 567.
Rubine 3G	537.
*C.I. 69, Toluidine red	87, 333, 406, 410, 420, 521, 525, 567, 570.
All other	439, 471.
Violet toners, reduced:	
*PMA Ethyl violet (C.I. 682)	433, 519, 525, 570.
Haloponts	333.
*PMA Methyl violet B (C.I. 680)	87, 388, 458, 471, 519, 525, 567, 570.
*PTA Methyl violet B (C.I. 680)	87, 119, 471, 587.
Methyl violet B (C.I. 680), fugitive	406, 458, 471.
Yellow toners, reduced:	
*Benzidine yellow	87, 333, 458, 464, 519, 521, 525, 563, 570.
Pr. 103, Hansa yellow G	333, 521, 525, 537, 570.
Pr. 104, Hansa yellow 5G	525, 567, 570.
Pr. 105, Hansa yellow 10G	333, 570.
Indanthrene yellow GK (C.I. 1132)	458.
Lithol fast yellow 3GD	333, 388.

Medicinals

TABLE 17B.--Synthetic organic chemicals: Medicinals for which United States production or sales were reported, identified by manufacturer, 1953

[Medicinals for which separate statistics are given in table 17A are marked below with an asterisk (*); medicinals not so marked do not appear in table 17A because the reported data are confidential and may not be published. Manufacturers' identification numbers shown below are taken from table 27. An X signifies that the manufacturer did not consent to the publication of his identification number with the designated product]

Chemical	Manufacturers' identification numbers (according to list in table 27)
MEDICINALS, CYCLIC	
<i>Benzenoid</i>	
1,4-Acetamidophenyl salicylate (Phenetsal)-----	198.
Acetanilide-----	132, 245.
Acetarsone (N-Acetyl-4-hydroxy-m-arsanilic acid) (Stovarsol).-----	376, 379, 565.
4-Acetoxy-m-arsanilic acid (Nemural)-----	379.
Acetylglycol salicylate-----	431.
*Acetylsalicylic acid (Aspirin)-----	129, 173, 245, 376, 448, 546.
*Adrenaline (Epinephrine)-----	379, 381, 394, 400, 562, X.
*Amino acids:	
3,5-Diiodotyrosine-----	133, 468.
d-Phenylalanine-----	379, 462.
dl-Phenylalanine-----	448, 558.
l-Phenylalanine-----	462.
dl-Tyrosine-----	448.
l-Tyrosine-----	171, 445, 558.
2-Amino-4-arsenosophenol (Mapharsen) hydrochloride--	400.
*p-Aminobenzoic acid-----	27, 78, 132, 360, 389, 527.
*p-Aminobenzoic acid derivatives:	
2-Amylaminoethyl p-aminobenzoate (Amylsine)-----	22.
*Benzocaine (Ethyl p-aminobenzoate)-----	343, 394, 431, 565.
Butacaine (3-Di-n-butylaminopropyl p-amino- benzoate) base.-----	280, 565.
Butacaine sulfate-----	565.
Butesin (n-Butyl p-aminobenzoate)-----	565.
Butesin picrate (Di(n-butyl p-aminobenzoate)tri- nitrophenol).-----	381, 565.
Isobutyl p-aminobenzoate (Cycloform)-----	78, 431.
2-Isobutylaminoethyl p-aminobenzoate (Unacaine) (Monocaine).-----	22.
*Procaine base (2-Diethylaminoethyl p-amino- benzoate) (Novocaine base).-----	27, 379, 389, 565.
*Procaine hydrochloride-----	27, 132, 325, 379, 389, 565.
Propyl p-aminobenzoate-----	431.
Tetracaine (2-Dimethylaminoethyl p-butylamino- benzoate) base and hydrochloride.-----	379, 431, 468.
*p-Aminobenzoic acid salts:	
Calcium p-aminobenzoate-----	389.
Magnesium p-aminobenzoate-----	389.
Potassium p-aminobenzoate-----	78, 360, 389.
Sodium p-aminobenzoate-----	27, 78, 132, 360, 389, 394, 527.
p-Aminohippuric acid-----	527.
4-Amino-2-methyl-1-naphthol hydrochloride (Synkamin)	400, 506.
*4-Aminosalicilic acid-----	198, 360, 400, 464.
*4-Aminosalicilic acid salts:	
Calcium 4-aminosalicylate-----	464.
Sodium 4-aminosalicylate-----	198, 360, 400, 464.
sec-Amyltri-cresol-----	X.
Anisoin (4,4'-Dimethoxybenzoin)-----	187, 442.
1,8,9-Anthratriol (Anthralin)-----	565.
Antihistamines:	
2-(Benzhydryloxy)-N,N-dimethylethylamine (Benadryl) hydrochloride.-----	400.
N,N-Dimethyl-2-(a-phenyl-o-toloxyl)ethylamine dihydrogen citrate.-----	238.
Benzaldehyde-----	397.
Benzestrol [2,4-Di(p-hydroxyphenyl)-3-ethylhexane]--	203.
Benzoic acid-----	245.
Benzoic acid salts:	
Calcium benzoate-----	397.
Lithium benzoate-----	274, 360.
N-Benzyl-β-chloropropionamide (Hibicon)-----	464.
p-Benzylphenyl carbamate (Diphenan)-----	78, 163, 468.
Benzyl succinate-----	586.
*Bismuth subgallate-----	231, 267, 281, 415, 515.
*Bismuth subsalicylate-----	129, 231, 267, 515.
Bis(4-nitrophenyl) disulfide-----	464.
p-Bromobenzyl bromide-----	468.
α-Bromoisovaleryl-p-phenetidine-----	198, 494.
N-Butylacetanilide-----	431.
6-tert-Butyl-4-chloro-m-cresol (2-tert-Butyl-4- chloro-5-methylphenol).-----	206.

TABLE 17B.--Synthetic organic chemicals: Medicinals for which United States production or sales were reported, identified by manufacturer, 1953--Continued

Chemical	Manufacturers' identification numbers (according to list in table 27)
MEDICINALS, CYCLIC--Continued	
<i>Benzenoid--Continued</i>	
tert-Butylresorol-----	431.
Calcium cresolsulfonate-----	360.
Carbasone (p-Carbamidobenzeneearsonic acid)-----	78, 442, 468.
Carbomethoxy chloride-----	468.
Chloramine T (Sodium p-toluenesulfonchloramide)---	245.
Chloromercuri-4-nitro-o-cresol-----	565.
Chlorosalicylanilide-----	591.
Chlorothymol-----	515, 520.
Chlorotriss(p-methoxyphenyl)ethylene (Tri-p-anisyl- chloroethylene).	289.
4-Chloro-3,5-xyleneol (3,5-Dimethyl-4-chlorophenol)-	206.
Citryl-p-phenetidine-----	360.
m-Cresyl acetate (Cresatin)-----	444.
p-(Cyclohexyloxy)benzoic acid-----	442.
p,p'-Diaminodiphenylsulfone-N,N'-di(dextrose sodium sulfonate).	400.
2,5-Diaminotoluene sulfate-----	498.
5,3'-Dichlorosalicylanilide-----	591.
5,4'-Dichlorosalicylanilide-----	591.
a-Diethylamino-2,6-acetoxyldine-----	6.
2-Diethylaminoethyl diphenylacetate hydrochloride--	468.
β-Diethylaminoethyl diphenylthioacetate hydro- chloride.	597.
N-Diethylaminoethyl isomyl phenyl glycinate dihydrochloride.	542.
p,p'-(1,2-Diethylethylene)diphenol (Hexestrol)----	506.
p,p'-(1,2-Diethylethylene)diphenol (Hexestrol) dipropionate.	506.
*α,α'-Diethyl-4,4'-stilbenediol (Diethylstilbestrol)	187, 360, 442, 506.
α,α'-Diethyl-4,4'-stilbenediol dipropionate-----	187, 506.
3,4-Dihydroxynorephedrine (3,4-Dihydroxyphenyl- propanolamine) hydrochloride.	379.
β-(3,5-Diiodo-4-hydroxyphenyl)-α-hydratropic acid--	290, 457.
6-Dimethylamino-4,4-diphenyl-3-heptanone hydro- chloride (Dolophine) (Methadone).	442, 515.
γ-Dimethylamino-α,α-diphenylvaleramide-----	238.
β-Dimethylaminoethyl (1-hydroxycyclopentyl) phenyl acetate (Cyclopentolate) hydrochloride.	203.
Dimethylaminopyrocatechol-----	300.
Dimethyl-3-hydroxyphenylammonium chloride-----	452.
*N,α-Dimethylphenethylamine (Desoxyephedrine) base--	198, 324.
*d-N,α-Dimethylphenethylamine hydrochloride-----	542.
*N,α-Dimethylphenethylamine hydrochloride-----	198, 324, 542.
Dimethyl-p-toluidine-----	468.
Diphenylacetic acid-----	389.
Diphenylacetyl-diethylaminoethanol hydrochloride---	336, 431.
p-(Di-N-propylsulfamyl)benzoic acid (Benemid)-----	245, 444, 468, 542.
Dithioalicylic acid-----	442.
*Dyea, medicinal:	
Acriflavine (3,6-Diamino-10-methylacridine chloride).	527, 565.
2,4-Diamino-4'-ethoxyazobenzene hydrochloride (Serenium).	87.
Gentian violet-----	527.
Merbromin (Dibromohydroxymercurifluorescein, sodium salt).	126, 360.
Methylene blue-----	464, 527.
Methyl violet-----	527.
Proflavine (3,6-Diaminoacridine sulfate)-----	527, 565.
Scarlet red (Phenol red)-----	527.
Sulfobromophthalein, sodium-----	599.
Tetraiodophenolphthalein and sodium salt-----	527.
Trypan blue-----	527.
All other-----	527.
1-Ephedrine (α-(1-Methylaminoethyl)benzyl alcohol)-	515.
Ephedrine, racemic-----	515.
4-Ethoxy-3-methoxybenzaldehyde-----	442.
4-Ethoxy-3-methoxyphenylacetic acid-----	442.
N-Ethyl-3,3'-diphenyldipropylamine-----	187, 431.
N-Ethyl-3,3'-diphenyldipropylamine citrate-----	187, 431.
N-Ethyl-3,3'-diphenyldipropylamine hydrochloride---	187.
Ethylene glycol salicylate-----	431.
N-Ethylephedrine hydrochloride-----	289.
Ethyl (iodophenyl)hendecanoate (Pantopaque)-----	498.
Gallic acid-----	231.
Gentisic acid (2,5-Dihydroxybenzoic acid) and derivatives:	
Gentisic acid-----	431, 542.

TABLE 17R.--Synthetic organic chemicals; Medicinals for which United States production or sales were reported, identified by manufacturer, 1953--Continued

Chemical	Manufacturers' identification numbers (according to list in table 27)
MEDICINALS, CYCLIC--Continued	
Benzenoid--Continued	
Gentisic acid (2,5-Dihydroxybenzoic acid) and derivatives--Continued	
Gentisic acid, sodium salt-----	360, 431, 542.
N-2-Hydroxyethylgentisamide (Gentisic acid amide of ethanolamine).	431.
Guaiacol, liquid and crystalline-----	245, 397.
Hexyl-m-cresol-----	444.
Hexylresorcinol-----	132, 444, 542.
Hydroquinone n-aryl ether (Amol)-----	444.
p-Hydroxyacetanilide-----	198.
p-Hydroxybenzoic acid esters:	
Benzyl p-hydroxybenzoate-----	397, 431.
n-Butyl p-hydroxybenzoate (Butoben)-----	360, 397, 431.
Ethyl p-hydroxybenzoate-----	360, 397, 431.
Methyl p-hydroxybenzoate-----	78, 360, 397, 431.
*Propyl p-hydroxybenzoate-----	360, 397, 431.
β -Hydroxy- β -(2,5-dimethoxyphenyl)isopropylamine hydrochloride (Methoxamine).	163.
Hydroxymercuri-4-nitro-o-cresol anhydride (Metaphen)	381, 442, 565.
4-Hydroxy-3-nitrobenzenearsonic acid-----	X.
L-1-(m-Hydroxyphenyl)-2-amino-1-propanol hydrogen d-tartrate (Aramine).	444.
β -(4-Hydroxyphenyl)- α -phenylpropionic acid (β -(4-Hydroxyphenyl)hydratropic acid).	431.
p-Hydroxypropiophenone (Hydrophen)-----	198.
o-Iodobenzoic acid-----	468.
α -(Isopropylaminomethyl)protocatechuyl alcohol (Aleudrine).	187, 394, 442.
Mandelic acid (Phenylglycolic acid)-----	231.
Mandelic acid derivatives:	
Calcium mandelate-----	231.
N-2-Hydroxyethylmandelamide-----	442.
o-Methoxy-N, α -dimethylphenethylamine (1-(o-Methoxyphenyl)-2-methylaminopropane) hydrochloride.	198.
3-Methoxy-N-(α -methylhomoveratryl)-p-acetophenetidine.	442.
3-(o-Methoxyphenoxy)-1,2-propanediol (Glyceryl guaiacyl ether).	78, 360, 431, 468.
N-Methylacetanilide (Exolgin)-----	78.
Methylenebis[octylcresol]-----	591.
5,5'-Methylenedisalicylic acid-----	397.
* α -Methylphenethylamine (Amphetamine) (Benzedrine) base.	47, 198, 308, 343, 442, 542.
* α -Methylphenethylamine salts:	
α -Methylphenethylamine hydrochloride-----	198, 542.
α -Methylphenethylamine phosphate-----	198.
α -Methylphenethylamine sulfate-----	198, 308, 542.
d- α -Methylphenethylamine sulfate-----	308.
2,7-Naphthalenediol (2,7-Dihydroxynaphthalene)-----	468.
2-Naphthol (β -Naphthol)-----	591.
2-Naphthyl benzoate-----	360, 494, 515.
N-(1-Naphthyl)ethylenediamine hydrochloride-----	468.
Neosynephrine (Phenylephrine) hydrochloride-----	360, 381, 394, 591.
p-Nitrobenzenearsonic acid-----	X.
4-(2-Nitrophenyl)veratrole (1-(3,4-Dimethoxyphenyl)-2-nitropropene-1).	442.
Norephedrine (Propadrine) hydrochloride-----	444.
Octylresol-----	591.
Octylresorcinol-----	591.
Paredrine (p-Hydroxy- α -methylphenethylamine) hydrobromide.	308.
Phenacaine [(Di-p-ethoxyphenyl)acetamidine] hydrochloride.	280, 379, 394.
Phenacetin (Acetophenetidin)-----	245, 389, 431, 448.
[γ -Phenyltris(oxyethylene)]-tris[triethylammonium iodide].	464.
Phenolphthalein-----	245.
Phenolsulfonic acid salts:	
Calcium phenolsulfonate-----	231, 515.
Copper phenolsulfonate-----	231.
Sodium phenolsulfonate-----	231.
Zinc phenolsulfonate-----	231, 515.
2-Phenyl-1,3-indandione-----	187, 203.
*Phenylmercuric derivatives:	
o-Chloromercuriphenol (o-Hydroxyphenylmercuric chloride).	163, 599, X.
Phenylmercuric acetate-----	211.
Phenylmercuric benzoate-----	211, 325.
Phenylmercuric borate-----	211, 325.
Phenylmercuric chloride-----	211, 325.
Phenylmercuric nitrate-----	211, 325.
4-Phenylsemicarbazide hydrochloride-----	468.

TABLE 17B.-- Synthetic organic chemicals; Medicinals for which United States production or sales were reported, identified by manufacturer, 1953--Continued

Chemical	Manufacturers' identification numbers (according to list in table 27)
MEDICINALS, CYCLIC--Continued	
Benzenoid--Continued	
Propenyl methyl guethol-----	431.
Prostigmine (Neostigmine) bromide-----	452, 468, 514, 542.
*Prostigmine (Neostigmine) methyl sulfate-----	468, 514, 542.
*Resorcinol monoacetate-----	47, 360, 498, 586, 591.
*Salicylamide-----	245, 324, 360, 389, 504, 542, 600.
*Salicylic acid-----	245, 376, 397, 448.
*Salicylic acid salts:	
Ammonium salicylate-----	231, 267, 360.
*Calcium salicylate-----	231, 360, 397, 448.
Lithium salicylate-----	75, 274.
Magnesium salicylate-----	231.
Manganese salicylate-----	397.
*Sodium salicylate-----	245, 397, 448.
Strontium salicylate-----	231, 448.
Salicyl salicylate (Salysal)-----	421.
Salol (Phenyl salicylate)-----	448.
*Silver picrate-----	78, 468, 564.
Sodium antimony III biscatechol-2,4-disulfonate (Fouadin).-----	379.
Sodium benzyl succinate-----	389, 586.
*Sodium ethylmercurithiosalicylate-----	381, 442, 506, 514.
Sodium o-iodohippurate dihydrate (Hippuran)-----	231.
Sodium methylenesulfonaminohydroxyphenyl arsonate (Aldarsone).-----	565.
Stilbamine glucoside (Neostam)-----	163.
*Sulfa drugs:	
Benzoylsulfanilamide-----	464.
Benzoylsulfanilamide, sodium salt-----	464.
p-Benzylaminobenzenesulfonamide-----	379.
N ¹ -(3,4-Dimethyl-5-isoxazolyl)sulfanilamide-----	452.
4'-(3,4-Dimethyl-5-isoxazolyl)sulfamoyl- acetanilide.-----	452.
2-Methyl-1,3,4,5-sulfanilamidothiadiazole-----	464.
Neo-Prontosil "S"-----	379.
Nisulfazole-----	379.
p-(p-Nitrophenylsulfonamido)acetanilide (N ⁴ -Acetyl-N ⁴ -(4-nitrophenyl)sulfanilamide).-----	X.
N ⁴ -Phthalylsulfacetamide-----	389, 457, 464.
Phthalylsulfathiazole-----	245, 290.
Prontosil scible (Disodium 4-sulfaminophenyl-2- azo-7-acetylamino-1-hydroxynaphthalene-3,6- disulfonate).-----	379.
Sulfadiazine-----	464.
Sulfadiazine, sodium salt-----	464.
Sulfaguandine-----	464.
Sulfallantoin-----	174.
Sulfamerazine (2-Sulfanilamide-4-methylpyrimi- dine).-----	464.
Sulfamerazine, sodium salt-----	464.
Sulfamethazine (Sulfadimethyldiazine)-----	464, 495.
Sulfanilamide (p-Aminobenzenesulfonamide)-----	245, 464, 515.
Sulfanililide (N ¹ -Phenylsulfanilamide)-----	X.
N-Sulfanilylacetamide (Sulfaacetamide)-----	78, 245, 389, 457.
N-Sulfanilylacetamide, sodium salt-----	389, 457.
Sulfapyridine-----	464, 515.
Sulfapyridine, sodium salt-----	464, 515.
Sulfaquinoxaline-----	515.
Sulfasuxidine (Succinylsulfathiazole)-----	245, 290.
Sulfathiazole-----	442, 464, 515.
Sulfathiazole, sodium salt-----	464, 515, 522.
(Sulfonylbis(p-phenyleneimino)dimethanesulfonic acid, disodium salt (Diasone).-----	565.
4,4'-Sulfonyldianiline (4,4'-Diaminodiphenyl- sulfone).-----	X.
Tannin albuminate (Tannalbin)-----	360, 591.
Thiosalicylic acid-----	442, 514.
Thymol-----	229, 323, 520.
*Thymol iodide-----	231, 267, 515.
*3-o-Toloxyl-1,2-propanediol (o-Cresyl α-glyceryl ether).-----	198, 360, 431, 494, 542.
Trithio(p-methoxyphenyl)propene-----	591.
*Vitamins:	
K (Menadione) (2-Methyl-1,4-naphthoquinone)-----	47, 394, 506, 542, 565.
K (Menadione), sodium bisulfite-----	506.
K (2-Methyl-1,4-naphthoquinone-diphosphoric ester tetrasodium salt).-----	452.
K ₁ (2-Methyl-3-phytyl-1,4-naphthoquinone)-----	515.
Zinc sulfanilate (Nizin)-----	163.

TABLE 17B.--Synthetic organic chemicals: Medicinals for which United States production or sales were reported, identified by manufacturer, 1953--Continued

Chemical	Manufacturers' identification numbers (according to list in table 27)
MEDICINALS, CYCLIC--Continued	
<i>Alicyclic and Heterocyclic</i>	
5-Acetamido-1,3,4-thiodiazole-2-sulfonamide-----	464.
Adenine, base and hydrochloride-----	462.
Adenine sulfate-----	462, 498.
Adenosine-----	462.
Adenosinediphosphoric acid-----	340.
Adenosinediphosphoric acid, barium salt-----	462.
Adenosine-5-phosphoric acid-----	340, 462.
Adenosinetriphosphoric acid and salt-----	340, 462.
Adenylic acid-----	462.
Adenylic acid, isomers A and B-----	462.
*Alkaloids and related products:	
Arecoline (Methyl 1,2,5,6-tetrahydromethyl- nicotinate) hydrobromide-----	421.
Atropine-----	299, 600.
Atropine amineoxide hydrochloride-----	513.
*Berberine base and hydrochloride-----	299, 562, 565, 600.
Brucine-----	299.
Cinchonidine-----	515.
Cinchonine-----	515.
Colchicine-----	299, 565, 600.
Digifolin-----	336.
Digitalin-----	299, 600.
Digitonin-----	591, 600.
Digitoxin-----	606.
Digoxin-----	163.
Emetine-----	600.
Ergonovine maleate-----	163.
Eserine (Physostigmine)-----	299.
Eserine salicylate-----	600.
Eucatropine hydrochloride-----	280.
*Homatropine and salts-----	187, 299, 515.
Homatropine methyl bromide-----	187, 299, 360, 419, 515.
Hydrastine-----	299, 600.
Hydrastine hydrochloride-----	600.
dl-3-Hydroxy-N-methylmorphinan hydrobromide-----	452.
1-3-Hydroxy-N-methylmorphinan tartrate-----	452.
Hyoscine (Scopolamine)-----	299, 600.
Hyoscine (Scopolamine) amineoxide hydrobromide-----	513, 600.
Hyoscyamine-----	299, 600.
Hyoscyamine sulfate-----	562.
Nicotine-----	600.
Pilocarpine hydrochloride-----	299, 600.
Pilocarpine nitrate-----	562, 600.
Quinidine-----	600.
Quinine-----	515.
Reserpine-----	336.
Strychnine-----	515.
Totaquine-----	515, 600.
Yohimbine-----	299, 600.
Allantoin (5-Ureidohydantoin)-----	174, 591.
*Amino acids:	
Histamine, base-----	42.
Histamine dihydrochloride-----	452.
Histamine phosphate-----	42.
Histidine monohydrochloride-----	468, 558.
dl-Tryptophane-----	379, 448, 558.
l-Tryptophane-----	558.
9-Aminoacridine hydrochloride-----	431.
2-Amino-5-nitrothiazole (Enheptin)-----	464.
*Antibiotics for human or veterinary use:	
Actidione-----	X.
*Bacitracin-----	367, 415, 600.
Carbonycin (Magnamycin)-----	415.
Chloroamphenicol (Chloromycetin)-----	245, 400.
Chlortetracycline (Aureomycin) hydrochloride-----	464.
*Dihydrostreptomycin-----	116, 238, 397, 415, 442, 515, 522, 565.
Erythromycin-----	442, 565, X.
Fumagillin-----	565.
Necmycin-----	397, 600, X.
Oxytetracycline (Terramycin)-----	415.
*Penicillin salts:	
Chloroprocaine penicillin "0"-----	X.
*Dipenicillin G dibenzylethylenediamine-----	238, 415, 442, 564.
Penicillin calcium-----	X.
Penicillin l-phenamine-----	367.
*Penicillin potassium-----	116, 152, 238, 367, 397, 415, 442, 515, 522, 564, 565, X.
Penicillin "0" potassium (Allylmercaptomethyl derivative).-----	X.

TABLE 17B.--Synthetic organic chemicals: Medicinals for which United States production or sales were reported, identified by manufacturer, 1953--Continued

Chemical	Manufacturers' identification numbers (according to list in table 27)
MEDICINALS, CYCLIC--Continued	
<i>Alicyclic and Heterocyclic--Continued</i>	
*Antibiotics for human or veterinary use--Continued	
*Penicillin salts--Continued	
*Penicillin procaine-----	116, 152, 238, 367, 397, 415, 442, 515, 522, 564, 565, X.
*Penicillin sodium-----	238, 367, 397, 415, 515, X.
Polymyxin-----	415.
*Streptomycin-----	116, 238, 397, 415, 442, 515, 522.
Tetracycline (Achromycin)-----	397, 464.
Tyrosin (Oramicidin)-----	600.
Viomycin-----	415.
*Antibiotics for animal feed supplements:	
Bacitracin-----	340, 367, 600.
Chlortetracycline (Aureomycin) hydrochloride-----	464.
Oxytetracycline (Terramycin)-----	415.
Penicillin salts:	
Dipenicillin G dibenzylethylenediamine-----	415.
Penicillin procaine-----	152, 238, 397, 415, 515, 565.
*Antihistamines:	
2-(Benzhydryloxy)-N,N-dimethylethylamine 8- chlorotheophyllinate.	547.
2-[Benzyl(2-dimethylaminoethyl)amino]pyridine (N,N-Dimethyl-N'-benzyl-N'-pyridylethylene- diamine).	336.
1-(4-Chlorobenzhydryl)-4-methylpiperazine hydro- chloride.	565.
2-[1-(p-Chlorophenyl)-3-dimethylaminopropyl]- pyridine maleate (Chlorophenylpyridamine maleate).	457.
1-(p-Chlorophenyl)-2-phenyl-4-pyrrolidyl-1-butene diphosphate and hydrochloride.	442.
1-(p-Chlorophenyl)-2-phenyl-4-pyrrolidyl- 2-butanol.	442.
2-[(5-Chloro-2-thenyl)(2-dimethylaminoethyl)- amino]pyridine citrate (N,N-Dimethyl-N'2- pyridyl-N'2-(5-chlorothenyl)ethylenediamine citrate).	245.
2-[α-(2-Dimethylaminoethoxy)-α-methylbenzyl]- pyridine succinate (2-(Methyl-2'-dimethylamino- ethoxybenzyl)pyridine succinate).	281, 289.
2-[(2-Dimethylaminoethyl)(p-methoxybenzyl)amino]- pyridine maleate.	515.
2-[(2-Dimethylaminoethyl)(p-methoxybenzyl)amino]- pyrimidine (N,N-Dimethyl-N'-p-methoxybenzyl-N- 2-pyrimidylethylenediamine).	205.
2-[(2-Dimethylaminoethyl)thénylamino]pyridine fumarate (N,N-Dimethyl-N'2-pyridyl-N'2-thényl- ethylenediamine fumarate).	245, 565.
2-[(2-Dimethylaminoethyl)thénylamino]pyridine hydrochloride (N,N-Dimethyl-N'2-pyridyl-N'2- thénylethylenediamine hydrochloride).	245, 379, 565.
2-[3-(Dimethylamino)-1-phenylpropyl]pyridine (1-Phenyl-1-(2-pyridyl)-3-dimethylamino- propane).	457.
2-[3-(Dimethylamino)-1-phenylpropyl]pyridine maleate (Prophenpyridamine maleate).	457.
2-Methyl-9-phenyl-2,3,4,9-tetrahydro-1-pyridin- ene hydrogen tartrate.	452.
N-(1-Pyrrolidyl)ethylphenothiazine hydrochloride--	X.
Antipyrine (1,5-Dimethyl-2-phenyl-3-pyrazolone)-----	448.
Barbituric acid-----	266, 565.
*Barbituric acid derivatives:	
5-Allyl-5-(2-cyclopenten-1-yl)barbituric acid and salt (Cyclopal).	394.
5-Allyl-5-isobutylbarbituric acid (Sandoptal)-----	198.
5-Allyl-5-isopropylbarbituric acid (Alurate)-----	452.
*5-Allyl-5-(1-methylbutyl)barbituric acid and salt- (Secobarbital).	343, 381, 394, 442, 494.
5-Allyl-5-phenylbarbituric acid and salt (Alphenal).	394.
5-n-Butyl-5-ethylbarbituric acid (Neonal)-----	565.
5-sec-Butyl-5-ethylbarbituric acid and sodium salt.	198, 343, 360, 381, 394, 442, 565.
5-(1-Cyclohexen-1-yl)-1,5-dimethylbarbituric acid (Evipal).	379.
5-(1-Cyclohexen-1-yl)-1,5-dimethylbarbituric acid, sodium salt.	379.
5-(1-Cyclohexen-1-yl)-5-ethylbarbituric acid and salt.	379.

TABLE 17B.--Synthetic organic chemicals: Medicinals for which United States production or sales were reported, identified by manufacturer, 1953--Continued

Chemical	Manufacturers' identification numbers (according to list in table 27)
MEDICINALS, CYCLIC--Continued	
<i>Alicyclic and Heterocyclic--Continued</i>	
*Barbituric acid derivatives--Continued	
5,5-Diallylbarbituric acid (Dial)-----	394.
*5,5-Diethylbarbituric acid (Barbital) and salt:	
5,5-Diethylbarbituric acid-----	394, 442, 565.
5,5-Diethylbarbituric acid, sodium salt-----	394, 565.
5-Ethyl-5-isoamylbarbituric acid and salt (Amytal).	360, 381, 394, 442.
5-Ethyl-5-isopropylbarbituric acid and salt-----	X.
5-Ethyl-5-(1-methyl-1-butenyl)barbituric acid (Delvinal).	198, X.
*5,5-Ethyl-5-(1-methylbutyl)barbituric acid (Pentobarbital) and salts:	
5-Ethyl-5-(1-methylbutyl)barbituric acid-----	198, 343, 381, 394, 565.
5-Ethyl-5-(1-methylbutyl)barbituric acid, calcium salt.	394.
5-Ethyl-5-(1-methylbutyl)barbituric acid, sodium salt.	198, 343, 381, 394, 565.
5-Ethyl-5-(1-methylbutyl)-2-thiobarbituric acid and salt (Pentothal).	565.
5-Ethyl-1-methyl-5-phenylbarbituric acid (Mephobarbital).	360, 379.
*5-Ethyl-5-phenylbarbituric acid (Phenobarbital) (Luminal).	231, 343, 379, 394, 565.
*5-Ethyl-5-phenylbarbituric acid, salts:	
5-Ethyl-5-phenylbarbituric acid, calcium salt----	343, 394.
5-Ethyl-5-phenylbarbituric acid, sodium salt-----	231, 343, 379, 394, 565.
Barium inosinate-----	462.
5,6-Benzoquinoline-----	468.
3-Benzyl-1-methyl-1-undecylimidazolium bromide-----	442.
*Bile acids and salts:	
Bilirubin-----	498.
Bilron-----	442.
*Cholic acid-----	5, 122, 165, 379, 416.
*Dehydrocholic acid-----	5, 122, 165, 379, 416.
Dehydrocholic acid, sodium salt-----	416.
*Desoxycholic acid-----	5, 122, 165, 379, 416, 562.
/ Ketocholanic acids-----	165, 379, 419, 547.
Methyl hydosoxycholate-----	122.
Mixed bile acids, extracted-----	379, 416, 419.
Mixed oxidized bile acids-----	122.
*Bromocamphor, mono-----	231, 360, 448, 600.
α -Butyloxycinchoninic acid diethylethylenediamide and hydrochloride (Nupercaine).	336.
*Caffeine, natural and synthetic-----	104, 245, 256, 274, 415.
Caffeine derivatives:	
*Caffeine citrate-----	231, 245, 267, 515.
*Caffeine sodium benzoate-----	231, 394, 515.
Ethyl caffeine-----	599.
Camphor, synthetic, U.S.P.-----	285, 333.
*Camphoric acid-----	78, 360, 468, 591.
Camphoric anhydride-----	591.
Camphosulfonic acid-----	78, 591.
Camphosulfonic acid salts:	
Calcium camphosulfonate-----	591.
Sodium camphosulfonate-----	78, 591.
Carboxymethylcellulose, sodium salt-----	336.
Cellulose, oxidized-----	483.
7-Chloro-4-(4-diethylamino-1-methylbutylamino)- quinoline (Aralen).	379.
*5-Chloro-7-iodo-8-quinolinol (Iodochlorohydroxy- quinoline).	78, 325, 336, 360, 389.
7-Chlorokynurenic acid (7-Chloro-4-hydroxyquinoline- 2-carboxylic acid).	376.
β -Cholesterol-----	122.
Cinchophen (2-Phenylquinoline-4-carboxylic acid)-----	464.
Cinchophen (2-Phenylquinoline-4-carboxylic acid) hydroiodide.	442.
Cinchophen, sodium salt-----	464.
Cocarcboxylase-----	462.
Coenzyme A-----	340.
Coramine (Nikethamide)-----	47, 78, 336.
Cozymase-----	340, 462.
1,4-Cyclohexanedione-----	527.
1-Cyclohexylamino-2-propyl benzoate (Cyclaine) hydrochloride.	444.
1-Cyclohexyl-2-methylpropylamine-----	462.
α -Cyclohexyl- α -phenyl-1-piperidinepropanol-----	464.
α -Cyclohexyl- α -phenyl-1-pyrrolidinepropanol-----	442.

TABLE 17B.--Synthetic organic chemicals: Medicinals for which United States production or sales were reported, identified by manufacturer, 1953.--Continued

Chemical	Manufacturers' identification numbers (according to list in table 27)
MEDICINALS, CYCLIC--Continued	
<i>Alicyclic and Heterocyclic--Continued</i>	
α-Cyclohexyl-α-phenyl-1-pyrrolidinepropanol methylsulfate.	442.
Cyclopentanol-----	442.
Cyclopentyl bromide-----	442.
1-Cyclopentyl-2-methylpropylamine-----	245.
1-Cyclopentyl-2-methylpropylamine (Cyclopentamine) hydrochloride.	442.
α-Cyclopentyl-α-phenyl-1-piperidinepropanol-----	442.
Cytidine and cytidine sulfate-----	462.
Cytidylic acid-----	462.
Cytosine-----	462.
Desoxyribonucleic acid-----	462.
Dextran (Glucopyranose anhydride)-----	281, 367.
2,4-Diamino-5-(p-chlorophenyl)-6-ethylpyrimidine (Daraprim).	163.
N-[p-(2,4-Diamino-6-pteridylmethylamino)benzoyl] glutamic acid.	464.
4,7-Dichloroquinoline-----	400.
Diethylaminocarbethoxybicyclohexyl (Dicyclamine) hydrochloride (Bentyl hydrochloride).	281.
6-(2-Diethylaminoethoxy)-2-dimethylaminobenzo-thiazole hydrochloride.	452.
3,3-Diethyl-2,4-dioxopiperidine-----	452.
N,N-Diethylpicolinamide (Pyridine-β-carboxylic acid, diethylamide).	47.
*Dihydrocodeinone bitartrate-----	231, 267, 419.
Dihydrohydroxycodeinone hydrochloride-----	419.
Diiodochelidamic acid-----	494, 515.
3,5-Diido-N-methyl-4-pyridone-2,6-dicarboxylic acid.	457.
3,5-Diido-4-pyridone-N-acetic acid, diethanolamine-	379.
*5,7-Diido-8-quinolinol-----	78, 325, 360, 389, 468, 547.
6,7-Dimethoxy-1-(4-ethoxy-3-methoxybenzyl)-3-methyl quinoline phosphate (Dioxylline phosphate).	442.
4-Dimethylaminoantipyrene (Aminopyrene)-----	360, 527.
p,α-Dimethylbenzyl camphorate, diethanolamine salt--	187.
N,α-Dimethylcyclohexane-ethylamine (1-Cyclohexyl-2-methylaminopropane).	308.
1,3-Dimethyl-4-phenyl-4-propionoxypiperidine hydrochloride (dl α form).	452.
N,N-Dimethyl-4-piperidylidene-1,1-diphenylmethane methyl sulfate (Diphenmethanil methyl sulfate).	457.
Diothane (Piperidinepropanediol diphenylurethane) base.	289.
Diothane hydrochloride-----	129, 289.
*5,5-Diphenylhydantoin and sodium salt-----	78, 381, 389, 394, 397, 494, 515, 542.
1-(Diphenylmethyl)-4-methylpiperazinium (Marezine) (Cyclizine) hydrochloride.	163.
Epoxytropine-tropate methylbromide-----	X.
5-Ethyl-3,5-dimethyl-2,4-oxazolinedione-----	565.
Ethyl 1-methyl-4-phenylisonipecotate (Demerol)-----	379.
Fructose-6-phosphate, barium salt-----	462.
Glucose-1-phosphate, potassium salt-----	462.
Glucose-6-phosphate, barium salt-----	462.
Glucuronolactone-----	287.
Guanine-----	462.
Guanine hydrochloride-----	462, 498.
Guanine sulfate-----	462.
Guanosine-----	462.
Guanylic acid and sodium salt-----	462.
Hexamethylenetetramine-----	397.
Hexamethylenetetramine acetaminosalicylic acid (Salihexin).	565.
Hexamethylenetetramine anhydromethylene citrate (Helmitol).	379, 591.
Hexamethylenetetramine camphosulfonate-----	591.
Hexamethylenetetramine mandelate-----	205.
Hexamethylenetetramine methylene citrate-----	591.
Hexamethylenetetramine methyl iodide-----	468.
Hexamethylenetetramine salicylate-----	591.
Hexamethylenetetramine sulfosalicylate-----	591.
Hexamethylenetetramine tetraiodide-----	246, 591.
Hexokinase-----	340.
Hexosediphosphoric acid salts:	
Barium hexosediphosphate-----	462.
Calcium hexosediphosphate-----	462.
Magnesium hexosediphosphate-----	462.

TABLE 17B.--Synthetic organic chemicals; Medicinals for which United States production or sales were reported, identified by manufacturer, 1953--Continued

Chemical	Manufacturers' identification numbers (according to list in table 27)
MEDICINALS, CYCLIC--Continued	
<i>Alicyclic and Heterocyclic--Continued</i>	
*Hormones (steroid):	
21-Acetoxyprogesterone-----	X.
Adrenocorticotrophic hormone (ACTH)-----	X.
Desoxycorticosterone acetate-----	457, X.
Estradiol-----	46, 457.
Estradiol 3-benzoate-----	457.
Estradiol trimethylacetate-----	300.
Estrogenic substance-----	46.
*Estrone-----	46, 400, X.
Estrone sulfate, sodium salt-----	564.
Ethinylestradiol-----	457.
Ethinyltestosterone-----	457.
Hydrocortisone alcohol and acetate-----	515, X.
*17-Hydroxy-11-dehydrocorticosterone (Cortisone) and acetate.	457, 515, X, X.
Methylandrostenial-----	457.
Methyltestosterone-----	336, 421, 457.
Piperazine estrone sulfate-----	565.
Pregnenolone-----	457, X.
Pregnenolone acetate-----	457, X.
*Progesterone-----	336, 400, 457, X.
Reichsteins substance S acetate-----	X.
Reichsteins substance S alcohol-----	X.
Testosterone-----	336, 421, 457.
Testosterone cyclopentylpropionate-----	X.
Testosterone propionate-----	336, 421, 457.
1-Hydrazinonaphthalazine hydrochloride-----	336.
*8-Hydroxy-7-iodo-5-quinolinesulfonic acid (Yatren and salt.	78, 325, 379, 389, 468.
1-(3-Hydroxy-5-methyl-4-phenylhexyl)-1-methyl- piperidinium bromide (Darstine).	444.
8-Hydroxy-5-quinolinesulfonic acid-----	325, 389.
Hypoxanthine-----	462.
Isonicotinic acid hydrazide-----	415, 452, 457, 522, 562.
Lysidine bitartrate-----	431, 468.
Menthyl salicylate-----	431.
homo-Menthyl salicylate-----	431.
6-Mercaptopurine-----	163.
β-Methoxy-γ-hydroxymercuric propylamide of camphoric acid (Mercurial acid).	381, 591.
β-Methoxy-γ-hydroxymercuric propylamide of camphoric acid, sodium salt with theophylline (Mercupurin).	381, 591.
8-(2'-Methoxy-3-hydroxymercuri) propyl coumarin 3-carboxylic acid (Mercumallylic acid).	419.
Methylcholanthrene-----	368, 498.
3,3'-Methylenbis[4-hydroxycoumarin] (Dicumarol)----	464, 565, 591.
Methyl 2-furoate-----	129.
Methyl nicotinate-----	431.
3-(2-Methyl-1-piperidyl)propyl alcohol-----	442.
3-(2-Methyl-1-piperidyl)propyl benzoate (Metycaine)-	442.
3-(2-Methyl-1-piperidyl)propyl p-cyclohexyloxy- benzoate.	442.
Methylthiouracils (5- and 6-)-----	462.
1-Methyl-2-undecylimidazole-----	442.
Methyluracils (5- and 6-)-----	462.
Myristyl-γ-picolinium chloride (Quatresin)-----	X.
2-(1-Naphthylmethyl)-2-imidazoline hydrochloride (Privine).	336.
Neocinchopen (Ethyl 6-methyl-2-phenyleinchoninate)-	464.
5-Nitro-2-furaldehyde diacetate-----	129.
5-Nitro-2-furaldehyde semicarbazone (Furacin)-----	129.
5-Nitro-2-furfurylidene 1-aminohydantoin (Furadantin).	129.
N-(5-Nitro-2-furfurylidene)-3-amino-2-oxazolidene---	129.
5-Nitro-2-furfuryl methyl ether-----	129.
Novalgin (1-Phenyl-2,3-dimethyl-4-methylamino-5- pyrazolone formaldehyde bisulfite).	360, 379.
Nucleic acid and salts-----	462.
Pamaquine (Plasmochin) (N-Diethylaminoisopentyl-8- amino-6-methoxyquinoline).	379.
Papaverine hydrochloride, synthetic-----	231, 442, 515.
Perparin base and hydrochloride-----	431.
*Phenothiazine-----	59, 251, 327, 333, 448.
Phenothiazinecarbonic acid-----	468.
Phytic acid salts:	
Calcium phytate-----	468.
Iron phytate-----	468.

TABLE 17B.--Synthetic organic chemicals: Medicinals for which United States production or sales were reported, identified by manufacturer, 1953--Continued

Chemical	Manufacturers' identification numbers (according to list in table 27)
MEDICINALS, CYCLIC--Continued	
<i>Alicyclic and Heterocyclic--Continued</i>	
*Piperazine-----	78, 360, 368, 468.
Piperazine derivatives:	
Piperazine citrate-----	78.
Piperazine tartrate-----	360.
sym-N-Tetramethylpiperazine diiodide-----	78, 468.
6-Propyl-2-thiouracil-----	464.
Pyridium (2,6-Diamino-3-phenylazopyridine)-----	205, 360.
β-Pyridyl-carbinol tartrate-----	452.
β-Pyrrolidinopropiophenone hydrochloride-----	442.
Quinacrine (Atebrin) (2-Methoxy-6-chloro-9-diethyl-aminopentylaminoacridine).	379.
8-Quinololinol (8-Hydroxyquinoline) salts and esters:	
8-Quinololinol base-----	132, 325.
8-Quinololinol benzoate-----	132, 325.
8-Quinololinol citrate-----	132.
8-Quinololinol hydrochloride-----	325.
8-Quinololinol phosphate-----	325.
8-Quinololinol sulfate (Quinosol)-----	78, 132, 325.
8-Quinololinol sulfate, potassium salt-----	325.
8-Quinololinol tannate-----	132.
d-Ribose-----	462.
Ribose-5-phosphate, barium salt-----	462.
*Rutin-----	389, 400, 562, 600.
l-Sorbose-----	415, 421.
*Terpinol hydrate-----	360, 389, 586, 600.
*Theobromine and derivatives:	
Theobromine, natural-----	245, 274, 562.
Theobromine calcium gluconate-----	165.
Theobromine calcium salicylate-----	360, 381.
Theobromine salicylate-----	231.
Theobromine sodium acetate-----	231, 267, 515.
Theobromine sodium salicylate-----	231, 267, 274, 360, 515.
*Theophylline (1,3-Dimethylxanthine) base and derivatives:	
Theophylline acetic acid-----	394.
Theophylline aminoisobutanol-----	X.
*Theophylline base-----	231, 274, 343, 394, 415.
Theophylline cholineate-----	360.
*Theophylline ethylenediamine (Aminophylline)-----	343, 389, 394, 401, 515, 547, 562.
Theophylline methoxymercuripropylsuccinylurea-----	300.
Theophylline monoethanolamine-----	389, 442.
Theophylline sodium acetate-----	231, 394.
2-Thiouracil-----	464.
Thymidine-----	462.
3,5,5-Trimethyl-2,4-oxazolidinedione (Tridione)-----	X.
Uracil-----	442.
Uric acid-----	462, 498.
Uridine-----	174, 558.
Uridine triphosphate-----	462.
Uridylic acid-----	340.
1-Vinyl-2-pyrrolidone polymerized-----	462.
*Vitamins:	550.
*A, from all sources:	
A, acetate-----	386, 415, 452, 498, 515.
A, alcohol-----	386, 469.
A, esters (natural)-----	498.
A, palmitate-----	415, 452, 498, 515.
A, palmitate (feed supplement)-----	415.
*B ₁ (Thiamin hydrochloride)-----	452, 464, 515.
*B ₁ (Thiamin nitrate)-----	452, 515.
B ₂ :	
*Riboflavin for human consumption, 100%-----	415, 452, 515.
*Riboflavin for animal and poultry consumption, 100%-----	340, 347, 367, 415, 464, 465.
Riboflavin-5'-phosphate, diethanolamine-----	452.
Riboflavin-5'-phosphate, monosodium salt-----	452.
*B ₆ (Pyridoxine)-----	452, 464, 515.
*B ₁₂ , 100%:	
Feed grade-----	340, 347, 367, 397, 415, 464, 465, 515.
Pharmaceutical quality-----	42, 415, 515.
U.S.P. Crystalline-----	515.
*D ₂ (Irradiated ergosterol) (Calciferol)-----	99, 162, 228, 248, 379, 400, 421, 465, 469, 489.
*D ₃ (Irradiated animal sterol) (Delsterol)-----	333, 379, 421, 465, 469, 489, 584.
E (α-Tocopherol)-----	452.
E esters: α-Tocopherol acetate-----	452.
Folic acid and Diopterin-----	464, X.
Inositol-----	287, 445.
Inositol hexaphosphate, calcium magnesium-----	336, 360, 445, 468.

TABLE 17B.--Synthetic organic chemicals: Medicinals for which United States production or sales were reported, identified by manufacturer, 1953--Continued

Chemical	Manufacturers' identification numbers (according to list in table 27)
MEDICINALS, CYCLIC--Continued	
<i>Alicyclic and Heterocyclic--Continued</i>	
*Vitamins--Continued	
*Niacin-----	205, 464, 515, 536.
*Niacinamide and niacinamide hydrochloride-----	205, 248, 464.
Xanthine and monosodium salt-----	462.
MEDICINALS, ACYCLIC	
Acetone, semicarbazone-----	129.
Acetylcarbromal-----	198, 494.
Acetylcholine bromide-----	78, 360.
*Acetylcholine chloride-----	78, 360, 468, 515.
S-Acetylglutathione-----	462.
Acetylmethionine-----	360, 463.
Acetyl- β -methylcholine bromide-----	78.
*Acetyl- β -methylcholine chloride-----	78, 468, 515.
Acetyl phosphate, lithium salt-----	462.
*Amino acids:	
d-Alanine-----	462.
dl-Alanine-----	448.
dl- α -Alanine-----	558.
l-Alanine-----	462.
* β -Alanine-----	248, 421, 515, 558, 563, 565.
l(+)-Arginine and hydrochloride-----	558.
l(+)-Asparagine-----	558.
dl-Aspartic acid-----	527, 558.
l(+)-Aspartic acid-----	558.
l-Citrulline-----	462.
l(+)-Cysteine hydrochloride-----	290, 558.
l-Cystine-----	558.
*l(+)-Glutamic acid-----	171, 228, 384, 558.
d-Glutamic acid, crude-----	462.
l(+)-Glutamic acid, calcium salt-----	171, 389.
l(+)-Glutamic acid hydrochloride-----	171, 228, 558.
l(+)-Glutamic acid, monoammonium salt-----	171.
l(+)-Glutamic acid, monopotassium salt-----	171.
l(+)-Glutamic acid, monosodium salt-----	558.
Glycine (Aminoacetic acid)-----	187, 343, 448, 558.
dl-Isoleucine-----	558.
l-Isoleucine-----	448.
d-Leucine-----	462.
dl-Leucine-----	448, 558.
l-Leucine-----	445, 515, 558.
l-Leucine (Methionine-free)-----	558.
Lysine-----	333.
dl-Lysine hydrochloride-----	448.
l(+)-Lysine monohydrochloride-----	558.
d-Methionine-----	462.
dl-Methionine-----	448, 463, 558.
l-Methionine-----	462.
Methionine, feed grade-----	463.
dl-Methionine, calcium salt-----	515.
dl-Norleucine-----	515, 558.
l-Ornithine-----	462.
dl-Serine-----	468, 515, 558.
l-Serine-----	462.
dl-Threonine-----	468, 558.
d-Valine-----	462.
dl-Valine-----	448, 515, 558.
l-Valine-----	462.
All other (mixtures)-----	445, 463.
2-Amino-4-methylhexane-----	442.
Amyl nitrite (Isoamyl nitrite)-----	231, 498.
Antimony sodium thioglycolate-----	468.
Auro-thioglucoase-----	457.
α, α' -Azobis(chloroformamidine) (Azochloramide)-----	313.
Betaine base-----	360.
Betaine hydrate-----	171.
*Betaine hydrochloride-----	171, 360, 389.
Bismuth octyloxyacetate (Lipo bismol)-----	400.
Bromocholeline bromide-----	468.
Bromoform (Tribromomethane)-----	448.
Bromural (α -Bromoisovaleryurea)-----	198.
Cacodylic acid derivatives:	
Iron cacodylate-----	78, 400.
Sodium cacodylate-----	78, 400.
Calcium borohibate-----	464.
Calcium bromolactobionate-----	468.
Calcium glycerate-----	591.
Calcium iodobehenate-----	591.

TABLE 17B.--Synthetic organic chemicals: Medicinals for which United States production or sales were reported, identified by manufacturer, 1953--Continued

Chemical	Manufacturers' identification numbers (according to list in table 27)
MEDICINALS, ACYCLIC--Continued	
Calcium lactophosphate-----	231.
Calcium levulinate-----	360.
Calcium methionate-----	468.
Calcium salts of sugar acids-----	442.
*Calcium succinate-----	360, 389, 527, 600.
Carbamino! choline chloride-----	515.
Carbanyl-2-hydroxypropyltrimethylammonium chloride-	515.
Carbromal (Bromodiethylacetylcarbamide)-----	198, 379, 494.
Chloral hydrate-----	360, 515.
Chloretone (tert-Trichlorobutyl alcohol)-----	229, 343, 431.
Chloriodized oil-----	547.
1-Chlorobutane-----	324.
2-Chloro-N,N-dimethylethylamine (Dimethylaminoethyl chloride) hydrochloride.	181, 542, 565.
2-Chloro-N,N-dimethylpropylamine hydrochloride----	181.
2-Chlorotriethylamine (Diethylaminoethyl chloride) hydrochloride.	181, 542.
Choline bicarbonate-----	367.
*Choline bitartrate-----	78, 324, 360, 426, 464, 607.
*Choline chloride, for animal and poultry feed and for use as an intermediate.	324, 367, 421, 464, 465, 607.
*Choline chloride, medicinal grade only-----	78, 324, 360, 426, 464, 515, 607.
Choline chloride, nonmedicinal-----	493, 515.
Choline citrus meal-----	426.
Choline dihydrogen citrate-----	78, 324, 360, 426, 464, 607.
Choline gluconate-----	367.
Choline tricitrate-----	324, 360, 426, 464, 607.
Diallylacetic acid and bismuth salt-----	187.
2,2-Diisopropyl-5-hydroxymethyl-1,3-dioxolane-----	198.
1,2-Dimercaptoopropanol-----	591.
Disodium methanearsonate (Arrhenal)-----	379.
Divinyl ether-----	515.
Ethylenediamine dihydrochloride-----	281.
Ethylenediamine diiodide-----	246.
Ethyl iodide-----	515, 599.
Ethylmercuric chloride-----	442.
Ethyl morrhuate-----	591.
Ethyl nitrite-----	231.
Gluconic acid salts:	
Aluminum gluconate-----	360.
Ammonium gluconate-----	415.
Calcium glucoheptonate-----	558.
Calcium gluconate-----	231, 415, 558.
Copper gluconate-----	415.
Iron (ferrous) gluconate-----	360, 415.
Magnesium gluconate-----	360, 415.
Manganese gluconate-----	415.
Potassium gluconate-----	75, 415.
Sodium gluconate-----	415.
Glucono-delta-lactone-----	415.
Glutathione-----	462.
Glutathione, monosodium salt-----	462.
Glutathione, oxidized-----	462.
Glycerophosphoric acid-----	245, 397.
Glycerophosphoric acid derivatives:	
Calcium glycerophosphate-----	245, 281, 397.
Iron glycerophosphate-----	245, 397.
Magnesium glycerophosphate-----	245, 397.
Manganese glycerophosphate-----	245, 281, 397.
Potassium glycerophosphate-----	245, 397.
Sodium glycerophosphate-----	245, 397.
Strychnine glycerophosphate-----	75.
Zinc glycerophosphate-----	75.
Hendecenoic acid (Undecylenic acid) salts:	
Copper hendecenoate-----	360.
Zinc hendecenoate-----	360.
Hexamethyldiaminoisopropanol diiodide-----	379, 468.
Hexamethylenebis[trimethylammonium base] (Hexamethonium base).	468.
Hexamethylenebis[trimethylammonium bitartrate] (Hexamethonium bitartrate).	468, 542.
Hexamethylenebis[trimethylammonium bromide] (Hexamethonium bromide).	542.
Hexamethylenebis[trimethylammonium chloride] (Hexamethonium chloride).	468, 542.
Hexamethylenebis[trimethylammonium iodide] (Hexamethonium iodide).	468.
Hexamethylenemethyl iodide-----	468.
Iodized castor oil-----	431.
Iodized oils, other-----	442.

TABLE 17B.--Synthetic organic chemicals: Medicinals for which United States production or sales were reported, identified by manufacturer, 1953--Continued

Chemical	Manufacturers' identification numbers (according to list in table 27)
MEDICINALS, ACYCLIC--Continued	
Iodoform-----	75, 231, 267.
Iodomethanesulfonic acid, sodium salt-----	360, 379.
Iron (ferrous) oxalate-----	360.
Isovaleric acid salts:	
Ammonium isovalerate-----	468, 494.
Zinc isovalerate-----	494.
Lactic acid salts (medicinal grades only):	
Aluminum lactate-----	360.
Iron (ferrous) lactate-----	231.
Lithium pyruvate-----	462.
Magnesium citrate soluble-----	515.
Malononitrile-----	132, 462.
Methylenecitric acid salts-----	379.
*Methylene iodide-----	233, 360, 368, 379, 468, 498, 515.
*Methyl iodide, all grades-----	231, 468, 498.
3-Methyl-1-pentynes-3-ol-----	457.
Morruhic acid, copper salt-----	591.
Morruhic acid, sodium salt-----	400, 591.
Phosphoglyceric acid-----	462.
2-Propylvaleric acid, bismuth salt-----	187.
Silver protein, mild-----	400.
Silver protein, strong-----	379, 397.
Sodium bismuth triglycolamate-----	X.
Sodium iodopropanol sulfonate-----	431.
Sodium pyruvate-----	462.
*Sodium succinate-----	231, 515, 600.
Succinylcholine dichloride-----	163.
Succinyl peroxide-----	431.
Sulfonethylmethane-----	231.
Tartaric acid salts, medicinal grades only:	
Ammonium tartrate-----	360.
Antimony potassium tartrate-----	415.
Bismuth potassium tartrate-----	468.
*Calcium tartrate-----	78, 281, 360.
Potassium bitartrate-----	217, 360, 415.
Potassium sodium tartrate (Bismosal)-----	217, 281, 415, 468.
Sodium tartrate-----	281, 360.
Tetraethylammonium chloride-----	468.
Tetramethylammonium chloride-----	468.
Thiosemicarbazide-----	78, 133.
Thiosinamine (Allylthiourea)-----	78, 431.
2,2,2-Tribromoethanol-----	379.
Triiodoethionic acid-----	457.
*Vitamins:	
*Ascorbic acid and derivatives:	
Ascorbic acid-----	415, 452, 515.
Ascorbic acid, calcium salt-----	415.
Ascorbic acid, sodium salt-----	415, 452, 515.
Ascorbyl palmitate-----	415.
*Pantothenic acid and derivatives:	
Pantothenic acid-----	465.
*Pantothenic acid, d-calcium salt-----	415, 421, 442, 464, 515.
*Pantothenic acid, dl-calcium salt-----	248, 421, 464, 565.
Pantothenic acid, sodium salt-----	400.
d-Pantothenyl alcohol (α,γ -Dihydroxy-N-(3-hydroxypropyl)- β,β -dimethylbutyramide).-----	452.

Flavor and Perfume Materials

TABLE 18B.--Synthetic organic chemicals: Flavor and perfume materials for which United States production or sales were reported, identified by manufacturer, 1953

[Flavor and perfume materials for which separate statistics are given in table 18A are marked below with an asterisk (*); those not so marked do not appear in table 18A because the reported data are confidential and may not be published. Manufacturers' identification numbers shown below are taken from table 27]

Material	Manufacturers' identification numbers (according to list in table 27)
FLAVOR AND PERFUME MATERIALS, CYCLIC	
<i>Benzenoid and Naphthalenoid</i>	
2-Acetonaphthone (Methyl β -naphthyl ketone)-----	229, 582.
Acetophenone-----	229, 392, 431.
Amyl benzoate-----	225, 229, 508, 582.
* α -Amylcinnamaldehyde-----	229, 451, 508, 511, 562, 582.
α -Amylcinnamaldehyde, dimethyl acetal-----	508, 582.
Amyl cinnamate-----	225, 508, 582.
α -Amylcinnamyl alcohol-----	451, 582.
Amyl phenylacetate (Isoamyl α -toluate)-----	229, 414, 508, 582, 598.
*Amyl salicylate (Isoamyl salicylate)-----	229, 274, 370, 582, 593.
*Anethole-----	222, 229, 285, 582.
*Anisaldehyde-----	229, 431, 582, 593.
Anisole (Methyl phenyl ether)-----	229, 431.
Anisyl acetate-----	225, 229, 508, 582.
Anisyl alcohol-----	229, 582.
Anisyl formate-----	225, 508, 582.
Anisyl propionate-----	508, 582.
*Benzophenone-----	229, 266, 582.
*Benzyl acetate-----	229, 266, 451, 562, 582.
*Benzyl alcohol, all grades-----	229, 255, 331, 343, 402, 451, 562, 582.
Benzyl benzoate, perfume grade only-----	229, 245, 255, 331, 402, 431, 562.
*Benzyl butyrate-----	225, 229, 414, 508, 562, 582.
Benzyl chloroacetate-----	274.
*Benzyl cinnamate-----	229, 255, 508, 582.
Benzyl ether, perfume grade only-----	229, 562.
*Benzyl formate-----	229, 274, 508, 582.
Benzyl isoamyl ether-----	229, 582.
Benzyl isobutyrate-----	225, 229, 508, 582.
*Benzyl isoeugenyl ether-----	229, 508, 511, 582.
Benzyl isovalerate-----	229, 508, 582.
Benzyl phenylacetate (Benzyl α -toluate)-----	229, 274, 508, 582, 598.
*Benzyl propionate-----	225, 229, 414, 451, 508, 562, 582, 598.
*Benzyl salicylate-----	229, 255, 562, 582.
Benzyl valerate-----	225, 508, 598.
α -Bromostyrene-----	582.
4-tert-Butyl-2,6-dimethyl-3,5-dinitroacetophenone (Musk ketone)-----	229, 562.
3-tert-Butyl-2,6-dinitro-p-cymene-----	229.
6-tert-Butyl-3-methyl-2,4-dinitroanisole (Musk ambrette)-----	229, 562.
5-tert-Butyl-2,4,6-trinitro-m-xylene (Musk xylol)-----	229, 562.
Carvacrol (Isopropyl-o-cresol)-----	229.
Cinnamaldehyde-----	229, 431, 582.
Cinnamic acid-----	229, 343, 431.
*Cinnamyl acetate-----	229, 414, 508, 582.
Cinnamyl alcohol-----	229, 562, 582.
Cinnamyl anthranilate-----	508, 598.
Cinnamyl butyrate-----	225, 414, 508, 582.
Cinnamyl cinnamate-----	229, 508, 582.
Cinnamyl formate-----	508, 582, 598.
Cinnamyl isobutyrate-----	225, 508, 582.
Cinnamyl isovalerate-----	225, 229, 508, 582.
Cinnamyl propionate-----	229, 508, 582.
Cinnamyl valerate-----	225, 255, 508, 598.
Cumaldehyde (p-Isopropylbenzaldehyde)-----	229, 333, 460.
p, α -Dimethylbenzyl alcohol (p-Methylphenylmethyl- carbinol)-----	229.
α,α -Dimethylphenethyl acetate-----	451.
α,α -Dimethylphenethyl alcohol-----	451.
α,α -Dimethyl-3-phenylpropanol-----	451.
Diphenylmethane-----	582.
1,3-Diphenyl-2-propanone (Dibenzyl ketone)-----	229.
Dulcin (p-Phenethylurea)-----	431, 468.
2-Ethoxynaphthalene (Ethyl β -naphthyl ether)-----	229, 266.
Ethyl anisate-----	431, 508.
*Ethyl anthranilate-----	133, 508, 562, 598.
Ethyl benzoate-----	229, 397, 463, 508, 582.
Ethyl cinnamate-----	229, 508, 582.
*Ethyl α,β -epoxy- β -methylhydrocinnamate (Ethyl methylphenylglycidate)-----	229, 431, 508, 582, 598.
2-Ethylhexyl salicylate-----	598.
Ethyl methyltolylglycidate-----	229, 508.
Ethyl β -phenylglycidate-----	431, 582, 598.
Ethyl salicylate-----	582.
Ethylvanillin-----	245.

TABLE 18B.--Synthetic organic chemicals: Flavor and perfume materials for which United States production or sales were reported, identified by manufacturer, 1953--Continued

Material	Manufacturers' identification numbers (according to list in table 27)
FLAVOR AND PERFUME MATERIALS, CYCLIC--Continued	
<i>Benzenoid and Naphthalenoid--Continued</i>	
*Eugenol	229, 230, 402, 431, 508, 511, 582, 593, 600.
*Eugenyl methyl ether	229, 431, 508, 582.
Hexylcinnamaldehyde	333, 508, 582.
Hydratropaldehyde (α -Phenylpropionaldehyde)	229, 451, 582.
Hydratropaldehyde, dimethyl acetal	451, 582.
Hydrocinnamaldehyde (β -Phenylpropionaldehyde)	229.
4-(4-Hydroxy-3-methoxyphenyl)-3-buten-2-one (Vanillidine acetone).	508.
*Isobutyl benzoate	225, 229, 274, 508, 582.
Isobutyl cinnamate	225, 508, 582, 598.
Isobutyl phenylacetate (Isobutyl α -toluate)	229, 508, 582.
Isobutyl salicylate	229, 508, 582.
*Isocougenol	229, 352, 402, 508, 582.
Isocougenyl acetate	229, 508.
Isocougenyl methyl ether	229, 431, 508, 582.
p-Isopropyl-4-methylhydrocinnamaldehyde (Cyclamen aldehyde).	229, 460.
p-Methoxyacetophenone	431.
2-Methoxybiphenyl	451.
*2-Methoxynaphthalene (Methyl β -naphthyl ether)	229, 451, 508, 582.
p-Methylacetophenone (Methyl p-tolyl ketone)	229, 352, 582.
Methyl anisate	431, 508.
p-Methylanisole (p-Cresyl methyl ether)	229, 431, 460, 508, 598.
Methyl anthranilate	229, 333, 448, 508, 562.
Methyl benzoate	225, 397, 431.
α -Methylbenzyl acetate	229, 508, 511, 582.
p-Methylbenzyl acetate	431.
α -Methylbenzyl alcohol (Methylphenylbarbinol)	582.
α -Methylbenzyl propionate	508.
Methyl cinnamate	229, 343, 431, 582.
Methyl N-methylanthranilate (Dimethyl anthranilate)	229, 333, 508, 598.
β -Methylphenethyl alcohol (2-Phenyl-1-propyl alcohol).	451.
Methyl phenylacetate (Methyl α -toluate)	229, 245, 266, 508, 582, 600.
*Methyl salicylate (Synthetic wintergreen oil)	245, 397, 448.
*Phenethyl acetate	229, 352, 451, 508.
*Phenethyl alcohol	229, 352, 448, 451, 600.
Phenethyl anthranilate	133, 229, 508, 598.
Phenethyl butyrate	133, 229, 274, 508.
Phenethyl cinnamate	451, 508, 598.
Phenethyl formate	229, 451, 508.
Phenethyl isovalerate	229, 274, 434, 508, 582.
Phenethyl phenylacetate (Phenethyl α -toluate)	229, 508, 582.
Phenethyl propionate	229.
Phenethyl salicylate	229.
Phenethyl valerate	508, 598.
2-Phenoxyethyl isobutyrate	229.
Phenylacetaldehyde (α -Tolualdehyde)	229, 582.
Phenylacetaldehyde, dimethyl acetal	229, 508, 582.
4-Phenyl-3-buten-2-one (Benzylidene acetone)	274, 508, 582.
Phenyl-1,2-ethanediol diacetate	451.
1-Phenyl-2-propanone (Benzyl methyl ketone)	582.
3-Phenyl-1-propyl acetate	582.
3-Phenyl-1-propyl alcohol (Hydrocinnamic alcohol)	229, 508, 582.
Propyl cinnamate	508, 598.
Salicylaldehyde	448, 572.
p-Tolualdehyde (p-Methylbenzaldehyde)	229, 397, 431.
*p-Tolyl acetate (p-Cresyl acetate)	229, 414, 508, 582, 598.
p-Tolyl isobutyrate (p-Cresyl isobutyrate)	451, 508.
*p-Tolyl phenylacetate (p-Cresyl α -toluate)	229, 508, 511, 582, 598.
α -(Trichloromethyl)benzyl acetate (Rosetone)	431.
p, α , α -Trimethylphenethyl alcohol	451.
2,3,5-Trimethyl-1,2,3,6-tetrahydrobenzaldehyde	451.
Vanillin	98, 229, 245, 274.
<i>Terpenoid, Heterocyclic, and Alicyclic</i>	
Allyl cyclohexanopropionate	508.
Bornyl acetate	285, 508, 598.
Carvone (Carvol)	414, 507, 508, 600.
Caryophyllene	229.
Cedrenal	511, 582.
Cedrol	451, 511, 582.
*Cedryl acetate	229, 352, 451, 511, 582.
Cineole (Eucalyptol)	507, 520.
*Citral (Geranial)	229, 230, 274, 414, 451, 508, 511, 582, 593, 598.

TABLE 18B.--Synthetic organic chemicals: Flavor and perfume materials for which United States production or sales were reported, identified by manufacturer, 1953--Continued

Material	Manufacturers' identification numbers (according to list in table 27)
FLAVOR AND PERFUME MATERIALS, CYCLIC--Continued	
Terpenoid, Heterocyclic, and Alicyclic--Continued	
*Citronellal-----	229, 414, 562, 582.
*Citronellol-----	229, 255, 451, 508, 511, 562, 582.
*Citronellyl acetate-----	229, 451, 508, 562, 582.
Citronellyl butyrate-----	133, 229, 508, 582, 598.
Citronellyl formate-----	229, 451, 508, 511, 582.
Citronellyl isobutyrate-----	229.
*Citronellyl propionate-----	229, 451, 508, 582.
*Coumarin-----	245, 274, 333, 448, 582.
Cyclohexanesulfamic acid, calcium salt-----	565.
Cyclohexanesulfamic acid, sodium salt-----	565.
Cyclopentanol-----	101.
Cyclopentanone-----	101.
Dihydrocitronellol-----	229.
3,7-Dimethyl-3-octanol (Tetrahydrolinalool)-----	582.
*Geraniol-----	229, 255, 352, 414, 451, 508, 511, 567, 582.
*Geranyl acetate-----	225, 229, 255, 414, 451, 508, 511, 562, 582, 598.
Geranyl benzoate-----	133, 229, 508.
Geranyl butyrate-----	225, 229, 508, 511, 582, 598.
*Geranyl formate-----	225, 229, 414, 451, 511, 582, 598.
Geranyl isovalerate-----	133, 414, 508, 582.
Geranyl phenylacetate (Geranyl α -toluate)-----	229, 582.
Geranyl propionate-----	225, 229, 451, 508, 582.
α -Heptyl- α -butyrolactone-----	451.
2-Hexyl-2-cyclopenten-1-one-----	451.
Hydrocoumarin (3,4-Dihydrocoumarin)-----	431.
*Hydroxycitronellal-----	229, 255, 352, 511, 582, 593.
Hydroxycitronellal, dimethyl acetal-----	229, 582.
Indole-----	229, 448.
* α -Ionone-----	229, 230, 274, 451, 511, 582.
* β -Ionone-----	229, 274, 352, 582.
*Ionone (α - and β -)-----	229, 230, 274, 352, 451, 511.
Isoborneol (Isobornyl alcohol)-----	333.
Isobornyl acetate-----	229, 333, 582.
Isobornyl propionate-----	333.
Isobutylquinoline-----	133.
Isopropylquinoline-----	133.
Isopulegol-----	229, 511, 562, 582.
Isopulegyl acetate-----	229, 582.
Isosafrole-----	229, 582.
d-Limonene-----	508.
*Linalool-----	229, 352, 414, 451, 508, 511, 582, 598, 600.
*Linalyl acetate-----	229, 230, 352, 414, 451, 508, 511, 582, 593, 598.
Linalyl anthranilate-----	133, 508, 511.
*Linalyl benzoate-----	133, 229, 508, 511.
Linalyl butyrate-----	225, 414, 508, 582.
Linalyl cinnamate-----	511, 582.
*Linalyl formate-----	229, 414, 508, 582.
Linalyl isobutyrate-----	229, 508, 582, 593.
Linalyl isovalerate-----	508, 582.
Linalyl phenylacetate-----	133.
*Linalyl propionate-----	225, 229, 451, 508, 582.
*Menthol, synthetic, tech-----	229, 352, 431, 562.
*Menthol, synthetic, U.S.P-----	229, 352, 507, 562.
Menthone-----	225, 229, 431, 511, 562.
Menthyl anthranilate-----	229, 508.
Menthyl isovalerate-----	133, 508.
Meta-homenthol (Cyclonol)-----	431.
3-Methylcoumarin-----	274.
6-Methylcoumarin-----	229.
*Methyl- α -ionone-----	229, 274, 352, 451, 582.
Methyl- β -ionone-----	274.
*Methylionone (α - and β -)-----	229, 230, 274, 333, 451, 511.
6-Methylquinoline-----	451.
*Nerol-----	414, 451, 511, 582.
Neryl acetate-----	582.
*Piperonal (Heliotropin)-----	229, 230, 402, 582, 593.
*Rhodinol-----	229, 230, 255, 333, 402, 414, 451, 508, 582, 598.
Rhodinol rose-----	511.
*Rhodinyl acetate-----	229, 255, 414, 451, 508, 582.
Rhodinyl formate-----	229, 451, 508, 598.
Saccharin-----	245, 301.
Saccharin, calcium salt-----	301.
Saccharin, sodium salt-----	245, 301.
*Safrole-----	229, 414, 520, 582, 600.
*Santalol-----	229, 451, 598.
Skatole-----	133.

TABLE 18B.--Synthetic organic chemicals: Flavor and perfume materials for which United States production or sales were reported, identified by manufacturer, 1953--Continued

Material	Manufacturers' identification numbers (according to list in table 27)
FLAVOR AND PERFUME MATERIALS, CYCLIC--Continued	
<i>Terpenoid, Heterocyclic, and Alicyclic--Continued</i>	
*Terpineols:	
α -Terpineol	222, 285, 352.
β -Terpineol	285.
Terpineol (α - and β -)	229, 333.
Terpinol hydrate (Terpin hydrate), tech	222.
*Terpinyl acetate	229, 285, 333, 451, 511, 582, 593, 598.
Terpinyl propionate	229, 508, 582.
1,2,3,4-Tetrahydro-6-methylquinoline	451.
Trimethyl-4-cyclohexene-1-carboxyaldehyde	333.
Vetivanol	229, 511, 582.
*Vetivenyl acetate	229, 255, 352, 451, 511, 552, 593.
FLAVOR AND PERFUME MATERIALS, ACYCLIC	
*Allyl caproate	225, 229, 414, 431, 451, 508, 582, 598.
Allyl caprylate	225, 508.
Allyl enanthate (Allyl heptanoate)	431, 508.
Allyl isothiocyanate (Synthetic mustard oil)	431, 599.
Allyl propionate	508, 598.
Allyl sulfide (Diallyl sulfide)	599.
2,3-Butanedione (Biacetyl)	343, 431.
*n-Butyl butyrate	225, 508, 582, 598.
Butyrene (Di-n-propyl ketone)	582.
Capraldehyde (Decyl aldehyde) (C ₁₀)	229, 508, 582.
Caprylaldehyde (Octyl aldehyde) (C ₈)	229, 508, 582.
Decyl acetate	508, 582, 598.
n-Decyl alcohol	229, 582.
Diethyl sebacate (Ethyl sebacate)	133, 598.
Diethyl succinate	508, 582.
Dodecyl acetate (Lauryl acetate)	508, 582.
Enanthaldehyde (n-Heptaldehyde) (C ₇)	219, 313.
*Ethyl butyrate	53, 414, 508, 582, 598.
Ethyl caprate (Ethyl decylate)	414, 508, 582, 598.
*Ethyl caproate (Ethyl hexoate)	414, 508, 582, 598.
Ethyl caprylate (Ethyl octoate)	414, 508, 582.
Ethyl enanthate (Ethyl heptylate)	508, 598.
Ethyl isobutyrate	508, 582.
Ethyl isovalerate	370, 414, 508.
Ethyl laurate	133, 229, 451, 508, 598.
Ethyl levulinate	133, 229, 508.
Ethyl myristate	229, 370, 508.
Ethyl oleate	370.
*Ethyl pelargonate	229, 431, 508, 582, 598.
*Glutamic acid, monosodium salt (Monosodium glutamate).	171, 228, 384, 445.
Hendecanaldehyde (Undecyl aldehyde) (C ₁₁)	582.
2-Hendecanone (Methyl nonyl ketone)	229, 582.
Hendecenaldehyde (Undecylenic aldehyde)	229, 508, 582.
Hendecenoic acid (Undecylenic acid)	219, 313, 562.
Hendecenol (Undecylenyl alcohol)	229, 582.
Heptyl alcohol (Heptanol)	219, 313, 551.
2,3-Hexanedione (Acetylbutyral)	133.
3-Hydroxy-2-butanone (Acetoin)	133, 508, 598.
γ -Hydroxycaprylic acid, lactone (γ -Octalactone)	508.
4-Hydroxyhendecanoic acid, γ -lactone (γ -Undecalactone).	229, 508.
γ -Hydroxypelargonic acid, lactone (γ -Nonalactone)	229, 508.
*Isoamyl butyrate (Amyl butyrate)	53, 229, 414, 431, 508, 582, 598.
Isoamyl caproate (Amyl caproate)	508, 582, 598.
Isoamyl caprylate (Amyl caprylate)	414, 508, 582.
*Isoamyl formate (Amyl formate)	229, 508, 582, 598.
Isoamyl isovalerate (Amyl isovalerate)	414, 582.
*Isoamyl propionate (Amyl propionate)	225, 229, 414, 508, 582, 598.
*Isobutyl acetate	225, 414, 508, 582.
Isobutyl butyrate	225, 508, 582.
Isobutyl caproate	225, 229, 508, 582.
Isobutyl isovalerate	508.
Isopropyl pelargonate	508, 598.
Lauraldehyde (Dodecyl aldehyde) (C ₁₂)	229, 508, 582.
2-Methylhendecanaldehyde (2-Methylnonylacetaldehyde)	229, 582.
Methyl hendecanoate (Methyl undecylenate)	229, 508.
6-Methyl-5-hopten-2-one	229, 582.
Methyl β -methylthiolpropionate	508.
Methyl nonenoate (Methyl nonylenate)	229, 508, 598.
Methyl octynoate (Methyl heptine carbonate)	229, 562.
Nonyl alcohol (C ₉)	229, 508, 582.
Octenoic acid	508.
n-Octyl acetate	508, 582, 593, 598.

TABLE 18B.--Synthetic organic chemicals: Flavor and perfume materials for which United States production or sales were reported, identified by manufacturer, 1953--Continued

Material	Manufacturers' identification numbers (according to list in table 27)
FLAVOR AND PERFUME MATERIALS, ACYCLIC--Continued	
n-Octyl formate-----	431, 508, 582.
n-Octyl isobutyrate-----	508, 582, 593.
Pelargonaldehyde (Nonyl aldehyde) (C ₉)-----	229, 508, 582.
2,3-Pentanedione-----	133.
1-Propanethiol (n-Propyl mercaptan)-----	508.
2-Propene-1-thiol (Allyl mercaptan)-----	508, 599.
Propyl propionate-----	508, 582.
CHEMICALLY MODIFIED ESSENTIAL OILS	
Ethyl oxyhydrate-----	225, 230.
Lavandin, acetylated-----	508, 598.
Petitgrain oil, acetylated-----	508, 511.
Sassafras oil, hydrogenated-----	229.

Plastics and Resin Materials

TABLE 19B.--Synthetic organic chemicals: Plastics and resin materials for which United States production or sales were reported, identified by manufacturer, 1953

[Plastics and resin materials for which separate statistics are given in table 19A are marked below with an asterisk (*); chemicals not so marked do not appear in table 19A because the reported data are confidential and may not be published. Manufacturers' identification numbers shown below are taken from table 27. An X signifies that the manufacturer did not consent to the publication of his identification number with the designated product]

Material	Manufacturers' identification numbers (according to list in table 27)
PLASTICS AND RESIN MATERIALS, BENZENOID	
Aniline-formaldehyde resins-----	487, 495.
*Coumarone-indene resins-----	134, 327, 536.
Epichlorohydrin resins:	
Epichlorohydrin-acetone-phenol-----	131, 258.
Epichlorohydrin-bisphenol-----	487.
Epichlorohydrin-bisphenol-fatty acid-----	44, 170, 186, 192, 333, 361, 395, 453, 521, 544.
Epichlorohydrin-phenol-fatty acid-rosin-----	95, 131, 170, 361, 409, 422, 568.
Epichlorohydrin-polyamine-----	295, 577.
All other-----	44, 395, 453, 487.
*Petroleum polymer and condensation resins-----	134, 234, 247, 311, 322, 327, 333.
*Phenolic and other tar-acid resins:	
*Unmodified:	
p-tert-Amylphenol-formaldehyde-----	487, 536.
p-tert-Amylphenol-phenylphenol-formaldehyde-----	487.
Bisphenol-formaldehyde-----	408, 453, 579.
*p-tert-Butylphenol-bisphenol-formaldehyde-----	167, 175, 408, 409, 463, 487.
*p-tert-Butylphenol-formaldehyde-----	120, 204, 245, 350, 408, 463, 487, 568.
Cashew nut shell oil type-----	69, 207, 339, 449.
*Cresols-formaldehyde-----	120, 167, 408, 432, 449, 453, 487, 536, 568.
Cresols-xyleneols-formaldehyde-----	69, 346, 408, 432.
*Cresylic acid-formaldehyde-----	71, 167, 408, 487, 524.
Phenol-p-tert-butylphenol-formaldehyde-----	245, 487, 521.
*Phenol-cresols-formaldehyde-----	29, 118, 167, 188, 245, 272, 346, 432, 453, 487, 536, 568.
*Phenol-cresols-xyleneols-formaldehyde-----	13, 97, 118, 120, 408, 432, 536.
*Phenol-cresylic acid-formaldehyde-----	35, 408, 487, 524.
*Phenol-formaldehyde-----	8, 26, 29, 30, 32, 67, 69, 70, 71, 85, 118, 124, 141, 167, 196, 207, 226, 245, 295, 304, 316, 317, 339, 346, 350, 372, 387, 395, 408, 432, 449, 453, 454, 463, 487, 490, 493, 524, 536, 568.
*Phenol-furfural-----	97, 167, 339, 449.
*Phenol-resorcinnol-formaldehyde-----	29, 207, 323, 449, 487, 524, 533.
Phenol-xyleneols-formaldehyde-----	35, 521.
*Phenylphenol-formaldehyde-----	323, 408, 487, 568.
*Resorcinnol-formaldehyde-----	245, 449, 487, 493, 524, 568.
Xyleneols-p-tert-amylphenol-formaldehyde-----	408.
*Xyleneols-formaldehyde-----	26, 71, 118, 487, 536, 568.
All other-----	487.
*Modified:	
*Except rosin and rosin ester modified:	
Cresols-formaldehyde-dibutyl phthalate-----	487.
Cresylic acid-formaldehyde-dibutyl phthalate-----	524.
Phenol-formaldehyde, ammoniated-----	493.
*Phenol-formaldehyde-aniline-----	29, 167, 245, 346, 408, 487.
Phenol-formaldehyde-dipentene-----	408.
Phenol-formaldehyde-glycerol-fatty acid-----	490.
*Phenol-formaldehyde, oil modified-----	207, 408, 487, 521, 524.
Phenol-formaldehyde-styrene-----	207.
Phenol-formaldehyde, sulfonated-----	295, 577.
Phenylphenol-formaldehyde-tung oil-----	487, 544.
All other-----	97, 167, 295, 346, 409, 464, 487, 568.
*Rosin and rosin ester modified:	
*Bisphenol-formaldehyde-rosin and rosin ester-----	91, 204, 222, 272, 292, 463, 536.
p-tert-Butylphenol-formaldehyde-glycerol-pentaerythritol-rosin.	568.
*p-tert-Butylphenol-formaldehyde-rosin and rosin ester.	91, 120, 272, 463, 493, 532, 536, 568.
p-tert-Butylphenol-glycerol-rosin-----	521, 536.
Cresols-formaldehyde-tung oil-rosin-----	487, 568.
Cresols-phenol-p-tert-butylphenol-formaldehyde-tung oil-rosin.	487.
Cresylic acid-formaldehyde-rosin ester-----	493, 524, 568.
Phenol-formaldehyde-glycerol-rosin and rosin ester.	292, 493, 536, 568.
Phenol-formaldehyde-pentaerythritol-rosin-----	154, 395, 463, 568.
*Phenol-formaldehyde-rosin and rosin ester-----	222, 395, 463, 487, 568.
Xyleneols-formaldehyde-tung oil-rosin-----	487.
All other-----	463, 487, 568.

TABLE 19B.--Synthetic organic chemicals: Plastics and resin materials for which United States production or sales were reported, identified by manufacturer, 1953--Continued

Material	Manufacturers' identification numbers (according to list in table 27)
PLASTICS AND RESIN MATERIALS, BENZENOID--Continued	
*Phthalic alkyd resins:	
*Unmodified:	
*Phthalic anhydride-glycerol-----	4, 20, 43, 44, 49, 57, 66, 79, 84, 91, 92, 95, 103, 127, 131, 138, 148, 154, 167, 170, 175, 178, 186, 192, 194, 239, 257, 261, 263, 272, 297, 304, 333, 346, 361, 374, 391, 393, 395, 422, 453, 463, 464, 487, 493, 521, 532, 536, 544, 564, 579, 581.
*Phthalic anhydride-glycerol-glycol-----	4, 34, 79, 91, 131, 148, 170, 193, 263, 346, 391, 395, 409, 422, 453, 463, 521.
Phthalic anhydride-glycerol-glycol-pentaerythritol.	175, 422, 453, 464.
*Phthalic anhydride-glycerol-pentaerythritol-----	4, 20, 43, 44, 66, 79, 91, 92, 95, 120, 138, 148, 170, 186, 194, 239, 257, 263, 297, 304, 333, 346, 361, 391, 393, 395, 422, 453, 463, 464, 490, 521, 532, 536, 544, 568, 581.
Phthalic anhydride-glycerol-pentaerythritol-sorbitol.	297.
*Phthalic anhydride-glycerol-sorbitol-----	20, 170, 297, 536, 568.
Phthalic anhydride-glycol-----	395, 453.
*Phthalic anhydride-glycol-pentaerythritol-----	4, 44, 66, 84, 91, 96, 170, 186, 222, 263, 304, 333, 346, 361, 395, 409, 422, 453, 463, 464, 493, 503, 521, 532, 544.
*Phthalic anhydride-pentaerythritol-----	20, 43, 64, 66, 84, 91, 95, 96, 103, 127, 131, 154, 170, 186, 194, 239, 257, 263, 304, 333, 346, 361, 391, 393, 395, 409, 422, 453, 463, 464, 493, 521, 532, 536, 544, 568, 579, 581.
All other-----	91, 333, 453, 544, 568.
*Modified:	
*Except rosin and rosin ester and styrene modified:	
*Phthalic anhydride-adipic acid-glycol-----	333, 463, 464.
*Phthalic anhydride-benzoic acid-glycerol-----	91, 186, 346, 391, 422, 464, 544, 568.
*Phthalic anhydride-fumaric acid-glycerol-----	44, 192, 214, 333, 361, 391, 463.
Phthalic anhydride-fumaric acid-glycol-pentaerythritol.	463, 464.
Phthalic anhydride-glycerol-pentaerythritol-phenol-formaldehyde.	148, 297, 568.
*Phthalic anhydride-glycerol-phenol-formaldehyde.	170, 186, 304, 333, 346, 395, 422, 464, 568, 581.
Phthalic anhydride-glycol-phenol-formaldehyde--	521.
*Phthalic anhydride-maleic anhydride-glycerol--	25, 44, 49, 79, 186, 192, 212, 304, 333, 391, 395, 409, 422, 453, 463, 521, 568, 581.
*Phthalic anhydride-maleic anhydride-glycerol-pentaerythritol.	25, 44, 79, 212, 214, 304, 346, 361, 395, 463, 521, 544, 568.
Phthalic anhydride-maleic anhydride-glycerol-phenol-formaldehyde.	395, 409, 463.
Phthalic anhydride-maleic anhydride-glycol-pentaerythritol.	422, 463, 464.
*Phthalic anhydride-maleic anhydride-pentaerythritol.	175, 212, 304, 333, 395, 422, 463, 521, 581.
Phthalic anhydride-pentaerythritol with various modifiers.	333, 361, 395, 490, 493, 521.
Phthalic anhydride-sebacic acid-alcohol-----	91, 333, 453.
All other-----	13, 44, 79, 96, 175, 178, 212, 333, 346, 391, 422, 453, 463, 464, 487, 493.
*Rosin and rosin ester modified:	
Phthalic anhydride-benzoic acid-fumaric acid-pentaerythritol-tall oil.	44.
*Phthalic anhydride-fumaric acid-glycerol-rosin and rosin ester.	361, 453, 544, 581.
Phthalic anhydride-fumaric acid-glycol-pentaerythritol-tall oil-rosin.	391.
Phthalic anhydride-glycerol-glycol-rosin and rosin ester.	84, 346.
*Phthalic anhydride-glycerol-pentaerythritol-phenol-formaldehyde-rosin ester.	44, 192, 257, 395, 409, 463.
*Phthalic anhydride-glycerol-pentaerythritol-rosin and rosin ester.	4, 43, 44, 66, 92, 127, 131, 148, 167, 186, 192, 297, 391, 395, 422, 568, 579.
*Phthalic anhydride-glycol-phenol-formaldehyde-rosin and rosin ester.	44, 79, 138, 170, 263, 346, 391, 395, 453, 463, 464, 521, 536, 568.
*Phthalic anhydride-glycerol-rosin and rosin ester.	20, 66, 91, 92, 103, 131, 170, 186, 193, 194, 239, 263, 297, 333, 346, 391, 395, 422, 453, 463, 464, 493, 521, 532, 536, 568.
Phthalic anhydride-glycerol-tall oil-----	304.
Phthalic anhydride-glycol-pentaerythritol-abitol alcohol and tall oil.	391, 422, 463, 521.
*Phthalic anhydride-maleic anhydride-glycerol-pentaerythritol-rosin ester.	297, 304, 395, 464, 521.
Phthalic anhydride-maleic anhydride-glycerol-phenol-formaldehyde-rosin and rosin ester.	304, 453, 463, 521.

TABLE 19B.--Synthetic organic chemicals: Plastics and resin materials for which United States production or sales were reported, identified by manufacturer, 1953--Continued

Material	Manufacturers' identification numbers (according to list in table 27)
PLASTICS AND RESIN MATERIALS, BENZENOID--Continued	
*Phthalic alkyd resins--Continued	
*Modified--Continued	
*Rosin and rosin ester modified--Continued	
*Phthalic anhydride-maleic anhydride-glycerol-rosin and rosin ester.	44, 79, 148, 192, 304, 391, 395, 399, 422, 453, 521, 536, 544.
Phthalic anhydride-maleic anhydride-pentaerythritol-phenol-formaldehyde-rosin ester.	212.
*Phthalic anhydride-maleic anhydride-pentaerythritol-rosin ester.	25, 175, 212, 263, 346, 391, 422, 463, 521.
*Phthalic anhydride-maleic anhydride-pentaerythritol-tall oil.	96, 175, 186, 263, 391, 395, 409, 463, 536.
Phthalic anhydride-pentaerythritol-phenol-formaldehyde-rosin and rosin ester.	395, 568.
*Phthalic anhydride-pentaerythritol-rosin and rosin ester.	4, 66, 91, 103, 138, 170, 175, 186, 222, 239, 261, 361, 391, 393, 395, 463, 521, 568.
*Phthalic anhydride-pentaerythritol-tall oil----	92, 154, 175, 391, 395, 463, 521, 532, 581.
All other-----	20, 44, 91, 192, 297, 333, 422, 493, 544.
*Styrene and styrene derivative polymer and copolymer resins:	
Polymethyl styrene-----	437, 448.
*Polystyrene-----	158, 245, 323, 448, 487, 524.
Styrene-acrylonitrile copolymer-----	378, 487.
*Styrene-alkyd polyesters:	
Adipic acid-fumaric acid-glycol-styrene-----	137, 464.
Adipic acid-glycol-styrene-----	493.
Maleic anhydride-adipic acid-glycol-styrene-----	464, 493.
Maleic anhydride-glycerol-styrene-----	378.
Maleic anhydride-glycol-styrene-----	346, 493.
Maleic anhydride-styrene-----	245, 437, 524, 535.
Phthalic anhydride-fumaric acid-glycol-pentaerythritol-styrene.	167, 395.
Phthalic anhydride-fumaric acid-glycol-styrene--	137, 346, 464.
*Phthalic anhydride-glycerol-pentaerythritol-styrene.	131, 186, 304, 391, 453.
*Phthalic anhydride-glycerol-styrene-----	91, 131, 333, 391, 395, 453, 464, 521, 568.
Phthalic anhydride-maleic anhydride-adipic acid-glycol-styrene.	295.
*Phthalic anhydride-maleic anhydride-glycol-styrene.	167, 391, 395, 418, 422, 453, 464, 487, 493, 536.
Phthalic anhydride-maleic anhydride-pentaerythritol-styrene.	568.
All other-----	395, 422, 464, 487, 493.
*Styrene-butadiene copolymer-----	111, 243, 323, 378, 396, 437, 448, 481, 496, 563.
*Styrene-divinylbenzene copolymer-----	295, 448, 463, 493, 577.
All other-----	134, 245, 333, 422, 453, 487, 493, 545, 568, 577, X.
Toluenesulfonamide resins-----	245, 464.
All other benzenoid plastics and resin materials----	487, 536, 550.
PLASTICS AND RESIN MATERIALS, NONBENZENOID	
Acetone-formaldehyde resins-----	464, 487, 568.
Acrylic resins-----	41, 333, 374, 437, 453, 464, 493, 545.
*Alkyd resins (except phthalic):	
*Unmodified:	
Adipic acid-glycerol-----	148, 493.
Adipic acid-glycerol-glycol-----	422, 463.
Adipic acid-glycol-----	148, 346, 422, 464, 493.
Cyclopentadiene-glycerol-----	391.
Fumaric acid-glycol-----	417, 464.
*Fumaric acid-pentaerythritol-----	297, 361.
*Maleic anhydride-glycerol-----	96, 103, 346, 521, 566.
Maleic anhydride-glycol-----	346, 464.
Maleic anhydride-pentaerythritol-----	297, 304, 395, 521.
Sebacic acid-glycerol-----	44, 170, 186, 395, 493, 568.
Sebacic acid-glycol-----	463, 464, 493.
All other-----	137, 167, 297, 346, 417, 464, 521.
*Modified:	
Fumaric acid-glycerol-pentaerythritol-tall oil--	304, 521.
*Fumaric acid-glycerol-rosin and rosin ester----	192, 346, 391, 463, 464, 493, 521, 568, 581.
*Fumaric acid-glycol-rosin and rosin ester----	532, 581.
*Fumaric acid-pentaerythritol-rosin and rosin ester.	25, 91, 361, 463, 493, 521, 544.
*Maleic anhydride-glycerol-pentaerythritol-rosin and rosin ester.	120, 170, 297, 393, 422, 463, 493, 532.
Maleic anhydride-glycerol-pentaerythritol-sorbitol-rosin.	170.
*Maleic anhydride-glycerol-rosin and rosin ester--	20, 49, 66, 84, 91, 106, 131, 154, 170, 192, 193, 204, 222, 272, 292, 391, 395, 453, 463, 464, 490, 493, 521, 532, 536, 568.
Maleic anhydride-glycol-pentaerythritol-rosin---	346.

TABLE 19B.--Synthetic organic chemicals: Plastics and resin materials for which United States production or sales were reported, identified by manufacturer, 1953--Continued

Material	Manufacturers' identification numbers (according to list in table 27)
PLASTICS AND RESIN MATERIALS, NONBENZENOID--Continued	
*Alkyd resins (except phthalic)--Continued	
*Modified--Continued	
*Maleic anhydride-glycol-rosin and rosin ester---	222, 409, 463, 521.
Maleic anhydride-pentaerythritol-phenol- formaldehyde-rosin ester.	257.
*Maleic anhydride-pentaerythritol-rosin and rosin ester.	64, 66, 79, 92, 106, 127, 192, 204, 222, 239, 297, 304, 391, 395, 409, 422, 463, 503, 521, 536, 568, 579.
Maleic anhydride-pentaerythritol-sorbitol-rosin---	91.
*Maleic anhydride-pentaerythritol-tall oil-----	91, 93, 95, 192, 212, 257, 263, 395, 422, 521, 544, 568.
All other-----	79, 96, 175, 192, 297, 391, 395, 422, 463, 464, 487.
Butadiene-acrylonitrile copolymer resins-----	350, 378, 437.
Furfuryl resins-----	339, 524.
Polyamide (Nylon) resins-----	228, 333.
Polychloro- and polyfluorethylene resins-----	243, 333.
Polyethylene resins-----	333, 392, 605.
Polyterpene type resins-----	134.
*Rosin and terpene adduct resins:	
*Pumaric acid-rosin-----	106, 192, 204, 463, 464, 493, 521, 568, 581.
*Maleic anhydride-rosin-----	391, 422, 453, 464, 490, 521, 568.
All other-----	103, 222, 387.
*Rosin esters, unmodified:	
*Rosin-glycerol-----	91, 103, 106, 154, 175, 192, 222, 292, 361, 391, 395, 453, 463, 490, 532, 536, 568, 579.
*Rosin-glycerol-pentaerythritol-----	106, 222, 304, 463, 568.
Rosin-glycol-----	222, 422, 463.
*Rosin-pentaerythritol-----	20, 25, 93, 95, 106, 170, 222, 239, 361, 395, 463, 521, 532, 536, 568.
Tall oil-glycerol-----	91, 395, 536.
Tall oil-methanol-----	96, 222, 422.
Tall oil-pentaerythritol-----	84, 175, 395, 521, 532, 544, 568, 581.
All other-----	222, 487, 544, 568.
*Silicone resins-----	315, 334, 346, 387, 487, 536.
*Urea and melamine resins:	
*Urea-formaldehyde type:	
*Butylurea-formaldehyde-----	91, 245, 333, 391, 464, 493, 536.
Isobutylurea-formaldehyde-----	333, 464, 536.
*Urea-formaldehyde-----	82, 91, 131, 178, 196, 207, 222, 245, 310, 333, 374, 395, 407, 428, 449, 453, 464, 487, 493, 524, 533, 535, 536, 566, 568, 575, 596.
All other-----	30, 333, 463, 464, 493, 535, 536, 566.
*Melamine-formaldehyde type:	
Butylmelamine-formaldehyde-----	245, 333, 464, 493, 536.
Butylmelamine-urea-formaldehyde-----	188, 245, 493.
Melamine-formaldehyde-----	245, 346, 464, 524, 536.
Melamine-urea-formaldehyde-----	464, 524.
All other-----	464, 493.
*Vinyl and vinyl copolymer resins:	
*Polyvinyl acetate-----	178, 184, 249, 296, 333, 374, 392, 437, 449, 493, 496, 532, 568.
Polyvinyl alcohol-----	249, 296, 333.
Polyvinyl butyral-----	249, 333, 392.
*Polyvinyl chloride and copolymers:	
*Polyvinyl chloride-----	242, 243, 245, 354, 378, 448, 563.
Polyvinyl chloride-vinylidene chloride-----	243, 448, 563.
All other-----	243, 392.
All other vinyl and vinyl copolymer resins-----	249, 333, 563.
All other nonbenzenoid plastics and resin materials-	243, 333, 391, 429, 464, 487, 536, 550, 563, 575, 577.

Rubber-Processing Chemicals

TABLE 21B.--Synthetic organic chemicals: Rubber-processing chemicals for which United States production or sales were reported, identified by manufacturer, 1953

[Rubber-processing chemicals for which separate statistics are given in table 21A are marked below with an asterisk (*); chemicals not so marked do not appear in table 21A because the reported data are confidential and may not be published. Manufacturers' identification numbers shown below are taken from table 27]

Chemical	Manufacturers' identification numbers (according to list in table 27)
RUBBER-PROCESSING CHEMICALS, CYCLIC	
*Accelerators:	
Aldehyde-amines:	
Acetaldehyde-aniline-----	378, 563.
*Butyraldehyde-aniline-----	245, 333, 378.
α -Ethyl- β -propylacrylanilide-----	56.
Formaldehyde-aniline (Methyleneaniline)-----	333.
Formaldehyde-p-toluidine (Methylene-p-toluidine).-----	333.
Heptaldehyde-aniline-----	378.
Triethyltrimethylenetriamine-----	378.
Dithiocarbamic acid derivatives:	
Carbon disulfide-methylenedipiperidine-----	245.
Dibenzylidithiocarbamic acid, zinc salt-----	378.
Dibutylidithiocarbamic acid, diphenylguanidine salt.-----	56.
Dimethylethylene diphenylidithiocarbamic acid, lead salt.-----	56.
2,4-Dinitrophenyl dimethylidithiocarbamate-----	378.
Piperidinium pentamethylenedithiocarbamate-----	245.
Piperidinium pentamethylenedithiocarbamic acid, potassium salt.-----	333.
*Guanidines:	
Dicetechol borate, di-o-tolylguanidine salt-----	333.
Diphenylguanidine-----	245, 464.
Diphenylguanidine phthalate-----	245.
Di-o-tolylguanidine-----	333, 464.
Triphenylguanidine-----	527.
*Thiazole derivatives:	
2-Benzothiazyl-N,N-diethylthiocarbamyl sulfide-----	580.
Bis[N,N'-2(2-benzothiazylthiomethyl)urea]-----	245.
N-Cyclohexyl-2-benzothiazolesulfenamido-----	245.
2-(2',4'-Dinitrophenylthio)benzothiazole-----	245.
*2,2'-Dithiobis [benzothiazole] (2,2'-Benzothiazyl disulfide).-----	245, 378, 396, 464.
*2-Mercaptobenzothiazole-----	245, 378, 396, 464, 580.
2-Mercaptobenzothiazole, sodium salt-----	245, 396, 464.
2-Mercaptobenzothiazole, zinc salt-----	396, 464.
2-Mercaptobenzothiazole phenylbiguanide-----	464.
2-Mercaptobenzothiazoline-----	464.
N-Oxydiethylene-2-benzothiazolesulfenamido-----	396, 464.
Miscellaneous compounds:	
Dibenzylamine-----	378.
Di-N-pentamethylenethiuram tetrasulfide-----	333.
2-Imidazole-2-thiol-----	333.
Poly-p-dinitrosobenzene-----	333.
p-Quinonedioxime-----	333.
p-Quinonedioxime dibenzoate-----	378.
*Antioxidants:	
Aldehyde- and acetone-amines:	
Acetaldehyde-aniline hydrochloride-----	245, 378.
p-Aminodiphenyl-acetone-----	245.
Aniline-acetone, acid derivatives-----	245.
Diphenylamine-acetone-----	378.
p-Phenetidine-acetone-----	245.
Phenyl-2-naphthylamine-acetone-----	378.
*Amino or hydroxy compounds:	
p,p'-Diaminophenylmethane-----	378.
2,5-Di-tert-amyhydroquinone-----	245.
2,5-Di-tert-butylhydroquinone-----	245.
p,p'-Dimethoxydiphenylamine-----	333.
N,N'-Di-2-naphthol-p-phenylenediamine-----	563.
N,N'-Diphenylethylenediamine-----	56, 429.
N,N'-Diphenyl-p-phenylenediamine-----	245, 333, 378, 563.
N,N'-Diphenylpropylenediamine-----	56.
Di-o-tolyethylenediamine-----	56.
Hydroquinone monobenzyl ether-----	563.
p-Hydroxydiphenylamine-----	333, 563.
p-Isopropoxydiphenylamine-----	563.
p,p'-Isopropylidenediphenol (β -Di-p-hydroxyphenylpropane).-----	396.
Octyldiphenylamine-----	378.
Octyldiphenylamine, alkylated-----	563.
N-Phenyl-1-naphthylamine-----	333, 527.
N-Phenyl-2-naphthylamine-----	333, 563.
Tetramethyl diphenylethylenediamine-----	429.

TABLE 21B.--Synthetic or organic chemicals: Rubber-processing chemicals for which United States production or sales were reported, identified by manufacturer, 1953--Continued

Chemical	Manufacturers' identification numbers (according to list in table 27)
RUBBER-PROCESSING CHEMICALS, CYCLIC--Continued	
*Antioxidants--Continued	
*Amino or hydroxy compounds--Continued	
Thiobis [di- <i>sec</i> -amylphenol]-----	245.
4,4'-Thiobis [6- <i>tert</i> -butyl- <i>m</i> -cresol]-----	245.
p-(p-Toluenesulfonamido)diphenylamine-----	378.
N- <i>o</i> -Tolyl-2-naphthylamine-----	396.
Miscellaneous compounds:	
Aldo- <i>a</i> -naphthylamine condensation-----	563.
Dieresyl disulfide-----	378.
2,2'-Methylenebis[4-methyl-6- <i>tert</i> -butylphenol]-----	464.
Nonylphenyl dioctylphenyl phosphite-----	378.
Phenol, alkylated-----	56, 396.
Phenol, styrenated-----	563.
2,2,4-Trimethyldihydroquinoline-----	563.
Inhibitors: N-Nitrosodiphenylamine-----	563.
Peptizers:	
<i>o,o'</i> -Dibenzamidophenyl disulfide-----	464.
Phenylhydrazine zinc chloride salt-----	333.
2-Naphthyl mercaptan-----	333.
Xylol mercaptide, zinc salt-----	333.
All other-----	333.
Tackifiers:	
p- <i>tert</i> -Amylphenol sulfide-----	580.
Bis[<i>iso</i> -octylhydroxyphenylmethylene]-----	348.
RUBBER-PROCESSING CHEMICALS, ACYCLIC	
*Accelerators:	
*Dithiocarbamic acid derivatives:	
Dibutyldithiocarbamic acid, dimethylcyclohexyl- amine salt-----	245.
Dibutyldithiocarbamic acid, nickel salt-----	333.
Dibutyldithiocarbamic acid, sodium salt-----	333, 364, 378.
*Dibutyldithiocarbamic acid, zinc salt-----	245, 254, 364, 378, 396, 580.
Diethyldithiocarbamic acid, diethylammonium salt-----	580.
Diethyldithiocarbamic acid, selenium salt-----	254, 580.
Diethyldithiocarbamic acid, sodium salt-----	378, 498.
Diethyldithiocarbamic acid, tellurium salt-----	254.
*Diethyldithiocarbamic acid, zinc salt-----	245, 254, 364, 378, 396, 580.
Diethyldithiocarbamic acid, bismate salt-----	254.
Dimethyldithiocarbamic acid, copper salt-----	254, 447.
Dimethyldithiocarbamic acid, dimethylammonium salt-----	378.
Dimethyldithiocarbamic acid, lead salt-----	254.
*Dimethyldithiocarbamic acid, potassium salt-----	137, 378, 396, 580.
Dimethyldithiocarbamic acid, selenium salt-----	254.
All other-----	378, 396.
Thiurams:	
Methylethylthiuram disulfides, mixed-----	580.
Tetrabutylthiuram monosulfide-----	378.
Tetraethylthiuram disulfide-----	378, 396, 580.
*Tetramethylthiuram disulfide-----	245, 333, 378, 396, 563, 580.
*Tetramethylthiuram monosulfide-----	245, 333, 378, 396.
Tetramethylthiuram tetrasulfide-----	333.
Xanthates:	
Di- <i>n</i> -butylxantho disulfide-----	378.
Diisopropylxantho disulfide-----	563.
Potassium butyl xanthate-----	378.
Zinc dibutyl xanthate-----	378, 396.
Miscellaneous compounds:	
<i>n</i> -Butyraldehyde-butylamine-----	333.
Di- <i>n</i> -butylammonium oleate-----	137, 333.
*Peptizers:	
Alkyl mercaptans, mixed-----	443.
Cadmium lauryl mercaptide-----	243.
*Dodecyl mercaptans-----	146, 338, 443, 580.
<i>tert</i> -Hexadecyl mercaptan-----	443.
Zinc laurate-----	378.
All other-----	333.

Elastomers (Synthetic Rubbers)

TABLE 22B.--Synthetic organic chemicals: Elastomers (synthetic rubbers) for which United States production or sales were reported, identified by manufacturer, 1953

[Elastomers (synthetic rubbers) for which separate statistics are given in table 22A are marked below with an asterisk (*); products not so marked do not appear in table 22A because the reported data are confidential and may not be published. Manufacturers' identification numbers shown below are taken from table 27. An X signifies that the manufacturer did not consent to the publication of his identification number with the designated product]

Product	Manufacturers' identification numbers (according to list in table 27)
ELASTOMERS, CYCLIC	
*Polybutadiene-styrene type (Buna S, GR-S)-----	105, 125, 146, 243, 273, 396, 443, 459, 601, 602.
ELASTOMERS, ACYCLIC	
Polyacrylate ester type-----	563.
Polyalkylene sulfide type (Thiokol)-----	412.
*Polybutadiene-acrylonitrile type (N-type)-----	243, 350, 378, 396, 563.
Polybutadiene type-----	396.
Polybutadiene-styrene-vinylpyridine type-----	137.
Polybutadiene-vinylpyridine type-----	333.
*Polychloroprene type (Neoprene, GR-M)-----	333.
Polyisobutylene type-----	X.
*Polyisobutylene-isoprene type (Butyl, GR-I)-----	94, 481.
*Polyvinyl type-----	245, 392, 563.
Reaction products of natural rubber:	
Cyclorubbers-----	396.
Polymerized chlorinated rubber (Parlon)-----	222.
Silicone type-----	315, 346.

Plasticizers

TABLE 23B.--Synthetic organic chemicals: Plasticizers for which United States production or sales were reported, identified by manufacturer, 1953

[Plasticizers for which separate statistics are given in table 23A are marked below with an asterisk (*); products not so marked do not appear in table 23A because the reported data are confidential and may not be published. Manufacturers' identification numbers shown below are taken from table 27. An X signifies that the manufacturer did not consent to the publication of his identification number with the designated product]

Chemical	Manufacturers' identification numbers (according to list in table 27)
PLASTICIZERS, CYCLIC	
Camphor, synthetic-----	333.
Coumarone-indene plasticizer-----	327.
N-Cyclohexyl-p-toluenesulfonamide-----	245.
Dibenzyl sebacate-----	86.
Di-tert-octylidiphenyl oxide-----	448.
Diphenyl cyclohexyl, o-, m-, p-----	245.
Dipropylene glycol dibenzoate-----	331.
Ethyl oxanilate-----	504.
N-Ethyl-p-toluenesulfonamide-----	245.
Isopropylidenediphenoxypropanol-----	448.
Naphthalene, alkylated-----	234.
Phenoxyethyl compounds-----	417.
Phosphoric acid esters:	
Cresyl diphenyl phosphate-----	245.
Dibutylphenyl phosphate-----	245.
Diphenyl mono-o-xenyl phosphate-----	448.
Diphenyl octyl phosphate-----	245.
Tri(p-tert-butylphenyl) phosphate-----	448.
*Trioresyl phosphate-----	128, 245, 418, 574.
*Triphenyl phosphate-----	245, 418, 498, 536.
Polyoxyalkylene phenol-----	417.
*Phthalic anhydride esters:	
Butyl benzyl phthalate-----	245.
Butyl cyclohexyl phthalate-----	536.
Butyl decyl phthalate-----	456.
Butyl phthalyl butyl glycolate-----	245.
Castor oil phthalate, hydrogenated-----	333.
Diallyl phthalate-----	128, 258.
Diamyl phthalate-----	463.
Di(2-butoxyethyl) phthalate (Di(butyl cellosolve) phthalate).-----	128, 333, 370.

TABLE 23B.--Synthetic organic chemicals: Plasticizers for which United States production or sales were reported, identified by manufacturer, 1953--Continued

Chemical	Manufacturers' identification numbers (according to list in table 27)
PLASTICIZERS, CYCLIC--Continued	
*Phthalic anhydride esters--Continued	
*Dibutyl phthalate-----	40, 86, 128, 245, 314, 333, 367, 422, 456, 463, 483, 496, 536, 574.
*Dicapryl phthalate-----	86, 128, 456, 493, 516, 536.
Dicyclohexyl phthalate-----	128, 333, 536.
Didecyl phthalate-----	450, 530.
Di(2-(2-ethoxyethoxy)ethyl) phthalate (Dicarbitol phthalate).	128.
Di(2-ethoxyethyl) phthalate (Dicellosolve phthalate).	128.
Di(2-ethylbutyl) phthalate-----	483.
*Diethyl phthalate-----	222, 245, 266, 463, 483, 536.
Diethyl phthalate-----	86, 485.
Diisobutyl phthalate-----	483.
Diisodecyl phthalate-----	245.
*Di(2-methoxyethyl) phthalate (Di(methyl cello- solve) phthalate).	128, 333, 370, 483.
*Dimethyl phthalate-----	245, 266, 333, 463, 483.
Dinonyl phthalate-----	450, 456.
Dioctyl capryl phthalate-----	456, 530.
*Dioctyl phthalates:	
*Di(2-ethylhexyl) phthalate-----	40, 86, 128, 314, 333, 392, 450, 456, 483, 496, 530, 536.
*Di-n-octyl phthalate, diiso-octyl phthalate, and mixtures.	40, 86, 128, 222, 245, 422, 450, 456, 496, 516, 530, 536, 563.
Diphenyl phthalate-----	245, 516.
Ethyl phthalyl ethyl glycolate-----	245.
Isobutyl castor oil phthalate-----	333.
Iso-octyl capryl phthalate-----	422, 450, 456, 516.
Methyl phthalyl ethyl glycolate-----	245.
*Octyl decyl phthalate-----	40, 128, 222, 245, 422, 450.
Tetrahydrofurfuryl oleate-----	499.
Toluenesulfonamide, o-, p- mixture-----	245.
All other-----	128, 580.
PLASTICIZERS, ACYCLIC	
*Adipic acid esters:	
Di(2-(2-butoxyethoxy)ethyl) adipate (Di(butyl carbitol) adipate).	412.
Di(2-butoxyethyl) adipate (Di(butyl cellosolve) adipate).	128, 333.
Dicapryl adipate-----	86.
Didecyl adipate-----	450, 516, 530.
*Di(2-ethylhexyl) adipate-----	128, 370, 392, 450, 456, 483, 530.
Di-n-hexyl adipate-----	86.
Diisooamyl adipate-----	493.
Diisobutyl adipate-----	128, 450, 483, 530.
*Diiso-octyl adipate-----	40, 86, 128, 370, 450, 456, 493, 516, 530.
Dinonyl adipate-----	456.
Dipropyl adipate-----	370.
n-Octyl decyl adipate-----	128, 222, 450.
All other-----	563.
Azelaic acid esters:	
Di-n-butyl azelate-----	370, 483.
Di(2-ethylbutyl) azelate-----	499.
Di(2-ethylhexyl) azelate-----	499.
Diisobutyl azelate-----	262, 483, X.
All other-----	530, X.
2-(2-Butoxyethoxy)ethyl pelargonate-----	262.
2-Butoxyethyl diglycol carbonate-----	391.
Butyl myristate-----	365, 370.
Castor oil maleate-----	493.
Citric and acetylcitric acid esters:	
Tributyl acetylcitrate-----	415, 463.
Tri-n-butyl citrate-----	415, 463.
Triisobutyl citrate-----	483.
Di(butoxyethoxy-ethoxy) methane-----	412.
Dibutyl tartrate-----	314, 370.
Dicapryl diglycolate-----	128.
Diethylene glycol dipelargonate-----	499.
Diethylene glycol ester of coconut oil fatty acid--	123, X.
Diethyl maleate-----	483.
Glyceryl diacetyl tartrate monoesters-----	541.
Glyceryl tributyrate (Tributylin)-----	483, 511.
Glyceryl tripropionate-----	483.
Isopropyl myristate-----	255, 365.
*Lauric acid esters:	
2-Butoxyethyl laurate (Butyl cellosolve laurate)--	262, 370.
Butyl laurate-----	370.

TABLE 23B.--Synthetic organic chemicals: Plasticizers for which United States production or sales were reported, identified by manufacturer, 1953--Continued

Chemical	Manufacturers' identification numbers (according to list in table 27)
PLASTICIZERS, ACYCLIC--Continued	
*Lauric acid esters--Continued	
Glyceryl monolaurate-----	183, 262, 370.
Methyl laurate-----	108, 370.
*Oleic acid esters:	
2-Butoxyethyl oleate (Butyl cellosolve oleate)----	262, 370.
*Butyl oleate-----	128, 262, 314, 365, 370, 374, 421.
Dimethylamine oleate-----	493.
*Glyceryl trioleate-----	123, 403, 438, 499.
Methyl oleate-----	183, 365, 370, 421, 499.
n-Propyl oleate-----	403, 499.
Triethanolamine oleate-----	493.
All other-----	128, 493.
Palmitic acid esters:	
Isobutyl palmitate-----	483.
Methoxyethyl palmitate-----	483.
Octyl palmitate-----	40.
*Phosphoric acid esters:	
Tri(2-butoxyethyl) phosphate (Tri(butyl cellosolve) phosphate).-----	128.
Tributyl phosphate-----	128, 367.
Triethyl phosphate-----	483.
Triisobutyl phosphate-----	483.
Tricetyl phosphate-----	392.
Polyethylene glycol di-2-ethylhexoate-----	392.
Polyethylene glycol ester of soybean oil fatty acid-----	374, 450.
*Ricinoleic and acetylricinoleic acid esters:	
n-Butyl acetylricinoleate-----	219.
Butyl ricinoleate-----	219, 450.
Cyclohexyl ricinoleate-----	450.
Diethylene glycol monoricinoleate-----	183, 262, 370.
Glyceryl monoricinoleate-----	123, 183, 219, 262, 370, 421.
Glyceryl triacetylricinoleate-----	219.
2-Methoxyethyl acetylricinoleate (Methyl cellosolve acetylricinoleate).-----	219, 450.
Methyl acetylricinoleate-----	219.
Methyl ricinoleate-----	219, 421.
Propylene glycol monoricinoleate-----	219, 370.
All other-----	370, 450.
*Sebacic acid esters:	
Diamyl sebacate-----	493.
Di(2-butoxyethyl) sebacate (Di(butyl cellosolve) sebacate).-----	450.
*Dibutyl sebacate-----	86, 262, 450, 456, 483, 493.
Dicapryl sebacate-----	86.
*Di(2-ethylhexyl) sebacate-----	86, 450, 456, 493, 516.
Diiso-octyl sebacate-----	40, 86, 493.
Dimethyl sebacate-----	86, 494.
Dinonyl sebacate-----	450.
Polyethylene glycol 2-ethylhexyl sebacate-----	516.
All other-----	86.
*Stearic acid esters:	
2-Butoxyethyl stearate (Butyl cellosolve stearate)-----	128, 370.
Butyl epoxystearate-----	128.
*Butyl stearate-----	86, 128, 314, 365, 367, 370, 403, 421, 450, 483.
Diethylene glycol distearate-----	370, 374.
Dimethylammonium stearate-----	493.
2-Ethylbutyl stearate-----	450.
2-Ethylhexyl stearate-----	128.
Ethyl stearate-----	370.
Glyceryl monohydroxystearate-----	421.
2-Methoxyethyl stearate (Methyl cellosolve stearate).-----	262, 370.
Methyl dichlorostearic acid-----	338.
Methyl pentachlorostearate-----	338.
Methyl stearate-----	370.
Polyglyceryl stearate-----	541.
All other-----	370.
Triethylene glycol di(caprylate-caprate)-----	40, 108, 438.
Triethylene glycol di-2-ethylbutyrate-----	392.
Triethylene glycol di-2-ethylhexoate-----	392.
All other-----	262, 392, 493, X.

Surface-Active Agents

TABLE 24B.--Synthetic organic chemicals: Surface-active agents for which United States production or sales were reported, identified by manufacturer, 1953

[Surface-active agents for which separate statistics are given in table 24A are marked below with an asterisk (*); products not so marked do not appear in table 24A because the reported data are confidential and may not be published. Manufacturers' identification numbers shown below are taken from table 27. An X signifies that the manufacturer did not consent to the publication of his identification number with the designated product]

Chemical	Manufacturers' identification numbers (according to list in table 27)
SURFACE-ACTIVE AGENTS, CYCLIC	
*Esters and ethers, nonsulfonated:	
Anhydrohexitol castor oil polyoxyalkylene ether----	417.
Anhydrohexitol dilaurate-----	417.
Anhydrohexitol dilaurate polyoxyalkylene ether-----	417.
Anhydrohexitol dioleate-----	417.
Anhydrohexitol glycerol monolaurate-----	417.
Anhydrohexitol monolaurate-----	417.
Anhydrohexitol monolaurate polyoxyalkylene ether-----	417.
Anhydrohexitol mono-oleate-----	342, 417.
Anhydrohexitol mono-oleate polyoxyalkylene ether-----	417.
Anhydrohexitol monopalmitate-----	417.
Anhydrohexitol monopalmitate polyoxyalkylene ether-----	417.
Anhydrohexitol monostearate-----	417.
Anhydrohexitol monostearate polyoxyalkylene ether-----	417.
Anhydrohexitol tall oil ester-----	417.
Anhydrohexitol tall oil polyoxyalkylene ether-----	417.
Anhydrohexitol tetrastearate-----	417.
Anhydrohexitol trioleate-----	417.
Anhydrohexitol trioleate polyoxyalkylene ether-----	417.
Anhydrohexitol triricinoleate-----	417.
Anhydrohexitol triricinoleate polyoxyalkylene ether-----	417.
Anhydrohexitol tristearate-----	417.
Anhydrohexitol tristearate polyoxyalkylene ether-----	417.
Anhydrosorbitol monostearate polyoxyalkylene ether-----	140.
Diisobutylphenoxy polyethoxy ethanol-----	550.
Dipropylene glycol salicylate-----	X.
Glucose polyoxyalkylene distearate-----	417.
Glucose polyoxyalkylene ether polyoxyalkylene oleate.	550.
Glucose polyoxyalkylene oleate-----	417.
Iso-octylphenoxy polyethoxyethanol-----	421, 493, 550.
Nonylphenoxy polyethoxyethanol-----	15, 222, 321, 417, 438, 550.
n-Octylphenoxy polyethoxyethanol-----	392.
Tetradecylphenoxy polyethoxyethanol-----	303.
*Nitrogen-containing surface-active agents, nonsulfonated:	
N-Alkylthylmorpholinium ethosulfates-----	417.
Benzylcetyltrimethylammonium chloride-----	374, 379, 493, 591.
Benzyltrimethyloctylammonium chloride-----	374.
Benzyltrimethylphenylammonium chloride-----	550.
1-(1-Benzyl-1-hydroxyethyl)-2-tridecyl imidazo- linium chloride.	342.
*Benzylauryltrimethylammonium chloride-----	374, 376, 479, 557, 591.
Benzylpolyethoxy coconut oil ammonium chloride-----	550.
Benzylpolyethoxy tall oil ammonium chloride-----	550.
Benzyltrimethylammonium chloride-----	367, 493.
Benzyltrimethylammonium hydroxide-----	591.
Caprylethyl-5-hydroxycycloimidine-sodium ethylate, sodium ethionate.	351.
Cetylpyridinium chloride-----	431, 591.
3,4-Dichlorobenzylauryltrimethylammonium chloride-----	374, 379, 557, 591.
1,1-Dihydroxyethyl-2-heptadecyl imidazolinium chloride.	342.
Dodecylmethylbenzyltrimethylammonium chloride-----	493, 591.
Ethanol diphenyl ethylenediamine-----	58.
Ethoxybenzyltrimethyloctylphenoxyammonium chloride-----	493.
2-Heptadecyl-1-hydroxyethyl-2-imidazoline-----	342.
2-Lauroyloxyethylcarbamylmethylpyridinium chloride (Lauryl ester of colaminoformylmethylpyridinium chloride).	541.
Lauryldimethylbenzyltrimethylammonium chloride-----	591.
Laurylethyl-5-hydroxycycloimidine, sodium ethylate, sodium ethionate.	351.
Laurylpyridinium chloride-----	338, 591.
Oleyl imidazoline-----	566, 573.
Oxazoline, substituted-----	367.
Rosin aminopolyethoxyethanol-----	550.
Rosin soap of polyamidoimidazoline-----	496.
Stearoyloxyethylcarbamylmethylpyridinium chloride-----	541.
Stearylethyl-5-hydroxycycloimidine, sodium ethylate, sodium ethionate.	351.

TABLE 24B.--Synthetic organic chemicals; Surface-active agents for which United States production or sales were reported, identified by manufacturer, 1953--Continued

Chemical	Manufacturers' identification numbers (according to list in table 27)
SURFACE-ACTIVE AGENTS, CYCLIC--Continued	
*Nitrogen-containing surface-active agents, nonsulfonated--Continued	
N-Xylol stearamide-----	385.
All other-----	1.
*Sulfated and sulfonated cyclic surface-active agents:	
Alkyl benzenoid compounds, sulfated and sulfonated:	
Benzyltrimethylphenylammonium chloride, sulfated, calcium salt.	429.
Dodecylbenzenesulfonic acid type-----	48, 245, 385, 561.
*Dodecylbenzenesulfonic acid type-----	15, 65, 140, 178, 191, 195, 210, 245, 276, 298, 332, 349, 385, 417, 429, 446, 473, 505, 516, 527, 529, 534, 549, 550, 555, 566, 571, 573, 596, X, X.
Dodecylbenzenesulfonic acid, butylammonium salt-----	245.
Dodecylbenzenesulfonic acid, isopropylammonium salt.	566.
Dodecyltoluenesulfonic acid-----	365.
Xylenesulfonic acid, sodium salt-----	446.
All other-----	573.
Lignin derivatives, sulfonated:	
Calcium lignosulfonate-----	19, 202.
Sodium lignosulfonate-----	19.
*Naphthalene derivatives, sulfonated:	
*Amylnaphthalenesulfonic acid, mono-----	464, 566.
Benzyl-naphthalenesulfonic acid, mono-----	550.
Butylisopropyl-naphthalenesulfonic acid, sodium salt.	470.
Butyl-naphthalenesulfonic acid, mono-----	294, 403, 495.
Diamyl-naphthalenesulfonic acid-----	178, 342.
*Dibutyl-naphthalenesulfonic acid-----	15, 342, 516, 550, 566.
Didodecyl-naphthalenesulfonic acid-----	516.
*Diisopropyl-naphthalenesulfonic acid-----	333, 374, 385, 421, 496, 516, 550.
Dilauryl-naphthalenesulfonic acid-----	421.
*Isopropyl-naphthalenesulfonic acid-----	333, 382, 429, 464, 527.
1,1'-Methylenebis[2-naphthalenesulfonic acid]-----	333.
Mixed alkylated naphthalenesulfonic acid-----	438, 589.
Octyl-naphthalenesulfonic acid-----	58.
Oleyl-naphthalenesulfonic acid-----	276.
Tetrahydronaphthalenesulfonic acid-----	333.
*Petroleum aromatic compounds, sulfonated:	
*Acid-layer-type petroleum sulfonate, sodium salt	81, 362, 404, 518, 555, 560.
Oil-layer-type petroleum sulfonate-----	81, 560.
Oil-layer-type petroleum sulfonate, ammonium salt.	518.
Oil-layer-type petroleum sulfonate, barium salt-----	210, 464, 518.
Oil-layer-type petroleum sulfonate, calcium salt-----	223, 303, 518.
Oil-layer-type petroleum sulfonate, lead salt-----	555.
*Oil-layer-type petroleum sulfonate, sodium salt-----	38, 81, 210, 223, 318, 362, 404, 405, 493, 502, 518, 566.
All other-----	1.
*All other sulfated and sulfonated cyclic surface-active agents:	
Butylbiphenylsulfonic acid-----	245.
Butylhydroxybiphenylsulfonic acid-----	245.
N-Cyclohexylpalmitoyltaurine-----	550.
Dibutylhydroxybiphenyldisulfonic acid-----	245.
Dioctyl sulfosuccinate, sodium salt-----	493.
N,N-Diethylcyclohexylamine salt of lauryl sulfate.	333.
Nonylphenoxy polyethoxyethyl sulfate-----	550, 571.
Octylphenoxy polyethoxyethyl sulfate-----	493.
Octylphenoxy polyethoxyethyl sulfonate-----	493.
Toluene sulfonate, sodium salt-----	385.
Trichlorophenol ethanolamine sulfate-----	550.
o-Xylenesulfonic acid, calcium salt-----	75.
SURFACE-ACTIVE AGENTS, ACYCLIC	
*Esters and ethers, nonsulfonated:	
Diethylene glycol ester of tall oil fatty acid-----	140, X.
*Diethylene glycol monolaurate-----	183, 262, 370, 421.
*Diethylene glycol mono-oleate-----	183, 262, 370, 421, 499, X.
*Diethylene glycol monostearate-----	123, 140, 183, 255, 262, 284, 370, 421, 431, 446, X, X.
Diisobutylene maleate, sodium salt-----	493.
Dipolyethoxyethyl ether of polyoxypropylene glycol-----	549.
Ethylene glycol mono-oleate-----	573.
*Ethylene glycol monostearate-----	123, 183, 255, 262, 370, 446.
Glycerol esters of normal fatty acids-----	417, X.

TABLE 24B.--Synthetic organic chemicals: Surface-active agents for which United States production or sales were reported, identified by manufacturer, 1953--Continued

Chemical	Manufacturers' identification numbers (according to list in table 27)
SURFACE-ACTIVE AGENTS, ACYCLIC--Continued	
*Esters and ethers, nonsulfonated--Continued	
Glyceryl maleate mono-oleate-----	X.
Glyceryl monococate-----	X.
Glyceryl monoester of lard-----	438, 541.
Glyceryl monoester of soybean oil-----	541.
*Glyceryl mono-oleate-----	123, 183, 259, 262, 370, 417, 421, 446, 499, 517, 541, X.
*Glyceryl monostearate-----	53, 123, 183, 255, 262, 276, 370, 421, 431, 438, 541, X.
Hexitol polyoxyalkylene beeswax ester-----	417.
Hexitol polyoxyalkylene dilaurate-----	417.
Hexitol polyoxyalkylene dioleate-----	417.
Hexitol polyoxyalkylene fatty acid ester-----	417.
Hexitol polyoxyalkylene hexalaurate-----	417.
Hexitol polyoxyalkylene hexaoleate-----	417.
Hexitol polyoxyalkylene hexastearate-----	417.
Hexitol polyoxyalkylene hexa(tall oil) ester-----	417.
Hexitol polyoxyalkylene lanolin ester-----	417.
Hexitol polyoxyalkylene mono(tall oil) ester-----	417.
Hexitol polyoxyalkylene oleate-----	417.
Hexitol polyoxyalkylene pentalaurate-----	417.
Hexitol polyoxyalkylene penta(tall oil) ester-----	417.
Hexitol polyoxyalkylene tetra(oleate, laurate) ester.	417.
Hexitol polyoxyalkylene tetra(tall oil) ester-----	417.
Methoxypolyethoxyethyl coconut oil ester-----	140, 370, 438.
Polybasic acid esters-----	466.
*Polyethoxyethyl castor oil ester-----	342, 421, 550, X.
*Polyethoxyethyl coconut oil ester-----	1, 178, 255, 276, 534, 573.
Polyethoxyethyl decyl ether-----	417.
*Polyethoxyethyl dilaurate-----	183, 342, 370, 374.
*Polyethoxyethyl dioleate-----	342, 370, 429, 573.
*Polyethoxyethyl distearate-----	284, 370, 517, X.
Polyethoxyethyl tert-dodecyl thioether-----	245, 464, 517, 573, 580.
Polyethoxyethyl fatty acid esters-----	470.
Polyethoxyethyl lauryl ether-----	178, 333, 417.
*Polyethoxyethyl monolaurate-----	24, 109, 262, 265, 284, 342, 370, 421, 438, 446, 517, 550.
*Polyethoxyethyl mono-oleate-----	109, 178, 183, 262, 284, 342, 370, 374, 385, 417, 421, 429, 438, 485, 517, 534, 550, 573, 581.
Polyethoxyethyl monopalmitate-----	417.
Polyethoxyethyl monoricinoleate-----	370, 421.
*Polyethoxyethyl monostearate-----	109, 140, 178, 183, 255, 262, 269, 284, 342, 370, 374, 417, 421, 479, 517, 550, X.
Polyethoxyethyl oleyl ether-----	333, 417, 550.
Polyethoxyethyl pelmitoylethenol-----	550.
Polyethoxyethyl rosin ester-----	222.
Polyethoxyethyl tall oil ester-----	58, 140, 245, 417, 421, 517, 550, 573, X.
Polyethoxyethyl tallow ester-----	140, 284, 429, 554.
Polyethoxyethyl tridecyl ether-----	417.
Polyethoxy stearate-----	493.
Polyglyceryl oleate-----	541.
Polyoxyalkylene fatty acid ester-----	417.
Polyoxyalkylene lanolin ether-----	417.
Polyoxyalkylene resin ester-----	417.
1,2-Propylene glycol monococate-----	X.
1,2-Propylene glycol monolaurate-----	183, 262, 370, 417, X.
1,2-Propylene glycol mono-oleate-----	262, 370, 483.
*1,2-Propylene glycol monostearate-----	123, 262, 276, 370, 541, X.
Propylene glycol polyoxyalkylene stearate-----	417.
Propylpolyethoxyethyl ether of polyoxypropylene glycol.	549.
*Nitrogen-containing surface-active agents, nonsulfonated:	
Alkylaminopolyethoxy ethanol-----	417.
Alkylsulfoamidoacetic acid, sodium salt-----	550.
N-(Aminoethyl)-N-(hydroxyethyl)oleamide (Oleamide of aminoethylethanolamine).	358, 385, 421.
*N-(Aminoethyl)-N-(hydroxyethyl)stearamide (Stear- amide of aminoethylethanolamine).	15, 140, 284, 332, 349, 358, 365, 374, 385, 403, 421, 428, 429, 566, 575.
Cetylbetaine-----	333, 591.
Cetylthylidimethylammonium bromide-----	591.
Cetyl, lauryl trimethylammonium bromide, mixed----	333.
Cetyltrimethylammonium acetate-----	591.
Cetyltrimethylammonium bromide-----	591.
Cocate diethanolamine-----	X.
Coconut oil amide of aminoethylethanolamine-----	140, 332.
*Coconut oil amide of mono(diethanolamine) (Diethanol lauramide).	109, 115, 284, 332, 342, 349, 374, 385, 421, 429, 438, 446, 529, 561, 571, 575, X.

TABLE 24B.--Synthetic organic chemicals: Surface-active agents for which United States production or sales were reported, identified by manufacturer, 1953--Continued

Chemical	Manufacturers' identification numbers (according to list in table 27)
SURFACE-ACTIVE AGENTS, ACYCLIC--Continued	
*Nitrogen-containing surface-active agents, nonsulfonated--Continued	
*Cocnut oil amide of bis(diethanolamine)-----	17, 48, 140, 178, 265, 385, 421, 446, 566, 573, X.
Cocnut oil amide of diethanolamine (neither bis nor mono).	535.
Cocnut oil amide of diethylenetriamine-----	58, 421.
Cocnut oil amide of isopropanolamine-----	178, 385, 446.
Cocnut oil amide of monoethanolamine (Ethanol lauramide).	15, 58, 178, 276, 349, 374, 446, 566, X.
Cocnut oil ester of ethanolamine hydrochloride----	541.
Cocnut oil trimethylammonium chloride-----	23.
Decylbetaine-----	333.
Dicocnut oil dimethylammonium chloride-----	23.
Dihydrogenated tallow dimethylammonium chloride----	23.
N,N-Di(2-hydroxyethyl)bisoleamide-----	573.
N,N-Di(2-hydroxyethyl)lauramide (Diethanolamine laurate).	333.
*N,N-Di(2-hydroxyethyl)oleamide (Diethanol oleamide)	109, 123, 342, 403, 446, X.
*N,N-Di(2-hydroxyethyl)stearamide (Diethanol stearamide).	58, 342, 385, 421, 446, 566.
Dilaurylammonium bromide-----	374.
Dodecyltrimethylammonium bromide-----	333.
Dodecyltrimethylammonium chloride-----	23.
Dodecyltrimethylammonium tosylate-----	591.
Ethanol laurylamide-ethylene oxide condensate-----	385.
N,N-Ethylene bisstearamide-----	123, 342.
Fish oil amide of diethanolamine, potassium salt----	535.
N-(2-Hydroxyethyl)myristamide (Ethanol myristamide)	X.
N-(2-Hydroxyethyl)oleamide (Ethanol oleamide)-----	421, 575.
N-(2-Hydroxyethyl)stearamide-----	333.
N-(Hydroxymethyl)stearamide (Methylolstearamide)----	333.
N-(Hydroxymethyl)stearamide, methyl ester-----	333.
N-(2-Hydroxypropyl)oleamide (Isopropanol oleamide)----	X.
Lauric myristic diethanolamine-----	X.
N-Lauroylisopropanolamide-----	342.
N-Lauroylpolypeptide-----	244, 274.
Lauroylsarcoside-----	342, 550, 566.
Nitrogen base stearates-----	332.
Octadecylethyltrimethylammonium bromide-----	591.
Octadecyltrimethylammonium chloride-----	23.
Octadecyltrimethylenediamine-----	23.
Oleamide of diethylenetriamine-----	358.
Oleylamino polyethoxyethanol-----	550.
Oleylbiguanide hydrochloride-----	550.
Oleylpolypeptide-----	274.
Oleylsarcosin (N-Methyloleyl glycine), sodium salt----	550.
Palm oil amide of aminoethylethanolamine-----	403.
N-Polyethoxy cocosamine-----	550.
Polyethoxyethanol mixed fatty amides and amines----	23, 550.
Polyethoxyethyl casein-----	550.
Polypeptide-----	274.
Soybean oil acyl chloride salt of sodium lysylbinate.	244.
Soybean oil diethyltri-amino-ethylene oxide addition product, ammonium salt.	550.
Soybean oil trimethylammonium chloride-----	23.
*Stearamide of diethylenetriamine-----	58, 358, 365, 374, 382, 429, 575.
*Stearamide of tetraethylenepentamine-----	332, 365, 374.
1-Stearamido-1'-adipoamido diethylenamine-----	58.
1-Stearamido-1'-sebacamido diethylenediamine-----	58.
Stearic acid ester of N-(2-hydroxyethyl)stearamide----	446, X.
Stearylaminopolyethoxyethanol-----	417, 550.
Stearylbiguanide hydrochloride-----	550.
Triethanolamine cocnut oil ester-----	446.
Triethanolamine oleate-----	302, 429.
Triethanolamine stearate-----	24.
Trihexylammonium sulfotricarballylate-----	550.
Trimethylstearyl ammonium bromide-----	333.
*Phosphorus-containing surface-active agents, nonsulfonated:	
Alkyl phosphates (mixed, nonionic)-----	208.
Alkyl polyphosphate, sodium salt-----	208.
Diethanolamine salts of mixed mono- and dialkyl acid phosphates.	333.
Ethylhexyl sodium phosphate-----	392.
Lauryl phosphate-----	333.
Octyl polyphosphate, potassium salt-----	535.
Octyl polyphosphate, sodium salt-----	208, 535.
Octyl polyphosphonate and phosphate-----	535.
Phosphorus derivatives of capryl and octyl alcohol----	332.

TABLE 24B.--Synthetic organic chemicals: Surface-active agents for which United States production or sales were reported, identified by manufacturer, 1953--Continued

Chemical	Manufacturers' identification numbers (according to list in table 27)
SURFACE-ACTIVE AGENTS, ACYCLIC--Continued	
*Salts of fatty acids, nonsulfonated:	
Castor oil, potassium salt-----	534.
*Coconut oil, potassium salt-----	113, 140, 284, 428, 438, 575.
Coconut oil, sodium salt-----	284.
Corn oil, potassium salt-----	16, 113, 534.
Corn oil, sodium salt-----	24.
Fish oil, potassium salt-----	535.
Potassium laurate-----	265, 421.
*Potassium oleate-----	16, 113, 140, 164, 293, 328, 356, 385, 403, 421, 428, 561, 573, 581.
*Potassium resinate-----	15, 332, 566, 573.
Potassium stearate-----	16, 164, 293.
*Potassium tallate-----	16, 24, 113, 140, 265, 534, 535.
*Sodium oleate-----	15, 16, 140, 356, 385, 421, 438, 464, 566, 575.
Sodium stearate-----	231, 293, 314, 421, 429, 515, 566.
Sodium tallate-----	140, 265, 421, 534.
Soybean oil, potassium salt-----	113, 438, 534.
Tall oil, potassium salt-----	573.
Tallow, potassium salt-----	438.
Tallow, sodium salt-----	16, 332, 534.
*Sulfated and sulfonated acyclic surface-active agents:	
*Acids, sulfated and sulfonated:	
Acetyloleic acid, sulfonated-----	333.
Coconut oil fatty acids, sulfonated-----	14, 356.
Cottonseed oil fatty acids, sulfonated-----	136.
Fish oil fatty acids, sulfonated-----	48, 259, 421.
*Oleic acid, sulfonated (Sulfonated red oil)-----	14, 15, 48, 54, 65, 81, 112, 130, 136, 143, 178, 259, 269, 293, 298, 332, 341, 356, 365, 382, 403, 421, 429, 438, 491, 529, 550, 566, 571, 573, 596.
Ricinoleic acid, sulfonated-----	421, 438.
Soybean oil fatty acids, sulfonated-----	421.
All other-----	113, 495.
*Alcohols, sulfated and sulfonated:	
Capryl and octyl alcohols, sulfated-----	332.
Cetyl and oleyl alcohols, sulfated-----	294.
Decyl sulfate-----	333, 374.
n-Decyloxyethyl sulfate-----	X.
Dicapryl sulfate-----	535.
3,9-Diethyl-6-tridecyl sulfate-----	392.
2-Ethylhexyl sulfate-----	392.
7-Ethyl-2-methyl-4-undecyl sulfate-----	392.
Hexadecyl sulfate-----	333, 342.
Lauryl, oleyl sulfate, mixed, sodium salt-----	333.
Lauryl sulfate, ammonium salt-----	100, 276, 571.
Lauryl sulfate, diethanolamine salt-----	333.
Lauryl sulfate, monoethanolamine salt-----	470.
Lauryl sulfate, potassium salt-----	100, 276, 516.
Lauryl sulfate, sodium salt (Sodium dodecyl sulfate).-----	100, 178, 276, 333, 374, 429, 493, 566, 571.
*Lauryl sulfate, triethanolamine salt-----	100, 276, 333, 374, 571.
Octadecyl sulfate (Stearyl sulfate)-----	276, 332, 333.
Polyethoxyethyloctadecyl sulfate-----	333.
Polyethoxyethyloctadecyl sulfate, diethanolamine salt.-----	333.
Tridecyl sulfate, sodium salt-----	140.
*Esters, sulfated and sulfonated:	
Bis-sulfosuccinate ester of tallow monoglyceride-----	464.
Butylethyleneglycol sulfo-oleate-----	428.
n-Butyl sulfo-oleate-----	140, 365, 374, 566.
n-Butyl sulfuricinate, sodium salt-----	450.
Di(2-ethylhexyl) sulfosuccinate, sodium salt-----	178, 342, 464, 535.
Dihexyl sulfosuccinate, sodium salt-----	464.
Ethyl and butyl sulfosuccinate, sodium salt-----	140, 464.
Ethylene glycol sulfo-oleate-----	428.
Ethyl sulfo-oleate-----	550.
Glycerol mono(coconut oil) ester, sulfated, ammonium salt.-----	X.
Glycerol mono(coconut oil) ester, sulfated, sodium salt.-----	376, X.
Glycerol monostearate sulfosuccinate, sodium salt-----	541.
*Glycerol tri(sulfo-oleate)-----	178, 429, 438, 554.
*Isopropyl sulfo-oleate-----	178, 332, 349, 382, 516.
Lauroyl ethylsulfonate, sodium salt-----	438.
Lauryl sulfosuccinate-----	527.
Methyl sulfo-oleate-----	365, 534.
Methyl, ethyl, and propyl sulfo-oleate-----	421.
n-Octadecylsulfosuccinate, disodium salt-----	464.
*n-Propyl sulfo-oleate-----	265, 403, 464, 499, 554, 573.
Synthetic glyceride, sulfonated-----	566.

TABLE 24B.--Synthetic organic chemicals; Surface-active agents for which United States production or sales were reported, identified by manufacturer, 1953--Continued

Chemical	Manufacturers' identification numbers (according to list in table 27)
SURFACE-ACTIVE AGENTS, ACYCLIC--Continued	
*Sulfated and sulfonated acyclic surface-active agents--Continued	
*Esters, sulfated and sulfonated--Continued	
Tallow and coconut oil fatty acids, ethyl ester, sulfonated.	550.
*Nitrogen-containing surface-active agents, sulfated and sulfonated:	
Castor oil monoethanolamide, sulfated, sodium salt.	385.
Coconut oil amide of isopropanolamine, sulfated, sodium salt.	178, 575.
Coconut oil amide of monoethanolamine, sulfated, potassium salt.	332.
*Coconut oil amide of monoethanolamine, sulfated, sodium salt.	15, 58, 140, 178, 332, 342, 349, 358, 374, 385, 516, 566, 575.
Coconut oil fatty acid ethanolamide sulfosuccinate, sodium salt.	X.
N-(2-Hydroxyethyl)oleamide, sulfated (Oleic acid ethanolamide sulfate), sodium salt.	403, 421.
N-(2-Hydroxyethyl)stearamide, sulfated (Stearic acid ethanolamide sulfate), sodium salt.	429.
Lauric acid ester of potassium sulfosuccinate ethanolamide.	X.
Lauroylamidoethyl sulfate, sodium salt-----	351.
*N-Methyloleoyltaurine, sodium salt-----	15, 140, 349, 429, 505, 535, 550, 566, 575.
N-Methylpalmitoyltaurine, sodium salt-----	550.
N-(Myristoyl)ethylsulfosuccinamide, sodium salt-----	X.
Neat's-foot oil amide of ethanolamine, sulfated, ammonium salt.	58.
Octadecylamine-1-epichlorohydrin reaction product, sulfonated.	464.
N-Octadecylsulfosuccinamide, disodium salt-----	464.
Oleoyl isopropanolamide sulfate, ethanolamine salt.	X.
N-(Oleoylisopropyl)sulfosuccinamide, sodium salt	X.
Tallow amide of ethanolamine sulfosuccinate, sodium salt.	403.
*Oils, fats, and waxes, sulfated and sulfonated:	
Animal fats and oils, sulfated and sulfonated:	
Grease other than wool grease, sulfonated-----	136, 189, 421, 534.
Lard oil, sulfonated-----	52, 58, 150, 385, 553, 573.
*Neat's-foot oil, sulfonated-----	54, 58, 60, 65, 117, 130, 143, 150, 259, 328, 356, 421, 438, 491, 534.
Oleostearine, sulfonated-----	130.
*Tallow, sulfonated-----	15, 65, 80, 81, 130, 136, 140, 143, 150, 178, 189, 259, 279, 284, 298, 307, 319, 332, 349, 365, 374, 382, 403, 421, 429, 438, 464, 491, 501, 534, 554, 566, 573.
Wool grease, sulfonated-----	136.
All other-----	150, 464.
*Fish and marine-animal oils, sulfated and sulfonated:	
*Cod oil, sulfonated-----	37, 52, 117, 130, 136, 150, 328, 356, 421, 428, 429, 438, 491, 505, 534, 553, 573.
*Herring oil, sulfonated-----	37, 130, 136, 150, 421, 534, 553.
*Menhaden oil, sulfonated-----	136, 150, 534, 553.
Mixed fish oils, sulfonated-----	150.
Red fish oil, sulfonated-----	464.
Salmon oil, sulfonated-----	150.
*Sperm oil, sulfonated-----	37, 52, 54, 117, 130, 136, 143, 150, 178, 328, 341, 349, 356, 374, 421, 428, 429, 438, 464, 491, 505, 534, 553, 573.
Whale oil, sulfonated-----	150.
*Tall oil, sulfonated-----	15, 58, 130, 143, 178, 259, 269, 365, 421, 464, 505, 534, 596.
*Vegetable oils, sulfated and sulfonated:	
*Castor oil, sulfonated-----	15, 48, 54, 58, 65, 81, 112, 117, 130, 136, 140, 143, 149, 150, 189, 259, 265, 269, 279, 284, 298, 304, 307, 328, 332, 333, 341, 349, 356, 365, 374, 380, 382, 385, 421, 428, 429, 436, 438, 464, 491, 495, 505, 529, 534, 550, 553, 556, 561, 566, 571, 573.
*Coconut oil, sulfonated-----	37, 65, 130, 150, 341, 421, 438, 464, 505, 553.
*Corn oil, sulfonated-----	14, 65, 113, 421, 464, 571.
Cottonseed oil, sulfonated-----	150, 341, 421.
Linseed oil, sulfonated-----	150, 491, 505.
Mustard-seed oil, sulfonated-----	421, 491, 571.
Olive oil, sulfonated-----	429, 436, 505.
Palm-kernel oil, sulfonated-----	553.

TABLE 243.--*Synthetic organic chemicals: Surface-active agents for which United States production or sales were reported, identified by manufacturer, 1953--Continued*

Chemical	Manufacturers' identification numbers (according to list in table 27)
SURFACE-ACTIVE AGENTS, ACYCLIC--Continued	
*Sulfated and sulfonated acyclic surface-active agents--Continued	
*Oils, fats, and waxes, sulfated and sulfonated--Continued	
*Vegetable oils, sulfated and sulfonated--Continued	
*Peanut oil, sulfonated-----	81, 298, 307, 341, 403, 421, 464, 491, 554.
Rapeseed oil, sulfonated-----	178.
Rice-bran foots, sulfonated-----	65, 421.
*Rice-bran oil, sulfonated-----	15, 189, 307, 349, 421, 429, 438.
*Soybean oil, sulfonated-----	15, 54, 136, 143, 150, 349, 374, 438, 491, 534, 553.
Soybean-oil foots, sulfonated-----	113.
Teaseed oil, sulfonated-----	505.
All other-----	140.
All other oils, fats, and waxes, sulfated and sulfonated:	
Japan wax, synthetic, sulfonated-----	140.
Petroleum aliphatic compounds, sulfated and sulfonated: Petroleum sulfonate, sodium salt.	109, 286, 333.
Recovered grease, sulfonated-----	130, 136, 356.
All other-----	333, 426, 429, 534.

Pesticides and Other Organic Agricultural Chemicals

TABLE 25B.--Synthetic organic chemicals: Pesticides and other organic agricultural chemicals for which United States production or sales were reported, identified by manufacturer, 1953

[Pesticides and other organic agricultural chemicals for which separate statistics are given in table 25A are marked below with an asterisk (*); products not so marked do not appear in table 25A because the reported data are confidential and may not be published. Manufacturers' identification numbers shown below are taken from table 27. An X signifies that the manufacturer did not consent to the publication of his identification number with the designated product]

Product	Manufacturers' identification numbers (according to list in table 27)
PESTICIDES AND OTHER ORGANIC AGRICULTURAL CHEMICALS, CYCLIC	
*Fungicides and seed disinfectants:	
p-Benzylphenol-----	431.
Chloranil (Tetrachloro-p-quinone)-----	378.
2-Chloro-4-(hydroxymercuri)phenol-----	333.
2,3-Dichloro-1,4-naphthoquinone-----	378.
3,5-Dimethyltetrahydro-3,5-thiadiazine-2-thione--	479.
N-(Ethylmercuri)-p-toluenesulfanilide-----	333.
Hydroxymercurinitrophenol-----	333.
*Naphthenic acid, copper salt-----	110, 135, 214, 221, 314, 353, 440, 466, 485, 555, 581.
Pentachlorophenol-----	245, 448.
Pentachlorophenol, sodium salt-----	245, 448.
Phenyl mercuric hydroxide-----	211, 333.
Phenyl mercuric lactate-----	211, 325.
Phenyl mercuric monoethanlammonium acetate-----	557.
Phenyl mercuric naphthenate-----	211.
*Phenyl mercuric oleate-----	211, 333, 353, 557.
Phenyl mercuric triethanolammonium lactate-----	557.
Phenyl mercuric urea-----	211.
*8-Quinolinol (8-Hydroxyquinoline), copper salt--	132, 245, 342, 353.
2,3,4,6-Tetrachlorophenol-----	448.
N-Trichloromethylthiotetrahydrophthalimide-----	177.
2,4,5-Trichlorophenol-----	338, 448, 594.
2,4,5-Trichlorophenol, ethanolamine salt-----	550.
2,4,5-Trichlorophenol, sodium salt-----	245, 448.
2,4,6-Trichlorophenol-----	448.
2,4,6-Trichlorophenol, potassium salt-----	479, 594.
*Herbicides and plant hormones:	
2-sec-Amyl-4,6-dinitrophenol-----	3.
2-sec-Butyl-4,6-dinitrophenol-----	448.
2-sec-Butyl-4,6-dinitrophenol, triethanolamina salt-----	3.
1-(p-Chlorophenyl)-3,3-dimethylurea-----	333.
3-(3,4-Dichlorophenyl)-1,1-dimethylurea-----	333.
3-(3,4-Dichlorophenyl)-1-methylurea-----	333.
1,2-Dihydro-3,6-pyridazinedione (Maleic hydrazide)	378.
1,1-Dimethyl-3-phenylurea-----	333.
3,6-Endoxyhexahydrophthalic acid, disodium salt--	580.
Isopropyl N-(3-chlorophenyl)carbamate-----	245, 391, 463.
Isopropyl N-phenylcarbamate (Isopropyl carbanilate) (IPC)-----	391.
*Naphthalene- and naphthoxyacetic acid derivatives:	
1-Naphthalenesacetamide-----	271.
1-Naphthaleneacetic acid-----	448, 591, 597.
1-Naphthaleneacetic acid, methyl ester-----	271, 597.
1-Naphthaleneacetic acid, sodium salt-----	271, 494.
2-Naphthoxyacetic acid-----	494, 591.
2-Naphthoxyacetic acid, sodium salt-----	494.
N-1-Naphthylphthalamic acid-----	378.
Phenoxyacetic acid, salts and derivatives:	
2-Chloro-4-methoxyphenoxyacetic acid, dimethylamine salt-----	517.
2-Chloro-4-methoxyphenoxyacetic acid, iso-octyl ester-----	517.
4-Chloro-2-methylphenoxyacetic acid-----	245.
p-Chlorophenoxyacetic acid-----	448.
*2,4-Dichlorophenoxyacetic acid (2,4-D)-----	245, 391, 448, 456, 493, 517, 594.
*2,4-Dichlorophenoxyacetic acid esters:	
Amyl 2,4-dichlorophenoxyacetate-----	55.
Butoxyethanol 2,4-dichlorophenoxyacetate-----	X.
Butoxypolypropylene glycol 2,4-dichloro- phenoxyacetate-----	448, 594.
n-Butyl 2,4-dichlorophenoxyacetate-----	55, 177, 245, 493, 517, 594.
sec-Butyl 2,4-dichlorophenoxyacetate-----	448, 456, 493.
Ethyl 2,4-dichlorophenoxyacetate-----	271.
Iso-octyl 2,4-dichlorophenoxyacetate-----	456, 517.
Isopropyl 2,4-dichlorophenoxyacetate-----	177, 271, 448, 456, 493, 517, 594.
Tetrahydrofurfuryl 2,4-dichlorophenoxyacetate	493.
*2,4-Dichlorophenoxyacetic acid salts:	
2,4-Dichlorophenoxyacetic acid, diethanol- amine salt-----	177, 271, 504.
2,4-Dichlorophenoxyacetic acid, dimethylamine salt-----	55, 177, 333, 456, 493, 517, 594.

TABLE 25B.--Synthetic organic chemicals: Pesticides and other organic agricultural chemicals for which United States production or sales were reported, identified by manufacturer, 1953--Continued

Product	Manufacturers' identification numbers (according to list in table 27)
PESTICIDES AND OTHER ORGANIC AGRICULTURAL CHEMICALS, CYCLIC--Continued	
*Herbicides and plant hormones--Continued	
Phenoxyacetic acid, salts and derivatives--Con.	
*2,4-Dichlorophenoxyacetic acid salts--Continued	
2,4-Dichlorophenoxyacetic acid, isopropanol- amine salt.	177.
2,4-Dichlorophenoxyacetic acid, sodium salt---	245.
2,4-Dichlorophenoxyacetic acid, triethanol- amine salt.	177, 333.
*2,4,5-Trichlorophenoxyacetic acid (2,4,5-T)----	245, 363, 391, 426, 448, 456, 494, 594.
*2,4,5-Trichlorophenoxyacetic acid derivatives:	
Amyl 2,4,5-trichlorophenoxyacetate-----	55.
Butoxyethanol 2,4,5-trichlorophenoxyacetate---	X.
Butoxypolypropyleneglycol 2,4,5-trichloro- phenoxyacetate.	426, 448.
n-Butyl 2,4,5-trichlorophenoxyacetate-----	448, 456, 493, 517, 594.
Iso-octyl 2,4,5-trichlorophenoxyacetate-----	456, 517.
Isopropyl 2,4,5-trichlorophenoxyacetate-----	177, 245, 456, 517, 594.
Tetrahydrofurfuryl 2,4,5-trichlorophenoxy- acetate.	177, 493.
*Phenyl mercuric acetate-----	211, 325, 557.
2,4,5-Trichlorophenoxypropionic acid-----	271, 363, 494.
*Insecticides:	
Aldrin (Hexachlorocyclohexahydrodimethanonaphthalene)--	474.
Allethrin (Allyl homolog of Cinerin I)-----	343, 463, 600.
Benzyl thiocyanate-----	338.
1,1-Bis(p-chlorophenyl)-2-nitrobutane-----	367.
1,1-Bis(p-chlorophenyl)-2-nitropropane-----	367.
2-(p-tert-Butylphenoxy) isopropyl-2-chloroethyl sulfite.	378.
Chlordane (1,2,4,6,7,8,8-octachloro-4,7-methano- 3a,4,7,7a-tetrahydroindane).	311.
p-Chlorophenyl p-chlorobenzene sulfonate-----	448, 594.
2-Cyclohexyl-4,6-dinitrophenol-----	448.
1,2-Dibromoethylbenzene (Styrene dibromide)-----	448.
1,1-Dichloro-2,2-bis(p-chlorophenyl)ethane (DDD)--	493, 504.
1,1-Dichloro-2,2-bis(p-ethylphenyl)ethane-----	493.
2,4-Dichlorophenyl benzenesulfonate-----	504.
Dieldrin (Hexachlorocyclooctahydrodimethano- naphthalene).	474.
Dinitro-octylphenyl crotonate-----	493.
4,6-Dinitro-o-cresol (DNOC)-----	3.
4,6-Dinitro-o-cresol, sodium salt-----	3.
Endrin (Hexachlorocyclooctahydroendoendodimethano- naphthalene).	474.
Ethyl p-nitrophenyl thionbenzenephosphonate (EPN)	333.
Heptachlor (Heptachlorohydro-4,7-methanoindene)---	311.
*Hexachlorocyclohexane (Benzene hexachloride)-----	161, 217, 275, 331, 333, 338, 345, 367, 391, 426, 430, 456, 504, 574, 594.
Lindane-----	338, 504, 574, 594.
Octachlorocyclohexenone-----	563.
Parathion (O,O-Diethyl O-(p-nitrophenyl) thiophosphate).	245, 456, 464.
Thanite (Isobornyl thiocyanacetate)-----	222, 281.
Toxaphene (Chlorinated camphene)-----	222.
*1,1,1-Trichloro-2,2-bis(p-chlorophenyl)ethane (DDT).	51, 139, 181, 245, 275, 333, 390, 492, 493, 495, 504, 594.
1,1,1-Trichloro-2,2-bis(p-methoxyphenyl)ethane (Methoxychlor) (Methoxy DDT).	333.
Rodenticides:	
1-(1-Naphthyl)-2-thiourea-----	476.
2-Pivalyl-1,3-indandione-----	599.
Warfarin (3-(Acetylbenzyl)-4-hydroxycoumarin)---	600, X.
PESTICIDES AND OTHER ORGANIC AGRICULTURAL CHEMICALS, ACYCLIC	
*Fumigants:	
*Bromomethane (Methyl bromide)-----	181, 359, 448.
Chloropicrin-----	171.
1,2-Dichloropropane-----	549.
Dichloropropene-dichloropropane (D-D mixture)---	258.
*Fungicides and seed disinfectants:	
Cadmium succinate-----	231.
Copper ethylcaproate-----	581.
Copper hendecenoate (Copper undecylenate)-----	494, 591.
Dimethyldithiocarbamic acid, ferric salt (Ferbam)-	211, 333, 476.
*Dimethyldithiocarbamic acid, sodium salt-----	137, 211, 364, 396, 580.
*Dimethyldithiocarbamic acid, zinc salt (Ziram)---	211, 245, 333, 364, 378, 396, 580.

TABLE 25B.--Synthetic organic chemicals: Pesticides and other organic agricultural chemicals for which United States production or sales were reported, identified by manufacturer, 1953--Continued

Product	Manufacturers' identification numbers (according to list in table 27)
PESTICIDES AND OTHER ORGANIC AGRICULTURAL CHEMICALS, ACYCLIC--Continued	
*Fungicides and seed disinfectants--Continued	
Ethyl mercuric acetate-----	333.
Ethyl mercuric chloride-----	333.
Ethyl mercuric hydroxide-----	333.
Ethyl mercuric phosphate-----	333.
Ethylenebis(dithiocarbamic acid), manganese salt--	333.
Ethylenebis(dithiocarbamic acid), sodium salt (Nabam).	333, 493.
Ethylenebis(dithiocarbamic acid), zinc salt (Zineb)	333, 493.
Methoxyethylmercuric acetate-----	211.
Methylmercuric hydroxide-----	599.
Sodium hendecenoate (Sodium undecylenate)-----	494.
Tetraiodoethylene-----	313.
Zinc hendecenoate (Zinc undecylenate)-----	313, 494.
All other-----	563.
*Herbicides:	
Diethyl dithiobis(thionoformate)-----	245.
Trichloroacetic acid-----	448, 504.
Trichloroacetic acid, sodium salt-----	245, 338, 448.
*Insecticides:	
Aliphatic thiocyanates-----	493.
S-(1,2-Dicarbethoxyethyl) O,O-dimethyl dithio- phosphate (Malathion).	464.
Metaldehyde-----	367.
Octamethyl pyrophosphoramide (OMPA)-----	245.
Tetraethyl dithionopyrophosphate-----	245, 476.
*Tetraethyl pyrophosphate (TEPP)-----	177, 208, 245, 312, 345, 359, 476.
Rodenticides: Sodium fluoroacetate-----	245.
*Soil conditioners:	
Methylvinylether-maleic anhydride half-amide copolymer.	X.
Polyacrylonitrile, hydrolyzed, sodium salt-----	268, 464.
Vinyl acetate-maleic acid, modified-----	245.

Miscellaneous Synthetic Organic Chemicals

TABLE 26B.--Synthetic organic chemicals: Miscellaneous chemicals for which United States production or sales were reported, identified by manufacturer, 1953

[Miscellaneous chemicals for which separate statistics are given in table 26A are marked below with an asterisk (*); chemicals not so marked do not appear in table 26A because the reported data are confidential and may not be published. Manufacturers' identification numbers shown below are taken from table 27. An X signifies that the manufacturer did not consent to the publication of his identification number with the designated product.]

Chemical	Manufacturers' identification numbers (according to list in table 27)
MISCELLANEOUS CHEMICALS, CYCLIC	
2-Aminobenzothiazole-----	133.
4-Amino-5-(ethoxymethyl)-2-methylpyrimidine-----	515.
Benzoic acid salts:	
Ammonium benzoate-----	245.
Copper benzoate-----	75.
*Sodium benzoate, tech-----	397.
*Sodium benzoate, U.S.P-----	245, 331, 338, 397, 586.
Benzoic oxime-----	133, 498.
Benzothiazole-----	464.
*Benzoyl peroxide-----	102, 357, 376, 427.
Benzoyl resorcinol-----	550.
3-Benzyl-4-methylumbelliferone-----	123.
Biological stains-----	7, 527.
4,4'-Bis[phenylureido]-2,2'-stilbenedisulfonic acid.	550.
Boron fluoride-phenol complex-----	504.
Butoxyanilol-----	229.
2 (and 3)-tert-Butyl-4-methoxyphenol-----	483.
tert-Butyl peroxybenzoate-----	357.
4-tert-Butylpyrocatechol-----	448.
Butyrolactone-----	550.
Camphene-----	333, 395.
*Centralite (N,N'-Diethyl-N,N'-diphenylurea)-----	376, 495, 580.
Chemical indicators:	
m-Cresolsulfonphthalein (m-Cresol purple)-----	498, 527.
o-Cresolsulfonphthalein (Cresol red)-----	498, 527.
Dibromo-o-cresolsulfonphthalein (Bromocresol purple).	498, 527.
Dibromothymolsulfonphthalein (Bromothymol blue)---	498, 527.
Dichlorophenolsulfonphthalein (Chlorophenol red)---	498, 527.
N,N'-Diphenylbenzidine-----	498.
Phenolsulfonphthalein (Phenol red)-----	498, 527, 591.
Tetrabromo-m-cresolsulfonphthalein (Bromocresol green).	498, 527.
Tetrabromophenolsulfonphthalein (Bromophenol blue).	498, 527.
Thymolphthalein-----	498, 591.
Thymolsulfonphthalein (Thymol blue)-----	498, 527.
All other-----	7, 9, 498, 527, 591.
*Chemical reagents:	
Aurintricarboxylic acid-----	498.
Barium diphenylamine sulfonate-----	498.
Diphenyl carbazide-----	498, 572.
Diphenyl carbazone-----	75, 498, 591.
Diphenyl thiocarbazono (Dithiazone)-----	498, 572, 591.
a,a-Dipyridyl-----	368, 498.
Girard F reagent-----	101, 514.
N-(1-Naphthyl)ethylenediamine dihydrochloride----	498.
Nitrosophenylhydroxylamine (Cupferron)-----	498.
Phloroglucinol CP-----	599.
Potassium biphthalate-----	498, 504.
Quinhydrone-----	498, 515, 572.
Sodium biphthalate-----	504.
Sodium-2,6-dichlorobenzenone indophenol-----	498.
Sulfosalicylic acid, reagent-----	515, 591.
o-Tolidine dihydrochloride-----	313.
All other-----	7, 101, 462, 498, 508, 527, 591.
5-Chloro-a,a-bis[3,5-dichloro-2-hydroxyphenyl]-o-toluenesulfonic acid, sodium salt.	550.
10-Chloro-5,10-dihydrophenarsazine (Diphenylamine-chlorarsine).	323.
Chlorophyll and derivatives:	
Caroten-----	588.
*Chlorophyll:	
Copper fixed-----	588.
Not fixed-----	326, 588.
*Chlorophyllins:	
Sodium-copper-----	326, 386.
Sodium-iron-----	326.
Sodium-magnesium-----	326.
Sodium-potassium-copper-----	543, 588, 604.
Sodium-potassium-hydrogen-----	588.
Sodium-potassium-iron-----	588.
Sodium-potassium-magnesium-----	588.

TABLE 26B.--Synthetic organic chemicals: Miscellaneous chemicals for which United States production or sales were reported, identified by manufacturer, 1953--Continued

Chemical	Manufacturers' identification numbers (according to list in table 27)
MISCELLANEOUS CHEMICALS, CYCLIC--Continued	
Chlorophyll and derivatives--Continued	
Copper chlorin-e-----	326.
Copper pheophytin-----	326.
Xanthophyll-----	386, 588.
Cholesterol-----	558.
Cumene hydroperoxide-----	222.
1,2-Cyclohexanedicarboxylic anhydride (Hexahydro- phthalic anhydride).-----	527.
Cyclohexanone peroxide-----	357.
Cyclohexene-1,2-dicarboxylic acid (Tetrahydro- phthalic acid), disubstituted, polyester salts:	
Barium salt-----	450.
Barium cadmium salt-----	450.
Cadmium salt-----	450.
Cyclohexyl phosphite-----	536.
*Cyclopropane-----	73, 231, 435, 522.
Decahydronaphthalene (Decalin)-----	333.
Diazodinitrophenol-----	222.
2,5-Di-n-butoxyaniline (Aminohydroquinone, dibutyl ether).-----	483.
p-Dibutoxybenzene (Hydroquinone, dibutyl ether)-----	483.
2,5-Di-tert-butylhydroquinone-----	483.
p-(Dichlorosulfamyl)benzoic acid (Halazone)-----	565.
2,5-Diethoxyaniline-----	483.
p-Diethoxybenzene-----	483.
7-Diethylamino-4-methylcoumarin-----	123, 376.
Dihydroxydimethoxybenzophenone-----	550.
3,5-Diiodosalicylic acid-----	599.
Diisopropylphenyl hydroperoxide-----	222.
2,5-Dimethoxyaniline-----	483.
p-Dimethoxybenzene (Dimethyl ether of hydroquinone)- o (and p)-Dimethylaminophenol-----	333, 483.
Dinitrosopentamethylenetetramine-----	75.
Dioxane (1,4-Diethylene oxide)-----	333.
Dipentene, hydrogenated-----	392.
Diphenylacetyl chloride-----	338.
Ergosterol-----	281.
Ethyl benzoylacetate-----	99.
Ethylene glycol monophenyl ether-----	463.
Ethylene glycol terpinyl ether-----	392, 448.
Ethylenethiourea-----	222.
Ethyl hydrocaffeate (Ethyl 3,4-dihydroxyhydro- cinnamate).-----	580.
Ethyl oxanilate-----	431.
o-Ethylphenylguanidine-----	599.
Fenchone-----	245.
*Flotation reagents:	
Diocresyldithiophosphoric acid-----	285.
Diocresyldithiophosphoric acid, ammonium salt-----	464.
Diocresyldithiophosphoric acid, sodium salt-----	464.
Di-o-tolylthiourea-----	398.
Rosin amine-----	245, 333, 464.
Rosin amine D ethylene oxide condensate-----	222.
*Thiocarbamide (Diphenylthiourea)-----	222.
Furan derivatives:	
Furfural (2-Furaldehyde)-----	245, 464, 527.
Furoic acid-----	475.
Hydrofuranide-----	475.
Tetrahydrofurfuryl alcohol-----	475.
Gallic acid, tech-----	338, 475.
Gasoline antioxidants and inhibitors:	
p-Butylaminophenol-----	424.
N,N'-Di-sec-butyl-p-phenylenediamine-----	333.
N,N'-Disalicylidene-1,2-propanediamine-----	333.
All other-----	333.
*Hexamethylenetetramine, tech-----	483.
Hydroquinone, tert-butyl dimethyl ether-----	72, 333, 387, 397, 487, 515.
8-Hydroxy-1,2-naphthimidazol hydrochloride-----	483.
*Lubricating oil additives:	
Alicyclic compounds, sulfurized-----	550.
Alkylphenols, mixed-----	518, 560.
2,6-Di-tert-butyl-p-cresol-----	323.
2,2'-Dihydroxy-5,5'-di-tert-octylphenol mono- sulfide, barium salt.-----	258, 323, 483.
High-molecular-weight hydrocarbons-----	464.
Petroleum sulfonate, barium salt-----	560.
Tall oil ester, sulfurized-----	608.
All other-----	608.
p-Menthane-----	608, X.
p-Menthyl hydroperoxide-----	285.
p-Methoxyphenol-----	222.
	431, 483.

TABLE 26B.--Synthetic organic chemicals: Miscellaneous chemicals for which United States production or sales were reported, identified by manufacturer, 1953--Continued

Chemical	Manufacturers' identification numbers (according to list in table 27)
MISCELLANEOUS CHEMICALS, CYCLIC--Continued	
Methylcyclohexanol-----	338.
2,2'-Methylenebis[4-chlorophenol] (Dichlorophene)---	229.
2,2'-Methylenebis[3,4,6-trichlorophenol] (Hexa- chlorophene).	229.
2,2'-Methylenedi-p-cresol-----	229.
Methyl glucoside-----	287.
Methyl o-methoxybenzoate-----	229.
Methyl terpinyl ether-----	222.
4-Methyl-5-thiazole-ethanol-----	515.
Methyl toluenesulfonates-----	245.
*4-Methylumbelliferone-----	117, 123, 323.
Morpholine-----	392, 448.
*Naphthenic acid salts:	
Aluminum naphthenate-----	353, 440.
Cadmium naphthenate-----	485.
*Calcium naphthenate-----	110, 220, 314, 353, 440, 466, 485, 555, 581.
*Cobalt naphthenate-----	110, 135, 220, 221, 314, 353, 440, 466, 485, 555, 581.
*Iron naphthenate-----	314, 353, 440, 466, 485, 555, 581.
Lead-cobalt-manganese blend-----	555.
*Lead naphthenate-----	103, 110, 135, 220, 221, 314, 353, 440, 466, 485, 555, 581.
Lithium naphthenate-----	485.
*Manganese naphthenate-----	110, 135, 220, 221, 314, 353, 440, 466, 485, 555, 581.
Mercury naphthenate-----	353.
Nickel naphthenate-----	353, 485.
Rare earth naphthenate-----	485.
Strontium naphthenate-----	485.
*Zinc naphthenate-----	110, 135, 220, 221, 314, 353, 440, 466, 485, 555, 581.
*Organic mercury compounds:	
o-Chloromercuriphenol (o,p-Hydroxyphenylmercuric chloride), tech.	599.
Phenyl mercuric o-benzosulfimide-----	325.
Phenyl mercuric borate-----	211.
Phenyl mercuric chloride-----	211.
Phenyl mercuric hydroxide-----	325.
Phenyl mercuric naphthenate-----	325.
Phenyl mercuric nitrate-----	211.
Phenyl mercuric salicylate-----	325.
Phenyl mercuric stearate-----	325.
Pyridyl mercuric acetate (Acetoxymercuri- pyridine).	231.
All other-----	479.
p,p'-Oxybis[benzenesulfonylhydrazide]-----	378.
Phenol, sulfurated-----	550.
Phenolthiosulfonic acid-----	550.
Phenylmagnesium bromide-----	101.
*Photographic chemicals:	
5-Amino-1,3,4-triazole-----	133.
p-Aminophenol oxalate, acid salt-----	75.
Benzotriazole-----	133, 498, 550, 599.
Catechol (Pyrocatechin)-----	323.
Chlorobenzotriazole-----	133.
p-Diazo-N-benzyl-N-ethylaniline, zinc chloride salt.	133, 599.
*p-Diazo-N,N-diethylaniline, zinc chloride salt---	133, 461, 540, 550, 599.
p-Diazo-N,N-diethyl-m-phenetidine, zinc chloride salt.	133, X.
*p-Diazo-N,N-dimethylaniline, zinc chloride salt---	133, 461, 540, 599.
p-Diazodiphenylamine sulfate-----	133, 599.
*p-Diazo-N-ethyl-N-hydroxyethylaniline, zinc chloride salt.	133, 461, 540, 599.
p-Diazo-N-hydroxyethyl-N-methylaniline, zinc chloride salt.	540, X.
p-Diazo-N-methyl-o-toluidina, zinc chloride salt---	X.
N,N-Diethyl-p-phenylenediamine hydrochloride----	133, 483.
N,N-Diethyltoluene-3,4-diamine, monohydrochloride	483.
2,5-Dihydroxybenzenesulfonic acid (Hydroquinone- sulfonic acid), sodium salt.	498.
N-Ethyl-N-hydroxyethyl-p-phenylenediamine sulfate	133, 461.
N-Ethyl-N-(β-methanesulfonamidoethyl)toluene-2,5- diamine sulfate.	483.
Hydroquinone (Hydroquinol)-----	240, 483.
N-(Hydroxyphenyl)glycine-----	461.
4-Methoxy-1-naphthol-----	483.
p-Methylaminophenol sulfate (Metol)-----	424, 460, 498.
5-Methylbenzotriazole-----	498.
2-Methylthiazoline-----	133.
6-Nitrobenzimidazole-----	498.
4-Phenylpyrocatechol-----	483.
Resorcinol-----	323.
All other-----	599.

TABLE 26B.--Synthetic organic chemicals: Miscellaneous chemicals for which United States production or sales were reported, identified by manufacturer, 1953--Continued

Chemical	Manufacturers' identification numbers (according to list in table 27)
MISCELLANEOUS CHEMICALS, CYCLIC--Continued	
Phthalic acid, lead salt, dibasic-----	371.
Pinene-----	395.
Pinene mercaptan-----	333.
Piperonyl butoxide, tech-----	463.
Polyethylene terephthalate-----	333.
β -Propiolactone-----	563.
*n-Propyl gallate-----	397, 424, 483, 591.
Pyrogallol (Pyrogallic acid)-----	231, 424.
p-Quinone-----	424, 483.
Research chemicals:	
Anthrone-----	144, 498.
Aryl chlorides and sulfides-----	128.
Aryl silanes-----	315, 334.
Cyclopentane derivatives-----	101.
Guanidine derivatives-----	464.
All other-----	101, 133, 144, 227, 334, 335, 482, 498, 514, 572, 591, 599.
*Rosin acid salts:	
Aluminum resinate-----	89.
*Calcium resinate-----	89, 131, 292, 440, 581.
Cobalt resinate-----	110, 135, 440, 581.
Copper resinate-----	89.
Iron resinate-----	89.
Lead resinate-----	89, 110, 440, 581.
*Manganese resinate-----	89, 110, 440, 581.
Zinc resinate-----	89, 395, 440, 581.
All other-----	89.
Salicylanilide-----	333.
Salicylic acid, lead salt-----	371.
Silicones:	
Methyl silicone fluids-----	346.
Pastes-----	346.
Sulfosalicylic acid and salt-----	515, 591.
*Tall oil (Linoleic-rosin acid) salts:	
Barium zinc tallate-----	440.
Calcium tallate-----	353, 485.
*Cobalt tallate-----	110, 135, 220, 314, 353, 440, 466, 485, 581.
Copper tallate-----	135, 440.
*Iron tallate-----	135, 314, 440.
*Lead tallate-----	110, 135, 220, 314, 353, 440, 466, 485, 581.
Lead-manganese tallate-----	110, 440, 466.
*Manganese tallate-----	110, 135, 220, 314, 353, 440, 466, 485, 581.
Zinc glyceryl tallate-----	485.
Zinc tallate-----	110, 440.
*Tanning materials, synthetic:	
Bisphenol-formaldehyde, bisulfite type-----	429.
Cresol-formaldehyde resin sulfonate, sodium salt-----	550.
Lignosulfonic acid, magnesium salt-----	19.
Lignosulfonic acid, sodium salt-----	19.
*Naphthalene condensates:	
1-Naphthalenesulfonic acid, formaldehyde condensate and salt.	245, 429, 519.
*2-Naphthalenesulfonic acid, formaldehyde condensate and salt.	245, 429, 493, 496, 527.
2-Naphtholsulfonic acid, formaldehyde condensate, sodium salt.	429.
Phenol-formaldehyde, sulfonated-----	429, 493.
Styrene-maleic anhydride interpolymer, partial sodium salt.	245, 333.
Sulfonyldiphenolsulfonic acid formaldehyde condensate.	550.
Terpene hydrocarbons-----	333.
1,2,3,4-Tetrahydronaphthalene (Tetralin)-----	333.
Tetraphenyl tin-----	338.
Textile chemicals, other than surface-active agents:	
Diphenyl-1,2-propanediamine-----	566.
Protalbinic acid mixture-----	294.
Saccharide, bisulfite-----	566.
Stearamide methylpyridinium chloride-----	333.
2,2'-Thiobis[4,6-dichlorophenol]-----	245.
Thiophenol-----	498, 514.
Thymol iodide-----	599.
o-Tolylbiguanide-----	245.
Tri-tert-amyphenyl phosphite-----	245.
N-Trichloromelamine-----	313.
1,5,5-Trimethylhydantoin-----	333.
Trioxane-----	418.
Triphenyl phosphite-----	245, 378.
o-Xenylbiguanide-----	245.

TABLE 26B.--Synthetic organic chemicals: Miscellaneous chemicals for which United States production or sales were reported, identified by manufacturer, 1953--Continued

Chemical	Manufacturers' identification numbers (according to list in table 27)
MISCELLANEOUS CHEMICALS, ACYCLIC	
*Acetaldehyde-----	216, 222, 252, 333, 344, 367, 392, 418, 483.
Acetamide-----	504.
*Acetic acid, synthetic, 100%-----	216, 222, 252, 392, 418, 483.
*Acetic acid salts:	
*Aluminum acetate-----	392, 429, 464, 504, 515.
Aluminum subacetate-----	515.
Ammonium acetate-----	281, 504.
Barium acetate-----	281, 429, 504.
Cadmium acetate-----	281, 504.
Calcium acetate-----	281, 504, 515.
Chromium acetate-----	429, 464.
*Cobalt acetate-----	110, 135, 281, 440.
Copper acetate-----	110, 281, 392, 504.
Lead acetate-----	281, 504, 521, 581.
Lead subacetate-----	281, 504, 515.
Lead tetraacetate-----	101.
Magnesium acetate-----	281, 504.
Manganese acetate-----	110, 281, 440.
Mercuric acetate-----	504.
Nickel acetate-----	110, 440.
Potassium acetate-----	281, 392, 504, 515.
Sodium acetate-----	231, 281, 392, 504, 515.
Zinc acetate-----	281, 392, 504, 515.
All other-----	75.
*Acetic anhydride, 100%:	
From acetaldehyde-----	222.
From ethylene-----	392.
From ketene-----	392.
From recovered acetic acid by the vapor-phase process.	222, 418, 483.
From acetic acid (other than recovered) by the vapor-phase process.	222, 418, 483.
Acetin:	
Mono-----	370.
Di-----	262, 370.
Tri-----	370, 483.
*Acetone:	
By fermentation-----	216, 218, 367, 463.
*From isopropyl alcohol-----	258, 392, 481, 483.
All other-----	252, 418.
Acetonitrile-----	392.
Acetonylacetone (2,5-Hexanedione)-----	392.
Acetylacetone (2,4-Pentanedione)-----	498.
Acetyl bromide-----	582.
Acetyl chloride-----	498.
1-Acetyl-2-thiohydantoin-----	486.
Aconitic acid-----	464.
Acrylamide-----	493.
Acrylate esters, above ethyl-----	464, 493, 563.
Acrylic acid-----	493.
Acrylic acid, calcium salt-----	245, 392, 464.
*Acrylonitrile-----	153.
Acrylyl chloride-----	333.
Adipic acid-----	333.
Adiponitrile-----	392.
Aldol (Acetaldol)-----	245.
Alkyl hydrogen phosphate and salts-----	258.
Allyl alcohol-----	599.
Allyl isothiocyanate, comm-----	47.
Aluminum isopropoxide (Aluminum isopropylate)-----	
*Amines:	
Allylamine-----	599.
n-Butylamine, mono-----	392, 483, 580.
tert-Butylamine-----	493.
Coconut oil amine-----	23.
Diallylamine-----	599.
Di-n-butylamine-----	392, 580.
Diethylamine-----	392, 580.
Diethylamine hydrochloride-----	360.
Diethylene glycol-----	430.
N ¹ ,N ¹ -Diethyl-1,4-pentanediamine (Novoldiamine)-----	376.
N,N-Diethyl-1,3-propanediamine-----	464.
Diisobutylamine-----	580.
Diisopropylamine-----	580.
Dimethylamine-----	245, 333, 367, 493.
Dimethylamine hydrochloride-----	360.
Dimethylamine sulfate-----	493.
N,N-Dimethyl-1,3-propanediamine-----	464.
Dimethyloctadecylamine (Stearyldimethylamine)-----	493.
Dipropylamine-----	580.

TABLE 26B.--Synthetic organic chemicals: Miscellaneous chemicals for which United States production or sales were reported, identified by manufacturer, 1953--Continued

Chemical	Manufacturers' identification numbers (according to list in table 27)
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued	
*Amines--Continued	
Dodecylamine-----	23.
Ethylamine, mono-----	392, 580.
Ethylenediamine-----	392.
Hexadecylamine-----	23.
Hexamethylenediamine-----	333.
3,3'-Iminobispropylamine-----	464.
Isobutylamine-----	580.
Isopropylamine-----	392, 580.
*Methylamine, mono-----	333, 367, 493.
Methylamine, mono, hydrochloride-----	360.
1-Methylhexylamine (2-Heptylamine)-----	442.
Octadecylamine-----	23.
Octylamine-----	23, 392, 493.
Polyethyleneamines-----	392.
Propylamine, mono-----	580.
Propylenediamine-----	392.
Soybean oil amine-----	23.
Tallow amine-----	23.
Tallow amine, hydrogenated-----	23.
Tributylamine-----	580.
Triethylamine-----	392, 580.
Trimethylamine-----	333, 367, 493.
Trimethylamine hydrochloride-----	333.
All other-----	493.
2-Amino-1-butanol-----	367.
Aminoguanidine sulfate-----	550.
2-Amino-2-(hydroxymethyl)-1,3-propanediol (Tris- hydroxymethyl)aminomethane)-----	367.
2-Amino-2-methyl-1,3-propanediol-----	367.
2-Amino-2-methyl-1-propanol-----	367.
2-Amino-2-methyl-1-propyl hydrogen phosphate-----	535.
3-Aminopropanol-----	464.
*Amyl acetates, 90%, primary:	
Normal-----	216, 367.
Isoamyl-----	53, 333, 414, 463.
Mixed isomers-----	580.
*Amyl alcohols, 100%:	
Crude fusel oil-----	367.
Refined fusel oil-----	216, 333, 367, 463.
Primary:	
Normal (n-Butylcarbinol)-----	580.
Active (2-Methylbutanol-1)-----	333.
Isoamyl (3-Methylbutanol-1)-----	367, 414, 463, 481.
Mixed-----	252, 580.
Secondary:	
Pentanol-2 (Methylpropylcarbinol)-----	580, X.
Pentanol-3 (Diethylcarbinol)-----	392.
Mixed-----	580.
Tertiary:	
Amyl (2-Methylbutanol-2)-----	379, 580.
Mixed-----	580.
Amyl ether-----	580.
Amyl mercaptan (1-Pentanethiol)-----	512, 580.
Amyl nitrate mixture-----	426.
Amyl potassium sodium phosphate-----	245.
Azelaic acid-----	499.
β, β' -Azodisobutyronitrile-----	363.
β, β' -Azobisformamide (Azocarbonamide)-----	378.
Barium and zinc salts of wool grease with phosphorus sesquisulfite.	464.
Behenic acid-----	260.
*Bis(2-chloroethyl) ether (Dichlorodiethyl ether), all grades.	321, 392, 430, 448, 549.
Bis(chloroisopropyl) ether (Dichloroisopropyl ether).	392, 448, 549.
Bis(2-ethylhexyl) hydrogen phosphite-----	312.
Boron fluoride ethyl ether complex-----	440, 504.
Bromal-----	379.
N-Bromoacetamide-----	101.
α -Bromolauric acid-----	333.
N-Bromosuccinimide (Succinibromimide)-----	101, 527.
*Butyl acetates, 90%:	
Normal-----	216, 333, 367, 392, 418, 463, 483.
Iso-----	418, 483.
Secondary-----	216, X.
Butyl (mono) acid orthophosphate-----	208.
*Butyl alcohols, 100%:	
Primary:	
*Normal (n-Propylcarbinol)-----	216, 218, 252, 367, 392, 418, 463, 483.
Iso (Isopropylcarbinol)-----	252, 333, 392, 414, 418, 483, 484.
Mixed-----	418.

TABLE 26B.--Synthetic organic chemicals: Miscellaneous chemicals for which United States production or sales were reported, identified by manufacturer, 1953--Continued

Chemical	Manufacturers' identification numbers (according to list in table 27)
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued	
*Butyl alcohols, 100%--Continued	
Secondary (Methylethylcarbinol)-----	258, X.
Tertiary (Trimethylcarbinol)-----	258.
Butylene glycol (1,2- and 1,3- mixture)-----	418.
Butyl ether (Di-n-butyl ether)-----	392.
2-Butyl-2-ethyl-1,3-propanediol-----	574.
tert-Butyl hydroperoxide-----	258, 357.
Butyl lactate-----	367.
tert-Butyl peroxide (Di-tert-butyl peroxide)-----	258, 357.
tert-Butyl peroxyacetate-----	357.
Butyraldehyde-----	392, 483, 484.
Butyraldehyde oxime-----	527.
Butyric acid-----	252, 392, 483.
Butyric acid, sodium salt-----	266.
Butyric anhydride-----	392, 483.
Butyl chloride-----	338.
Capric acid (n-Decylic acid)-----	108.
Caproic acid-----	392, 582.
Caprolactam (2-Oxohexamethylenimine)-----	333.
Capryl chloride (Decanoyl chloride)-----	338.
Caprylic acid (Octanoic acid)-----	108.
*Caprylic acid salts:	
Aluminum caprylate-----	360, 421, 566.
Sodium caprylate-----	360.
Triethanolamine tricaprylate-----	550.
Zinc caprylate-----	281, 360, 566.
*Carbon disulfide-----	166, 182, 190, 200, 217, 345, 448.
*Cellulose esters:	
*Cellulose acetate-----	50, 222, 333, 418, 483.
Cellulose acetate butyrate-----	483.
Cellulose acetate propionate-----	483.
Cellulose nitrate-----	222, 333.
*Cellulose ethers:	
Ethyl cellulose-----	222, 448.
Methyl cellulose-----	448.
*Sodium carboxymethylcellulose, 100%-----	222, 264, 333, 549.
Sodium carboxymethylhydroxyethylcellulose-----	222.
*Chloral (Trichloroacetaldehyde)-----	333, 345, 390.
Chloroacetaldehyde dimethyl acetal-----	590.
*Chloroacetic acid, mono-----	222, 245, 264, 338, 343, 448.
Chloroacetic acid, mono, derivatives:	
Butyl monochloroacetate-----	245.
Ethyl monochloroacetate-----	245, 448.
Methyl monochloroacetate-----	266, 448.
Sodium monochloroacetate-----	448.
Chloroacetone (1-Chloro-2-propanone)-----	498.
Chloroacetyl chloride-----	448.
Chlorodiethoxymethylsilane-----	315.
2-Chloroethyl acetate-----	431.
2-Chloroethyl methyl ether (2-Chloroethoxymethane)-----	412.
Chloromaleic anhydride, mono-----	527.
Chloromethyl methyl ether-----	338, 493.
Chloromethylsilanes-----	346.
p-Chloropropionyl chloride-----	498.
N-Chlorosuccinimide (Succinichlorimide)-----	101, 527.
Chlorotrimethylsilane-----	315.
Citric acid, by fermentation, refined-----	415.
*Citric acid salts:	
Ammonium citrate-----	231, 515.
Ammonium dihydrogen citrate-----	515.
Barium citrate-----	521.
Calcium citrate-----	415.
Ferrous calcium citrate-----	281.
Iron citrate-----	231, 415.
Iron ammonium citrate-----	231, 415.
Potassium citrate-----	415, 515.
Sodium citrate-----	415, 515.
Cocoon fatty acid amide-----	23.
Cocoon and tallow fatty acyl chloride-----	590.
Coctonseed oil, diethylenetriamine, acetate-----	464.
Crotonaldehyde-----	392, 483.
α-Cyanoacetamide-----	266.
Cyanoacetic acid-----	266, 343, 394, 448.
Cyanuric acid-----	498.
Decane-----	551.
Diacetone alcohol (4-Hydroxy-4-methyl-2-pentanone)-----	258, 392.
2-Dibutylaminoethanol-----	580.
Dibutyl hydrogen phosphite-----	312.
1,3-Dibutyl-2-thiourea-----	580.
Dibutyl tin methoxide-----	X.

TABLE 26B.--Synthetic organic chemicals: Miscellaneous chemicals for which United States production or sales were reported, identified by manufacturer, 1953--Continued

Chemical	Manufacturers' identification numbers (according to list in table 27)
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued	
Dichloroacetaldehyde-----	345.
Dichloroacetic acid-----	266.
Dichloroacetic acid, methyl ester-----	266.
Dichloroacetyl chloride-----	266.
Dichlorodimethylsilane-----	315.
Dichlorodimethylsilane (Dimethyl silicon dichloride).	315.
Dichloroethyl formal (Bis(2-chloroethoxy)methane)--	392.
Di(1,2-epoxypropane)amine-----	333.
Diethoxydimethylsilane-----	315.
2-Diethylaminoethanol-----	392, 580.
Diethylaminopropionitrile-----	464.
Diethyl amylethylmalonate (n-Amyl ethyl malonic ester).	442.
Diethyl butylethylmalonates-----	565.
Diethyl carbonate-----	463.
Diethyl diethylmalonate (Diethyl malonic ester)----	442, 565.
*Diethylene glycol-----	321, 392, 430, 448, 549.
Diethylene glycol chloroformate-----	391.
Diethylene glycol diethyl ether (Bis(2-ethoxyethyl) ether).	392.
Diethylene glycol monobutyl ether (2-(2-Butoxyeth- oxy)ethanol).	392.
Diethylene glycol monobutyl ether acetate (2-(2-Bu- toxyethoxy)ethyl acetate).	392.
Diethylene glycol monoethyl ether (Carbitol) (2-(2-Ethoxyethoxy)ethanol).	392.
Diethylene glycol monoethyl ether acetate (2-(2-Eth- oxyethoxy)ethyl acetate).	392.
Diethylene glycol monomethyl ether (2-(2-Methoxy- ethoxy)ethanol).	392.
Diethyl ethylisomylmalonate-----	394, 442.
Diethyl ethylmalonate (Ethyl malonic ester)-----	442, 565.
Diethyl hydrogen phosphite-----	312.
Diethylhydroxylamine oxalate-----	498.
Diethyl isopropylmalonate-----	X.
Diethyl maleate-----	392, 464.
*Diethyl malonate (Malonic ester)-----	266, 394, 442, 448, 565.
Diethyl 1-methylbutylmalonate-----	394, 442, 565.
Diethyl oxalate (Ethyl oxalate)-----	367, 463.
1,3-Diethyl-2-thiourea-----	580.
Diglycolic acid-----	333.
α , β -Dihydroxy- β , β -dimethylbutyric acid, sodium salt (Sodium 3,3-dimethyl-2,4-dihydroxybutyrate).	442.
Dihydroxytartaric acid-----	464.
Diisobutyl ketone (Isovalerone)-----	392.
Diisopropyl peroxydicarbonate (Isopropyl percar- bonate).	391.
1,3-Diisopropyl-2-thiourea-----	580.
Dimethyl acid pyrophosphate-----	208.
*2-Dimethylaminoethanol-----	392, 493, 580.
Dimethylaminopropionitrile-----	338.
N,N-Dimethylformamide-----	333, 493.
Dimethylglyoxime-----	498.
Dimethylglyoxime, sodium salt-----	281.
Dimethyl hydrogen phosphite-----	312.
1,1-Dimethylurea-----	343.
1,3-Dimethylurea-----	580.
Dioleyl maleate-----	245.
*Dipropylene glycol-----	321, 392, 418, 448, 549.
Dipropylene glycol methyl ether-----	448.
Dithiocarbamates, not listed under specified use classifications.	563.
Dithiophosphoric acid esters, not listed under specified use classifications:	
Barium di(hexyl, lauryl) dithiophosphate-----	464.
Zinc dihexyl dithiophosphate-----	464.
1-Dodecene-----	551.
Dodecylsuccinic anhydride-----	527.
Epichlorohydrin-----	258.
Erucic acid-----	260.
Ethanesulfonic acid-----	560.
*Ethanalamines:	
*Mono (2-Aminoethanol)-----	231, 321, 392, 448.
*Di (2,2'-Aminodithanol)-----	321, 392, 448.
*Tri (2,2',2''-Nitritotriethanol)-----	321, 392, 448.
Ethanalamine (mono) hydrochloride-----	566.
Ethanalamine (mono) salt with formaldehyde-----	493.
Ethanalamine residue-----	321.
Ethoxymethylene malonic ester-----	266.
β -Ethoxypropionitrile-----	464.
*Ethyl acetate, 85%-----	216, 249, 252, 333, 367, 392, 463, 483.

TABLE 26B.--Synthetic organic chemicals: Miscellaneous chemicals for which United States production or sales were reported, identified by manufacturer, 1953--Continued

Chemical	Manufacturers' identification numbers (according to list in table 27)
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued	
Ethyl acetoacetate-----	392, 463.
Ethyl acrylate-----	392, 493.
*Ethyl alcohol, synthetic-----	222, 252, 258, 333, 392, 481, 484, 592.
2-Ethylaminoethanol (Ethylmonoethanolamine)-----	580.
Ethyl ammonium phosphate-----	245.
Ethyl bromoacetate (Ethyl monobromoacetate)-----	448.
2-Ethyl-1-butanol (sec-Hexyl alcohol)-----	392, 483.
α -Ethylbutyraldehyde-----	392.
α -Ethylbutyric acid (Diethylacetic acid)-----	392.
α -Ethylcaproaldehyde (2-Ethylhexaldehyde)-----	392, 484.
α -Ethylcaproic acid (2-Ethyl-1-hexoic acid)-----	392.
* α -Ethylcaproic (2-Ethyl-1-hexoic) acid salts:	
Aluminum α -ethylcaproate-----	314.
*Calcium α -ethylcaproate-----	314, 440, 485, 581.
*Cobalt α -ethylcaproate-----	314, 440, 485, 581.
Iron α -ethylcaproate-----	440, 581.
*Lead α -ethylcaproate-----	314, 371, 440, 485, 581.
Manganese α -ethylcaproate-----	440, 485, 581.
*Zinc α -ethylcaproate-----	314, 440, 485, 581.
Zirconium α -ethylcaproate-----	485.
α -Ethylcapryl acetate-----	392.
Ethyl chloroformate-----	463.
Ethyl cyanoacetate-----	266, 394, 448.
Ethyldiethanolamine (2,2'-(Ethylimino)diethanol)-----	580.
Ethylene, from ethyl alcohol-----	323, 435, 463.
Ethylene chlorohydrin (2-Chloroethanol)-----	392, 412.
Ethylene cyanhydrin (Hydracrylonitrile)-----	338, 464, 493.
*Ethylene glycol-----	321, 333, 392, 430, 448, 549.
Ethylene glycol diformate-----	392.
Ethylene glycol dimethyl ether-----	101.
Ethylene glycol monobutyl ether (2-Butoxyethanol)-----	321, 392.
Ethylene glycol monoethyl ether (Cellosolve) (2-Ethoxyethanol).-----	392.
Ethylene glycol monoethyl ether acetate (2-Ethoxyethyl acetate).-----	321, 392, 448.
Ethylene glycol monomethyl ether (2-Methoxyethanol)-----	392.
Ethylene glycol monomethyl ether acetate (2-Methoxyethyl acetate).-----	321, 392, 430, 448.
*Ethylene oxide-----	321, 392, 430, 448.
*Ethyl ether:	
*Tech-----	222, 323, 392, 481, 484, 592.
*U.S.P.-----	231, 463, 522.
*Absolute-----	463.
Ethyl β -ethoxypropionate-----	493.
*Ethyl formate-----	367, 392, 414, 508, 582.
N-Ethylglycine-----	464.
2-Ethyl-1,3-hexanediol-----	392.
2-Ethyl-1-hexanol-----	392, 483, 484.
Ethyl α -hydroxyisobutyrate-----	493.
Ethyl α -hydroxyisovalerate-----	493.
Ethyl lactate-----	464.
Ethyl magnesium bromide-----	101.
2-(Ethylmercapto)ethanol-----	580.
Ethyl (mono) orthophosphate-----	208.
Ethyl potassium sodium phosphate-----	245.
Ethyl propionate-----	53, 414, 582.
Ethyl silicate-----	315, 392.
Ethyl stearoylacetate-----	X.
Ethyl sulfate (Diethyl sulfate)-----	392.
2-Ethynyl-2-butanol-----	372.
Fats and oils, chemically modified:	
Castor oil, acetylated-----	219.
Castor oil, dehydrated-----	219.
Castor oil, hydrogenated-----	260.
Fish oil, hydrogenated-----	260.
Soybean oil, hydrogenated-----	260.
Sperm oil, hydrogenated-----	260.
Tallow, hydrogenated-----	260.
Vegetable oils, brominated-----	302.
All other-----	123, 131, 314.
Fatty acids, chemically modified:	
Bromo fatty acids-----	333, 510.
Castor oil fatty acids, dehydrated-----	219.
Stearic acid, dehydrated-----	493.
*Fatty acid esters, not included with plasticizers:	
Butyl palmitate-----	370, 421.
Ethylene glycol mono-oleate-----	177, 342.
β -Hydroxyethyl ester of tall oil-----	245.
Isopropyl myristate-----	229, 370, 541.
Isopropyl oleate-----	370.

TABLE 26B.--Synthetic organic chemicals: Miscellaneous chemicals for which United States production or sales were reported, identified by manufacturer, 1953--Continued

Chemical	Manufacturers' identification numbers (according to list in table 27)
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued	
*Fatty acid esters, not included with plasticizers-- Continued	
Isopropyl palmitate-----	229, 370.
Isopropyl stearate-----	370.
Methyl caproate-----	108.
Methyl ester of coconut oil-----	108.
Methyl myristate-----	108.
Methyl palmitate-----	108.
Methyl tallow-----	421.
Pentaerythritol tall oil ester-----	421.
Polyethoxyethyl castor oil ether-----	417.
Polyethoxyethyl castor oil ether, hydrogenated-----	417.
Polyethylene glycol stearate (wax)-----	421.
Polyoxyalkylene linseed dimer ester-----	417.
1,2-Propylene glycol dioleate-----	438.
Propylene glycol stearate-----	417.
All other-----	108.
*Fatty and synthetic higher alcohols (C ₁₀ and higher):	
Decyl alcohol-----	333, 481, 551.
3,9-Diethyl-6-tridecanol-----	392.
Dodecyl alcohol (Lauryl alcohol)-----	276, 333, 551.
7-Ethyl-2-methyl-4-hendecanol-----	392.
5-Ethyl-2-nonanol-----	392.
1-Hexadecanol (Oetyl alcohol)-----	86, 260, 333, 551.
1-Octadecanol (Stearyl alcohol)-----	260, 333, 551.
cis-9-Octadecen-1-ol (Oleyl alcohol)-----	333.
1-Tetradecanol-----	551.
1-Tridecanol-----	481.
All other-----	333, 493, 551.
*Flotation reagents:	
Dithiophosphates:	
Ammonium di-sec-butyl dithiophosphate-----	464.
Ammonium diisopropyl dithiophosphate-----	464.
Potassium dihexyl dithiophosphate-----	464.
Potassium diisopropyl dithiophosphate-----	464.
Sodium di-sec-butyl diethyl dithiophosphate-----	464.
Sodium diethyl dithiophosphate-----	464.
Sodium dihexyl dithiophosphate-----	464.
Sodium diisopropyl dithiophosphate-----	464.
Fatty amine salts:	
Butylammonium oleate-----	580.
Coconut oil amine acetate-----	23.
Octadecylamine acetate-----	23, 464.
Soybean amine acetate-----	23.
Tallow amine acetate-----	23.
Tallow amine acetate, hydrogenated-----	23.
Oetyl isocyanate-----	245.
Quaternary ammonium compounds-----	566.
Xanthates:	
Potassium amylxanthate-----	448, 464.
Potassium sec-butylxanthate-----	448.
Potassium ethylxanthate-----	448.
Potassium isopropylxanthate-----	448.
Potassium pentasolamylxanthate-----	448.
Sodium n-butylxanthate-----	36.
Sodium sec-butylxanthate-----	464.
Sodium ethylxanthate-----	448, 464.
Sodium isopropylxanthate-----	448, 464.
*Formaldehyde, 37% HCHO by weight-----	72, 245, 266, 286, 333, 344, 367, 387, 397, 418, 449, 493, 515, 596.
Formamide-----	333.
*Formic acid, 90%-----	208, 231, 333, 397.
*Formic acid salts:	
Aluminum formate-----	75, 208, 342, 392, 429.
Ammonium formate-----	75, 504.
Chromic formate-----	550.
Lead formate-----	371.
Magnesium formate-----	360.
Nickel formate-----	110, 440.
Potassium formate-----	360, 379.
*Sodium formate, crude-----	208, 222, 397, 515.
*Sodium formate, refined-----	281, 504, 515.
All other-----	75.
Formyl acetone dimethyl acetal-----	266.
*Fumaric acid-----	245, 464, 527.
Fumaryl chloride-----	527.
Gases (poisonous, tear, etc.): Phosgene (Carbonyl chloride).-----	391.
Gluconic acid, tech-----	415.
Glycerol, synthetic-----	258.

TABLE 26B.--Synthetic organic chemicals: Miscellaneous chemicals for which United States production or sales were reported, identified by manufacturer, 1953--Continued

Chemical	Manufacturers' identification numbers (according to list in table 27)
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued	
Glycerol a-chlorohydrin (3-Chloro-1,2-propanediol)-	431, 483, 498.
Glycerol dichlorohydrin (1,3-Dichloro-2-propanol)--	498.
Glycine (Aminoacetic acid), tech-----	343.
Glycine ethyl ester hydrochloride-----	343.
Glycolic acid (Hydroxyacetic acid)-----	333.
Glycolonitrile-----	464, 493.
Glyoxal-----	392.
Guanidine hydrochloride-----	426, 519.
Guanidine stearate-----	426.
4-Guanyl-1-isonitrosoguanyl-1-tetrazene-----	X.
*Halogenated hydrocarbons:	
1-Bromobutane (n-Butyl bromide)-----	448, 512.
2-Bromobutane (sec-Butyl bromide)-----	442, 448, 512, X.
1-Bromo-2-chloroethane (Ethylene chlorobromide)--	345.
Bromochloromethane-----	181, 359.
1-Bromo-3-chloropropane (Trimethylene chloro- bromide).-----	73, 448.
1-Bromodecane-----	333.
Bromoethane (Ethyl bromide)-----	181, 394, 448.
1-Bromohexadecane (Cetyl bromide)-----	448, 512.
1-Bromo-2-methylpropane (Isobutyl bromide)-----	448, 512.
Bromo-octadecane-----	333, 512, 550.
1-Bromopentane (n-Amyl bromide)-----	448, 498, 512.
2-Bromopentane (1-Methylbutyl bromide)-----	442, 498, 565.
1-Bromopropane (n-Propyl bromide)-----	448, 512.
2-Bromopropane (Isopropyl bromide)-----	448, X.
3-Bromopropene (Allyl bromide)-----	448, 512.
3-Bromo-1-propene-----	550.
Bromotrifluoromethane-----	333.
*Carbon tetrachloride-----	217, 242, 321, 345, 448, 464.
*Chlorinated paraffins:	
Less than 35% chlorine-----	338, X.
35%-64% chlorine-----	222, 242, 338, 487.
65% or more chlorine-----	242.
1-Chlorobutane (n-Butyl chloride)-----	392, 574.
1-Chloro-1,1-difluoroethane-----	504.
Chlorodifluoromethane-----	333, 504.
*Chloroethane (Ethyl chloride):	
Tech-----	222, 333, 426, 448.
U.S.P-----	258, 448.
*Chloroethylene (Vinyl chloride monomer)-----	242, 245, 354, 378, 392, 448, 563.
*Chloroform:	
Tech-----	121, 169, 333, 448.
U.S.P-----	121, 169, 448.
*Chloromethane (Methyl chloride):	
Crude-----	74, 346.
Refined, refrigerant grade-----	74, 121, 333, 448.
1-Chloro-3-methylbutane (Isoamyl chloride)-----	442, 512.
2-Chloro-2-methylpropane (tert-Butyl chloride)---	498, 512.
1-Chloropentane (n-Amyl chloride)-----	338, 442, 512, 580.
Chloropentanes (Amyl chlorides), mixed-----	580.
1-Chloropropane (n-Propyl chloride)-----	512.
2-Chloropropane (Isopropyl chloride)-----	448.
3-Chloropropene (Allyl chloride)-----	258.
Chlorotrifluoroethylene-----	333.
Chlorotrifluoromethane-----	333.
Dibromodifluoromethane-----	333.
1,2-Dibromoethane (Ethylene dibromide)-----	345, 359, 448, 603.
Dibromomethane (Methylene bromide)-----	448, 498.
1,4-Dibromopentane-----	431.
1,3-Dibromopropane (Trimethylene dibromide)---	448, 512.
1,4-Dichlorobutane-----	333.
Dichlorodifluoromethane-----	333, 504.
*1,2-Dichloroethane (Ethylene dichloride)-----	242, 245, 321, 392, 426, 430, 448, 493, 549.
Dichlorofluoromethane-----	333.
*Dichloromethane (Methylene chloride):	
Crude-----	121, 448.
Refined, refrigerant grade-----	121, 333, 448.
Dichloropentanes, mixed-----	580.
1,2-Dichloropropane (Propylene dichloride)-----	392, 448, 549.
Dichlorotetrafluoroethane-----	333.
1,1-Difluoroethane-----	504.
1,1-Difluoroethylene-----	504.
Hexachlorobutadiene-----	338.
Hexachloroethane-----	591.
Iodoethane (Ethyl iodide), tech-----	498, 512.
Iodoform-----	233.
Iodomethane (Methyl iodide), tech-----	512, 599.
Pentachloroethane-----	333.
1,1,2,2-Tetrabromoethane (Acetylene tetrabromide)	448.

TABLE 26B.--Synthetic organic chemicals: Miscellaneous chemicals for which United States production or sales were reported, identified by manufacturer, 1953--Continued

Chemical	Manufacturers' identification numbers (according to list in table 27)
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued	
*Halogenated hydrocarbons--Continued	
1,1,2,2-Tetrachloroethane (Acetylene tetra- chloride)	333.
*Tetrachloroethylene (Perchloroethylene)-----	242, 333, 337, 391, 448.
1,1,1-Trichloroethane (Methyl chloroform)-----	448.
1,1,2-Trichloroethane (Vinyl trichloride)-----	392.
*Trichloroethylene-----	145, 333, 337, 448.
Trichlorofluoromethane-----	333, 504.
1,2,3-Trichloropropane-----	258.
Trichlorotrifluoroethane-----	333.
Vinylidene chloride, monomer-----	448.
All other halogenated hydrocarbons-----	321, 512, 549.
2-Heptanone (Methyl amyl ketone)-----	392.
n-Hexadecane-----	333, 551.
1-Hexadecene-----	551.
Hexamethyldisiloxane-----	315.
Hexamethylenediammonium adipate-----	333.
2,5-Hexanedione (Acetylacetone) carbon disulfide-----	281.
Hexyl alcohol-----	392.
n-Hexyl ether-----	392.
Hydrazine and salts-----	133.
Hydrogenated tallow amide-----	23.
α-Hydroxyisobutyrate, above ethyl-----	493.
α-Hydroxyisobutyronitrile (Acetone cyanhydrin)-----	333, 464, 493.
2-(Hydroxymethyl)-2-nitro-1,3-propanediol (Tris(hy- droxymethyl)nitromethane).	367.
N-Hydroxymethylstearamide (N-Methylolstearamide)---	333.
β,β'-Iminodipropionitrile-----	464.
Inositol hexanitrate-----	417.
Isethionic acid (2-Hydroxyethanesulfonic acid)-----	550.
Isoamyl octyl orthophosphate-----	208.
Isoamyl (mono) orthophosphate-----	208.
Isobutyraldehyde-----	484.
Isobutyraldehyde lactone-----	464.
Isobutyric acid-----	483.
Isobutyric anhydride-----	483.
Iso-octyl alcohol (6-Methyl-1-heptanol)-----	209, 481.
Iso-octyl thioglycolate-----	147.
Isopropanolamines:	
Monoisopropanolamine-----	392, 448.
Diisopropanolamine-----	392.
Triisopropanolamine-----	392.
Mixed-----	392.
Isopropoxypropionitrile-----	464.
Isopropyl acetate-----	333, 367, 392, 483.
*Isopropyl alcohol (Isopropanol), 100%-----	252, 258, 392, 481, X.
2-Isopropylaminoethanol-----	580.
Isopropyl chloroformate-----	391, 463.
*Isopropyl ether-----	258, 392, 481.
*Lactic acid, 100%:	
*Edible-----	201, 235, 333, 539.
*Medicinal-----	333.
*Technical-----	201, 235, 333, 539.
Lactic acid salts:	
Calcium lactate-----	235, 539.
Ferrous lactate-----	281.
*Sodium lactate-----	376, 515, 539, 566.
Strontium lactate-----	231.
All other-----	75.
Lactide-----	201.
Lactonitrile-----	464.
Lauric acid-----	108.
Lauroyl chloride:	
Crude-----	333, 541, 550.
Refined-----	333, 338, 550, 574.
Lauroyloxyacetic acid-----	518.
Lauroyl peroxide-----	102, 357.
N-Lauroylsarcosin, sodium salt-----	X.
Lead soaps from oxidized hydrocarbons-----	270.
Levulinic acid-----	360.
*Linoleic acid salts:	
Ammonium linoleate-----	135, 581.
*Calcium linoleate-----	131, 135, 164, 485, 581.
*Cobalt linoleate-----	110, 131, 135, 376, 440, 581.
Iron linoleate-----	440.
Lead linoleate-----	135, 376, 440, 581.
Lead manganese linoleate-----	376, 581.
*Manganese linoleate-----	131, 135, 440, 581.
*Lubricating oil additives:	
Alkyl phosphate esters-----	333.
Barium alkyl dithiophosphate-----	608.

TABLE 26B.--Synthetic organic chemicals: Miscellaneous chemicals for which United States production or sales were reported, identified by manufacturer, 1953--Continued

Chemical	Manufacturers' identification numbers (according to list in table 27)
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued	
*Lubricating oil additives--Continued	
Chloronaphtha xanthate-----	245.
Octyl formaldehyde-----	258.
Oxidized hydrocarbons-----	270.
Phosphorous derivatives of high-molecular-weight hydrocarbons.	560.
Polymethacrylates, diethylaminoethyl and lauryl, mixed.	333.
Zinc alkyl dithiophosphate-----	608.
All other-----	338, X.
Maleic acid-----	442, 527, 536, 558.
Maleic acid, lead salt, tribasic-----	371.
Maleic anhydride-----	245, 392, 527.
Malic acid-----	464, 527, 558.
Malonic acid-----	176, 468.
Mannitol-----	417.
Mannitol hexaacetate-----	417.
Mannitol hexanitrate-----	417.
Mesityl oxide-----	258, 392.
Methacrylamide-----	493.
Methacrylates, above methyl-----	333, 493.
Methacrylic acid-----	333, 493.
*Methanol, synthetic-----	72, 252, 267, 286, 333, 344, 392, 418, 430.
2-(Methoxymethoxy)ethanol-----	333.
3-Methoxypropionitrile-----	464.
3-Methoxypropylamine-----	464.
Methoxytriglycol acetate-----	392.
Methyl acetate-----	296, 392, X.
Methyl acetone acetal-----	344.
Methyl acrylate, monomer-----	493.
Methylal (Dimethoxymethane)-----	418.
Methyl cyanoacetate-----	266, 448.
N,N'-Methylenebis[iminopropionic acid]-----	559.
N,N'-Methylenebis(stearamide)-----	23.
Methylene citric acid-----	379.
Methyl ether (Dimethyl ether)-----	333.
Methyl ethyl ketone (2-Butanone)-----	252, 258, 392, X.
Methyl ethyl ketone peroxide-----	102, 357.
Methyl ethyl ketoxime (2-Butanone oxime)-----	527.
Methyl formate-----	333.
Methyl glycolate (Methyl hydroxyacetate)-----	333.
4-Methyl-2-hexanone-----	442.
1-Methylisobutylcarbinol (4-Methyl-2-pentanol)-----	258, 392.
1-Methylisobutylcarbinyl acetate (4-Methyl-2-amyl acetate).	333, 392.
Methyl lactate-----	201.
Methyl magnesium bromide-----	101.
Methyl methacrylate, monomer-----	41, 333, 493.
2-Methyl-2-nitro-1,3-propanediol-----	367.
2-Methyl-2-nitro-1-propanol-----	367.
Methylolurea, mono (Hydroxymethylurea)-----	333.
2-Methyl-2,4-pentanediol (Hexylene glycol)-----	258, 392.
4-Methyl-2-pentanone (Methyl isobutyl ketone)-----	258, 392.
Methyl polyethanolamine-----	550.
Methyl sulfate (Dimethyl sulfate)-----	333.
N-Methyltaurine-----	550.
Methyltriethoxysilane-----	315.
Methyl vinyl ether-----	550.
Mucochloric acid-----	498.
Myristic acid-----	108.
Nitroethane-----	367.
Nitromethane-----	367.
1-Nitropropane-----	367.
2-Nitropropane-----	367.
Nylon (Polyhexamethylene adipamide)-----	333.
1-Octanol-----	333, 551, 582.
2-Octanol-----	86, 493.
2-Octanone (Hexyl methyl ketone)-----	493, 536.
Octene-----	493.
Octyl (mono) hydrogen orthophosphate-----	208.
Octylamide-----	23.
Octyl mercaptan-----	551.
Octyl oleyl maleate-----	245.
Oleamide (Octadecene amide)-----	23.
*Oleic acid salts:	
Aluminum oleate-----	135, 314, 421, 581.
Barium zinc oleate-----	440.
Calcium hydroxyoleate-----	421.
Chromium oleate-----	440.
Copper oleate-----	135, 440, 581.
*Lead oleate-----	135, 314, 440, 581.

TABLE 26B.--Synthetic organic chemicals: Miscellaneous chemicals for which United States production or sales were reported, identified by manufacturer, 1953--Continued

Chemical	Manufacturers' identification numbers (according to list in table 27)
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued	
Oleoyl chloride-----	86, 535, 550, 566, 575.
*Oxalic acid-----	185, 208, 415, 504.
*Oxalic acid salts:	
Ammonium oxalate-----	231, 281, 415, 504.
Calcium oxalate-----	208.
Ferric ammonium oxalate-----	415.
Ferric oxalate-----	415.
Ferric potassium oxalate-----	415.
Ferric sodium oxalate-----	415.
Ferrous oxalate-----	599.
Potassium binoxalate-----	281, 504, 515.
Potassium oxalate-----	281, 504.
Sodium oxalate-----	208, 231, 281, 415, 504, 515.
All other-----	75.
Oxamide-----	504.
Oxidized hydrocarbons other than lubricating oil additives.	270.
Palmitic acid salts:	
Aluminum palmitate-----	164, 421.
Zinc palmitate-----	164, 314, 421, 464.
*Palmitoyl chloride-----	153, 550, 582.
Paraformaldehyde-----	333, 344, 397, 418.
Paraldehyde (Paracetaldehyde)-----	392.
Pelargonic acid (Nonanoic acid)-----	229, 499.
*Pentaerythritol-----	142, 222, 309, 367, 397.
*Pentaerythritol tetranitrate-----	222, 309, 333.
Pentanediol-----	333.
2-Pentanone (Methyl propyl ketone)-----	252.
Phytic acid, calcium salt-----	287.
Phytol-----	588.
Pine oil, synthetic-----	222.
Polyacrylic acid, potassium salt-----	563.
Polyacrylic acid, sodium salt-----	529, 563.
Polyacrylonitrile-----	333.
Polyacrylonitrile, hydrolyzed, sodium salt (non-soil-conditioner).-----	364.
Polyethoxyethyl sorbitol-----	417.
Polyethylene glycol-----	321, 392, 448.
Polyglycerol-----	245, 396, X.
Polyoxyalkylene derivatives, miscellaneous-----	448.
Polyoxyalkylene glucose-----	417.
Polypropylene glycol-----	392, 448.
Propionaldehyde-----	252.
*Propionic acid-----	252, 333, 418, 483.
Propionic acid salts:	
Cadmium propionate-----	504.
Calcium propionate-----	333, 360, 418, 539.
Sodium propionate-----	333, 360, 418, 539.
Zinc propionate-----	281, 360.
Propionic anhydride-----	392.
Propionyl chloride-----	431, 582.
n-Propyl acetate-----	418, 463, 582.
n-Propyl alcohol (Propanol)-----	252, 333, 414, 418.
Propylene, from coke-oven gas-----	333.
α-Propylene chlorohydrin (1-Chloro-2-propanol)-----	392.
*Propylene glycol (1,2-Propanediol)-----	333, 392, 418, 448, 549.
Propylene glycol dipropionate-----	370.
Propylene glycol glycolate-----	485.
Propylene glycol methyl ether-----	448.
Propylene glycols, methyl ethers, mixtures-----	448.
Propylene oxide-----	392, 418, 448.
Propyl isobutyrate-----	367.
Propyl mercaptan (1-Propanethiol)-----	498, 512.
Pyruvic acid-----	464.
Rare sugars-----	558.
Research chemicals:	
Bromatin-----	101.
Creatine and creatinine-----	558.
Halogen compounds-----	512, 591.
Hydrocarbons-----	551.
Phosphonates-----	312.
Silanes-----	315, 334.
Sulfur compounds-----	512, 551.
All other-----	75, 101, 227, 334, 464, 482, 498, 508, 512, 514, 551, 558, 572, 591.
Ricinoleic acid salts:	
Aluminum ricinoleate-----	164.
Barium ricinoleate-----	219.
Cadmium ricinoleate-----	219, 440.
Calcium ricinoleate-----	219.
Sodium ricinoleate-----	219.

TABLE 26B.--Synthetic organic chemicals; Miscellaneous chemicals for which United States production or sales were reported, identified by manufacturer, 1953--Continued

Chemical	Manufacturers' identification numbers (according to list in table 27)
MISCELLANEOUS CHEMICALS, ACRYLIC--Continued	
Ricinoleic acid salts--Continued	
Triethyltetramine ricinoleate-----	550.
Zinc ricinoleate-----	219.
Sarcosine (N-Methylaminoacetic acid)-----	333, 550, 559, 574.
Sebacic acid-----	86, 493.
Semicarbazide base-----	133.
Semicarbazide hydrochloride-----	133, 599.
Sequestering agents:	
(Diethylenetrinitrilo)pentaaetic acid-----	342.
(Ethylenedinitrilo)tetraacetic acid-----	342, 550.
(Ethylenedinitrilo)tetraacetic acid, disodium salt.	342.
(Ethylenedinitrilo)tetraacetic acid, disodium-copper salt.	342.
(Ethylenedinitrilo)tetraacetic acid, monosodium-iron salt.	342.
*(Ethylenedinitrilo)tetraacetic acid, tetrasodium salt.	342, 464, 550, 590.
(Ethylenedinitrilo)tetraacetic acid, trisodium salt.	342.
Silicones, fluids and greases-----	315.
Sodium ethoxide-----	394, 463.
Sodium ethyl oxalacetate-----	463.
Sodium formaldehydebisulfite-----	266, 498, 599.
*Sodium formaldehydesulfoxylate-----	307, 333, 429, 493.
Sodium methoxide (Sodium methylate)-----	394, 430, 551, X.
Sodium sorbitol borate-----	417.
Sorbitol-----	417.
Soya nitrile-----	23.
Stearamide (Octadecane amide)-----	333.
*Stearic acid salts:	
*Aluminum stearates:	
*Aluminum distearate-----	21, 39, 164, 231, 288, 314, 421, 464, 566.
Aluminum monostearate-----	21, 164, 231, 421.
Aluminum stearates, mixed-----	464.
Aluminum tristearate-----	21, 39, 131, 164, 231, 314, 421, 464, 566.
Ammonium stearate-----	164, 314, 319, 421, 566.
*Barium stearate-----	21, 39, 164, 314, 421, 566.
*Cadmium stearate-----	21, 314, 421.
*Calcium stearate-----	21, 39, 164, 231, 314, 421, 464, 566.
Cobalt stearate-----	314.
Ferric stearate-----	314.
Ferrous stearate-----	566.
*Lead stearate-----	164, 314, 371, 421, 440, 566.
Lead stearate, dibasic-----	314, 371.
Lithium hydroxystearate-----	314.
*Lithium stearate-----	39, 164, 274, 314, 421, 566.
*Magnesium stearate-----	21, 39, 164, 231, 314, 421, 464, 566.
Manganese stearate-----	314.
*Zinc stearate-----	21, 39, 164, 231, 314, 421, 464, 566.
All other-----	417.
Stearonitrile (Octadecanenitrile)-----	23.
Stearoyl chloride-----	541, 550.
Stearoxyethylcarbonyl chloride-----	541.
Succinic acid-----	527.
*Succinic anhydride-----	245, 527, 551.
Succinimide-----	101, 498, 527.
Succinonitrile-----	464.
Sucrose octaacetate-----	392.
Tall oil fatty acyl chloride-----	550.
Tallow fatty acyl chloride-----	550.
Tartaric acid-----	217.
Tartaric acid salts, nonmedicinal-----	75, 515.
Tetraethylene glycol-----	448.
Tetraethylene glycol dimethyl ether (Bis[2-(2-methoxyethoxy)ethyl]ether).	74.
Tetraethyl lead-----	333, 426.
Tetraglycine hydroperiodide-----	313, 565.
Thiamine hydrobromide-----	515.
Thioacetamide-----	498.
Thioacetic acid (Sulfoacetic acid)-----	498.
Thioglycerol-----	147.
Thioglycolic acid (Mercaptoacetic acid)-----	147, 383.
Thioglycolic acid salts:	
*Ammonium thioglycolate-----	147, 253, 383, 599.
Calcium thioglycolate-----	147.
Sodium thioglycolate-----	147, 514.
Thiourea-----	245.
Triallyl cyanurate-----	464.
Tributyl phosphate-----	312.
Tributyl phosphite-----	312.

TABLE 26B.--Synthetic organic chemicals: Miscellaneous chemicals for which United States production or sales were reported, identified by manufacturer, 1953--Continued

Chemical	Manufacturers' identification numbers (according to list in table 27)
MISCELLANEOUS CHEMICALS, ACYCLIC--Continued	
2,2,2-Trichloro-1-ethoxyethanol-----	495.
Trichloroethylsilane (Ethyl silicon trichloride)---	315.
Trichlorohexadecylsilane (Hexadecyltrichlorosilane)	315.
Trichloromethylsilane (Methyltrichlorosilane)-----	315.
Trichloro-octadecylsilane (Octadecyltrichloro- silane).	315.
Triethanolamine phosphate-----	302.
1,1,1-Triethoxyethane-----	498.
Triethyl citrate-----	415.
Triethylene glycol-----	321, 392, 448.
Triethylene glycol dichloride (2-(2-Chloroethoxy)- ethyl 2-chloroethyl ether).	392.
Triethyl orthoformate-----	266.
Triethyl orthopropionate-----	498.
Triethyl phosphite-----	312.
Trihexyl phosphite-----	312.
Triiso-octyl phosphite-----	312.
Triisopropyl phosphite-----	312.
Tripropylene glycol-----	448.
Tripropylene glycol, methyl ether-----	448.
Tris(2-ethylhexyl) phosphite-----	312.
Undecylenic acid (Hendecenoic acid)-----	219.
Urea, solid-----	286, 333.
Urea in feed compounds-----	286, 333.
Urea in solid fertilizer-----	333.
Urea in urea-ammonia solution-----	286, 333.
Vinyl acetate, monomer-----	333, 392, 418.
Xanthic acid, ethyl, sodium salt-----	333.
*Zinc formaldehydesulfoxylate-----	307, 333, 429, 493, 596.

Directory of Manufacturers

The Directory of Manufacturers lists the companies that report their production of synthetic organic chemicals to the United States Tariff Commission. The name of each manufacturer is preceded by an identification number.

For 1953, the Directory of Manufacturers lists 608 companies (see table 27). This is 17 more than the number that reported for 1952. Some of the companies that report production of synthetic organic chemicals consume their entire output in further manufacturing.

The Directory of Manufacturers lists the companies in two ways. Section 1 lists them in numerical order, the identification number for each company having been assigned in the order in which the Tariff Commission received the company's reporting schedule. This system makes it unnecessary to wait until all the schedules are returned before assigning the identification numbers, and greatly speeds the preparation of the tables in part III. Section 2 lists the companies in alphabetical order.

TABLE 27.--Synthetic organic chemicals: Directory of manufacturers, 1953

SECTION 1. NUMERICAL DIRECTORY

[Names of synthetic organic chemical manufacturers who reported production or sales to the United States Tariff Commission for 1953 are listed below in the order of their identification numbers as used in tables in part III. Section 2 of this table lists these manufacturers alphabetically and gives their offices and plant addresses]

No.	Name of company	No.	Name of company
1	Enkay Chemical Co.	74	Ansul Chemical Co.
2	Guyan Color & Chemical Works.	75	City Chemical Corp.
3	Standard Agricultural Chemicals, Inc.	76	Dye Specialties Corp., Inc.
4	Witte, John H., & Sons.	77	Anderson Laboratories, Inc.
5	Drug Processors, Inc.	78	Polychemical Co.
6	Astra Pharmaceutical Products, Inc.	79	Standard-Toch Chemicals, Inc.
7	Hartman-Leddon Co.	80	Siddall, George F., Co., Inc.
8	Knoedler Chemical Co.	81	Someborn, L., Sons, Inc.
9	LaMotte Chemical Products Co.	82	American Viscose Corp. (Sylvania Div.).
10	Nilok Chemicals, Inc.	83	Atlas Wall Paper Mills, Inc.
11	Poughkeepsie Dyestuff Corp.	84	Cargill, Inc. (Falk Div.).
12	Foster-Heaton Co.	85	General Motors Corp. (AC Spark Plug Div.).
13	George, P. D., Co.	86	Hardesty, W. C., Co., Inc.
14	Marrow's, Inc.	87	Kohnstamm, H., & Co., Inc.
15	Metro-Atlantic, Inc.	88	Magnolia Petroleum Co.
16	Standard Soap Co. of Camden.	89	Meyer, J., & Sons.
17	Southern Textile Chemical Corp.	90	Neshes Butane Products Co. (R. R.). ¹
18	Dakota Briquets & Tar Products, Inc.	91	Reliance Varnish Co., Inc.
19	Marathon Corp. (Chemical Div.).	92	Vita-Var Corp.
20	Red Spot Paint & Varnish Co.	93	Bird & Son, Inc.
21	Synthetic Products Co.	94	Humble Oil & Refining Co. (R. R.). ¹
22	United States Procaine Co., Inc.	95	Moderne Paint Co., Inc.
23	Armour & Co. (Chemical Div.).	96	Morwear Paint Co.
24	Commonwealth Color & Chemical Co.	97	Richardson Co.
25	Crownoil Chemical Co., Inc.	98	Salvo Chemical Corp.
26	Ironsides Co.	99	Standard Brands, Inc.
27	Purocaine, Inc.	100	American Alcolac Corp.
28	Dr. Salsbury's Laboratories.	101	Arapahoe Chemicals, Inc., & Arapahoe Special Products, Inc.
29	Watertown Manufacturing Co.	102	Cadet Chemical Corp.
30	American Marietta Co.	103	California Ink Co., Inc.
31	Atlas Processing Co.	104	Citro Chemical Co.
32	Armstrong Cork Co.	105	Copolymer Corp. (R. R.). ¹
33	Elizabethtown Consolidated Gas Co.	106	Crosby Chemicals, Inc.
34	Hanna Paint Manufacturing Co. (Industrial Div.).	107	Crown Tar & Chemical Works, Inc.
35	Harbor Plywood Corp.	108	El Dorado Oil Works.
36	Kennecott Copper Corp. (Chino Mines Div.).	109	Griffin Chemical Co.
37	Marden-Wild Corp.	110	McGean Chemical Co.
38	Mineral Oil Refining Co.	111	Marbon Corp.
39	Parsons, N. W., Plymouth, Inc.	112	Marlowe-Van Loan Corp.
40	Rubber Corp. of America.	113	Peerless Chemical Co.
41	U. S. Plastic Products Corp.	114	Peerless Color Co., Inc.
42	Van Camp Laboratories, Div. of Van Camp Sea Food Co., Inc.	115	Phoenix Oil Co.
43	Sipe, James B., & Co.	116	Schenley Laboratories, Inc.
44	American Marietta Co. (Ferber-Schorndorfer Co. Div.).	117	Fiber Chemical Corp.
45	Cabot, Samuel, Inc.	118	Continental-Diamond Fibre Co.
46	Organics, Inc.	119	Marx, Max, Color & Chemical Co.
47	Ortho Chemical Corp.	120	Schenectady Varnish Co., Inc.
48	Scholler Bros., Inc.	121	Belle Alkali Co.
49	Advance Paint Co.	122	Bio-Process Co., Div. of Armour & Co.
50	American Viscose Corp.	123	Carlisle Chemical Works, Inc.
51	Alabama Chemical Co.	124	Farley & Loetscher Manufacturing Co.
52	Kehev-Bradley Co.	125	Firestone Tire & Rubber Co. (R. R.). ¹
53	Northwestern Chemical Co.	126	Hynson, Westcott & Dunning, Inc.
54	Swift & Co.	127	Kyanize Paints, Inc.
55	Thompson Chemicals Corp.	128	Food Machinery & Chemical Corp. (Ohio-Apex Div.).
56	Chemico, Inc.	129	Norwich Pharmacal Co.
57	Nonweiler, A. P., Co.	130	Whittemore-Wright Co., Inc.
58	Apex Chemical Co., Inc.	131	Jones-Dabney Co., Div. of Devco & Reynolds Co., Inc.
59	Atomic Basic Chemicals Corp.	132	Gamma Chemical Corp.
60	Chaffardon, J.	133	Fairmont Chemical Co., Inc.
61	Coopers Creek Chemical Corp.	134	Pennsylvania Industrial Chemical Corp.
62	Dow Chemical Co. (Styrene Div.). (R. R.). ¹	135	Shephard Chemical Co.
63	Keystone Color Works, Inc.	136	White & Hodges, Inc.
64	Keystone Paint & Varnish Corp.	137	General Tire & Rubber Co. (Chemical Div.).
65	Laurel Soap Manufacturing Co., Inc.	138	Minnesota Paints, Inc.
66	Long, Chas. R., Jr., Co.	139	Pine Bluff Chemical Co., subsidiary of Food Machinery & Chemical Corp.
67	Marlette Corp.	140	Amalgamated Chemical Corp.
68	Metro Dyestuff Corp.	141	Booty Resinners, Inc.
69	Raybestos Div. of Raybestos-Manhattan, Inc.	142	Delaware Chemicals, Inc.
70	Sonoco Products Co.	143	Kali Manufacturing Co.
71	Spaulding Fibre Co., Inc.	144	Montclair Research Corp.
72	Spencer Chemical Co.	145	Niagara Alkali Co.
73	Edison, Thomas A., Inc. (Medical Gas Div.).		

See footnote at end of table.

TABLE 27.--Synthetic organic chemicals: Directory of manufacturers, 1953--Continued

No.	Name of company	No.	Name of company
146	U. S. Rubber Co. (R. R.). ¹	228	General Mills, Inc.
147	Evans Chemetics, Inc.	229	Givaudan Corp.
148	Rinshed-Mason Co.	230	Lueders, George, & Co.
149	American Aniline & Extract Co., Inc.	231	Mallinckrodt Chemical Works.
150	Atlas Refinery, Inc.	232	Merichem Co.
151	Bates Chemical Co.	233	National Biochemical Co.
152	Cutter Laboratories.	234	Pan American Refining Corp.
153	Genesee Research Corp.	235	American Maize Products Co.
154	Gilman Paint & Varnish Co.	236	Allied Chemical & Dye Corp. (Solvay Process Div.).
155	Huggins, James, & Son, Inc.	237	Appleton Coated Paper Co.
156	Old Colony Tar Co., Inc.	238	Bristol Laboratories, Inc.
157	Portland Gas & Coke Co.	239	Carpenter-Morton Co.
158	Seattle Gas Co.	240	Carus Chemical Co., Inc.
159	Solvent Chemical Co., Inc.	241	Colgate-Palmolive Co.
160	Tar Distilling Co., Inc.	242	Diamond Alkali Co.
161	Tennessee-Frontier Corp.	243	Firestone Plastics Co. Div. of Firestone Tire & Rubber Co.
162	Whittier Laboratories.	244	Kalide Corp.
163	Burroughs Wellcome & Co. (U.S.A.), Inc.	245	Monsanto Chemical Co.
164	Leffingwell Chemical Co.	246	Pitman-Moore Co., Div. of Allied Laboratories, Inc.
165	Maltbie Laboratories, Inc.	247	Pure Oil Co.
166	Old Hickory Chemical Co., Inc.	248	Scherer, R. P., Corp.
167	Westinghouse Electric Corp.	249	Shawinigan Resins Corp.
168	Wilnot & Cassidy, Inc.	250	Southern Dyestuff Corp.
169	Brown Co.	251	Southside Chemical Co., Inc.
170	Grand Rapids Varnish Corp.	252	Stanolind Oil & Gas Co.
171	International Minerals & Chemical Corp.	253	Summit Chemical Products.
172	Levey, Fred'k. H., Co., Inc.	254	Vanderbilt Chemical Corp.
173	Miles Laboratories, Inc.	255	Van Dyk & Co., Inc.
174	Schuykill Chemical Co.	256	General Foods Corp. (Maxwell House Div.).
175	Wetherill, George D., Varnish Co.	257	Pabco Products, Inc.
176	American Bio-Synthetics Corp.	258	Shell Chemical Corp.
177	California-Spray Chemical Corp.	259	Trask, Arthur C., Co.
178	Quaker Chemical Products Corp.	260	Archer-Daniels-Midland Co.
179	Standard Naphthalene Products Co.	261	Ford Motor Corp.
180	General Color Co., Inc.	262	Hall, C. P., Co. of Illinois.
181	Michigan Chemical Corp.	263	Baltimore Paint & Color Works.
182	Barium Reduction Corp.	264	Buckeye Cotton Oil Co.
183	Glyco Products Co., Inc.	265	Burkart-Schier Chemical Co.
184	National Starch Products, Inc.	266	Kay-Fries Chemicals, Inc.
185	Oldbury Electro-Chemical Co.	267	New York Quinine & Chemical Works, Inc.
186	A-ro Co.	268	Wilson Organic Chemicals, Inc.
187	Specific Pharmaceuticals, Inc.	269	Zurn, O. F., Co.
188	Taylor Fibre Co.	270	Alox Corp.
189	Crown Chemical Corp.	271	American Chemical Paint Co.
190	Baker, J. T., Chemical Co. (Taylor Chemical Div.).	272	Cook Paint & Varnish Co.
191	Lever Brothers Co.	273	General Tire & Rubber Co. (R. R.). ¹
192	Osborn, C. J., Co.	274	Maywood Chemical Works.
193	Oxford Corp.	275	Pennsylvania Salt Manufacturing Co.
194	Pratt & Lambert, Inc.	276	Procter & Gamble Co.
195	Purex Corp., Ltd.	277	Thomasset Colors, Inc.
196	Snyder Chemical Corp.	278	Cosden Petroleum Corp.
197	Standard Chlorine Chemical Co.	279	Greenwood Textile Supply Co.
198	Sumner Chemical Co., Inc.	280	Werner Drug & Chemical Co.
199	Upjohn Co.	281	Baker, J. T., Chemical Co.
200	Wheeler, Reynolds & Stauffer.	282	Fine Colors Co.
201	Clinton Foods, Inc.	283	Great Southern Chemical Corp.
202	Puget Sound Pulp & Timber Co.	284	Moreland Chemical Co., Inc.
203	Schieffelin & Co.	285	Newport Industries, Inc.
204	Krumbhaar Chemical Co., Inc.	286	Allied Chemical & Dye Corp. (Nitrogen Div.).
205	Nepera Chemical Co., Inc.	287	Corn Products Refining Co.
206	Ottawa Chemical Co., Inc.	288	Kentucky Color & Chemical Co.
207	Synvar Corp.	289	Merrell, Wm. S., Co.
208	Victor Chemical Works.	290	Paul-Lewis Laboratories, Inc.
209	Gulf Oil Corp.	291	Ad-Co Color Corp.
210	Atlantic Refining Co.	292	California Flaxseed Products Co.
211	Berk, F. W., & Co., Inc.	293	Carolina Aniline & Extract Co.
212	Bruder, M. A., & Sons, Inc.	294	Chemical Manufacturing Co., Inc.
213	Cities Service Refining Corp. (R. R.). ¹	295	Chemical Process Co.
214	Federal Paint Co., Inc.	296	Colton Chemical Co.
215	Oil & Chemical Products, Inc.	297	Fuller, W. P., & Co.
216	Publicker Industries, Inc.	298	Industrial Products, Inc.
217	Stauffer Chemical Co.	299	Inland Alkaloid Co.
218	Western Condensing Co.	300	Lakeside Laboratories, Inc.
219	Baker Castor Oil Co.	301	Maume Chemical Co.
220	Chase Chemical Corp.	302	Dominion Products, Inc.
221	General Petroleum Corp.	303	Oronite Chemical Co.
222	Hercules Powder Co.	304	Pacific Paint & Varnish Co.
223	Shell Oil Co.	305	Richfield Oil Corp.
224	Peck's Products Co.	306	Roosevelt Oil & Refining Corp.
225	Florasynth Laboratories, Inc.	307	Royce Chemical Co.
226	Colt's Manufacturing Co.		
227	Delta Chemical Works.		

See footnote at end of table.

TABLE 27.--Synthetic organic chemicals; Directory of manufacturers, 1953--Continued

No.	Name of company	No.	Name of company
308	Smith, Klein & French Laboratories.	385	Ultra Chemical Works, Inc.
309	Trojan Powder Co.	386	Collett-Week-Nibecker, Inc.
310	United Pices Dye Works.	387	Durez Plastics & Chemicals, Inc.
311	Velsicol Corp., Div. of Arvey Corp.	388	Holland Color & Chemical Co.
312	Virginia-Carolina Chemical Corp.	389	Lemke, B. L., & Co., Inc.
313	Wallace & Tiernan, Inc.	390	Montrose Chemical Corp. of California.
314	Witco Chemical Co.	391	Pittsburgh Plate Glass Co.
315	Dow Corning Corp.	392	Union Carbide & Carbon Corp. (Carbide & Carbon Chemicals Co.).
316	Inland Steel Container Co.	393	Valspar Corp. (Valentine & Co. Div.).
317	Loven Chemical Co. of California.	394	Gane's Chemical Works, Inc.
318	Esso Standard Oil Co.	395	Glidden Co.
319	Farrington, W. U., Estate of.	396	Goodyear Tire & Rubber Co.
320	Interchemical Corp. (Textile Colors Div.).	397	Heyden Chemical Corp.
321	Jefferson Chemical Co., Inc.	398	Kennecott Copper Corp. (Utah Copper Div.).
322	Kendall Refining Co.	399	Maas & Waldstein Co.
323	Koppers Co., Inc.	400	Parke, Davis & Co.
324	Meta Chemical Corp.	401	Premo Pharmaceutical Laboratories, Inc.
325	Metalsalts Corp.	402	Shulton, Inc. (Fine Chemicals Div.).
326	National Chlorophyll & Chemical Co.	403	Standard Chemical Products, Inc.
327	Neville Chemical Co.	404	Sun Oil Co.
328	Ottol Oil Co.	405	Texas Co.
329	Remington Arms Co., Inc.	406	Uhlich, Paul, & Co., Inc.
330	Stange, Wm. J., Co.	407	U. S. Oil Co.
331	Tennessee Products & Chemical Corp.	408	Vareum Chemical Corp.
332	Dexter Chemical Corp.	409	Washburn, T. F., Co.
333	duPont de Nemours, E. I., & Co., Inc.	410	Western Dry Color Co.
334	Union Carbide & Carbon Corp. (Linde Air Products Co. Div.).	411	Young Aniline Works, Inc.
335	Bios Laboratories, Inc.	412	Thiokol Chemical Corp.
336	Ciba Pharmaceutical Products, Inc.	413	Crown Central Petroleum Corp.
337	Hooker-Detrex, Inc.	414	Fritzsche Brothers, Inc.
338	Hooker Electrochemical Co.	415	Pfizer, Chas., & Co., Inc.
339	Irrington Varnish & Insulator Co. Div. of Minnesota Mining & Manufacturing Co.	416	Wilson Laboratories.
340	Pabst Brewing Co.	417	Atlas Powder Co.
341	Ritter Chemical Co., Inc.	418	Celanese Corp. of America.
342	Alrose Div. of Geigy Chemical Corp.	419	Endo Products, Inc.
343	Benzol Products Co.	420	Hampden Color & Chemical Co.
344	Cities Service Oil Co.	421	Nopec Chemical Co., Inc.
345	Food Machinery & Chemical Corp. (Westvaco Chemical Div.).	422	Specialty Resins Co.
346	General Electric Co. (Chemical Div.).	423	Union Oil Co. of California.
347	Grain Processing Corp.	424	Zinsser & Co., Inc.
348	Harsyd Chemicals, Inc.	425	Childs Pulp Colors, Inc.
349	Hart Products Corp.	426	Ethyl Corp.
350	Heresite & Chemical Co.	427	Peters Chemical Co.
351	Miranol Chemical Co., Inc.	428	Sandoz Chemical Works, Inc.
352	Norda Essential Oil & Chemical Co., Inc.	429	Wolf, Jacques, & Co.
353	Nudex Products Co., Inc.	430	Mathieson Chemical Corp.
354	Pathfinder Chemical Corp., subsidiary of Goodyear Tire & Rubber Co.	431	Fries Bros., Inc.
355	Warner-Jenkinson Manufacturing Co.	432	Lebec Chemical Corp.
356	White & Begley Co.	433	Lever, C., Co., Inc.
357	Wallace & Tiernan, Inc. (Lucidol Div.).	434	Carvin Co.
358	Alframinge Corp.	435	Ohio Chemical & Surgical Equipment Co.
359	American Potash & Chemical Corp. (Eston Chemicals Div.).	436	Soluol Chemical Co., Inc.
360	Chemo Puro Manufacturing Corp.	437	American Polymer Co. Div. of the Borden Co.
361	McCloskey Varnish Co.	438	Drew, E. F., & Co., Inc.
362	Socoxy-Vacuum Oil Co., Inc.	439	Federal Color Laboratories, Inc.
363	Westville Laboratories.	440	Harshaw Chemical Co.
364	Aleo Oil & Chemical Corp.	441	Humble Oil & Refining Co.
365	Arnold, Hoffman & Co., Inc.	442	Lilly, Eli, & Co.
366	Ciba States, Ltd. (Toms River Div.).	443	Phillips Petroleum Co. (R. R.). ¹
367	Commercial Solvents Corp.	444	Sharp & Dohme Div. of Merck & Co., Inc.
368	Edcan Laboratories.	445	Staley, A. E., Manufacturing Co.
369	Johnson, Chas. Enou, Co., Inc.	446	Ninol Laboratories, Inc.
370	Kessler Chemical Co., Inc.	447	Wolff-Alport Chemical Corp.
371	National Lead Co.	448	Dow Chemical Co.
372	Reilly Tar & Chemical Corp.	449	Borden Co. (Chemical Div.).
373	Republic Cresoating Co.	450	Decey Products Co.
374	Richards Chemical Works, Div. of Onyx Oil & Chemical Co.	451	van Ameringen-Haebler, Inc.
375	Ruberoid Co.	452	Hoffmann-LaRoche, Inc.
376	Sterling Drug, Inc. (Hilton-Davis Div.).	453	Interchemical Corp. (Finishes Div.).
377	United States Pipe & Foundry Co.	454	Plastics Engineering Co.
378	U. S. Rubber Co. (Naugatuck Chemical Div.).	455	Belle Chemical Co., Inc.
379	Winthrop-Stearns, Inc.	456	Pittsburgh Coke & Chemical Co.
380	All-Tex Specialties Co.	457	Schering Corp.
381	Blackman Brands, Inc.	458	Sun Chemical Corp. (Pigment Div.).
382	Bryant Chemical Corp.	459	Goodrich, B. F., Chemical Co. (Div. of B. F. Goodrich Co.) (R. R.). ¹
383	Halby Products Co.	460	Verona Chemical Co.
384	Huron Milling Co.	461	Industrial Dyestuff Co.
		462	Schwarz Laboratories, Inc.
		463	U. S. Industrial Chemical Co.
		464	American Cyanamid Co. (Lederle Laboratories Div. and Organic Chemicals Div.).

See footnote at end of table.

TABLE 27.--Synthetic organic chemicals: Directory of manufacturers, 1953--Continued

No.	Name of company	No.	Name of company
465	Dave's Laboratories, Inc.	542	Hexagon Laboratories, Inc.
466	Ferro Chemical Corp.	543	Keystone Chemurgic Corp.
467	Patent Chemicals, Inc.	544	Midland Industrial Finishes Co.
468	R. S. A. Corp.	545	Union Bay State Chemical Co., Inc.
469	Vitamins, Inc.	546	Sterling Drug, Inc. (Bayer Co. Div.).
470	Synthetic Chemicals, Inc.	547	Searle, G. D., & Co.
471	Brooklyn Color Works, Inc.	548	Sigma Chemical Co.
472	Dykes Co.	549	Wyandotte Chemicals Corp.
473	Continental Oil Co.	550	General Aniline & Film Corp. (Dyestuff & Chemical Div.).
474	Hyman, Julius, & Co.	551	Humphrey-Wilkinson, Inc.
475	Quaker Oats Co.	552	May, Otto B., Inc.
476	Rensselaer Chemicals, Inc.	553	Salem Oil & Grease Co.
477	Indoil Chemical Corp.	554	Southern Sizing Co.
478	Berkshire Color & Chemical Mfg. Corp.	555	Standard Oil Co. of California.
479	Cleary, W. A., Corp.	556	Standard Chemical Co.
480	Crown Chemical Div., Joseph Turner & Co.	557	Gallowhur Chemical Corp.
481	Esso Standard Oil Co. (Louisiana Div.).	558	Pfanstiehl Chemical Co.
482	Pedlow-Nease Chemical Co., Inc.	559	Pharma Chemical Corp.
483	Tennessee Eastman Co., Div. of Eastman Kodak Co.	560	Standard Oil Co. of Indiana.
484	Texas Eastman Co., Div. of Eastman Kodak Co.	561	Wica Co., Inc.
485	Advance Solvents & Chemical Corp.	562	Maschmeijer, A., Jr., Inc.
486	Pfister Chemical Works, Inc.	563	Goodrich, B. F., Chemical Co.
487	Union Carbide & Carbon Corp. (Bakelite Co.).	564	Wyeth Laboratories, Inc.
488	Coastwise Petroleum Co.	565	Abbott Laboratories.
489	Douglas Chemical Corp.	566	Sun Chemical Corp. (Warwick Chemical Co. Div.).
490	France, Campbell & Darling, Inc.	567	Eakins, J. S. & W. R., Inc.
491	Leatex Chemical Co.	568	Reichhold Chemicals, Inc.
492	Lebanon Chemical Corp.	569	Bick & Co., Inc.
493	Rohm & Haas Co.	570	Collway Colors, Inc.
494	Berkeley Chemical Corp.	571	Stepan Chemical Co.
495	Cincinnati Chemical Works, Inc.	572	Fisher Scientific Co.
496	Devey & Almy Chemical Co.	573	Houghton, E. F., & Co.
497	Eastern States Chemical Corp.	574	Montrose Chemical Co.
498	Eastman Kodak Co.	575	DePaul Chemical Co., Inc.
499	Emery Industries, Inc.	576	American Aniline Products, Inc.
500	Magruder Color Co., Inc.	577	Fermutit Co.
501	Arabol Manufacturing Co.	578	Augusta Chemical Co.
502	Pennsylvania Refining Co.	579	Davis, H. B., Co.
503	American Alkyd Industries.	580	Sharples Chemicals, Inc.
504	Allied Chemical & Dye Corp. (General Chemical Div.).	581	Stresen-Reuter, Fred'k. A., Inc.
505	Finetex, Inc.	582	Trubek Laboratories.
506	LaSalle Chemical Corp.	583	Alliance Color & Chemical Co.
507	Farmers' Chemical Co.	584	DePree Co.
508	Ritter, F., & Co.	585	Lewis Tar Products Co.
509	Rossville Dyestuff Corp.	586	Seydel Chemical Co.
510	Sapon Laboratories.	587	Sinclair & Valentine Co.
511	Verley Chemical Co., Inc.	588	Strong, Cobb & Co., Inc. (American Chlorophyll Div.).
512	Columbia Organic Chemicals, Inc.	589	Universal Detergents, Inc.
513	Lobica-Debruille, Inc.	590	Bersworth Chemical Co.
514	Medical Chemicals Corp.	591	Fine Organics, Inc.
515	Merck & Co., Inc.	592	National Petro-Chemicals Corp.
516	Morton-Withers Chemical Co.	593	Dodge & Olecott, Inc.
517	Rivordale Chemical Co.	594	Diamond Alkali Organic Chemicals Div., Inc.
518	Sinclair Refining Co.	595	Swope Oil & Chemical Co.
519	New York Color & Chemical Co., Div. of American Dyewood Co.	596	Watson-Park Co.
520	Orbis Products Corp.	597	Cockerille, F. O.
521	Sherwin-Williams Co.	598	Felton Chemical Co., Inc.
522	Squibb, E. R., & Sons, Div. of Mathieson Chemical Corp.	599	Ringwood Chemical Corp.
523	Althouse Chemical Co., Inc.	600	Penick, S. B., & Co.
524	Catalin Corp. of America.	601	Kentucky Synthetic Rubber Corp. (R. R.). ¹
525	Imperial Paper & Color Corp. (Pigment Color Div.).	602	Midland Synthetic Rubber Co. (R. R.). ¹
526	Organic Chemical Corp.	603	Ethyl-Dow Chemical Co.
527	Allied Chemical & Dye Corp. (National Aniline Div.).	604	Archer-Daniels-Midland Co. (Chlorophyll Div.).
528	Jennison-Wright Corp.	605	Allied Chemical & Dye Corp. (Semet-Solvay Div.).
529	Jordan, Jr., W. H., & F., Manufacturing Co.	606	Callison, I. P., & Sons, Inc.
530	Cabot, Godfrey L., Inc.	607	Hoffman-Taff, Inc.
531	Standard Ultramarine & Color Co.	608	Lubrizol Corp.
532	Allydol Laboratories, Inc.		
533	Perkins Glue Co.		
534	Reilly-Whitman-Walton Co.		
535	Synthron, Inc.		
536	Allied Chemical & Dye Corp. (Barrett Div.).		
537	Ansbacher-Siegle Corp.		
538	Productol Co.		
539	Sheffield Chemical Co., Inc.		
540	Azoplate Corp.		
541	Emulacl Corp.		

¹ R. R. in parentheses following the name of a company indicates U. S. Government plant operated for the Office of Rubber Reserve.

TABLE 27.--Synthetic organic chemicals: Directory of manufacturers, 1953--Continued

SECTION 2. ALPHABETICAL DIRECTORY

[Names of synthetic organic chemical manufacturers who reported production or sales to the United States Tariff Commission for 1953 are listed below alphabetically, together with their identification numbers as used in tables in part III. Section 1 of this table lists these manufacturers in the order of their identification numbers.]

No.	Name of company	Office address (location of plant given in parentheses if not in same city as office)
565	Abbott Laboratories-----	14th St. and Sheridan Rd., North Chicago, Ill.
291	Ad-Co Color Corp-----	66 Lister Ave., Newark 5, N. J.
49	Advance Paint Co-----	601-35 Kentucky Ave., Indianapolis 7, Ind.
485	Advance Solvents & Chemical Corp-----	245 5th Ave., New York 16, N. Y. (Jersey City, N. J.).
364	Alco Oil & Chemical Corp-----	Trenton Ave. and William St., Philadelphia 34, Pa.
358	Alframine Corp-----	72-76 Putnam St., Paterson 4, N. J.
532	Alkydol Laboratories, Inc-----	3242 S. 50th Ave., Cicero 50, Ill.
583	Alliance Color & Chemical Co-----	33 Avenue F, Newark 5, N. J.
	Allied Chemical & Dye Corp.:	
536	Barrett Div-----	40 Rector St., New York 6, N. Y. (Fairfield, Ala.; Calumet City and Chicago, Ill.; Detroit, Mich.; Edgewater, N. J.; Greensboro, N. C.; Ironton, Toledo, and Youngstown, Ohio; and Bethlehem, Frankford, and Philadelphia, Pa.).
504	General Chemical Div-----	40 Rector St., New York 6, N. Y. (Claymont, Del.; Baton Rouge, La.; Buffalo, N. Y.; and Marcus Hook, Pa.).
527	National Aniline Div-----	40 Rector St., New York 6, N. Y. (Buffalo, N. Y., and Moundsville, W. Va.).
286	Nitrogen Div-----	40 Rector St., New York 6, N. Y. (South Point, Ohio, and Hopewell, Va.).
605	Somet-Solvay Div-----	40 Rector St., New York 6 (Tonawanda), N. Y.
236	Solvay Process Div-----	Syracuse 1 (Geddes), N. Y.
380	All-Tex Specialties Co-----	65 Meadow St., Warwick, R. I.
270	Alox Corp-----	70 Pine St., New York 3 (Niagara Falls), N. Y.
342	Alrose Div., Geigy Chemical Corp-----	P.O. Box 1294, Providence 1 (Cranston), R. I.
523	Aithouse Chemical Co., Inc-----	540 Pear St., Reading, Pa.
140	Amalgamated Chemical Corp-----	Ontario and Rorer Sts., Philadelphia 34, Pa.
100	American Alcolac Corp-----	3440 Fairford Rd., Baltimore 26, Md.
503	American Alkyd Industries-----	Broad and 14th Sts., Carlstadt, N. J.
149	American Aniline & Extract Co., Inc-----	Venango and F Sts., Philadelphia 34, Pa.
576	American Aniline Products, Inc-----	50 Union Sq., New York 3, N. Y. (Lock Haven, Pa.).
176	American Bio-Synthetics Corp-----	710 W. National Ave., Milwaukee 4, Wis.
271	American Chemical Paint Co-----	Ambler, Pa.
464	American Cyanamid Co-----	30 Rockefeller Plaza, New York 20, N. Y. (Azusa, Calif.; Stamford and Wallingford, Conn.; Bound Brook, Warners, and Woodbridge, N. J.; Charlotte, N. C.; and Bridgeville, Pa.).
	Lederle Laboratories Div-----	30 Rockefeller Plaza, New York 20 (Pearl River), N. Y.
	Organic Chemicals Div-----	30 Rockefeller Plaza, New York 20, N. Y. (Bound Brook, N. J.).
235	American Maize Products Co-----	100 E. 42d St., New York 17, N. Y.
30	American Marietta Co-----	3400 13th Ave., SW., Seattle 14, Wash.
44	Ferbert-Schorndorfer Co. Div-----	12815 Elmwood Ave., Cleveland 11, Ohio.
437	American Polymer Co. Div. of the Borden Co-----	101 Foster St., Peabody, Mass.
359	American Potash and Chemical Corp., Eston Chemicals Div-----	3100 E. 26th St., Los Angeles 23, Calif.
50	American Viscose Corp-----	1617 Pennsylvania Blvd., Philadelphia 3 (Meadville), Pa.
82	Sylvania Div-----	Fredericksburg, Va.
77	Anderson Laboratories, Inc-----	3940 Summit St., Weston, Mich.
537	Ansbacher-Siegle Corp-----	92 Chestnut Ave., Rosebank, Staten Island 5, N. Y.
74	Ansul Chemical Co-----	1 Stanton St., Marinette, Wis.
58	Apex Chemical Co., Inc-----	225 W. 34th St., New York 1, N. Y. (Elizabethport, N. J.).
237	Appleton Coated Paper Co-----	1200 N. Meade St., Appleton, Wis.
501	Arebol Manufacturing Co-----	110 E. 42d St., New York 17, N. Y.
101	Arapahoe Chemicals, Inc., & Arapahoe Special Products, Inc-----	2800 Pearl St., Boulder, Colo.
260	Archer-Daniels-Midland Co-----	2191 W. 110th St., Cleveland, Ohio (Wyandotte, Mich.).
604	Chlorophyll Div-----	P.O. Box 839, Minneapolis 2, Minn. (Neodesha, Kans., and Bethlehem, Pa.).
186	Arco Co-----	7301 Bessemer Ave., Cleveland 27, Ohio.
23	Armour & Co., Chemical Div-----	1355 W. 31st St., Chicago 9 (McCook), Ill.
362	Armstrong Cork Co-----	W. Liberty St., Lancaster (Pittsburgh), Pa.
35	Arnold, Hoffman & Co., Inc-----	55 Canal St., Providence 1, R. I. (Dighton, Mass.; Charlotte, N. C.; and Cincinnati, Ohio).
6	Astra Pharmaceutical Products, Inc-----	7 $\frac{1}{2}$ Neponset St., Worcester 6, Mass.
210	Atlantic Refining Co-----	260 S. Broad St., Philadelphia 1, Pa. (Port Arthur, Tex.).
417	Atlas Powder Co-----	9th and Market Sts., Wilmington, Del. (Atlas Point, Del., and Reynolds, Pa.).
31	Atlas Processing Co-----	P.O. Box 1786, Shreveport, La.
150	Atlas Refinery, Inc-----	142 Lockwood St., Newark 5, N. J.
83	Atlas Wall Paper Mills, Inc-----	Coal City, Ill.

TABLE 27.--Synthetic organic chemicals: Directory of manufacturers, 1953--Continued

No.	Name of company	Office address (location of plant given in parentheses if not in same city as office)
59	Atomic Basic Chemicals Corp-----	350 Delwar Rd., Pittsburgh 36, Pa.
578	Augusta Chemical Co-----	Box 660, Augusta, Ga.
540	Azoplate Corp-----	Morris Ave. and Weaver St., Summit, N. J.
219	Baker Castor Oil Co-----	120 Broadway, New York 5, N. Y. (Bayonna, N. J.).
281	Baker, J. T., Chemical Co-----	600 N. Broad St., Phillipsburg, N. J.
190	Taylor Chemical Div-----	600 N. Broad St., Phillipsburg, N. J. (Pann Yan, N. Y.).
263	Baltimore Paint & Color Works-----	2325 Annapolis Ave., Baltimore 30, Md.
182	Barium Reduction Corp-----	P.O. Box 8097, S. Charleston 3, W. Va.
151	Bates Chemical Co-----	Scottdale Rd., Lansdowne, Pa.
121	Bello Alkali Co-----	P.O. Box 615, Belle, W. Va.
455	Belle Chemical Co., Inc-----	534 Pearl St., Reading, Pa.
343	Benzol Products Co-----	237 South St., Newark 5 (Piscataway), N. J.
211	Bark, F. W., & Co., Inc-----	Park Pl., E., Wood-Ridge, N. J.
494	Berkeley Chemical Corp-----	Summit Ave., Berkeley Heights, N. J.
478	Berkshire Color & Chemical Mfg. Corp-----	250 Delawanna Ave., Delawanna, N. J.
590	Bersworth Chemical Co-----	875 Waverly St., Framingham, Mass.
569	Bick & Co., Inc-----	1820 N. 12th St., Reading, Pa.
122	Bio-Process Co., Div. of Armour & Co-----	P.O. Box 1411, Joliet, Ill.
335	Bios Laboratories, Inc-----	17 W. 60th St., New York 23, N. Y.
93	Bird & Son, Inc-----	East Walpole (Norwood), Mass.
381	Blackman Brands, Inc-----	Wesley St., S. Hackensack, N. J.
141	Booty Resinners, Inc-----	112 Jefferson St., Newark, Ohio.
449	Borden Co., Chemical Div-----	350 Madison Ave., New York 17, N. Y. (Demopolis, Ala.; Dominguez, Calif.; Union, Ill.; Bainbridge, N. Y.; Kernersville, N. C.; Springfield, Ore.; Philadelphia, Pa.; and Seattle, Wash.).
238	Bristol Laboratories, Inc-----	P.O. Box 657, Syracuse 1, N. Y.
471	Brooklyn Color Works, Inc-----	681 Morgan Ave., Brooklyn 22, N. Y.
169	Brown Co-----	650 Main St., Berlin, N. H.
212	Bruder, M. A., & Sons, Inc-----	52d and Grays Ave., Philadelphia 43, Pa.
382	Bryant Chemical Corp-----	6 North St., N. Quincy 71, Mass.
264	Buckeye Cotton Oil Co-----	P.O. Box 539, Cincinnati 1, Ohio.
265	Burkardt-Schier Chemical Co-----	Chestnut St. at 13th, Chattanooga 2, Tenn.
163	Burroughs-Wellcome & Co. (U.S.A.), Inc-----	Main St., Tuckahoe 7, N. Y.
530	Cabot, Godfrey L., Inc-----	77 Franklin St., Boston 10 (Cambridge), Mass.
45	Cabot, Samuel, Inc-----	141 Milk St., Boston 9 (Chelsea), Mass.
102	Cadet Chemical Corp-----	717 Elk St., Buffalo 5, N. Y.
51	Calabama Chemical Co-----	P.O. Box 147, Huntsville 1, Ala.
292	California Flaxseed Products Co-----	3135 E. 26th St., Los Angeles 23, Calif.
103	California Ink Co., Inc-----	945 Sansome St., San Francisco 11 (Berkeley), Calif.
177	California-Spray Chemical Corp-----	Lucas and Ortho Way, Richmond 4, Calif.
606	Callison, I. P., & Sons, Inc-----	801 Lloyd Bldg., Seattle 1, Wash.
84	Cargill, Inc., Falk Div-----	Rossllyn Sta., Carnegie, Pa.
123	Carlisle Chemical Works, Inc-----	West St., Reading 15, Ohio.
293	Carolina Aniline & Extract Co-----	301 S. Cedar St., Charlotta 1, N. C.
239	Carpenter-Morton Co-----	376 3d St., Everett 49, Mass.
240	Carus Chemical Co., Inc-----	Box 364, LaSalle, Ill.
434	Carwin Co-----	Stiles Lane, North Haven, Conn.
524	Catalin Corp. of America-----	1 Park Ave., New York 16, N. Y. (Calumet City, Ill.; Fords, N. J.; and Thomasville, N. C.).
418	Celanese Corp. of America-----	180 Madison Ave., New York 16, N. Y. (Amcelle, Md.; Newark, N. J.; Celriver, S. C.; Bishop and Pampa, Tex.; and Calco, Va.).
	Marco Products Div-----	290 Ferry St., Newark (Linden), N. J.
60	Chaffardon, J-----	209 Market St., Lynn, Mass.
220	Chase Chemical Corp-----	3527 Smallman St., Pittsburgh 1, Pa.
294	Chemical Manufacturing Co., Inc-----	Ashland, Mass.
295	Chemical Process Co-----	901 Spring St., Redwood City, Calif.
56	Chemo, Inc-----	2508 E. Bailey Rd., Cuyahoga Falls, Ohio.
360	Chemo-Furc Manufacturing Corp-----	32-25 Queens Blvd., Long Island City 1, N. Y.
425	Chids Pulp Colors, Inc-----	43 Summit St., Brooklyn 31, N. Y.
336	Ciba Pharmaceutical Products, Inc-----	556 Morris Ave., Summit, N. J.
366	Ciba Statas, Ltd., Toms River Div-----	P.O. Box 71, Toms River, N. J.
495	Cincinnati Chemical Works, Inc-----	P.O. Box 20, Evanston Sta., Cincinnati 7 (Norwood and St. Bernard), Ohio.
344	Cities Service Oil Co-----	Masonic-Empire Bldg., Bartlesville (Tallant), Okla.
213	Cities Service Refining Corp. (R. R.) ¹	716 Hodges St., Lake Charles, La.
104	Citro Chemical Co-----	199 Maywood Ave., Maywood, N. J.
75	City Chemical Corp-----	132 W. 22d St., New York 11, N. Y. (Jersey City, N. J.).
479	Cloary, W. A., Corp-----	Nav Brunswick (Franklin Township), N. J.
201	Clinton Foods, Inc-----	Clinton, Iowa.
488	Coastwise Petroleum Co-----	1127 Munsey Bldg., Baltimore 2, Md. (Goodhope, La.).
597	Cockerville, F. O-----	Greenwood, Va.
241	Colgate-Palmolive Co-----	105 Hudson St., Jersey City 2, N. J. (Berkeley, Calif.; Jeffersonville, Ind.; Kansas City, Kans.; and Jersey City, N. J.).
386	Collatt-Waak-Nibacker, Inc-----	Quimby St., Ossining, N. Y.
570	Collway Colors, Inc-----	15 Market St., Paterson 1, N. J.
296	Colton Chemical Co-----	1545 E. 18th St., Cleveland 14, Ohio.
226	Colt's Manufacturing Co-----	17 Van Dyke Ave., Hartford 15, Conn.
512	Columbia Organic Chemicals, Inc-----	600 Capitol Pl., Columbia (Cedar Terrace), S. C.

See footnote at end of table.

TABLE 27.--Synthetic organic chemicals: Directory of manufacturers, 1953--Continued

No.	Name of company	Office address (location of plant given in parentheses if not in same city as office)
367	Commercial Solvents Corp-----	260 Madison Ave., New York 16, N. Y. (Agnew, Calif.; Peoria, Ill.; Terre Hauts, Ind.; Harvey and Sterlington, La.; and Carlstadt, N. J.).
24	Commonwealth Color & Chemical Co-----	3240 Grace Ave., New York 69, N. Y.
118	Continental-Diamond Fibre Co-----	70 S. Chapel St., Newark, Del. (Bridgesport, Pa.).
473	Continental Oil Co-----	1000 S. Pine St., Ponca City, Okla.
272	Cook Paint & Varnish Co-----	P. O. Box 389, Kansas City 41, Mo.
61	Coopers Croek Chemical Corp-----	River Rd., W. Conshohocken, Pa.
105	Copolymer Corp. (R. R.) ¹ -----	P. O. Box 1029, Baton Rouge 1, La.
287	Corn Products Refining Co-----	17 Battery Pl., New York 4, N. Y. (Argo, Ill.).
278	Conden Petroleum Corp-----	P. O. Box 1311, Big Spring, Tex.
106	Crosby Chemicals, Inc-----	Box 32, De Ridder, La. (Piceayune, Miss.).
413	Crown Central Petroleum Corp-----	American Bldg., Baltimore 2, Md. (Pasadena, Tex.).
189	Crown Chemical Corp-----	240 India St., Providence 3, R. I.
480	Crown Chemical Div. of Joseph Turner & Co.	Pleasantview Terrace, Ridgefield, N. J.
25	Crownoil Chemical Co., Inc-----	2-14 49th Ave., Long Island City 1, N. Y.
107	Crown Tar & Chemical Works, Inc-----	900 Wovata St., Denver 4, Colo.
152	Cutter Laboratories-----	4th and Parker Sts., Berkeley 1, Calif.
18	Dakota Briquets & Tar Products, Inc-----	Dickinson, N. Dak.
579	Davis, H. B., Co-----	Bayard & Severn Sts., Baltimore 2, Md.
465	Dave's Laboratories, Inc-----	4800 S. Richmond St., Chicago 32, Ill. (Newaygo, Mich.).
450	Deacy Products Co-----	120 Potter St., Cambridge 42, Mass.
142	Delaware Chemicals, Inc-----	50 Murray St., Staten Island 9, N. Y.
227	Delta Chemical Works-----	23 W. 60th St., New York 23, N. Y.
575	DePaul Chemical Co., Inc-----	44-27 Purvis St., Long Island City 1, N. Y.
584	DePrez Co-----	130 Central Ave., Holland, Mich.
131	DeVoe & Reynolds Co., Inc., Jones-Dabney Co. Div.	1481 S. 11th St., Louisville 8, Ky.
496	Dewey & Almy Chemical Co-----	62 Whittemore Ave., Cambridge 40 (Acton), Mass.
332	Dexter Chemical Corp-----	819 Edgewater Rd., New York 59, N. Y.
242	Diamond Alkali Co-----	300 Union Commerce Bldg., Cleveland 14, Ohio (Painesville, Ohio, and Houston, Tex.).
594	Diamond Alkali Organic Chemicals Div., Inc.	80 Lister Ave., Newark 5, N. J.
593	Dodge & Olcott, Inc-----	180 Varick St., New York 14, N. Y. (Bayonne, N. J.).
302	Dominion Products, Inc-----	10-40 44th Dr., Long Island City 1, N. Y.
489	Douglas Chemical Corp-----	1624 Darrow Ave., Evanston, Ill.
448	Dow Chemical Co-----	Midland, Mich. (Pittsburg, Calif.; Galas Ferry, Conn.; and Freeport, Tex.).
62	Dow Chemical Co., Styrene Div. (R. R.) ¹	P. O. Box 500, Gardena (Los Angeles), Calif.
315	Dow Corning Corp-----	Box 592, Midland, Mich.
438	Drew, E. F., & Co., Inc-----	15 E. 26th St., New York 10, N. Y. (Boonton, N. J.).
5	Drug Processors, Inc-----	1219 E. Church St., Adrian, Mich.
333	duPont de Nemours, E. I., & Co., Inc-----	10th and Market Sts., Wilmington 7, Del. (Newport and Wilmington, Del.; E. Chicago, Ind.; Louisville, Ky.; Wyandotte, Mich.; Arlington, Carnay's Point, Deepwater, Gibbstown, Grasselli, Newark, New Brunswick, Parlin, and Porth Amboy, N. J.; Dresden and Niagara Falls, N. Y.; Toledo, Ohio; Philadelphia, Pa.; Memphis, Tenn.; Houston, Orange, and Victoria, Tex.; and Belle and Parkersburg, W. Va.).
387	Durez Plastics & Chemicals, Inc-----	Walek Rd., N. Tonawanda, N. Y.
76	Dye Specialties Corp., Inc-----	26 Journal Sq., Jersey City 6, N. J.
472	Dykes Co-----	2307 N. 11th St., St. Louis 6, Mo.
567	Eakins, J. S. & W. R., Inc-----	55 Berry St., Brooklyn 11, N. Y.
497	Eastern States Chemical Corp-----	8938 Manchaster Ave., Houston 12, Tex.
498	Eastman Kodak Co-----	343 State St., Rochester 4, N. Y.
483	Tennessee Eastman Co. Div-----	Eastman Rd., Kingsport, Tenn.
484	Texas Eastman Co. Div-----	P. O. Box 2068, Longview, Tex.
368	Edcan Laboratories-----	10 Pine St., South Norwalk, Conn.
73	Edison, Thomas A., Inc., Medical Gas Div.	P. O. Box 15, Stuyvesant Falls, N. Y.
108	El Dorado Oil Works-----	311 California St., San Francisco 4 (Oakland), Calif.
33	Elizabethtown Consolidated Gas Co-----	16 W. Jersey St., Elizabeth 4, N. J.
499	Emery Industries, Inc-----	4300 Carew Tower, Cincinnati 2, Ohio.
1	Emley Chemical Co-----	319 2d St., Elizabeth 1, N. J.
541	Emulsol Corp-----	59 E. Madison St., Chicago 3, Ill.
419	Endo Products, Inc-----	84-40 101st St., Richmond Hill 18, N. Y.
318	Esso Standard Oil Co-----	P. O. Box 23, Linden, N. J.
481	Louisiana Div-----	P. O. Box 551, Baton Rouge 1, La.
426	Ethyl Corp-----	100 Park Ave., New York 17, N. Y. (Baton Rouge, La.; Orangaburg, S. C.; and Pasadena, Tex.).
603	Ethyl-Dow Chemical Co-----	Midland, Mich. (Freeport, Tex.).
147	Evans Chmatics, Inc-----	250 E. 43d St., New York 17 (Watarloo), N. Y.
133	Fairmont Chemical Co., Inc-----	600 Ferry St., Newark 5, N. J.
124	Farley & Loetecher Manufacturing Co-----	7th and White Sts., Dubuque, Iowa.
507	Farmora's Chemical Co-----	P. O. Box 591, Kalamazoo, Mich.
319	Farrington, W. U., Estate of-----	Box 389, E. Groenwich (Warwick), R. I.
439	Federal Color Laboratories, Inc-----	4633 Forest Ave., Norwood 12, Ohio.

See footnote at end of table.

TABLE 27.--Synthetic organic chemicals: Directory of manufacturers, 1953--Continued

No.	Name of company	Office address (location of plant given in parentheses if not in same city as office)
214	Federal Paint Co., Inc-----	33 Rector St., New York 6, N. Y.
598	Felton Chemical Co., Inc-----	599 Johnson Ave., Brooklyn 37, N. Y.
466	Ferro Chemical Corp-----	450 Krick Rd., Bedford, Ohio.
117	Fiber Chemical Corp-----	P.O. Box 218, Matawan (Cliffwood), N. J.
282	Fine Colors Co-----	21-29 McBride Ave., Paterson 1, N. J.
591	Fine Organics, Inc-----	211 E. 19th St., New York 3, N. Y. (Lodi, N. J.).
505	Finetex, Inc-----	Box 414, Pompton Plains, N. J.
125	Firestone Tire & Rubber Co. (R. R.) ¹ -----	381 W. Wilbeth Rd., Akron 1, Ohio.
243	Firestone Tire & Rubber Co., Firestone Plastics Co. Div-----	P.O. Box 690, Pottstown, Pa.
572	Fisher Scientific Co-----	635 Greenwich St., New York 14, N. Y.
225	Florasynth Laboratories, Inc-----	900 Van Nest Ave., New York 62, N. Y.
128	Food Machinery & Chemical Corp.: Ohio-Apex Div-----	Nitro, W. Va.
139	Pine Bluff Chemical Co-----	100 Niagara St., Middleport, N. Y. (Arsenal, Ark.).
345	Westvaco Chemical Div-----	161 E. 42d St., New York 17, N. Y. (Newark, Calif., and S. Charleston, W. Va.).
261	Ford Motor Corp-----	3000 Schaefer Rd., Dearborn (Highland Park), Mich.
12	Foster-Heaton Co-----	16 E. 5th St., Paterson 4, N. J.
490	France, Campbell & Darling, Inc-----	Michigan Ave., Kenilworth, N. J.
431	Fries Bros., Inc-----	271 Church St., New York 13, N. Y. (Bloomfield, N. J.).
414	Fritzsche Brothers, Inc-----	76 9th Ave., New York 11, N. Y. (Clifton, N. J.).
297	Fuller, W. P., & Co-----	301 Mission St., San Francisco 19, Calif.
557	Gallowhur Chemical Corp-----	801 2d Ave., New York 25 (Ossining), N. Y.
132	Gamma Chemical Corp-----	220 E. 42d St., New York 17, N. Y. (Great Meadows, N. J.).
394	Gane's Chemical Works, Inc-----	677 5th Ave., New York 22, N. Y. (Carlstadt, N. J.).
550	General Aniline & Film Corp., Dyestuff & Chemical Div-----	435 Hudson St., New York 14, N. Y. (Linden, N. J., and Rensselaer, N. Y.).
180	General Color Co., Inc-----	24 Ave. B, Newark 5, N. J.
346	General Electric Co., Chemical Div-----	1 Plastics Ave., Pittsfield, Mass. (Anaheim, Calif.; Pittsfield, Mass.; Schenectady and Waterford, N. Y.; and Coshocton, Ohio).
256	General Foods Corp., Maxwell House Div-----	1125 Hudson St., Hoboken, N. J.
228	General Mills, Inc-----	400 2d Ave., S., Minneapolis 1, Minn.
85	General Motors Corp., AC Spark Plug Div-----	1300 N. Dort Highway, Flint 2, Mich.
221	General Petroleum Corp-----	P.O. Box 2122, Terminal Annex, Los Angeles 54, Calif.
273	General Tire & Rubber Co. (R. R.) ¹ -----	Baytown, Tex.
137	General Tire & Rubber Co., Chemical Div-----	1708 Englewood Ave. at Holmes, Akron (Mogadora), Ohio.
153	Genesee Research Corp-----	961 Lyell Ave., Rochester 6, N. Y.
13	George, P. D., Co-----	5200 N. 2d St., St. Louis 7, Mo.
154	Gilman Paint & Varnish Co-----	216 W. 8th St., Chattanooga 1, Tenn.
229	Givaudan Corp-----	109-201 Delawanna Ave., Delawanna, N. J.
395	Glidden Co-----	11001 Madison Ave., Cleveland 2, Ohio (San Francisco, Calif.; Jacksonville, Fla.; Chicago, Ill.; Minneapolis, Minn.; Cleveland, Ohio; and Reading, Pa.).
183	Glyco Products Co., Inc-----	26 Court St., Brooklyn 1, N. Y. (Williamsport, Pa.).
459	Goodrich, B. F., Co.: Goodrich, B. F., Chemical Co. Div. (R. R.) ¹ -----	324 Ross Bldg., Cleveland 15, Ohio (Port Neches, Tex., and Institute, W. Va.).
563	Goodrich, B. F., Chemical Co. Div-----	Rose Bldg., 2060 E. 9th St., Cleveland 15, Ohio (Calvert City and Louisville, Ky.; Heladon and Kearny, N. J.; Niagara Falls, N. Y.; and Akron and Avon Lake Villages, Ohio).
396	Goodyear Tire & Rubber Co-----	1144 E. Market St., Akron 16, Ohio.
347	Grain Processing Corp-----	1600 Oregon St., Muscatine, Iowa.
170	Grand Rapids Varnish Corp-----	1350 Steele Ave., SW., Grand Rapids 2, Mich.
283	Great Southern Chemical Corp-----	P.O. Box 4166, Corpus Christi, Tex.
279	Greenwood Textile Supply Co-----	27 Meadow St., Apponaug, R. I.
109	Griffin Chemical Co-----	1000 16th St., San Francisco 7 (Richmond), Calif.
209	Gulf Oil Corp-----	Gulf Bldg., Pittsburgh 30, Pa.
2	Guyana Color & Chemical Works-----	Box 1088, Huntington, W. Va.
383	Halby Products Co-----	P.O. Box 366, Wilmington 99, Del.
262	Hall, C. P., Co. of Illinois-----	5145 W. 67th St., Chicago 38, Ill.
420	Hampden Color & Chemical Co-----	5 Albany St., Springfield 1, Mass.
34	Hanna Paint Manufacturing Co., Indus- trial Div-----	95 W. Long St., Columbus 15, Ohio.
35	Harbor Plywood Corp-----	Box 940, Aberdeen, Wash.
86	Hardasty, W. C., Co., Inc-----	P.O. Box 148, Newark, N. J. (Dover, Ohio).
440	Harshaw Chemical Co-----	1945 E. 97th St., Cleveland 6, Ohio (Gloucestsr City, N. J.).
348	Harsyd Chemicals, Inc-----	397 W. 21st St., Holland, Mich.
349	Hart Products Corp-----	1440 Broadway, New York 18, N. Y. (Jersey City, N. J.).
7	Hartman-Leddon Co-----	5821 Market St., Philadelphia 39, Pa.
222	Hercules Powder Co-----	900 Market St., Wilmington 99, Del. (Savannah, Ga.; Mansfield, Mass.; Hattisburg, Miss.; Burlington and Parlin, N. J.; and Hopewell, Va.).
350	Heresits & Chemical Co-----	822 S. 14th St., Manitowoc, Wis.
542	Hexagon Laboratories, Inc-----	6536 Peartree Ave., New York 69, N. Y.

See footnotes at end of table.

TABLE 27.--Synthetic organic chemicals: Directory of manufacturers, 1953--Continued

No.	Name of company	Office address (location of plant given in parentheses if not in same city as office)
397	Heyden Chemical Corp-----	342 Madison Ave., New York 17, N. Y. (Fords, Garfield, and Princeton, N. J.).
452	Hoffmann-LaRoche, Inc-----	324-424 Kingsland Rd., Nutley 10, N. J.
607	Hoffman-Teff, Inc-----	W. Bennett Street Rd., Springfield, Mo.
388	Holland Color & Chemical Co-----	Holland, Mich.
337	Hooker-Detrex, Inc-----	Buffalo Ave. & 47th St., Niagara Falls, N. Y. (Ashtabula, Ohio, and Tacoma, Wash.).
338	Hooker Electrochemical Co-----	Buffalo Ave. & 47th St., Niagara Falls, N. Y. (Tacoma, Wash.).
573	Houghton, E. F., & Co-----	303 W. Lehigh Ave., Philadelphia 33, Pa.
155	Huggins, James, & Son, Inc-----	239 Medford St., Malden 48, Mass.
441	Humble Oil & Refining Co-----	P.O. Box 2180, Houston 1 (Baytown), Tex.
94	Humble Oil & Refining Co. (R. R.) ¹ -----	P.O. Box 4321, Baytown, Tex.
551	Humphrey-Wilkinson, Inc-----	DeVine St., North Haven, Conn.
384	Huron Milling Co-----	9 Park Pl., New York 7, N. Y. (Harbor Beach, Mich.).
474	Hyman, Julius, & Co-----	P.O. Box 2171, Denver 1, Colo.
126	Hynson, Westcott & Dunning, Inc-----	1030 N. Charles St., Baltimore 1, Md.
525	Imperial Paper & Color Corp., Pigment Color Div-----	P.O. Box 231, Glens Falls, N. Y.
477	Indoil Chemical Corp-----	910 S. Michigan Ave., Chicago 80, Ill. (Whiting, Ind.).
461	Industrial Dyestuff Co-----	Massasoit Ave., E. Providence 14, R. I.
298	Industrial Products, Inc-----	215 S. Laurens St., Greenville, S. C.
299	Inland Alkaloid Co-----	Tipton, Ind.
316	Inland Steel Container Co-----	6532 S. Menard Ave., Chicago 38, Ill.
453	Interchemical Corp.: Finishes Div-----	224 McWhorter St., Newark 1, N. J. (Los Angeles, Calif.; Elizabeth and Newark, N. J.; and Cincinnati, Ohio).
320	Textile Colors Div-----	150 Wagaraw Rd., Hawthorne, N. J.
171	International Minerals & Chemical Corp-----	20 N. Wacker Dr., Chicago 6, Ill. (San Jose, Calif.; Niagara Falls, N. Y.; and Rossford, Ohio).
26	Ironcides Co-----	270 W. Mound St. (P.O. Box 1999), Columbus 16, Ohio.
339	Irrington Varnish & Insulator Co. Div. of Minnesota Mining & Manufacturing Co-----	6 Argyle Ter., Irvington 11 (Newark), N. J.
321	Jefferson Chemical Co., Inc-----	260 Madison Ave., New York 16, N. Y. (Port Neches, Tex.).
528	Jennison-Wright Corp-----	2463 Broadway, Toledo 9, Ohio.
369	Johnson, Charles Eneu, Co., Inc-----	10th & Lombard Sts., Philadelphia 47, Pa.
529	Jordan, Jr., W. H., & F., Manufacturing Co-----	2126 E. Somerset St., Philadelphia 34, Pa.
143	Kali Manufacturing Co-----	427 E. Moyer St., Philadelphia 25, Pa.
244	Kalide Corp-----	S. Canal St., Lawrence, Mass.
266	Key-Frios Chemicals, Inc-----	180 Madison Ave., New York 16 (West Haverstraw), N. Y.
52	Kehew-Bradley Co-----	40 Oliver St., Boston 10 (Everett), Mass.
322	Kendall Refining Co-----	77 N. Kendall Ave., Bradford, Pa.
36	Kennecott Copper Corp.: Chino Mines Div-----	Hurley, N. Mex.
398	Utah Copper Div-----	Kearns Bldg., Salt Lake City 1 (Garfield), Utah.
288	Kentucky Color & Chemical Co-----	600 N. 34th St., Louisville 12, Ky.
601	Kentucky Synthetic Rubber Corp. (R. R.) ¹ -----	Louisville, Ky.
370	Kessler Chemical Co., Inc-----	State Rd. and Cottman Ave., Philadelphia 35, Pa.
543	Keystone Chemurpic Corp-----	R. D. #1, Bethlehem, Pa.
63	Keystone Color Works, Inc-----	151 W. Gay Ave., York, Pa.
64	Keystone Paint & Varnish Corp-----	71 Otsego St., Brooklyn 31, N. Y.
8	Knoedler Chemical Co-----	651 High St., Lancaster 1, Pa.
87	Kohnstamm, H., & Co., Inc-----	83-93 Park Pl., New York 7 (Brooklyn), N. Y.
323	Koppers Co., Inc.: Chemical Div-----	Koppers Bldg., 430 7th Ave., Pittsburgh 19, Pa. (Berkeley Heights and Kearny, N. J.; Kobuta, Monaca, Oil City, and Petrolia, Pa.; and Port Arthur, Tex.).
	Tar Products Div-----	Koppers Bldg., 430 7th Ave., Pittsburgh 19, Pa. (Woodward, Ala.; Fontana, Calif.; New Haven, Conn.; Chicago and East St. Louis, Ill.; Chalmette, La.; Portland, Maine; Everett and Westfield, Mass.; St. Paul, Minn.; St. Louis, Mo.; Kearny and Westfield, N. J.; Buffalo, Rochester, and Utica, N. Y.; Hamilton, Warren, and Youngstown, Ohio; Swedeland and Swiseseale, Pa.; E. Providence, R. I.; Memphis, Tenn.; Houston, Tex.; Follansbee, W. Va.; and Carrollville, Wis.).
204	Krumbhaar Chemical Co., Inc-----	24-30 Jacobus Ave., S. Kearny, N. J.
127	Kyanize Paints, Inc-----	2d & Boston Sts., Everett 49, Mass.
300	Lakeside Laboratories, Inc-----	1707 E. North Ave., Milwaukee 1, Wis.
9	LaMotte Chemical Products Co-----	Towson 4, Md.
506	LaSalle Chemical Corp-----	Fox Island Rd., Port Chester, N. Y.
65	Laurel Soap Manufacturing Co., Inc-----	Tioga & Thompson Sts., Philadelphia 34, Pa.
491	Leatex Chemical Co-----	2722 N. Hancock St., Philadelphia 33, Pa.
492	Lebanon Chemical Corp-----	P.O. Box 532, Lebanon, Pa.
432	Lebec Chemical Corp-----	14066 S. Garfield Ave., Paramount, Calif.
164	Leffingwell Chemical Co-----	P.O. Box 191, Whittier, Calif.

See footnote at end of table.

TABLE 27.--Synthetic organic chemicals: Directory of manufacturers, 1953--Continued

No.	Name of company	Office address (location of plant given in parentheses if not in same city as office)
389	Lamke, B. L., & Co., Inc	199 Main St., Lodi, N. J.
191	Lever Brothers Co	390 Park Ave., New York 22, N. Y.
433	Lever, C., Co., Inc	Howard and Huntington Sts., Philadelphia 33, Pa.
172	Levey, Fred'k. H., Co., Inc	380 Madison Ave., New York 17 (Brooklyn), N. Y.
585	Lewis Tar Products Co	P.O. Box A, Lyons (McCook), Ill.
442	Lilly, Eli, & Co	740 S. Alabama St., Indianapolis 6, Ind.
513	Lobica-Debrulls, Inc	1841 Broadway, New York 23, N. Y.
66	Long, Chas. R., Jr., Co	1630 W. Hill St., Louisville 10, Ky.
317	Loven Chemical Co. of California	244 Pine St., Newhall, Calif.
608	Lubrizol Corp	Cleveland 17, Ohio.
230	Lueders, George, & Co	427 Washington St., New York 13 (Brooklyn), N. Y.
399	Maas & Waldstein Co	2121 McCarter Hwy., Newark 4, N. J.
88	Magnolia Petroleum Co	P.O. Box 900, Dallas 21 (Beaumont), Tex.
500	Magruder Color Co., Inc	2385 Richmond Tar., Staten Island 2, N. Y.
231	Mallinckrodt Chemical Works	3600 N. 2d St., St. Louis 7, Mo. (Jersey City, N. J.).
165	Maltbie Laboratories, Inc	240-250 High St., Newark 1, N. J.
19	Marathon Corp., Chemical Div	Rothschild, Wis.
67	Marbette's Corp	37-21 30th St., Long Island City 1, N. Y.
111	Marbon Corp	1926 W. 10th Ave., Gary, Ind.
37	Marden-Wild Corp	500 Columbia St., Somersville 43, Mass.
112	Marlowe-Van Loan Corp	1511 Byrum St., High Point, N. C.
14	Marrow's, Inc	657 W. Chicago Ave., Chicago 10, Ill.
119	Marx, Max, Color & Chemical Co	192 Coit St., Irvington 11, N. J.
562	Maschmeijer, A., Jr., Inc	43 W. 16th St., New York 11, N. Y. (Newark, N. J.).
430	Mathieson Chemical Corp	10 Light St., Baltimore 3, Md. (Brandenburg, Ky.; Niagara Falls, N. Y.; and Morgantown, W. Va.).
522	Squibb, E. R., & Sons Div	745 5th Ave., New York 22, N. Y. (New Brunswick, N. J.).
301	Maumee Chemical Co	2 Oak St., Toledo 5, Ohio.
552	May, Otto B., Inc	52 Amsterdam St., Newark 5, N. J.
274	Maywood Chemical Works	100 W. Hunter Ave., Maywood, N. J.
361	McCloskey Varnish Co	7600 State Rd., Philadelphia 36, Pa.
110	McGean Chemical Co	1040 Midland Bldg., Cleveland 15, Ohio.
514	Medical Chemicals Corp	4122 W. Grand Ave., Chicago 51, Ill.
515	Merck & Co., Inc	Lincoln Ave., Rahway, N. J. (Albany, Ga.; Danville, Pa.; and Elkton, Va.).
232	Mericham Co	3101 Fannin St., Houston 4 (Green's Bayou), Tex.
289	Morrell, Wm. S., Co	Galbraith Rd. and Pennsylvania R. R., Cincinnati 15, Ohio.
324	Mata Chemical Corp	Washington Ave., Carlestadt, N. J.
325	Metalealts Corp	200 Wagaraw Rd., Hawthorne, N. J.
15	Metro-Atlantic, Inc	2072 Smith St., Centerville 11, R. I.
68	Metro Dyestuff Corp	101 W. Quindick St., West Warwick, R. I.
89	Mayer, J., & Sons	4321 N. 4th St., Philadelphia 40, Pa.
181	Michigan Chemical Corp	500 N. Bankson St., St. Louis, Mich.
544	Midland Industrial Finishes Co	E. Water St., Waukegan, Ill.
602	Midland Synthetic Rubber Co. (R. R.) ¹	Los Angeles, Calif.
173	Miles Laboratories, Inc	Elkhart, Ind.
38	Mineral Oil Refining Co	P.O. Box 625, Dickinson, Tex.
138	Minnesota Paints, Inc	1101 S. 3d St., Minneapolis 15, Minn.
351	Miranol Chemical Co., Inc	277 Coit St., Irvington 11, N. J.
95	Molene Paint Co., Inc	305 Eastern Ave., Chelsea 50, Mass.
245	Monsanto Chemical Co	800 N. 12th Blvd., St. Louis 1, Mo. (Anniston, Ala.; Long Beach and Santa Clara, Calif.; Monsanto, Ill.; Everett and Springfield, Mass.; Tranton, Mich.; Texas City, Tex.; Seattle, Wash.; and Nitro, W. Va.).
144	Montclair Research Corp	4 Cherry St., Montclair, N. J.
574	Montrose Chemical Co	120 Lister Ave., Newark 5, N. J.
390	Montrose Chemical Corp. of California.	824 Wilshire Blvd., Los Angeles 17 (Torrance), Calif.
284	Moreland Chemical Co., Inc	P.O. Box 1743, Spartanburg, S. C.
516	Morton-Withers Chemical Co	2110 High Point Rd., Greensboro, N. C.
96	Morwear Paint Co	568 14th St., Oakland 12, Calif.
233	National Biochemical Co	3106 W. Lake St., Chicago 12, Ill.
326	National Chlorophyll & Chemical Co	Lamar, Colo.
463	National Distillers Products Corp	See U. S. Industrial Chemicals Co.
371	National Lead Co	111 Broadway, New York 6, N. Y. (Perth Amboy, N. J., and Philadelphia, Pa.).
592	National Petro-Chemicals Corp	Box 109, Tuscola, Ill.
184	National Starch Products, Inc	270 Madison Ave., New York 16, N. Y. (San Francisco, Calif.; Chicago, Ill.; Indianapolis, Ind.; and Plainfield, N. J.).
90	Neches Butane Products Co. (R. R.) ¹ --	P.O. Box 1535, Port Neches, Tex.
205	Nepers Chemical Co., Inc	21 Gray Oaks Ave., Yonkers 2 (Harriman), N. Y.
327	Neville Chemical Co	Neville Island, Pittsburgh 25, Pa. (Anaheim, Calif.).
285	Newport Industries, Inc	P.O. Box 911, Pensacola, Fla.
519	New York Color & Chemical Co., Div. of American Dywood Co.	Main & Jerusalem Sts., Belleville 9, N. J.
267	New York Quinins & Chemical Works, Inc.	50 Church St., New York 7, N. Y. (Newark, N. J.).
145	Niagara Alkali Co	60 E. 42d St., New York 17 (Niagara Falls), N. Y.
10	Nilok Chemicals, Inc	2000 College Ave., Niagara Falls (Lockport), N. Y.
446	Ninol Laboratories, Inc	1719 S. Clinton St., Chicago 16, Ill.
57	Nonweiler, A. F., Co	Box 1007, Oshkosh, Wis.

See footnote at end of table.

TABLE 27.--Synthetic organic chemicals: Directory of manufacturers, 1953--Continued

No.	Name of company	Office address (location of plant given in parentheses if not in same city as office)
421	Nopco Chemical Co., Inc-----	1st and Essex Sts., Harrison, N. J. (Richmond, Calif.; Cedartown, Ga.; and Harrison, N. J.)
352	Norda Essential Oil & Chemical Co., Inc.	601 W. 26th St., New York 1, N. Y. (Boonton, N. J.).
53	Northwestern Chemical Co-----	120 N. Aurora St., West Chicago, Ill.
129	Norwich Pharmacal Co-----	17 Eaton Ave., Norwich, N. Y.
353	Nudex Products Co., Inc-----	830 Magnolia Ave., Elizabeth, N. J.
435	Ohio Chemical & Surgical Equipment Co., Div. of Air Reduction Co., Inc.	1400 E. Washington Ave., Madison 10, Wis. (Cleveland, Ohio).
215	Oil & Chemical Products, Inc-----	295 Madison Ave., New York 17, N. Y. (Houston, Tex.).
185	Oldbury Electro-Chemical Co-----	5001 Buffalo Ave., Niagara Falls, N. Y.
156	Old Colony Tar Co., Inc-----	500 5th Ave., New York 36, N. Y. (Cambridge, Framingham, New Bedford, and Worcester, Mass.).
166	Old Hickory Chemical Co., Inc-----	P.O. Box 1480, Richmond 12, Va. (Old Hickory, Tenn.).
520	Orbis Products Corp-----	601 W. 26th St., New York 1, N. Y. (Newark, N. J.).
526	Organic Chemical Corp-----	74-84 Valley St., E. Providence, R. I.
46	Organics, Inc-----	1724 Greenleaf Ave., Chicago 26, Ill.
303	Oronite Chemical Co-----	38 Sansome St., San Francisco 4, Calif. (Oak Point, La.).
47	Ortho Chemical Corp-----	44-26 Purvis St., Long Island City 1, N. Y.
192	Osborn, C. J., Co-----	132 Nessau St., New York 38, N. Y. (Linden, N. J.).
206	Ottawa Chemical Co., Inc-----	823 Hamilton St., Toledo 7, Ohio.
467	Ottol Oil Co-----	455 Cortlandt St., Belleville 9, N. J.
193	Oxford Corp-----	350 Morris St., Toledo 4, Ohio.
257	Pabco Products, Inc-----	475 Brannan St., San Francisco 19 (Emeryville), Calif.
340	Pabst Brewing Co-----	917 W. Junoau, Milwaukee 3, Wis. (Peoria, Ill.).
304	Pacific Paint & Varnish Co-----	4th and Cedar Sts., Berkeley 9, Calif.
234	Pan American Refining Corp-----	P.O. Box 401, Texas City, Tex.
400	Parke, Davis & Co-----	Foot of Joseph Campau, Detroit 32, Mich.
39	Parsons, M. W., Plymouth, Inc-----	59 Beekman St., New York 38 (Brooklyn), N. Y.
467	Patent Chemicals, Inc-----	335 McLean Blvd., Paterson 4, N. J.
354	Pathfinder Chemical Corp., subsidiary of Goodyear Tire & Rubber Co.	5408 Baker Ave., Niagara Falls, N. Y.
290	Paul-Lewis Laboratories, Inc-----	4253 N. Port Washington Rd., Milwaukee 12, Wis.
224	Pock's Products Co-----	610 E. Clarence Ave., St. Louis 15, Mo.
482	Podlow-Nease Chemical Co., Inc-----	Lock Haven, Pa.
113	Peerless Chemical Co-----	3850 Oakman Blvd., Detroit 4, Mich.
114	Peerless Color Co., Inc-----	521-535 North Ave., Plainfield, N. J.
600	Penick, S. B., & Co-----	50 Church St., New York 8, N. Y. (Jersey City, Lyndhurst, and Montville, N. J.).
134	Pennsylvania Industrial Chemical Corp.	120 State St., Clairton (Chester), Pa.
502	Pennsylvania Refining Co-----	Butler (Karns City), Pa.
275	Pennsylvania Salt Manufacturing Co-----	1000 Widener Bldg., Philadelphia 7, Pa.
533	Perkins Gluco Co-----	632 Cannon Ave., Lansdale, Pa.
577	Permutit Co-----	330 W. 42d St., New York 36, N. Y. (Birmingham, N. J.).
427	Petora Chemical Co-----	2575 Ewen Ave., New York 63, N. Y.
558	Pfanstiehl Chemical Co-----	104 Lakeview Ave., Waukegan, Ill.
486	Pfister Chemical Works, Inc-----	Ridgefield, N. J.
415	Pfizer, Charles, & Co., Inc-----	630 Flushing Ave., Brooklyn 6, N. Y. (Groton, Conn., and Vigo, Ind.).
559	Pharma Chemical Corp-----	175 5th Ave., New York 10, N. Y. (Bayonne, N. J.).
443	Phillips Petroleum Co. (R. R.) ¹ -----	Bartlesville, Okla. (Phillips, Tex.).
115	Phoenix Oil Co-----	9505 Cassius Ave., Cleveland 5, Ohio.
246	Pitman-Moore Co., Div. of Allied Laboratories, Inc.	1200 Madison Ave., Indianapolis 2, Ind.
456	Pittsburgh Coke & Chemical Co-----	Grant Bldg., Pittsburgh 19 (Neville Island), Pa.
391	Pittsburgh Plate Glass Co-----	Grant Bldg., Pittsburgh 19, Pa.
454	Plastics Engineering Co-----	1 Gateway Center, Pittsburgh 22, Pa. (Torrance, Calif.; Atlanta, Ga.; Detroit, Mich.; Newark, N. J.; Barborton, Cleveland, and Dayton, Ohio; Springdale, Pa.; Houston, Tex.; New Martinsville, W. Va.; and Milwaukee, Wis.).
78	Polychemical Co-----	1603 Goele Ave., Sheboygan, Wis.
157	Portland Gas & Coke Co-----	494 Hunts Point Ave., New York 59, N. Y.
11	Poughkeepsie Dyestuff Corp-----	Public Service Bldg., Portland 4, Oreg.
194	Prett & Lambert, Inc-----	77 N. Water St., Poughkeepsie, N. Y.
401	Premo Pharmaceutical Laboratories, Inc.	75 Tonawanda St., Buffalo 7, N. Y.
276	Procter and Gamble Co-----	111 Leuning St., S. Heckoness, N. J.
538	Productol Co-----	Gwynne Bldg., Cincinnati 2, Ohio.
216	Publicker Industries, Inc-----	417 S. Hill St., Los Angeles 13 (Santa Fe Springs), Calif.
202	Pugot Sound Pulp & Timber Co-----	1429 Walnut St., Philadelphia 2, Pa.
247	Pure Oil Co-----	300 Laurel St., Bellingham, Wash.
195	Purex Corp., Ltd-----	35 E. Wacker Dr., Chicago 1, Ill. (Toledo, Ohio; Nederland, Tex.; Cabin Creek and Dewes, W. Va.; and Worland, Wyo.).
27	Purocaine, Inc-----	9300 Rayo Ave., South Gate, Calif. (St. Louis, Mo.).
178	Quaker Chemical Products Corp-----	Valley Rd., Hockessin, Del.
475	Quaker Oats Co-----	Lime & Elm Sts., Coneshohocken, Pa. (Wilmington, Del.).
468	R. S. A. Corp-----	Merchandise Mart Plaza, Chicago 54, Ill. (Cedar Rapids, Iowa; Omaha, Nebr.; and Memphis, Tenn.).
		690 Sew Mill River Rd., Ardsley, N. Y.

See footnote at end of table.

TABLE 27.--Synthetic organic chemicals: Directory of manufacturers, 1953--Continued

No.	Name of company	Office address (location of plant given in parentheses if not in same city as office)
69	Raybestos Div. of Raybestos-Manhattan, Inc.	75 E. Main St., Stratford, Conn.
20	Red Spot Paint & Varnish Co-----	110 Main St., Evansville 8, Ind.
568	Reichhold Chemicals, Inc-----	525 N. Broadway, White Plains, N. Y. (Tuscaloosa, Ala.; Azusa and San Francisco, Calif.; Argo, Ill.; Detroit, Mich.; Elizabeth, N. J.; Brooklyn, N. Y.; Charlotte, N. C.; and Seattle, Wash.).
372	Reilly Tar & Chemical Corp-----	1615 Merchants Bank Bldg., Indianapolis 4, Ind. (Chicago and Granite City, Ill.; Indianapolis, Ind.; Newark, N. J.; Cleveland and Dover, Ohio; Chattanooga, Tenn.; Lone Star, Tex.; and Fairmont, W. Va.).
534	Reilly-Whitman-Walton Co-----	Washington & Righter Sts., Conshohocken, Pa.
91	Reliance Varnish Co., Inc-----	4730 Crittenden Dr., Louisville 9, Ky.
329	Remington Arms Co., Inc-----	939 Barnum Ave., Bridgeport 2, Conn.
476	Remsen Chemicals, Inc-----	1 Park Ave., New York 16 (Oceanside), N. Y.
373	Republic Croesoting Co-----	1615 Merchants Bank Bldg., Indianapolis 4, Ind. (Mobile and Florence, Ala.; Indianapolis, Ind.; St. Louis Park, Minn.; Lima, Ohio; Ironton, Utah; Norfolk, Va.; and Seattle, Wash.).
374	Richards Chemical Works, Div. of Onyx Oil & Chemical Co.	190 Warren St., Jersey City 2, N. J.
97	Richardson Co-----	27th Ave. and Lake St., Melrose Park, Ill.
305	Richfield Oil Corp-----	555 S. Flower St., Los Angeles 17 (Watson), Calif.
599	Ringwood Chemical Corp-----	Ringwood, Ill.
148	Rinshed-Mason Co-----	5935 Milford St., Detroit, Mich. (Anaheim, Calif.).
508	Ritter, F., & Co-----	4001 Goodwin Ave., Los Angeles 39, Calif.
341	Ritter Chemical Co., Inc-----	403 W. Main St., Amsterdam, N. Y.
517	Riverdale Chemical Co-----	324 E. 147th St., Harvey (Dolton), Ill.
493	Rohm & Haas Co-----	222 W. Washington Sq., Philadelphia 5, Pa. (Bristol and Philadelphia, Pa.; Knoxville, Tenn.; and Deer Park, Tex.).
306	Roosevelt Oil & Refining Corp-----	Box 271, Mt. Pleasant, Mich.
509	Rossville Dyestuff Corp-----	Arthur Kill Rd., Staten Island 9, N. Y.
307	Royce Chemical Co-----	Carlton Ave., Carlton Hill, N. J.
40	Rubber Corp. of America-----	274 Ten Eyck St., Brooklynn 6 (Hicksville), N. Y.
375	Ruberoid Co-----	500 5th Ave., New York 36, N. Y. (Joliet, Ill.; Baltimore, Md.; and Erie, Pa.).
553	Salam Oil & Grease Co-----	60 Grove St., Salem, Mass.
28	Dr. Salsbury's Laboratories-----	500 Gilbert St., Charles City, Iowa.
98	Salvo Chemical Corp-----	Rothschild, Wis.
428	Sandoz Chemical Works, Inc-----	61-63 Van Dam St., New York 13, N. Y. (Fair Lawn, N. J.).
510	Sipon Laboratories-----	543 Union St., Brooklyn 15, N. Y.
120	Schenectady Varnish Co., Inc-----	Congress and 10th Ave., Schenectady 1 (Rotterdam Jct.), N. Y.
116	Schenley Laboratories, Inc-----	350 5th Ave., New York 1, N. Y. (Lawrenceburg, Ind.).
248	Scherex, R. P., Corp-----	9425 Grinnell Ave., Detroit 13, Mich.
457	Schering Corp-----	2 Broad St., Bloomfield (Union), N. J.
203	Schieffelin & Co-----	16-26 Cooper Sq., New York 3, N. Y.
48	Scholler Bros., Inc-----	Collins and Westmoreland Sts., Philadelphia 34, Pa.
174	Schuykill Chemical Co-----	2346 Sedgley Ave., Philadelphia 32, Pa.
462	Schwarz Laboratories, Inc-----	230 Washington St., Mt. Vernon, N. Y.
547	Searle, G. D., & Co-----	P.O. Box 5110, Chicago 80 (Skokie), Ill.
158	Seattle Gas Co-----	1507 4th Ave., Seattle 11, Wash.
586	Seydel Chemical Co-----	225 Mercer St., Jersey City 2 (Clifton), N. J.
444	Sharp & Dohme Div. of Merck & Co., Inc.	640 N. Broad St., Philadelphia 1 (West Point), Pa.
580	Sharples Chemicals, Inc-----	1100 Widener Bldg., Philadelphia 7, Pa. (Wyandotte, Mich.).
249	Shawinigan Resins Corp-----	644 Monsanto Ave., Springfield 2, Mass.
539	Sheffield Chemical Co., Inc-----	P.O. Box 630, Norwich (Oneonta), N. Y.
258	Shell Chemical Corp-----	50 W. 50th St., New York 20, N. Y. (Martinez, Los Angeles, and Pittsburg, Calif.; and Deer Park, Tex.).
223	Shell Oil Co-----	50 W. 50th St., New York 20, N. Y. (Martinez and Wilmington, Calif.; Roxana, Ill.; Norco, La.; and Deer Park, Tex.).
135	Shepherd Chemical Co-----	2803 Highland Ave., Cincinnati 12, Ohio.
521	Sherwin-Williams Co-----	101 Prospect Ave., N. W., Cleveland 1, Ohio (Chicago, Ill.; Detroit, Mich.; Dayton and Cleveland, Ohio; and Philadelphia and Pittsburg, Pa.).
402	Shulton, Inc., Fine Chemicals Div-----	Route 46, Clifton, N. J.
80	Siddall, George F., Co., Inc-----	P.O. Box 975, Providence 1, R. I. (Spartanburg, S. C., and Cranston, R. I.).
548	Sigma Chemical Co-----	4648 Easton Ave., St. Louis 15, Mo.
518	Sinclair Refining Co-----	600 5th Ave., New York 20, N. Y. (Sand Springs, Okla.; Marcus Hook, Pa.; and Houston, Tex.).
587	Sinclair & Valentine Co-----	611 W. 129th St., New York 27, N. Y. (Ridgway, Pa.).
43	Sipe, James B., & Co-----	P.O. Box 8010, S. Hills Branch, Pittsburgh 16 (Bridgeville), Pa.
308	Smith, Kline & French Laboratories-----	1530 Spring Garden St., Philadelphia 1, Pa.
196	Snyder Chemical Corp-----	Henry St., Bethel, Conn.
362	Socony-Vacuum Oil Co., Inc-----	26 Broadway, New York 4, N. Y. (Paulsboro, N. J., and Beaumont, Tex.).
436	Soluol Chemical Co., Inc-----	Green Hill and Market Sts., Natick, R. I.

TABLE 27.--Synthetic organic chemicals: Directory of manufacturers, 1953--Continued

No.	Name of company	Office address (location of plant given in parentheses if not in same city as office)
159	Solvent Chemical Co., Inc-----	341 Commercial St., Malden 48, Mass.
81	Sonneborn, L., Sons, Inc-----	300 4th Ave., New York 10, N. Y. (Petrolia, Pa.).
70	Sonoco Products Co-----	Hartsville, S. C.
250	Southern Dyestuff Corp-----	P.O. Box 1045, Charlotte 1 (Sodyeco), N. C.
554	Southern Sizing Co-----	P.O. Box 391, 601 Campbell St., East Point, Ga.
17	Southern Textile Chemical Corp-----	Clearwater, S. C.
251	Southside Chemical Co., Inc-----	2031 Woodland Rd., Petersburg 23, Va.
71	Spaulding Fibre Co., Inc-----	210 Wheeler St., Tonawanda, N. Y.
422	Specialty Resins Co-----	3801 Lynwood Rd., Lynwood, Calif.
187	Specific Pharmaceuticals, Inc-----	331 4th Ave., New York 10, N. Y. (Bayonne, N. J.).
72	Spencer Chemical Co-----	610 Dwight Bldg., Kansas City 5, Mo. (Calumet City, Ill., and Pittsburg, Kans.).
522	Squibb, E. R., & Sons-----	See Mathieson Chemical Corp.
445	Staley, A. E., Manufacturing Co-----	Decatur, Ill.
3	Standard Agricultural Chemicals, Inc-----	1301 Jefferson St., Hoboken, N. J.
99	Standard Brands, Inc-----	595 Madison Ave., New York 22, N. Y.
556	Standard Chemical Co-----	217-219 New St., Philadelphia 6, Pa.
403	Standard Chemical Products, Inc-----	1301 Jefferson St., Hoboken, N. J.
197	Standard Chlorine Chemical Co-----	115 Jacobus Ave., S. Kearny, N. J.
179	Standard Naphthalene Products Co-----	115 Jacobus Ave., S. Kearny, N. J.
555	Standard Oil Co. of California-----	225 Bush St., San Francisco 20 (Bakersfield, El Segundo, and Richmond), Calif.
560	Standard Oil Co. of Indiana-----	910 S. Michigan Ave., Chicago 80, Ill. (Wood River, Ill.; Whiting, Ind.; and Sugar Creek, Mo.).
16	Standard Soap Co. of Camden-----	205 S. 2d St., Camden 3, N. J.
79	Standard-Toch Chemicals, Inc-----	2600 Richmond Ter., Staten Island 3, N. Y.
531	Standard Ultramarine & Color Co-----	5th Ave. and 24th St., Huntington, W. Va.
330	Stange, Wm. J., Co-----	342 N. Western Ave., Chicago 12, Ill.
252	Stanolind Oil & Gas Co-----	P.O. Box 591, Tulsa, Okla. (Brownsville, Alvin, Katy, Pettus, and Sweeney, Tex.).
217	Stauffer Chemical Co-----	380 Madison Ave., New York 17, N. Y. (Henderson, Nev.; Brooklyn and Niagara Falls, N. Y.; Perry, Ohio; Chester and Monongahela, Pa.; Lowland, Tenn.; and Bentonville and Roanoke, Va.).
571	Stapan Chemical Co-----	20 N. Wacker Dr., Chicago 6, Ill.
546	Sterling Drug, Inc.: Bayer Co. Div-----	1450 Broadway, New York 18, N. Y. (Trenton, N. J.).
574	Hilton-Davin Chemical Co. Div-----	2235 Langdon Farm Rd., Cincinnati 13, Ohio.
581	Stressen-Reuter, Fred'k. A., Inc-----	2113 Medill Ave., Chicago 47 (Bensenville), Ill.
588	Strong, Cobb & Co., Inc.. American Chlorophyll Div-----	P.O. Box 231, Lake Worth, Fla.
253	Summit Chemical Products-----	11 William St., Belleville 9, N. J.
198	Sumner Chemical Co., Inc-----	215 N. Centennial St., Zeeland, Mich.
458	Sun Chemical Corp.: Pigment Div-----	309 Sussex St., Harrison, N. J.
566	Warwick Chemical Co. Div-----	Wood River Junction, R. 1. (Rock Hill, S. C.).
404	Sun Oil Co-----	1608 Walnut St., Philadelphia 3, Pa. (Marcus Hook, Pa., and Toledo, Ohio).
54	Swift & Co-----	4115 Packers Ave., Chicago 9, Ill.
595	Swope Oil & Chemical Co-----	3335 Richmond St., Philadelphia 34, Pa.
470	Synthetic Chemicals, Inc-----	335 McLean Blvd., Paterson 4, N. J.
21	Synthetic Products Co-----	1636 Wayside Rd., Cleveland 12, Ohio.
535	Synthron, Inc-----	Ryan Ave., Ashton, R. I.
207	Synvar Corp-----	419 E. Front St., Wilmington 99, Del.
160	Tar Distilling Co., Inc-----	500 5th Ave., New York 36, N. Y. (Cleveland, Ohio).
188	Taylor Fibre Co-----	Norristown (Betzwood), Pa.
483	Tennessee Eastman Co., Div. of Eastman Kodak Co-----	See Eastman Kodak Co.
161	Tennessee-Frontier Corp-----	321 W. Douglas, Wichita 2, Kans.
331	Tennessee Products & Chemical Corp-----	First American National Bank Bldg., Nashville 3 (Chattanooga), Tenn.
405	Texas Co-----	P.O. Box 2332, Houston 1, Tex.
484	Texas Eastman Co., Div. of Eastman Kodak Co-----	See Eastman Kodak Co.
412	Thiokol Chemical Corp-----	780 N. Clinton Ave., Trenton 7, N. J.
277	Thomasset Colors, Inc-----	338 Wilson Ave., Newark 5, N. J.
55	Thompson Chemicals Corp-----	3028 Locust St., St. Louis 3, Mo.
259	Trask, Arthur C., Co-----	4103 S. LaSalle St., Chicago 9, Ill.
309	Trojan Powder Co-----	17 N. 7th St., Allentown (Seiple), Pa.
582	Trubek Laboratories-----	State Highway #17, E. Rutherford, N. J.
406	Uhlich, Paul, & Co., Inc-----	90 West St., New York 6 (Brooklyn), N. Y.
385	Ultra Chemical Works, Inc-----	2 Wood St., Paterson 4, N. J.
545	Union Bay State Chemical Co., Inc-----	491 Main St., Cambridge 42, Mass.
487	Union Carbide & Carbon Corp.: Bakelite Co-----	30 E. 42d St., New York 17, N. Y. (Wyandotte, Mich.; Bloomfield and Bound Brook, N. J.; and Marietta, Ohio).
392	Carbide & Carbon Chemicals Co-----	30 E. 42d St., New York 17, N. Y. (Whiting, Ind.; Niagara Falls, N. Y.; Texas City, Tex.; and Institute and S. Charleston, W. Va.).
334	Linde Air Products Co-----	30 E. 42d St., New York 17 (Tonawanda), N. Y.
423	Union Oil Co. of California-----	617 W. 7th St., Los Angeles 17, Calif. (Bakersfield, Rodeo, and Wilmington, Calif.; Cut Bank, Mont.; and Edmonds, Wash.).

TABLE 27.--Synthetic organic chemicals: Directory of manufacturers, 1953--Continued

No.	Name of company	Office address (location of plant given in parentheses if not in same city as office)
310	United Piece Dye Works-----	Nicholson St., Lodi, N. J.
463	U. S. Industrial Chemicals Co., Div. of National Distillers Products Corp.	120 Broadway, New York 20, N. Y. (Pensacola, Fla.; New Orleans, La.; Baltimore, Md.; and Newark, N. J.).
407	U. S. Oil Co-----	Box 1345, Providence (Phillipsdale), R. I.
377	United States Pipe & Foundry Co-----	P.O. Box 2651, Birmingham, Ala.
41	U. S. Plastic Products Corp-----	Lake & Whitman Aves., Metuchen, N. J.
22	United States Procaine Co., Inc-----	15-29 129th St., College Point, N. Y.
378	U. S. Rubber Co., Naugatuck Chemical Div.	1230 Ave. of the Americas, New York 20, N. Y. (Naugatuck, Conn.).
146	U. S. Rubber Co. (R. R.) ¹ -----	1230 Ave. of the Americas, New York 20, N. Y. (Naugatuck, Conn., and Port Neches, Tex.).
589	Universal Detergents, Inc-----	1825 E. Spring St., Long Beach 6, Calif.
199	Upjohn Co-----	301 Henrietta St., Kalamazoo 99, Mich.
393	Valspar Corp., Valentine & Co. Div-----	11 E. 36th St., New York 16 (Brooklyn), N. Y.
451	van Ameringen-Haebler, Inc-----	521 W. 57th St., New York 19, N. Y. (Elizabeth and Union Beach, N. J.).
42	Van Camp Laboratories, Div. of Van Camp Sea Food Co., Inc.	772 Tuna St., Terminal Island, Calif.
254	Vanderbilt Chemical Corp-----	230 Park Ave., New York 17, N. Y. (Bethel, Conn.).
255	Van Dyk & Co., Inc-----	11 William St., Beloitville 9, N. J.
408	Varmac Chemical Corp-----	P.O. Box 476, Niagara Falls, N. Y.
311	Velsicol Corp., Div. of Arvey Corp-----	330 E. Grand Ave., Chicago 11, Ill. (Marshall, Ill., and Memphis, Tenn.).
511	Verley Chemical Co., Inc-----	200 Pulaski St., Newark 5, N. J.
460	Verona Chemical Co-----	26 Verone Ave., Newark 4, N. J.
208	Victor Chemical Works-----	141 W. Jackson Blvd., Chicago 4, Ill.
312	Virginia-Carolina Chemical Corp-----	401 E. Main St., Richmond 5, Va. (Charleston, S. C.).
469	Vitamins, Inc-----	809 W. 58th St., Chicago 21, Ill.
92	Vita-Var Corp-----	10 Commerce Ct., Newark 2, N. J.
313	Wallace & Tiernan, Inc-----	25 Main St., Belleville 9, N. J.
357	Lucidol Div-----	1740 Military Rd., Buffalo 5, N. Y.
355	Warner-Jenkinson Manufacturing Co-----	2526 Baldwin St., St. Louis 6, Mo.
409	Washburn, T. F., Co-----	2244 Elston Ave., Chicago 18, Ill.
29	Watertown Manufacturing Co-----	127 Echo Lake Rd., Watertown, Conn.
596	Watson-Park Co-----	Box 158, Ballard Vale, Mass.
280	Werner Drug & Chemical Co-----	759 Beechwood Ave., Cincinnati 32, Ohio.
218	Western Condensing Co-----	P.O. Box 739, Appleton (Adell), Wis.
410	Western Dry Color Co-----	600 W. 52d St., Chicago 9, Ill.
167	Westinghouse Electric Corp-----	401 Liberty Ave., P.O. Box 2278, Pittsburgh 30 (East Pittsburgh), Pa.
363	Westville Laboratories-----	Stepney, Conn.
175	Wetherill, George D., Varnish Co-----	Haddon Ave. & White Horse Pike, Camden 3, N. J.
200	Wheeler, Reynolds & Stauffer-----	636 California St., San Francisco 8 (Richmond), Calif.
356	White & Bagley Co-----	100 Foster St., Worcester 8, Mass.
136	White & Hodges, Inc-----	2 Wellington Ave., Everett 49, Mass.
130	Whittemore-Wright Co., Inc-----	62 Allford St., Charlestown 29, Mass.
162	Whittier Laboratories-----	919 N. Michigan Ave., Chicago 11, Ill.
561	Wica Co., Inc-----	P.O. Box 506, Charlotte 1, N. C.
168	Wilmot & Cassidy, Inc-----	108-112 Provost St., Brooklyn 22, N. Y.
416	Wilson Laboratories-----	4221 S. Western Ave., Chicago 9, Ill.
268	Wilson Organic Chemicals, Inc-----	P.O. Box 452, Sayreville, N. J.
379	Winthrop-Stearns, Inc-----	1450 Broadway, New York 18 (Rensselaer), N. Y.
314	Witco Chemical Co-----	260 Madison Ave., New York 16, N. Y. (Chicago, Ill., and Brooklyn, N. Y.).
4	Witte, John H., & Sons-----	206 Jefferson St., Burlington, Iowa.
429	Wolf, Jacques, & Co-----	350 Lexington Ave., Clifton (Carlstadt), N. J.
447	Wolff-Alport Chemical Corp-----	1127 Irving Ave., Brooklyn 27, N. Y.
549	Wyandotte Chemicals Corp-----	1609 Biddle Ave., Wyandotte, Mich.
564	Wyeth Laboratories, Inc-----	1401 Walnut St., Philadelphia 2, Pa. (Chicago, Ill., and Philadelphia and West Chester, Pa.).
411	Young Aniline Works, Inc-----	2731 Boston St., Baltimore 24, Md.
424	Zinsser & Co., Inc-----	Hastings-on-Hudson 6, N. Y.
269	Zurn, O. F., Co-----	2736 N. Broad St., Philadelphia 32, Pa.

¹ R. R. in parentheses following the name of a company indicates U. S. Government plant operated for the Office of Rubber Reserve.

APPENDIX

A. United States Imports of Coal-Tar Intermediates and Finished Coal-Tar Products

Table 28 summarizes, for the period 1951-53, United States imports of coal-tar products dutiable under paragraphs 27 and 28 of the Tariff Act of 1930. The data, which were obtained by analyzing invoices covering imports through all United States customs districts, are given in detail in a separate report of the Tariff Commission.¹

Imports in 1953 of coal-tar chemicals entered under paragraph 27, virtually all of which are intermediates, totaled 22.3 million pounds, with a foreign invoice value of 5.4 million dollars. Imports of these products were 3.0 million pounds, valued at 1.7 million dollars, in 1952, and 8.5 million pounds, valued at 2.2 million dollars, in 1951. The very large increase in the quantity of imports in 1953, compared with 1951 and 1952, was due primarily to greatly increased imports of phthalic anhydride, and to substantial imports of many other low-priced basic intermediates. More than half of all imports of intermediates in 1953 came from Germany and the United Kingdom. Imports from Germany totaled 7.7 million pounds in 1953, compared with 1.4 million pounds in 1952; imports from the United Kingdom were 4.9 million pounds in 1953, compared with 629,000 pounds in 1952. In 1953 sizable quantities of intermediates were also imported from Italy, France, Belgium, the Netherlands, Japan, Switzerland, and Canada; lesser quantities came from Denmark, Sweden, Australia, and Mexico. In terms of quantity, the three most important intermediates imported in 1953 were phthalic anhydride, naphthalene, and anthraquinone. Imports of phthalic anhydride totaled 16.7 million pounds and came from Germany, the United Kingdom, Italy, France, Belgium, the Netherlands, Japan, Switzerland, and Denmark. Imports of refined naphthalene, which totaled 1.1 million pounds, came from the Netherlands, Germany, Belgium, and the United Kingdom; imports of anthraquinone, which totaled 732,000 pounds, came chiefly from the United Kingdom, France, and Germany.

In 1953 the imports of all finished coal-tar products that are dutiable under paragraph 28 totaled 3.4 million pounds (actual weight), with a foreign invoice value of 6.9 million dollars. In 1952, imports totaled 4.5 million pounds, with a foreign invoice value of 6.9 million dollars, and in 1951, 4.4 million pounds, valued at 7.3 million dollars. It should be noted that the data for 1953 are based on general imports, whereas the data for 1951 and 1952 are based on imports for consumption. The differences between general imports and imports for consumption are small, so that the figures for the 3 years are quite comparable.

¹ U. S. Tariff Commission, *Imports of Coal-Tar Products, 1953* [processed].

TABLE 28.--Coal-tar intermediates and finished coal-tar products: United States imports, classified by use, 1951-53

Product	1951		1952		1953	
	Quantity	Foreign invoice value	Quantity	Foreign invoice value	Quantity	Foreign invoice value
Intermediates ¹ -----	1,000 pounds 8,483	1,000 dollars 2,245	1,000 pounds 3,028	1,000 dollars 1,749	1,000 pounds 22,273	1,000 dollars 5,419
Finished coal-tar products, total-----	4,408	7,330	4,526	6,934	3,394	6,905
Dyes, total-----	² 3,379	6,264	² 2,175	4,404	² 2,555	4,594
Acid-----	515	1,333	247	705	348	1,043
Vat-----	1,630	2,317	896	1,192	957	1,240
Mordant and chrome-----	326	727	247	593	143	313
Sulfur-----	2	4	30	29	39	38
Direct-----	616	1,266	509	1,245	396	958
Acetate rayon-----	60	162	48	123	57	147
Azoic-----	60	150	95	240	42	99
Basic-----	32	54	11	15	43	88
Color-lake and spirit-soluble-----	33	94	20	52	398	299
All other-----	105	157	72	210	132	369
Medicinals and pharmaceuticals-----	88	733	204	1,928	379	1,925
Flavor and perfume materials-----	21	67	9	18	105	194
All other-----	920	266	2,138	584	355	192

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

² Actual weight; the computed weight (corrected to the standards of strength established by the Secretary of the Treasury) was 4,214 thousand pounds in 1951, 2,703 thousand pounds in 1952, and 3,255 thousand pounds in 1953.

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

NOTE.--The statistics for 1953 are based on general imports; the statistics for 1951 and 1952 are based on imports for consumption. The statistics for 1953, therefore, are not strictly comparable with those for 1951 and 1952. The differences, however, are small, so that comparisons are significant.

As in previous years, dyes were by far the most important group of finished coal-tar products imported. Imports of dyes in 1953 amounted to 4.6 million dollars (foreign invoice value), or 67 percent of the total value of all imports under paragraph 28. In 1953 Switzerland was the principal supplier of dyes, accounting for 51 percent of total imports; Germany's share of the total was 28 percent, and the United Kingdom's share was 20 percent. Medicinals and pharmaceuticals were the next most important group of finished coal-tar products imported in 1953. In both 1953 and 1952, imports of these products were valued at 1.9 million dollars, or 28 percent of the total value of all imports under paragraph 28. Germany, Switzerland, and Italy were the principal sources of imports of coal-tar medicinals in 1953. Imports of flavor and perfume materials increased in value to \$194,000 in 1953 from \$18,000 in 1952; Canada was the principal source of these materials in 1953. Imports of other coal-tar products dutiable under paragraph 28 decreased in value to \$192,000 in 1953 from \$584,000 in 1952. The synthetic resins--the most important class of items in this group--came chiefly from Canada and the Netherlands.

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

Because of the interest of the synthetic organic chemical industry in statistics on chemical research, the Tariff Commission each year collects and publishes statistics on the number of technically trained research workers in the industry, their salaries, and the cost of research (see table 29). This information is not available elsewhere. As many of the companies that produce synthetic organic chemicals also manufacture other products, the data are only approximate; for some companies the allocation of the

cost of research on synthetic organic chemicals is somewhat arbitrary. Notwithstanding this limitation, the statistics do indicate trends in the amount of research done in the synthetic organic chemical industry. The data here reported probably cover about 85 percent of the industry's total expenditure for research activities.

In 1953 a total of 363 companies reported on research activities. The number of technically trained research workers (minimum salary of \$3,600 per year) reported for 1953 was 12,208, or about the same as the number reported for 1952. The average salary paid was \$6,856, compared with \$6,285 in 1952. Salaries paid in 1953 totaled 83.7 million dollars, compared with 76.7 million dollars in the preceding year. In 1953 the gross cost of research was 210 million dollars, or an increase of 15 million dollars over that in 1952. The cost to the industry in 1953 for research conducted for it outside of the facilities of the reporting companies--a cost not included in the figures given above--was 7.9 million dollars, 1.7 million dollars less than in 1952. This figure, however, probably does not represent all research projects in universities and private laboratories, or all consulting services.

TABLE 29.--Synthetic organic chemical industry: Number of research workers, salaries paid research workers, and cost of research, 1945-53

Year	Companies reporting	Technically trained research workers ¹	Salaries paid research workers	Total reported cost of research		
				Within the plant		Outside the plant
				Gross	Net ²	
	<i>Number</i>	<i>Number</i>	<i>1,000 dollars</i>	<i>1,000 dollars</i>	<i>1,000 dollars</i>	<i>1,000 dollars</i>
1945-----	274	6,219	26,944	55,046	52,184	4,023
1946-----	313	7,527	35,791	73,376	69,412	4,249
1947-----	301	8,707	41,571	90,640	87,825	4,600
1948-----	303	9,114	46,346	98,729	95,417	4,594
1949-----	338	8,916	51,521	105,333	100,580	4,996
1950-----	335	10,529	56,619	115,191	111,374	6,648
1951-----	353	9,984	67,376	149,607	144,784	6,724
1952-----	381	12,203	76,701	194,993	186,503	9,603
1953-----	363	12,208	83,694	210,035	199,829	7,951

¹ For the years 1945-50, a technically trained research worker was defined as a person with technical training engaged in research work and earning not less than \$2,500 per year; for 1951-53, the minimum amount of earnings was fixed at \$3,600.

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

C. Glossary of Synonymous Names of Cyclic Intermediates

Many cyclic intermediates are known in the chemical trade by a variety of names. Individuals in the trade frequently are not acquainted with all the synonymous names for a given product. To bring together the synonymous names for each product, the tables on intermediates in this report (table 7A in part II, and table 7B in part III) show the standard name, in accordance with the system used by Chemical Abstracts; this standard name is frequently followed by the most common synonymous name in parentheses.

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

Common name	Standard (Chemical Abstracts) name
Acedianthrone-----	Aceanthra[2,1-a]aceanthrylene-5,13-dione.
p-Acetamidobenzenesulfonyl chloride-----	N-Acetylsulfanilyl chloride.
5-Acetamido-2-hydroxybenzoic acid-----	5-Acetamidossilylic acid.
5-Acetamido-orthoanic acid-----	5-Acetamido-2-aminobenzenesulfonic acid.
Acetanilide-p-sulfonic acid-----	N-Acetylsulfanilic acid.
Acetanilid sulfon chloride-----	N-Acetylsulfanilyl chloride.
p-Acetoacetchloranilide-----	p-Chloroacetacetanilide.
Acetoacet-o-chloroanilide-----	o-Chloroacetacetanilide.
o-Acetoacetochloroanilide-----	o-Chloroacetacetanilide.
m-Acetoacetoxylidide-----	2,4-Acetoacetoxylidide.
Acetoacet-o-toluidide-----	o-Acetoacetotoluidide.
Acetoacet-o-toluidine-----	o-Acetoacetotoluidide.
Acetoacetyl-o-anisidine-----	o-Acetoacetanisidide.
Acetoacetyl benzidine-----	p,p'-Biacetacetanilide.
Acetylacet-o-phenylacetacetanilide-----	γ-(o-Acetoacetophenyl)acetacetanilide.
Acetyl-p-amino-o-aminophenol hydrochloride-----	4-Acetamido-2-aminophenol hydrochloride.
Acetylamino Cleve's acid-----	8-Acetamido-5-amino-2-(and 3)-naphthalenesulfonic acid.
Acetyl-o-anisidine-----	o-Acetanisidide.
Acetyl-p-anisidine-----	p-Acetanisidide.
Acetylaminanthraquinone-----	1,5(or 1,8)-Diacetamidoanthraquinone.
Acetyl-2,4-diaminophenol hydrochloride-----	4-Acetamido-2-aminophenol hydrochloride.
Acetyl H acid-----	8-Acetamido-1-naphthol-3,6-disulfonic acid.
Acetyl-1,4-naphthalenediamine-6(and 7)-sulfonic acid-----	8-Acetamido-5-amino-2-(and 3)-naphthalenesulfonic acid.
Acetyl-p-nitro-o-aminophenol-----	2-Acetamido-4-nitrophenol.
Acetyl-m-phenylenediamine-----	m-Aminoacetanilide.
Acetyl-p-phenylenediamine-----	p-Aminoacetanilide.
Acetyl-p-phenylenediamine sulfate-----	p-Aminoacetanilide sulfate.
N ⁴ -Acetylsulfanilamide-----	N-Sulfanilylacetamide.
N ⁴ -Acetylsulfanilamide-----	p-Sulfamylacetanilide.
2-(N ⁴ -Acetylsulfanilamido)thiazole-----	p-2-Thiazolylsulfamylacetanilide.
N ⁴ -Acetyl-2-sulfo-p-phenylenediamine-----	5-Acetamido-2-aminobenzenesulfonic acid.
N-Acetyl-o-toluidide-----	o-Acetoctoluidide.
1,2,4-Acid-----	1-Amino-2-naphthol-4-sulfonic acid.
Amichin-----	8-Amino-6-methoxyquinoline.
p-Aminoazobenzene-----	p-Phenylazoaniline.
Aminoazobenzene disulfo acid-----	6-Amino-3,4'-azobis[benzenesulfonic acid].
Aminoazobenzene-3,4-disulfonic acid-----	6-Amino-3,4'-azobis[benzenesulfonic acid].
p-Aminoazobenzene hydrochloride-----	p-Phenylazoaniline hydrochloride.
Aminoazobenzene-m-sulfonic acid-----	m-(p-Aminophenylazo)benzenesulfonic acid.
Aminoazobenzene-p-sulfonic acid-----	p-(p-Aminophenylazo)benzenesulfonic acid.
o-Aminoazotoluene-----	4-(o-Tolylazo)-o-toluidide.
o-Aminoazotoluene sulfate-----	4-(o-Tolylazo)-o-toluidine sulfate.
o-Aminoazotoluenesulfonic acid and salt-----	4-(4-Amino-m-tolylazo)-m-toluenesulfonic acid and salt.
Aminoazoxylene-----	4-(2,4-Xylylazo)-2,5-xylylidine.
Aminoazoxylene-toluidide-----	4-(2,4-Xylylazo)-o-toluidide.
8-Amino-1,2-benzacridin-7(12)-one-----	8-Aminobenz[ajacridin-7(12)-one.
8-Amino-1,2-benzacridone-----	8-Aminobenz[ajacridin-7(12)-one.
p-Aminobenzenearsonic acid-----	Arsanilic acid.
m-Aminobenzenesulfonic acid-----	Metanilic acid.
p-Aminobenzenesulfonic acid-----	Sulfanilic acid.
o-Aminobenzoic acid-----	Anthranilic acid.
m-Aminobenzoyl I(or J) acid-----	6-(m-Aminobenzamido)-1-naphthol-3-sulfonic acid.
p-Aminobenzoyl I(or J) acid-----	6-(p-Aminobenzamido)-1-naphthol-3-sulfonic acid.
o-Aminobenzylsulfonic acid-----	o-Toluidinometanethanesulfonic acid.
o-Aminobiphenyl-----	2-Biphenylamine.
2-Aminobiphenyl-----	2-Biphenylamine.
4-Aminobiphenyl-----	Xenylamine.
1-Amino-2-bromo-4-(p-toluidine)anthraquinone-----	1-Amino-2-bromo-4-(p-toluidino)anthraquinone.
5-Amino-2-chlorobenzenesulfonic acid-----	6-Chlorometanilic acid.
5-Amino-3-chlorobenzenesulfonic acid-----	5-Chlorometanilic acid.
5-Amino-4-chlorobenzenesulfonic acid-----	4-Chlorometanilic acid.
5-Amino-2-chlorobenzoic acid-----	3-Amino-6-chlorobenzoic acid.
2-Amino-4-chlorotoluene-----	5-Chloro-o-toluidide.
2-Amino-5-chlorotoluene-----	4-Chloro-o-toluidide.
2-Amino-6-chlorotoluene-----	6-Chloro-o-toluidide.
2-Amino-5-chlorotoluene hydrochloride-----	4-Chloro-o-toluidine hydrochloride.
m-Amino-p-cresol-----	2-Amino-p-cresol.
3-Amino-p-cresol methyl ether-----	5-Methyl-o-anisidine.
3-Amino-p-cresyl methyl ether-----	5-Methyl-o-anisidine.
Aminodichlorobenzenesulfonic acid-----	2,5-Dichlorosulfanilic acid.
2-Aminodicyclohexyl-----	2-Aminobicyclohexyl.
2-Amino-1,4-diethoxybenzene-----	2,5-Die thoxyaniline.
2-Amino-5-diethylamino-toluene hydrochloride-----	N ² ,N ² -Diethyl-toluene-2,5-diamine hydrochloride.
p-Aminodiethtylaniline-----	N,N-Diethyl-p-phenylenediamine.
4-Amino-1,3-dihydroxyanthraquinone-----	4-Aminoxanthopurpurin.
2-Amino-1,4-dimethoxybenzene-----	2,5-Dimethoxyaniline.
p-Aminodimethylaniline-----	N,N-Dimethyl-p-phenylenediamine.
p-Aminodimethylaniline hydrochloride-----	N,N-Dimethyl-p-phenylenediamine hydrochloride.
p-Aminodimethylaniline sulfate-----	N,N-Dimethyl-p-phenylenediamine sulfate.
2-Amino-4,6-dinitrophenol and salt-----	Picramic acid and salt.
o-Aminodiphenyl-----	2-Biphenylamine.
p-Aminodiphenyl-----	Xenylamine.

Cyclic intermediates: Glossary of synonymous names—Continued

Common name	Standard (Chemical Abstracts) name
p-Aminodiphenylamine	N-Phenyl-p-phenylenediamine.
4-Aminodiphenylamine-2-sulfonic acid	5-Amino-2-anilinobenzene-sulfonic acid.
Aminodiphenyl ether	p-Phenyxaniline.
4-Aminoethoxyethylamine	2-(p-Amino-N-methylanilino)ethanol.
Amino G acid	7-Amino-1,3-naphthalenedisulfonic acid.
Amino I (or J) acid	6-Amino-1,3-naphthalenedisulfonic acid.
p-Amino-N-isobutylphenol	p-Isobutylanilino-phenol.
5-Amino-2-methoxybenzyl alcohol	5-Aminosalignin-2-methyl ether.
4-Amino-3-methoxydiphenylamine-2-sulfonic acid	6-Amino-2-methoxymetanilic acid.
4-Amino-1-naphthalenesulfonic acid	Naphthionic acid.
2-Aminonaphthalene-3,6,8-trisulfonic acid	7-Amino-1,3,6-naphthalenetrisulfonic acid.
1-Amino-7-naphthol	8-Amino-2-naphthol.
1-Amino-8-naphthol-4,6-disulfonic acid	8-Amino-1-naphthol-3,5-disulfonic acid.
4-Amino-5-naphthol-1,7-disulfonic acid	8-Amino-1-naphthol-3,5-disulfonic acid.
1-Amino-8-naphthol-2,4-disulfonic acid, monosodium salt.	8-Amino-1-naphthol-5,7-disulfonic acid, monosodium salt.
1-Amino-8-naphthol-3,6-disulfonic acid, monosodium salt.	8-Amino-1-naphthol-3,6-disulfonic acid, monosodium salt.
2-Amino-8-naphthol-3,6-disulfonic acid, monosodium salt.	7-Amino-1-naphthol-3,6-disulfonic acid, monosodium salt.
4-Amino-5-naphthol-1,3-disulfonic acid, monosodium salt.	8-Amino-1-naphthol-5,7-disulfonic acid, monosodium salt.
5-Amino-4-naphthol-2,7-disulfonic acid, monosodium salt.	8-Amino-1-naphthol-3,6-disulfonic acid, monosodium salt.
6-Amino-4-naphthol-2,7-disulfonic acid, monosodium salt.	7-Amino-1-naphthol-3,6-disulfonic acid, monosodium salt.
2-Amino-6-naphthol-8-sulfonic acid	6-Amino-2-naphthol-4-sulfonic acid.
4-Amino-3-naphthol-1-sulfonic acid	1-Amino-2-naphthol-4-sulfonic acid.
7-Amino-3-naphthol-1-sulfonic acid	6-Amino-2-naphthol-4-sulfonic acid.
1-Amino-8-naphthol-4-sulfonic acid, sodium salt.	8-Amino-1-naphthol-5-sulfonic acid, sodium salt.
2-Amino-5-naphthol-7-sulfonic acid, sodium salt.	6-Amino-1-naphthol-3-sulfonic acid, sodium salt.
2-Amino-8-naphthol-6-sulfonic acid, sodium salt.	7-Amino-1-naphthol-3-sulfonic acid, sodium salt.
4-Amino-5-naphthol-1-sulfonic acid, sodium salt.	8-Amino-1-naphthol-5-sulfonic acid, sodium salt.
6-Amino-4-naphthol-2-sulfonic acid, sodium salt.	7-Amino-1-naphthol-3-sulfonic acid, sodium salt.
7-Amino-4-naphthol-2-sulfonic acid, sodium salt.	6-Amino-1-naphthol-3-sulfonic acid, sodium salt.
2-Amino-4-nitroanisole	5-Nitro-o-anisidine.
2-Amino-5-nitroanisole	4-Nitro-o-anisidine.
2-Amino-6-nitroanisole	6-Nitro-o-anisidine.
4-Amino-3-nitroanisole	2-Nitro-p-anisidine.
4-Amino-4-nitrodiphenylamine-2-sulfonic acid	2-(p-Aminoanilino)-5-nitrobenzenesulfonic acid.
2-Aminophenetole	o-Phenetidine.
Aminophenol sulfamide	2-Amino-1-phenol-4-sulfonamide.
o-Aminophenol-p-sulfonamide	2-Amino-1-phenol-4-sulfonamide.
o-Aminophenol-p-sulfonic acid	2-Amino-1-phenol-4-sulfonic acid.
Aminophenylphenyl ether	Phenyxaniline.
m-Aminophenylpyrazolonecarboxylic acid	1-(m-Aminophenyl)-5-oxo-2-pyrazoline-3-carboxylic acid.
1-(m-Aminophenyl)-5-pyrazolone-3-carboxylic acid	1-(m-Aminophenyl)-5-oxo-2-pyrazoline-3-carboxylic acid.
p-Aminophenyl-p-tolylaminesulfonic acid	6-p-Toluidinometanilic acid.
Amino R acid	3-Amino-2,7-naphthalenedisulfonic acid.
6-Amino-3-(p-toluene sulfone)amino-4-methoxytoluene	4'-Amino-5'-methyl-p-toluenesulfon-o-aniside.
3'-Amino-(p-toluenesulfone)ethoxytoluene	3-Methyl-N-(p-toluenesulfonyl)-p-phenetidine.
2-Aminotoluene-5-sulfonic acid	4-Amino-m-toluenesulfonic acid.
Aminoviolanthrene	16-Aminoviolanthrene.
Aniline-2,4-disulfonic acid	4-Amino-m-benzenedisulfonic acid.
Aniline-2,5-disulfonic acid	2-Amino-p-benzenedisulfonic acid.
Aniline hydrochloride	Aniline salt.
Aniline oil	Aniline.
Aniline-m-sulfonic acid	Metanilic acid.
Aniline-p-sulfonic acid	Sulfanilic acid.
Aniline-omega-sulfonic acid, sodium salt	Anilinomethanesulfonic acid, sodium salt.
6-Anilinometanilic acid	5-Amino-2-anilinobenzene-sulfonic acid.
o-Aniside-4-acetylurea	o-Anisidinomethanesulfonic acid.
2-Aniside-4-acetylurea	1-Acetyl-3-(4-amino-p-anisyl)urea.
2-Anisidine-4-sulfoethylamide	3-Amino-N-butyl-p-anisole-sulfonamide.
o-Anisidine-omega-sulfonic acid	o-Anisidinomethanesulfonic acid.
1,4,9,10-Anthratreol	Leuco quinzarin.
1,9-Anthrathiazole-2-carbonyl chloride	Anthr[1,9]isothiazole-2-carbonyl chloride.
1,1'-Azobis(2-naphthol-4-sulfonic acid)	Naphth[1,2]oxadiazole-5-sulfonic acid.
1,1'-Azobis(8-nitro-2-naphthol-4-sulfonic acid)	7-(and 8)-Nitronaphth[1,2]oxadiazole-5-sulfonic acid.
5,5'-Azobis(salicylic acid)	3-Carboxy-2-(and 4)-hydroxybenzenedisazonium sulfate.
Azohydroxyaniline	p-(p-Aminophenylazo)phenol.
Azoxyaniline	m,m'-Azoxydianiline.
m,m'-Azoxybis(aniline)	m,m'-Azoxydianiline.
Benzal chloride	α,α-Dichlorotoluene.
Benzaldehydedisulfonic acid	4-Formyl-m-benzenedisulfonic acid.
Benzaldehydemonosulfonic acid	o-Formylbenzenesulfonic acid.
1-(4-Benzamido-1-anthraquinonylimino)-5-benzamido-anthraquinone.	4,5'-Dibenzamido-1,1'-iminodianthraquinone.
Benzanthrone	7-Benz[de]anthracen-7-one.
Benzanthronedianthraquinonyldi-imide	3,9-Bis[1-anthraquinonylamino]-7-benz[de]anthracen-7-one.

Cyclic intermediates: Glossary of synonymous names—Continued

Common name	Standard (Chemical Abstracts) name
Benzeneazobenzene	Azobenzene.
Benzene-1,3-dicarboxylic acid	Isophthalic acid.
p-Benzenedicarboxylic acid	Terephthalic acid.
1,3,5-Benzenetriol	Phloroglucinol.
2,2'-Benzidine disulfonic acid	4,4'-Diamino-2,2'-biphenyldisulfonic acid.
Benzidine sulfonic acid	2-Amino-5-(p-aminophenyl)benzenesulfonic acid.
Benzocaine	p-Aminobenzoic acid, ethyl ester.
Benzotrichloride	α,α,α-Trichlorotoluene.
Benzoylacetanilide	α-Benzoylacetanilide.
1-Benzoylamino-4-aminanthraquinone	1-Amino-4-benzamidoanthraquinone.
2-Benzoylamino-1,4-dithoxybenzene	2',5'-Diethoxybenzanilide.
2-Benzoylamino-1,4-dimethoxybenzene	2',5'-Dimethoxybenzanilide.
5-Benzoylamino-2-nitrodime-thoxybenzene	2',5'-Dimethoxy-4'-nitrobenzanilide.
5-Benzoylamino-2-nitrohydroquinone diethyl ester	2',5'-Diethoxy-4'-nitrobenzanilide.
6-Benzoylamino-3-(p-toluenesulfonamido)-4-methoxy-toluene.	6-Benzamido-4-methoxy-3-(p-toluenesulfonamido)toluene.
2-Benzoyl-4-chloro-3-nitrobenzoic acid	o-(4-Chloro-3-nitrobenzoyl)benzoic acid.
Benzoyl J acid	6-Benzamido-1-naphthol-3-sulfonic acid.
2-Benzoylthiophene	Phenyl 2-thienyl ketone.
α-Benzylacetamide	Hydrocinnamamide.
m-Benzyl-p-aminophenol hydrochloride	4-Amino-α-phenyl-m-cresol hydrochloride.
Benzyl chloride	α-Chlorotoluene.
Benzyl cyanide	Phenylacetoneitrile.
N-Benzyl-N-ethylaniline	N-Ethyl-N-phenylbenzylamine.
N-Benzyl-N-methyl-p-nitrosaniline	N-Ethyl-N-(p-nitrosophenyl)benzylamine.
3-Benzyl-7-hydroxy-4-methylcoumarin	3-Benzyl-4-methylumbelliferone.
Benzylideneacetophenone	Chalcone.
Bibenzoyl	Benzil.
o-Biphenylamine	2-Biphenylamine.
4-Biphenylamine	Xenylamine.
p,p'-Bis(acetoacetanilide)	4,4'-Biacetoacetanilide.
N,N'-Bis(acetoacetyl)benzidine	4,4'-Biacetoacetanilide.
N,N'-Bis(2-hydroxyethyl)aniline	2,2'-(Phenylimino)diethanol.
N,N'-Bis(2-hydroxyethyl-m-toluidine)	2,2'-(m-Tolylimino)diethanol.
4,4'-Bis[2-(N-methyl-o-anisylidiazocamino)ethanesulfonic acid].	3,3'-Dimethoxy-4,4'-biphenylbis[3-methyl-3-triazene-ethanesulfonic acid].
N,N'-Bis-6-(1-naphthol-3-sulfonic acid)urea	6,6'-Dreylenebis[1-naphthol-3-sulfonic acid].
B.O.N.	3-Hydroxy-2-naphthoic acid.
Brocner's acid	6-Amino-2-naphthalenesulfonic acid.
Bromamine acid	1-Amino-4-bromo-2-anthraquinonesulfonic acid.
p-Bromoacetamidooanthraquinone	1-Acetamido-4-bromoanthraquinone.
Bromobenzanthrone	3-Bromo-7-benz[de]anthracen-7-one.
p-Bromomethylaminoanthraquinone	4-Bromo-1-methylaminoanthraquinone.
4-Bromo-N-methyl-1,9-anthrapyridone	6-Bromo-3-methyl-7-dibenz[f,i]isoquinoline-2,7(3)-dione.
n-Butyl-p-nitrobenzoate	p-Nitrobenzoic acid, n-butyl ester.
p-Carboxybenzenesulfonamide	p-Sulfamylbenzoic acid.
3-Carboxy-4-hydroxyacetanilide	5-Acetamidosalicylic acid.
Cassella acid	3-Amino-1,5-naphthalenedisulfonic acid.
Centralite	N,N'-Diethylcarbanilide.
Chicago acid	8-Amino-1-naphthol-5,7-disulfonic acid.
Chlorinated cresols	Cresols, chlorinated.
2-Chloro-3-acetamino-9,10-anthrahydroquinone disulfonic acid ester.	2-Acetamido-3-chloro-9,10-dihydro-9,10-anthradiol-9,10-disulfonic acid, diethyl ester.
2-Chloro-3-acetaminoanthraquinone	2-Acetamido-3-chloroanthraquinone.
2-Chloro-3-acetamino-9,10-dihydroxyanthracene-9,10-disulfonic acid ester.	2-Acetamido-3-chloro-9,10-dihydro-9,10-anthradiol-9,10-disulfonic acid, diethyl ester.
Chloroacetylarsonic acid	Chloroarsacetin.
5-Chloro-2-aminoanisole	4-Chloro-o-anisidine.
4-Chloro-2-amino-6-benzenesulfonic acid	5-Chlorometanilic acid.
6-Chloro-3-aminobenzo-trifluoride	6-Chloro-α-trifluoro-m-toluidine.
Chloroaminophenol	2-Amino-4-chlorophenol.
2-Chloro-4-aminotoluene	3-Chloro-p-toluidine.
5-Chloro-2-aminotoluene	4-Chloro-o-toluidine.
m-Chloroaniline-o-sulfonic acid	2-Amino-6-chlorobenzenesulfonic acid.
p-Chloroaniline-m-sulfonic acid	6-Chlorometanilic acid.
p-Chloroaniline-o-sulfonic acid	2-Amino-5-chlorobenzenesulfonic acid.
5-Chloroanisidine	4-Chloro-o-anisidine.
2-Chloro-3-anthracenecarboxylic acid	3-Chloro-2-anthracenecarboxylic acid.
2-Chloroanthraquinone-3-carboxylic acid	3-Chloro-2-anthraquinonecarboxylic acid.
2-Chlorobenzaldehyde-5-sulfonic acid	4-Chloro-3-formylbenzenesulfonic acid.
4-Chlorobenzaldehyde-2-sulfonic acid	5-Chloro-2-formylbenzenesulfonic acid.
1-Chloro-5-benzamidoanthraquinone	1-Benzamido-5-chloroanthraquinone.
Chlorobenzanthrone	Chloro-7-benz[de]anthracen-7-one.
4-Chlorobenzotrifluoride	4-Chloro-α,α,α-trifluorotoluene.
Chlorobenzyl cyanide	(p-Chlorophenyl)acetoneitrile.
1-Chloro-2-carboxyanthraquinone	1-Chloro-2-anthraquinonecarboxylic acid.
p-Chloro-m-cresol	6-Chloro-m-cresol.
2-Chloro-1,4-dihydroxyanthraquinone	2-Chloroquinizarin.
Chloro H acid	8-Chloro-1-naphthol-3,6-disulfonic acid.
5-Chloro-8-hydroxyquinoline	5-Chloro-8-quinolinol.
3-Chloro-3'-methoxy-6-diphenylaminocarboxylic acid, potassium salt.	N-(m-Anisyl)-4-chloroanthranilic acid, potassium salt.

Cyclic intermediates: Glossary of synonymous names—Continued

Common name	Standard (Chemical Abstracts) name
3-Chloro-4'-methoxy-6-diphenylaminocarboxylic acid, potassium salt.	N-(p-Anisyl)-4-chloroanthranilic acid, potassium salt.
(4-Chloro-2-methoxy-N-methylphenyldiazamino)acetic acid.	1-(4-Chloro-o-anisyl)-3-methyl-3-triazeneacetic acid.
Chloromethylantraquinone	1-Chloro-2-methylantraquinone.
(5-Chloro-N-methyl-o-tolyldiazamino)acetic acid	1-(5-Chloro-o-tolyl)-3-methyl-3-triazeneacetic acid.
o-Chloro-p-nitroaniline	2-Chloro-4-nitroaniline.
p-Chloro-o-nitroaniline	4-Chloro-2-nitroaniline.
4-Chloro-3-nitrobenzotrifluoride	4-Chloro-4,4,4-trifluoro-3-nitrotoluene.
2-Chlorophenol	o-Chlorophenol.
4-Chlorophenol	p-Chlorophenol.
2-(m-Chlorophenyldiazamino)-4-sulfobenzoic acid	2-[1-(m-Chlorophenyl)triazene]-4-sulfobenzoic acid.
Chlorophenylhydrazine-p-sulfonic acid	4-Chloro-3-hydrazinobenzenesulfonic acid.
2-Chloro-o-phenyl phenol	2-Chloro-6-phenylphenol.
1-(2-Chloro-4-sulphonyl)-3-methyl-5-pyrazolone	1-(6-Chloro-4-sulphonyl)-3-methyl-5-pyrazolone.
o-Chloro-p-toluene sodium sulfonate	3-Chloro-p-toluenesulfonic acid, sodium salt.
4-Chlorotoluene-2-sulfonic acid	5-Chloro-o-toluenesulfonic acid.
m-Chlorotoluene-thioglycolic acid	4-Chloro-o-tolylmercaptoacetic acid.
5-Chloro-2-toluidine	5-Chloro-o-toluidine.
o-Chloro-m-toluidine-p-sulfonic acid	2-Amino-5-chloro-p-toluenesulfonic acid.
2-Chloro-p-toluidine-5-sulfonic acid	6-Amino-4-chloro-m-toluenesulfonic acid.
2-Chloro-5-toluidine-4-sulfonic acid	2-Amino-5-chloro-p-toluenesulfonic acid.
Chlorotolylthioglycolic acid	4-Chloro-o-tolylmercaptoacetic acid.
Chloro-sym-xylene	4-Chloro-3,5-xylene.
Chloroxyldenesulfonic acid	6-Amino-3-chloro-2,5-xylenesulfonic acid.
Chromotropic acid	4,5-Dihydroxy-2,7-naphthalenedisulfonic acid.
1,6-Cleve's acid	5-Amino-2-naphthalenesulfonic acid.
1,7-Cleve's acid	8-Amino-2-naphthalenesulfonic acid.
Cleve's acid, mixed	5(and 8)-Amino-2-naphthalenesulfonic acid.
Cresidine	5-Methyl-o-anisidine.
m-Cresol methyl ether	m-Methylanisole.
Cresols, mixed	Cresylic acid.
m-Cresolsulfonic acid	5-Hydroxy-m-toluenesulfonic acid.
o-Cresotic acid	2,3-Cresotic acid.
o-Cresotinic acid	2,3-Cresotic acid.
m-Cresyl methyl ether	m-Methylanisole.
psi-Cumidine	Pseudocumidine.
Cuminaldehyde	Cumaldehyde.
2-Cyanopyridine	Picolinonitrile.
3-Cyanopyridine	Nicotinonitrile.
4-Cyanopyridine	Isonicotinonitrile.
Dahl's acid	6-Amino-1-naphthalenesulfonic acid.
Dehydrothio-p-toluidine	2-(p-Aminophenyl)-6-methylbenzothiazole.
Desoxyanisoin	α-(p-Anisyl)-p-methoxyacetophenone.
Developer Z	3-Methyl-1-phenyl-5-pyrazolone.
3,6-Diaminoacridine	Proflavine base.
m-Diaminoanisole	5-Methoxy-m-phenylenediamine.
3,3'-Diaminoazobenzene	m,m'-Azoxydianiline.
4,4'-Diamino-1,1'-dianthraquinonylamine	1,1'-Iminodi-4-aminocanthraquinone.
4,4'-Diamino-1,1'-dianthrimide	1,1'-Iminodi-4-aminocanthraquinone.
Diamino-4,4'-dibenzoyl-1,1'-dianthraquinoneimine	1,1'-Iminobis[4-benzamidoanthraquinone].
Diamino-4,5-dibenzoyl-1,1'-dianthraquinonylamine	4,5'-Dibenzamido-1,1'-aminodianthraquinone.
1,4-Diamino-2,3-dihydroanthraquinone	Acetate leuco violet.
3,6-Diamino-2,7-dimethylacridine hydrochloride	Acridine yellow.
4,4'-Diamino-3,3'-dimethyl-5,5'-bisbenzenesulfonic acid.	2,2'-Diamino-5,5'-bi-m-toluenesulfonic acid.
4,4'-Diamino-2,2'-dimethyldiphenylmethane	4,4'-Methylenebis[m-toluidine].
p,p'-Diaminodiphenylmethane	p,p'-Methylenedianiline.
p,p'-Diaminodiphenylsulfide	p,p'-Thiodianiline.
3,3'-Diaminodiphenyl urea	3,3'-Diaminocarbamilide.
Di(p-aminophenyl)sulfide	p,p'-Thiodianiline.
1,3-Di(m-aminophenyl)urea	3,3'-Diaminocarbamilide.
2,6-Diaminotoluene-4-sulfonic acid	3,5-Diamino-p-toluenesulfonic acid.
Diamylphenol	2,4-Di-tert-amyphenol.
1,5-Diamilinoanthraquinone-o,o'-dicarboxylic acid	1,5-Diamilino-2,6-anthraquinonedicarboxylic acid.
o-Dianisidine	3,3'-Dimethoxybenzidine.
Di(o-anisylidazo)methylenebis(iminoacetic acid)	3,3'-Methylenebis[1-o-anisyl-3-triazeneacetic acid].
Di(o-anisylidazo)methylenebis(iminopropionic acid)	3,3'-Methylenebis[1-o-anisyl-3-triazenemethylacetic acid].
α,β-Dianisylglycol	1,2-Di-p-anisyl-1,2-ethanediol.
1,1'-Dianthraquinoneimine	1,1'-Iminodianthraquinone.
1,1'-Dianthraquinonylamine	1,1'-Iminodianthraquinone.
Dianthrimide	1,1'-Iminodianthraquinone.
Diazaminobenzene	1,3-Diphenyltriazine.
1-Diazo-2-naphthol-4-sulfonic acid	5-Naphth[1,2]oxadiazosulfonic acid.
Dibenzanthrone	Violanthrone.
2,2-Dibenzanthronyl	(4,4'-Bi-7-benz[de]anthracen)-7,7'-dione.
13,13-Dibenzanthronyl	(3,3'-Bi-7-benz[de]anthracen)-7,7'-dione.
Dibenzoyl	Benzil.
4,5-Dibenzoylamidodianthraquinonylamine	4,5'-Dibenzamido-1,1'-aminodianthraquinone.
4,4'-Dibenzoyldiamino-1,1'-dianthrimide	1,1'-Iminobis[4-benzamidoanthraquinone].
Dibenzyl	Bibenzyl.

Cyclic intermediates: Glossary of synonymous names—Continued

Common name	Standard (Chemical Abstracts) name
Dibenzylamine	N-Phenyldibenzylamine.
Dibenzyl disulfide	Benzyl disulfide.
Dibenzyl ether	Benzyl ether.
Dibenzyl sodium sulfanilate	N,N-Dibenzylsulfanilic acid, sodium salt.
Dibromoaminanthraquinone	1-Amino-2,4-dibromoanthraquinone.
7,16-Dibromo-6,15-dihydro-5,9,14,18-anthraquinetetrone	7,16-Dibromodanthrene.
p-Dibromodihydroxynaphthalene	4,5-Dibromo-1,8-naphthalenediol.
2,6-Dibromo-1,5-dihydroxynaphthalene	2,6-Dibromo-1,5-naphthalenediol.
4,5-Dibromo-1,8-dihydroxynaphthalene	4,5-Dibromo-1,8-naphthalenediol.
1,4-Dichloroaniline	2,5-Dichloroaniline.
2,5-Dichloroaniline-4-sulfonic acid	2,5-Dichlorosulfanilic acid.
Dichloroanisyl diazodi-iminodiacetic acid	3,3'-Methylenebis[1-(5-chloro-o-anisyl)-3-triazeneacetic acid].
Di(5-chloro-o-anisyl diazo)methylenebis(iminoacetic acid)	3,3'-Methylenebis[1-(5-chloro-o-anisyl)-3-triazeneacetic acid].
1,5-Dichloro-4,8-anthraquinonedisulfonic acid	4,8-Dichloro-1,5-anthraquinonedisulfonic acid.
1,8-Dichloro-4,5-anthraquinonedisulfonic acid	4,5-Dichloro-1,8-anthraquinonedisulfonic acid.
2,6-Dichlorobenzalchloride	$\alpha, \alpha, 2, 6$ -Tetrachlorotoluene.
o,o'-Dichlorobenzidine	3,3'-Dichlorobenzidine.
m,m'-Dichlorobenzidine hydrochloride	2,2'-Dichlorobenzidine hydrochloride.
2,4-Dichlorobenzyl chloride	$\alpha, 2, 4$ -Trichlorotoluene.
2,4-Dichlorobenzylidene chloride	$\beta, \beta, 2, 4$ -Tetrachlorotoluene.
2,6-Dichlorobenzylidene chloride	$\gamma, \alpha, 2, 6$ -Tetrachlorotoluene.
Di(4-chloro-o-diazotoluyl)methylenebis(iminoacetic acid)	3,3'-Methylenebis[1-(4-chloro-o-tolyl)-3-triazeneacetic acid].
2-(2,5-Dichloro-N-ethylphenyldiazoamino)-5-sulfobenzoic acid	2-[1-(2,5-Dichlorophenyl)-3-ethyl-3-triazene]-5-sulfobenzoic acid.
Dichlorohydroxybenzylbenzoic acid	o-(3,5-Dichlorosalicyloyl)benzoic acid.
2,5-Dichlorophenylhydrazinesulfonic acid	2,5-Dichlorohydrazinobenzenesulfonic acid.
1-(2,5-Dichlorophenyl)-5-pyrazolone-3-carboxylic acid	1-(2,5-Dichlorophenyl)-5-oxo-2-pyrazoline-3-carboxylic acid.
Di(5-chloro-o-tolyldiazo)methylenebis(iminoacetic acid)	3,3'-Methylenebis[1-(5-chloro-o-tolyl)-3-triazeneacetic acid].
Di(5-chloro-o-tolyldiazo)methylenebis(iminopropionic acid)	3,3'-Methylenebis[1-(5-chloro-o-tolyl)-3-triazene-methylacetic acid].
Dieresyl disulfide	Cresyl disulfide.
Dicyclohexyl	Bicyclohexyl.
Diethanolamine	2,2'-(Phenylimino)diethanol.
Diethanol-m-toluidine	2,2'-(m-Tolylimino)diethanol.
1,4-Diethoxybenzene	p-Diethoxybenzene.
N-(2,5-Diethoxy-4-nitrophenyl)benzamide	2',5'-Diethoxy-4'-nitrobenzanilide.
N-(2,5-Diethoxyphenyl)benzamide	2',5'-Diethoxybenzanilide.
p-Diethylaminobenzaniline-o-sulfonic acid	N-(p-Diethylaminobenzylidene)aniline-o-sulfonic acid.
Diethylamine-m-sulfonic acid	N,N-Diethylmetanilic acid.
Diethylamine	N,N'-Diformyltoluene-2,5-diamine.
Diformyl-m-tolylenediamine	Acenaphthene.
1,2-Dihydroscenaphthylene	Chelidonic acid.
1,4-Dihydro-4-oxo-2,6-pyridinedicarboxylic acid	Xanthopurpurin.
1,3-Dihydroxyanthraquinone	Quinizarin.
1,4-Dihydroxyanthraquinone	Anthraquin.
1,5-Dihydroxyanthraquinone	Chryszin.
1,8-Dihydroxyanthraquinone	Anthraflavic acid.
2,6-Dihydroxyanthraquinone	β -Resorcylic acid.
2,4-Dihydroxybenzoic acid	1,4-Diaminohystazarin.
2,3-Dihydroxy-1,4-diaminoanthraquinone	16,17-Dihydroxyviolanthrone.
Dihydroxydibenzanthrone	Adrenalone.
3,4-Dihydroxy- α -dimethylaminoacetophenone	6,6'-Iminobis[1-naphthol-3-sulfonic acid].
5,5'-Dihydroxydi-2-naphthylamine-7,7'-disulfonic acid	4,8-Dinitroanthraquin.
1,5-Dihydroxy-4,8-diaminoanthraquinone	p,p'-Isopropylidenediphenol.
p,p'-Dihydroxydiphenyldimethylmethane	p,p'-Sulfonyldiphenol.
4,4'-Dihydroxydiphenylsulfone	6,6'-Iminobis[1-naphthol-3-sulfonic acid].
5,5'-Dihydroxy-7,7'-disulfonic-2,2'-dinaphthylamine	2,2'-(Phenylimino)diethanol.
Dihydroxyethylamine	2,2'-(m-Tolylimino)diethanol.
Dihydroxyethyl-3-toluidine	1,5-Naphthalenediol.
1,5-Dihydroxynaphthalene	2,3-Naphthalenediol.
2,3-Dihydroxynaphthalene	4,5-Dihydroxy-2,7-naphthalenedisulfonic acid.
1,8-Dihydroxynaphthalene-3,6-disulfonic acid	4,5-Dihydroxy-1-naphthalenesulfonic acid.
1,8-Dihydroxynaphthalene-4-sulfonic acid	6,7-Dihydroxy-2-naphthalenesulfonic acid.
2,3-Dihydroxynaphthalene-6-sulfonic acid	Isopropylideneaminobenzenesulfonic acid, sodium salt.
Dimethanil-sodium sulfonate	o-Veratraldehyde.
2,3-Dimethoxybenzaldehyde	Veratraldehyde.
3,4-Dimethoxybenzaldehyde	Veratrole.
o-Dimethoxybenzene	Veratrole.
1,2-Dimethoxybenzene	Anisoin.
4,4'-Dimethoxybenzoin	Veratryl alcohol.
3,4-Dimethoxybenzyl alcohol	3,3'-Methylenebis[1-(5-chloro-o-anisyl)-3-triazeneacetic acid].
Di(methoxy-2-diazo-4-chlorobenzyl)methylenebis(iminoacetic acid)	3,3'-Methylenebis[1-o-anisyl-3-triazeneacetic acid].
Dimethoxydiazodiphenylmethylenebis(iminoacetic acid)	3,3'-Methylenebis[1-o-anisyl-3-triazene-methylacetic acid].
Dimethoxydiazodiphenylmethylenebis(iminopropionic acid)	3,3'-Dimethoxy-4,4'-biphenylbis[3-methyl-3-triazene-ethanesulfonic acid].
2,2'-(3,3'-Dimethoxy-N,N'-dimethyl-4,4'-biphenylbis-diazamino)diethanesulfonic acid	γ -Ethyl-4,4'-dimethoxychalcone.
Di-p-methoxyethylchalcone	2',5'-Dimethoxy-4'-nitrobenzanilide.
N-(2,5-Dimethoxy-4-nitrophenyl)benzamide	

Cyclic intermediates: Glossary of synonymous names—Continued

Common name	Standard (Chemical Abstracts) name
(3,4-Dimethoxyphenyl)acetic acid-----	Homoveratric acid.
N-(2,5-Dimethoxyphenyl)benzamide-----	2',5'-Dimethoxybenzanilide.
2,4-Di(p-methoxyphenyl)-3-ethylhexane-----	2,4-Di(p-anisyl)-3-ethylhexane.
2,4-Di(p-methoxyphenyl)-3-ethylhexene-----	2,4-Di(p-anisyl)-3-ethylhexene.
3,4-Di(p-methoxyphenyl)hexane-----	3,4-Di(p-anisyl)hexane.
Dime thylacetanilide-----	Acetoxyllidide.
Dimethylaminoacetyl catechol-----	Adrenalone.
N,N-Dimethyl-3-aminophenol-----	m-Dimethylaminophenol.
Dimethyl aniline-----	Xylidine.
Dime thylbenzene-----	Xylene.
2,4-Dime thylbenzenesulfonanilide-----	p-Toluenesulfono-o-toluidide.
2,4-Dime thyl-6-tert-butylacetophenone-----	6-tert-Butyl-2,4-dime thylacetophenone.
1,3-Dime thyl-5-tert-butylbenzene-----	5-tert-Butyl-m-xylene.
2,7-Dime thylceroxanol-----	2,8-Dime thyl-13 β -hydroxy-9(13 β)-ceroxone.
Dimethyl dianthraquinonyl-----	2,2'-Dimethyl-1,1'-bianthraquinone.
2,2'-Dime thyl-1,1'-dianthraquinonylamine-----	1,1'-Iminobis[2-methylanthraquinone].
2,7-Dime thylfluorane-----	2',7'-Dimethylfluoran.
Dimethylhydroresorcinol-----	Dimethyl-1,3-cyclohexanedione.
Dime thyl- α -naphthylamine-----	N,N-Dime thyl-1-naphthylamine.
2,7-Dime thylquinoline-----	m-Toluquinaldine.
0inaphtho[1,2,3-cd,3',2',1'-lm] perylene-----	Violanthrene.
0inaphtho[1,2,3-cd,3',2',1'-lm] perylene-5,10-dione-----	Violanthrene.
1,4-Dinitrobenzene-----	p-Dinitrobenzene.
2,4-Dinitrobenzene-----	m-Dinitrobenzene.
Dinitrochlorobenzene-----	1-Chloro-2,4-dinitrobenzene.
Dinitrochlorobenzenesulfonic acid-----	4-Chloro-3,5-dinitrobenzenesulfonic acid.
3,5-Dinitro-4-chlorobenzoic acid-----	4-Chloro-3,5-dinitrobenzoic acid.
2,6-Dinitro-4-chlorophenol-----	4-Chloro-2,6-dinitrophenol.
Dinitro-o-cyclohexylphenol-----	2-Cyclohexyl-4,6-dinitrophenol.
4,4'-Dinitro-1,1'-dianthraquinonylamine-----	1,1'-Iminodi-4-nitroanthraquinone.
Dinitrodibenzanthronyl-----	Dinitro(3,3'-bi-7-benz[de]anthracen)-7,7'-dione.
Dinitrohydroxydiphenylamine-----	p-(2,4-Dinitroanilino)phenol.
Dinitrotetramethylamino diphenylmethane-----	p,p'-Methylenebis[N,N-dimethyl-2-nitroaniline].
2,4-Dinitrotoluenesulfonic acid-----	3,5-Dinitro-tro-o-toluenesulfonic acid.
1,5-Dioxamidoanthraquinone-----	N,N'-(1,5-Anthraquinone)dioxamic acid.
Dioxy S acid-----	4,5-Dihydroxy-1-naphthalenesulfonic acid.
Diphenyl-----	Biphenyl.
2,4-Diphenylamine-1-hydroxyanthraquinone-----	2,4-Dianilino-1-hydroxyanthraquinone.
2,4-Diphenylamine-1-oxyanthraquinone-----	2,4-Dianilino-1-hydroxyanthraquinone.
Diphenylcarbazide-----	1,5-Diphenylcarbohydrazide.
Diphenylene oxide-----	Dibenzofuran.
Diphenyl epsilon acid-----	8-Diphenylamino-1,6-naphthalenedisulfonic acid.
Diphenyl ether-----	Phenyl ether.
Diphenyl ketone-----	Benzophenone.
Diphenylmethanol-----	Benzhydrol.
Diphenyl oxide-----	Phenyl ether.
Diphenyl silicon dichloride-----	Dichlorophenylsilane.
Dipyrazoledianthrone-----	Pyrazole anthrone yellow.
1,3-Di-p-toluidineanthraquinone-----	1,3-Di-p-(toluidino)anthraquinone.
1,4-Di-p-toluidineanthraquinone-----	1,4-Di-p-(toluidino)anthraquinone.
1,3-Di(p-tolylamino)anthraquinone-----	1,3-Di-p-(toluidino)anthraquinone.
1,4-Di-p-tolylaminoanthraquinone-----	1,4-Di-p-(toluidino)anthraquinone.
N-Ethanol-N-ethyl-4-nitrosoaniline-----	2-(N-Ethyl-4-nitrosoanilino)ethanol.
2-Ethanolpyridine-----	2-Pyridinethanol.
2-Ethoxyaniline-----	o-Phenetidine.
4-Ethoxyaniline-----	p-Phenetidine.
2-Ethoxy-6-sulfonaphthalene-----	6-Ethoxy-2-naphthalenesulfonic acid.
Ethyl-p-aminobenzoate-----	p-Aminobenzoic acid, ethyl ester.
Ethyl-o-amino-p-cresol-----	3-Ethylamino-p-cresol.
Ethylaniline (mono)-----	N-Ethylaniline.
N,N-Ethylbenzylaniline-----	N-Ethyl-N-phenylbenzylamine.
Ethylbenzylanilinesulfonic acid-----	α -(N-Ethylanilino)-p-toluenesulfonic acid.
Ethylbenzyl-m-toluidide-----	N-Benzyl-N-ethyl-m-toluidide.
Ethylbenzyl-m-toluidine-o-sulfonic acid-----	4-(N-Benzyl-N-ethylamino)-o-toluenesulfonic acid.
Ethylene lycol monophenylether-----	2-Phenoxyethanol.
Ethyl hydrol-----	4,4'-Bis(diethylamino)benzhydrol.
Ethyl ketone base-----	4,4'-Bis(diethylamino)benzophenone.
2-(N-Ethyl-2-methoxy-5-nitrophenyldiazoamino)-5-sulfon.	2-[3-Ethyl-1-(5-nitro-o-anisyl)-3-triazene]-5-sulfo-benzoic acid.
5-Ethyl-2-methylpyridine-----	5-Ethyl-2-picoline.
2-(N-Ethyl)-5-nitro-o-anisyldiazoamino-5-sulfo-benzoic acid.	2-[3-Ethyl-1-(5-nitro-o-anisyl)-3-triazene]-5-sulfo-benzoic acid.
p-Ethylnitrobenzene-----	1-Ethyl-4-nitrobenzene.
Ethyl p-nitrobenzoate-----	p-Nitrobenzoic acid, ethyl ester.
Ethyl-p-nitrobenzoylacetate-----	p-Nitrobenzoylacetic acid, ethyl ester.
Ethyl phenyl ether-----	Phenetole.
Ethyl salicyl carbonate-----	o,o'-Carbonyldioxydibenzoic acid, diethyl ester.
Ethylsulfobenzylaniline-----	α -(N-Ethylanilino)-p-toluenesulfonic acid.
N-Ethyl-o-toluidine-p-sulfonic acid-----	3-Ethylamino-p-toluenesulfonic acid.
Fast red TR base-----	5-Chloro-o-toluidine.
p-Formylaniline-----	p-Aminobenzaldehyde.

Cyclic intermediates: Glossary of synonymous names—Continued

Common name	Standard (Chemical Abstracts) name
p-Formyl-N,N-diethylaniline-----	p-Diethylaminobenzaldehyde.
G acid-----	2-Naphthol-6,8-disulfonic acid.
Gamma acid-----	7-Amino-1-naphthol-3-sulfonic acid.
Gamma disulf acid-----	7-Amino-1-naphthol-3,6-disulfonic acid.
Glycerolmonoethylaniline-----	3-(N-Ethylanilino)-1,2-propanediol.
H acid-----	8-Amino-1-naphthol-3,6-disulfonic acid.
Halocerin-----	6,9-Dichloro-2-methoxyacridine.
Hexahydrobenzoic acid-----	Cyclohexanecarboxylic acid.
Hexahydropyridine-----	Piperidine.
Homoveratrylamine-----	1,1-Dimethoxyphenethylamine.
1,2-1,2-Hydrazinedibromanthraquinone-----	7,16-Dibromoindanthrene.
Hydrol-----	p,p'-Bis(dimethylamino)benzhydrol.
Hydroquinone dimethyl ether-----	p-Dimethoxybenzene.
o-Hydroxybenzyl benzoate, calcium salt-----	Saligenin benzoate, calcium salt.
7-Hydroxycoumarin-----	Umbelliferone.
4-Hydroxydiphenyl-----	p-Phenylphenol.
p-Hydroxyethyl o-chloroaniline-----	2-(Chloroanilino)ethanol.
Hydroxyethyl ethylaniline-----	2-(N-Ethylanilino)ethanol.
Hydroxyethylmethylaniline-----	2-(N-Methylanilino)ethanol.
Hydroxyethyl-3-toluidine-----	2-(m-Toluidino)ethanol.
2-Hydroxy-3-methoxybenzaldehyde-----	o-Vanillin.
2-Hydroxy-3-methylbenzoic acid-----	2,3-Cresotic acid.
2-Hydroxy-4-methylbenzoic acid-----	2,4-Cresotic acid.
7-Hydroxy-4-methylcoumarin-----	4-Methylumbelliferone.
2-Hydroxy-5-nitroacetanilide-----	2-Acetamido-4-nitrophenol.
p-Hydroxyphenylarsonic acid-----	p-Hydroxybenzenearsonic acid.
p-Hydroxyphenyl-n-butylamine-----	p-Amino-N-(n-butyl)-phenol.
8-Hydroxyquinoline-----	8-Quinolol.
I acid-----	6-Amino-1-naphthol-3-sulfonic acid.
I acid imide-----	6,6'-Iminobis[1-naphthol-3-sulfonic acid].
Isobutyl p-nitrobenzoate-----	p-Nitrobenzoic acid, isobutyl ester.
Isodibenzanthrone-----	Isoviolanthrone.
p-Isopropylaniline-----	Cumidine.
p-Isopropylbenzaldehyde-----	Cumaldehyde.
Isopropylbenzene-----	Cumene.
Isopropyl p-toluenesulfonate-----	p-Toluenesulfonic acid, isopropyl ester.
J acid-----	6-Amino-1-naphthol-3-sulfonic acid.
J acid imide-----	6,6'-Iminobis[1-naphthol-3-sulfonic acid].
J acid urea-----	6,6'-Ureylenebis[1-naphthol-3-sulfonic acid].
K acid-----	8-Amino-1-naphthol-3,5-disulfonic acid.
Koch's acid-----	8-Amino-1,3,6-naphthalenetrisulfonic acid.
Lake red C amine-----	2-Amino-5-chloro-p-toluenesulfonic acid.
Laurent's acid-----	5-Amino-1-naphthalenesulfonic acid.
Lead styphnic-----	Styphnic acid, lead salt.
Lead trinitroresorcinate-----	Styphnic acid, lead salt.
Leuco-1,4-dimethylaminanthraquinone-----	1,4-Dimethylamino-9,10-anthradicol.
Leucoindophenol BCFN-----	4-(p-Dimethylaminoanilino)-1-naphthol.
Limonene-----	Dipentene.
Methane base-----	p,p'-Methylenebis[N,N-diethylaniline].
Methane salt-----	4,4'-Methylenebis[3-hydroxy-2-naphthoic acid].
o-Methoxyacetanilide-----	o-Acetanisidide.
p-Methoxyacetanilide-----	p-Acetanisidide.
4-Methoxy-4'-aminodiphenylamine-----	N-(p-Anisyl)-p-phenylenediamine.
2-Methoxy-4'-aminodiphenylamine-2-sulfonic acid-----	o-(4-Amino-2-anisidino)benzenesulfonic acid.
Methoxyaniline-----	Anisidine.
Methoxybenzene-----	Anisole.
p-Methoxybenzoic acid-----	Anisic acid.
3-Methoxy-3'-chloro-6'-carboxydiphenylamine, potassium salt-----	N-(p-Anisyl)-4'-chloroanthranilic acid, potassium salt.
2-Methoxy-6,9-dichloroacridine-----	6,9-Dichloro-2-methoxyacridine.
4'-Methoxy-4-nitrodiphenylamine-2'-sulfonic acid-----	2-p-Amino-5-nitrobenzenesulfonic acid.
Methoxy-ome-a-sulfonic acid-----	o-Anisidinomethanesulfonic acid.
6-Methoxy-m-toluidine-----	5-Methyl-o-anisidine[NH=1].
4-Methyl-4'-aminodiphenylamine-2-sulfonic acid-----	6-p-Toluidinomethanilic acid.
Methylaminosulfobenzoic acid-----	N-Methyl-5-sulfoanthranilic acid.
o-Methylaniline-----	o-Toluidine.
Methylaniline(mono)-----	N-Methylaniline.
2-Methylbenzanthrone-----	2-Methyl-7-benz[de]anthracen-7-one.
2'-Methyl-3-benzidinesulfonic acid-----	5-Amino-2-(4-amino-m-toluidino)benzenesulfonic acid.
Methylenebis[N-p-(5-chloro-o-anisylazophenyl)iminoacetic acid], disodium salt-----	N,N'-Methylenebis[N-p-(5-chloro-o-anisylazophenyl)glycine], disodium salt.
Methylenebis(methylaminoantipyrene)-----	N,N'-Methylenebis[4-methylaminoantipyrene].
Methylenebis(toluenediamine)-----	5,5'-Methylenebis(toluene-2,4-diamine).
7-Methyl-5-ethylpyridine-----	5-Ethyl-2-picolone.
7-Methyl-7-hydroxycoumarin-----	7-Methylumbelliferone.
Methyl-p-hydroxy-m-nitrobenzoate-----	p-Hydroxy-m-nitrobenzoic acid, methyl ester.
Methylphenylpyrazolone-3-sulfonic acid-----	4-Methyl-1-(m-sulfophenyl)-5-pyrazolone.

Cyclic intermediates: Glossary of synonymous names--Continued

Common name	Standard (Chemical Abstracts) name
Methylphenylpyrazolone-4-sulfonic acid	3-Methyl-1-(p-sulfophenyl)-5-pyrazolone.
2-Methylpiperidine	2-Pipecoline.
Methylpyridine	Picoline.
2-Methylquinoline	Quinaldine.
Methyl-p-toluenesulfonate	p-Toluenesulfonic acid, methyl ester.
β -Methylumbelliferone	4-Methylumbelliferone.
Michler's hydrol	4,4'-Bis(dimethylamino) benzhydrol.
Michler's ketone	4,4'-Bis(dimethylamino) benzophenone.
Mixed cresols, refined	Cresylic acid, refined.
Monobromobenzene	Bromobenzene.
Monochlorobenzene	Chlorobenzene (mono).
Naphthalene sodium sulfonates	Naphthalenesulfonic acids, sodium salt (mixed).
Naphthalene- β -thio-lycolic acid	2-Naphthylmercaptoacetic acid.
o-Naphthionic acid	1-Amino-2-naphthalenesulfonic acid.
α -Naphthol	1-Naphthol.
β -Naphthol	2-Naphthol.
1-Naphthol-8-chloro-3,6-disulfonic acid	8-Chloro-1-naphthol-3,6-disulfonic acid.
2-Naphthol ethyl ether	2-Ethoxynaphthalene.
2-Naphtholthioindoxyl	μ -(2-Hydroxynaphthyl)-3-thianaphthol.
Nuphtiosulfochloride	1-Naphthalenesulfonyl chloride.
Naphthylacetone trile	Naphthalenesacetone trile.
α -Naphthylamine	1-Naphthylamine.
β -Naphthylamine	2-Naphthylamine.
1-Naphthylamine-3,6-disulfonic acid	5-Amino-2,7-naphthalenedisulfonic acid.
1-Naphthylamine-3,8-disulfonic acid	8-Amino-1,6-naphthalenedisulfonic acid.
1-Naphthylamine-4,7-disulfonic acid	4-Amino-1,6-naphthalenedisulfonic acid.
1-Naphthylamine-4,8-disulfonic acid	4-Amino-1,5-naphthalenedisulfonic acid.
2-Naphthylamine-1,5-disulfonic acid	2-Amino-1,5-naphthalenedisulfonic acid.
2-Naphthylamine-3,6-disulfonic acid	3-Amino-2,7-naphthalenedisulfonic acid.
2-Naphthylamine-4,8-disulfonic acid	3-Amino-1,5-naphthalenedisulfonic acid.
2-Naphthylamine-5,7-disulfonic acid	6-Amino-1,3-naphthalenedisulfonic acid.
2-Naphthylamine-6,8-disulfonic acid	7-Amino-1,3-naphthalenedisulfonic acid.
1-Naphthylamine-2-sulfonic acid	1-Amino-2-naphthalenesulfonic acid.
1-Naphthylamine-3-sulfonic acid	4-Amino-2-naphthalenesulfonic acid.
1-Naphthylamine-4-sulfonic acid	Naphthionic acid.
1-Naphthylamine-5-sulfonic acid	5-Amino-1-naphthalenesulfonic acid.
1-Naphthylamine-6-sulfonic acid	5-Amino-2-naphthalenesulfonic acid.
1-Naphthylamine-6 (and 7)-sulfonic acid	5 (and 8)-Amino-2-naphthalenesulfonic acid.
1-Naphthylamine-7-sulfonic acid	8-Amino-2-naphthalenesulfonic acid.
1-Naphthylamine-8-sulfonic acid	8-Amino-1-naphthalenesulfonic acid.
2-Naphthylamine-1-sulfonic acid	2-Amino-1-naphthalenesulfonic acid.
2-Naphthylamine-5-sulfonic acid	6-Amino-1-naphthalenesulfonic acid.
2-Naphthylamine-6-sulfonic acid	6-Amino-2-naphthalenesulfonic acid.
2-Naphthylamine-8-sulfonic acid	7-Amino-1-naphthalenesulfonic acid.
1-Naphthylamine-3,6,8-trisulfonic acid	8-Amino-1,3,6-naphthalenetrisulfonic acid.
2-Naphthylamine-3,6,8-trisulfonic acid	7-Amino-1,3,6-naphthalenetrisulfonic acid.
1-Naphthylamine-2-carboxylic acid anthraquinone	1-(1-Naphthylamino)-2-anthraquinonecarboxylic acid.
α -Naphthyl isocyanate	1-Naphthyl isocyanate.
Naphthylmethanesulfonic acid	Naphthalenemethanesulfonic acid.
β -Naphthylthio-lycolic acid	2-Naphthylmercaptoacetic acid.
Neville and Winter's acid	1-Naphthol-4-sulfonic acid.
3-Nitro-4-aminoanisole	2-Nitro-p-anisidine.
4-Nitro-2-aminoanisole	5-Nitro-o-anisidine.
5-Nitro-2-aminoanisole	4-Nitro-o-anisidine.
6-Nitro-2-aminoanisole	3-Nitro-o-anisidine.
o-Nitro-p-aminophenol	4-Amino-2-nitrophenol.
p-Nitro-o-aminophenol	2-Amino-4-nitrophenol.
5-Nitro-o-aminophenol	2-Amino-5-nitrophenol.
4-Nitro-2-aminophenol-6-sulfonic acid	2-Amino-4-nitro-1-phenol-6-sulfonic acid.
6-Nitro-2-aminophenol-4-sulfonic acid	2-Amino-6-nitro-1-phenol-4-sulfonic acid.
4-Nitro-4'-amino-2-sulfodiphenylamine	2-(p-Aminoanilino)-5-nitrobenzenesulfonic acid.
5-Nitro-2-aminotoluene	4-Nitro-o-toluidine.
p-Nitroaniline-o-sulfonic acid	2-Amino-5-nitrobenzenesulfonic acid.
m-Nitro-p-anisidine	2-Nitro-p-anisidine.
3-Nitro-p-anisidine	2-Nitro-p-anisidine.
4-Nitro-2-anisidine	5-Nitro-o-anisidine.
5-Nitro-2-anisidine	4-Nitro-o-anisidine.
2-Nitroanisole-4-sulfodietylamide	N,N-Diethyl-3-nitro-p-anisolesulfonamide.
9-Nitroanthra(1,9,4,10)bis(1,2,3)oxathiazine-2,7-bis-dioxide.	9-Nitroanthra[1,9-de,4,10-d'e']bis[1,2,3]oxathiazine-2,7-bisdioxide.
1-Nitroanthraquinone-2-carboxylic acid	1-Nitro-2-anthraquinonecarboxylic acid.
Nitrobenzene-2,5-disulfonic acid	2-Nitro-p-benzenedisulfonic acid.
1-Nitrobenzene-4-sulfonic acid	p-Nitrobenzenesulfonic acid.
2-Nitrobenzenesulfonic acid	o-Nitrobenzenesulfonic acid.
3-Nitrobenzenesulfonic acid	m-Nitrobenzenesulfonic acid.
3-Nitrobenzenesulfonyl chloride	m-Nitrobenzenesulfonyl chloride.
m-Nitrobenzoyl J acid	6-(m-Nitrobenzamido)-1-naphthol-3-sulfonic acid.
p-Nitrobenzoyl J acid	6-(p-Nitrobenzamido)-1-naphthol-3-sulfonic acid.
m-Nitrochlorobenzene	1-Chloro-3-nitrobenzene.
o-Nitrochlorobenzene	1-Chloro-2-nitrobenzene.
p-Nitrochlorobenzene	1-Chloro-4-nitrobenzene.
2-Nitro-1-chlorobenzene-4-sulfobutylamide	N-Butyl-4-chloro-3-nitrobenzenesulfonamide.

Common name	Standard (Chemical Abstracts) name
2-Nitro-1-chlorobenzene-4-sulfodiethylamide	4-Chloro-N,N-diethyl-3-nitrobenzenesulfonamide.
o-Nitrochlorobenzene-p-sulfonic acid	4-Chloro-3-nitrobenzenesulfonic acid.
p-Nitrochlorobenzene-o-sulfonic acid	2-Chloro-5-nitrobenzenesulfonic acid.
3-Nitro-4-chlorobenzoylbenzoic acid	o-(4-Chloro-3-nitrobenzoyl)benzoic acid.
4-Nitro-6-chloro-1,3-dimethoxybenzene	6-Chloro-1,3-dimethoxy-4-nitrobenzene.
2-Nitro-4-chlorophenol	4-Chloro-2-nitrophenol.
2-Nitro-4-chlorophenol-6-sulfonic acid	4-Chloro-2-nitro-1-phenol-6-sulfonic acid.
m-Nitro-p-chlorotoluene	4-Chloro-3-nitrotoluene.
o-Nitro-p-chlorotoluene	4-Chloro-2-nitrotoluene.
p-Nitro-o-chlorotoluene	2-Chloro-4-nitrotoluene.
2-Nitro-4-chlorotoluene	4-Chloro-2-nitrotoluene.
m-Nitro-p-cresol	2-Nitro-p-cresol.
Nitroeresyl methyl ether	4-Methyl-o-nitroanisole.
Nitro-p-dichlorobenzene	1,4-Dichloro-2-nitrobenzene.
o-Nitrodiphenyl	2-Nitrobiphenyl.
p-Nitrodiphenyl	4-Nitrobiphenyl.
4-Nitro-2-diphenylamine-sulfonic acid	2-Anilino-5-nitrobenzenesulfonic acid.
4-Nitrodiphenylamino-2-sulfonic acid	2-Anilino-5-nitrobenzenesulfonic acid.
2-Nitrohydroquinone, diethyl ether	1,4-Diethoxy-2-nitrobenzene.
2-Nitrohydroquinone, dimethyl ether	1,4-Dimethoxy-2-nitrobenzene.
3-Nitro-4-hydroxy-1-phenylarsonic acid	4-Hydroxy-3-nitro-1-benzenearsonic acid.
2-Nitro-4-methoxy-3-aminotoluene	4-Methyl-5-nitro-o-anisidine.
2-Nitro-4-methoxy-5-(p-toluenesulfonamido)toluene	N-(5-Methyl-4-nitro-o-anisyl)-p-toluenesulfonamide.
4-Nitro-1-methylaniline	5-Nitro-o-toluidine.
1-Nitro-2-methylanthraquinone	2-Methyl-1-nitroanthraquinone.
2-Nitronaphthalene-4,8-disulfonic acid	3-Nitro-1,5-naphthalenedisulfonic acid.
7-Nitro-1,5-naphthalenedisulfonic acid	3-Nitro-1,5-naphthalenedisulfonic acid.
4-Nitronaphthalic acid tolylimide	4-Nitro-N-tolynaphthalimide.
3-Nitrophenylhydrazine	m-Nitrophenylhydrazine.
1-(m-Nitrophenyl)-5-pyrazolone-3-carboxylic acid	1-(m-Nitrophenyl)-5-oxo-2-pyrazoline-3-carboxylic acid.
Nitropyrazolonecarboxylic acid	1-(m-Nitrophenyl)-5-oxo-2-pyrazoline-3-carboxylic acid.
p-Nitrosodiethylaniline	N,N-Diethyl-p-nitrosoaniline.
p-Nitrosodimethylaniline	N,N-Dimethyl-p-nitrosoaniline.
Nitroso-β-naphthol	1-Nitroso-2-naphthol.
3-Nitro-5-stearoylamino-p-toluenesulfonic acid	3-Nitro-5-stearoylamido-p-toluenesulfonic acid.
4-Nitrotolueneanilide	2-Methyl-5-nitrodiphenylamine.
6-Nitro-3-(p-toluenesulfone)amino-4-methoxytoluene	N-(5-Methyl-4-nitro-o-anisyl)-p-toluenesulfonamide.
4'-Nitro-p-toluenesulfone-o-toluide	N-(4-Nitro-o-tolyl)-p-toluenesulfonamide.
o-Nitrotoluenesulfonic acid	3-Nitro-p-toluenesulfonic acid.
p-Nitrotoluene-o-sulfonic acid	5-Nitro-o-toluenesulfonic acid.
m-Nitro-o-toluidine	4-Nitro-o-toluidine.
m-Nitro-p-toluidine	2-Nitro-p-toluidine.
p-Nitro-o-toluidine	5-Nitro-o-toluidine.
3-Nitro-4-toluidine	2-Nitro-p-toluidine.
4-Nitro-2-toluidine	5-Nitro-o-toluidine.
5-Nitro-2-toluidine	4-Nitro-o-toluidine.
Nitrotoluidine sulfone	4'-Nitro-p-toluenesulfone-o-toluide.
6-Nitro-o-toluidine-4-sulfonic acid	3-Amino-5-nitro-p-toluenesulfonic acid.
5-Nitro-1,2,4-trichlorobenzene	1,2,4-Trichloro-5-nitrobenzene.
Nitroviolanthrene	16-Nitroviolanthrone.
p-Nitro-o-xylene	4-Nitro-o-xylene.
4-Nitro-1,3-xylene	4-Nitro-m-xylene.
2-Nitro-1,4-xylol	2-Nitro-p-xylene.
4-Nitro-1,3-xylol	4-Nitro-m-xylene.
Orthanilic acid	o-Aminobenzenesulfonic acid.
Oxalyl-p-nitroaniline	N,N'-Di(p-nitrophenyl)oxamide.
Oxalyl-m-phenylenediamine	N,N'-Di(m-aminophenyl)oxamide.
Oxalyl-p-phenylenediamine	N,N'-Di(p-aminophenyl)oxamide.
Oxo-1,4-pyran-2,6-dicarboxylic acid	Chelidonic acid.
2-Oxycarbazole	2-Hydroxycarbazole.
α-Oxynaphthoic acid	1-Hydroxy-2-naphthoic acid.
β-Oxynaphthoic acid	3-Hydroxy-2-naphthoic acid.
Pentaanthramide	1,4,5,8-Tetrakis[1',1'',1''',1''''-anthraquinonyl-amino]anthraquinone.
Peri acid	8-Amino-1-naphthalenesulfonic acid.
Phenethylmalonic acid, diethyl ether	Ethylphenylmalonic acid, diethyl ester.
1-Phenylacetylcarbinol	1-Hydroxy-1-phenyl-2-propanone.
β-Phenylacrylophenone	Chalcone.
2-Phenylamine-5-naphthol-7-sulfonic acid	6-Anilino-1-naphthol-3-sulfonic acid.
2-Phenylamine-8-naphthol-6-sulfonic acid	7-Anilino-1-naphthol-3-sulfonic acid.
N-Phenylaniline	Diphenylamine.
Phenylarsonic acid	Benzenearsonic acid.
Phenylbiphenyl	Terphenyl.
Phenyl bromide	Bromobenzene.
1-Phenyl-3-carboxy-5-pyrazolone-4-sulfonic acid	5-Oxo-1-(p-sulfofenyl)-2-pyrazoline-3-carboxylic acid.
Phenyldiethanolamine	2,2'-(Phenylimino)diethanol.
m-Phenylenediaminedisulfonic acid	4,6-Diamino-m-benzenedisulfonic acid.
m-Phenylenediaminesulfonic acid	2,4-Diaminobenzenesulfonic acid.
p-Phenylenediaminesulfonic acid	2,5-Diaminobenzenesulfonic acid.

Cyclic intermediates: Glossary of synonymous names--Continued

Common name	Standard (Chemical Abstracts) name
Phenylene nerol acid	6-(p-Aminoanilino)metanilic acid.
Phenylethanolamine	2-Anilinoethanol.
Phenylethylmalonic ester	Ethylphenylmalonic acid, diethyl ester.
Phenyl gamma acid	7-Anilino-1-naphthol-3-sulfonic acid.
Phenylhydrazine-p-sulfonic acid	p-Hydrazinobenzenesulfonic acid.
Phenylhydrazine-2-sulfonic acid	o-Hydrazinobenzenesulfonic acid.
Phenylhydrazine-3-sulfonic acid	m-Hydrazinobenzenesulfonic acid.
N-Phenyl-N'-(p-hydroxyethyl)thiourea	1-(2-Hydroxyethyl)-3-phenyl-2-thiourea.
Phenyl isocyanate	Isocyanic acid, phenyl ester.
Phenyl J acid	6-Anilino-1-naphthol-3-sulfonic acid.
Phenylmalonic ester	Phenylmalonic acid, diethyl ester.
Phenylmethanesulfonic acid	alpha-Toluenesulfonic acid.
N-Phenyl-1-naphthylamine-8-sulfonic acid	8-Anilino-1-naphthalenesulfonic acid.
alpha-Phenyl-beta-(4-oxophenyl)propionic acid	p-(p-Hydroxyphenyl)-alpha-phenylpropionic acid.
Phenyl peri acid	8-Anilino-1-naphthalenesulfonic acid.
N-Phenyl-p-phenylenediaminesulfonic acid	5-Amino-2-anilinobenzenesulfonic acid.
1-Phenyl-5-pyrazolone-3-carboxylic acid, ethyl ester	5-Oxo-1-phenyl-2-pyrazoline-3-carboxylic acid, ethyl ester.
Phenyl silicon chloride	Trichlorophenylsilane.
1-Phenyl-4-sulfo-5-pyrazolone-3-carboxylic acid	5-Oxo-1-(p-sulfophenyl)-2-pyrazoline-3-carboxylic acid.
Phthalyl chloride	Phthaloyl chloride.
Piperidinopropyl alcohol	1-Piperidinepropanol.
Polychlorodiphenyl	Polychlorobiphenyl.
Potassium-3-chloro-6-carboxy-3-methoxydiphenylamine	2-(m-Anisyl)-4-chloroanthranilic acid, potassium salt.
n-Propyl p-nitrobenzoate	p-Nitrobenzoic acid, n-propyl ester.
Pyrazolanthrone	Anthra[1,9]pyrazol-6(2)-one.
Pyrazolone C	3-Methyl-1-(p-sulfophenyl)-5-pyrazolone.
Pyrazolone T	5-Oxo-1-(p-sulfophenyl)-2-pyrazoline-3-carboxylic acid.
Quinophthalone	2,2'-(1,3-Indandione)quinoline.
R acid	2-Naphthol-3,6-disulfonic acid.
2R acid	7-Amino-1-naphthol-3,6-disulfonic acid.
Red KB base	4-Chloro-o-toluidine.
Rhoduline acid	6,6'-Iminobis[1-naphthol-3-sulfonic acid].
S acid	8-Amino-1-naphthol-5-sulfonic acid.
2S(SS) acid	8-Amino-1-naphthol-5,7-disulfonic acid.
Schaeffer's acid	2-Naphthol-6-sulfonic acid.
Silver salt	2-Anthraquinonesulfonic acid, sodium salt.
Sodium carbolate	Phenol, sodium salt.
Sodium naphthionate	Naphthionic acid, sodium salt.
Sodium phenate	Phenol, sodium salt.
Sodium-o-phenylphenolate	o-Phenylphenol, sodium salt.
Sodium tetrachlorophenolate	2,3,4,6-Tetrachlorophenol, sodium salt.
Sodium trichlorophenolate	2,4,5-Trichlorophenol, sodium salt.
Sulfo BB acid	4-Sulfo-o-benzoylbenzoic acid.
o-Sulfobenzaldehyde	o-Formylbenzenesulfonic acid.
1-Sulfo-5-nitroanthraquinone	5-Nitro-1-anthraquinonesulfonic acid.
Sulfophenylmethylpyrazolone	3-Methyl-1-p-sulfophenyl-5-pyrazolone.
1-(p-Sulfophenyl)-5-pyrazolone-3-carboxylic acid	5-Oxo-1-(p-sulfophenyl)-2-pyrazoline-3-carboxylic acid.
Tetraaminoditolylmethane	5,5'-Methylenebis[toluene-2,4-diamine].
Tetrachloroquinone	Chloranil.
Tetraethyldiaminobenzhydrol	4,4'-Bis[diethylamino]benzhydrol.
Tetraethyldiaminobenzophenone	4,4'-Bis[diethylamino]benzophenone.
Tetraethyldiaminodiphenylmethane	p,p'-Methylenebis[N,N-diethylaniline].
Tetraethyldiaminotriphenylmethane	p,p'-Benzylidenebis[N,N-diethylaniline].
Tetramethyldiaminoacridine hydrochloride	2,7-Bis[dimethylamino]acridine hydrochloride.
Tetramethyldiaminobenzophenone	4,4'-Bis[dimethylamino]benzophenone.
Tetramethyldiaminobenzoylhydrol	4,4'-Bis[dimethylamino]benzhydrol.
Tetramethyldiaminodiphenylmethane	p,p'-Methylenebis[N,N-dimethylaniline].
Tetramethyldiaminodiphenylmethanesulfonic acid and salt	Bis[p-dimethylaminophenyl]methanesulfonic acid and salt.
Tetramethyldiaminotriphenylmethane	p,p'-Benzylidenebis[N,N-dimethylaniline].
Thioaniline	p,p'-Thiodianiline.
Thioanilinedisulfonic acid	6,6'-Thiodimetanilic acid.
p,p'-Thiobis(4-amino-o-benzenesulfonic acid)	6,6'-Thiodimetanilic acid.
Thioisallylic acid	o-Mercaptobenzoic acid.
Tobias acid	2-Amino-1-naphthalenesulfonic acid.
Tolazine base	3-Amino-6-hydroxy-2-methylphenazine.
o-Toluidinedisulfonic acid	2,2'-Diamino-5,5'-bi-m-toluenesulfonic acid.
alpha-Toluamide	alpha-Phenylacetamide.
p-Toluenesulfochloride	p-Toluenesulfonyl chloride.
4-Toluenesulfonamido-1-aminoanthraquinonesulfonic acid	1-Amino-4-(p-toluenesulfonamido)-2-anthraquinone-sulfonic acid.
4-Toluic acid	p-Toluic acid.
alpha-Toluic acid	Phenylacetic acid.
4-Toluidine-2-sulfanilide	o-Aminobenzenesulfon-p-toluide.
m-Toluidine-o-sulfonic acid	4-Amino-o-toluenesulfonic acid.

Cyclic intermediates; Glossary of synonymous names--Continued

Common name	Standard (Chemical Abstracts) name
m-Toluidine-p-sulfonic acid-----	2-Amino-p-toluenesulfonic acid.
o-Toluidine-m-sulfonic acid-----	4-Amino-m-toluenesulfonic acid.
o-Toluidine-omega-sulfonic acid-----	o-Toluidinomethanesulfonic acid.
p-Toluidine-m-sulfonic acid-----	6-Amino-m-toluenesulfonic acid.
p-Toluidine-o-sulfonic acid-----	5-Amino-o-toluenesulfonic acid.
p-Toluidine-o-sulfonic acid, isopropyl ester-----	5-Amino-o-toluenesulfonic acid, isopropyl ester.
3-Toluidine-6-sulfonic acid-----	4-Amino-o-toluenesulfonic acid.
alpha-Tolunitrile-----	Phenylacetoneitrile.
4-Tolunitrile-----	p-Tolunitrile.
p-Tolyl-o-benzoic acid-----	o-(p-Tolyl)benzoic acid.
o-Tolylcarbinol-----	2-Methylbenzyl alcohol.
p-m-Tolylenediamine-----	Toluene-2,5-diamine.
4-m-Tolylenediamine-----	Toluene-2,4-diamine.
5-m-Tolylenediamine-----	Toluene-3,5-diamine.
m-Tolylenediaminesulfonic acid-----	2,4-Diamino-m-toluenesulfonic acid.
Tolyl peri acid-----	8-(p-Toluidino)-1-naphthalenesulfonic acid.
2,4,6-Triaminobenzene trihydrochloride-----	1,3,5-Benzenetriamine trihydrochloride.
2,4,6-Triaminotoluene trihydrochloride-----	2,4,6-Toluenetriamine trihydrochloride.
Trianthraquinonyldi-imide-----	1,4-Bis[1-anthraquinonylamino]anthraquinone.
1,4-Trianthrimide-----	1,4-Bis[1-anthraquinonylamino]anthraquinone.
1,2,4-Trihydroxyanthraquinone-----	Purpurin.
1,2,6-Trihydroxyanthraquinone-----	Flavopurpurin.
1,3,5-Trimethylbenzene-----	Mesitylene.
2,4,6-Trimethylpyridine-----	s-Collidine.
Trinitrophenol-----	Picric acid.
2,4,6-Trinitroresorcin-----	Styphnic acid.
1,2,4-Trioxyanthraquinone-----	1,2,4-Trihydroxyanthraquinone.
Triphenyl silicon chloride-----	Chlorotriphenylsilane.
3,3'-Ureyleneaniline-----	1,3-Di(m-aminophenyl)urea.
Vinylbenzene-----	Styrene.
2,4-Xylenesulfonamide-----	p-Toluenesulfonic acid.
m-Xylidine acetate-----	2,4-Xylidine acetate.
m-Xylidinesulfonic acid-----	2-Amino-3,5-xylenesulfonic acid.
Xylol chloride-----	4-Chloro-m-xylene.

D. Production and Sales of Cellulose Plastics

Cellulose plastics are derived from cellulose acetate, cellulose propionate, cellulose butyrate, and mixtures of cellulose esters, and from cellulose nitrate and ethyl cellulose. The most important uses of cellulose plastics are in the manufacture of molded and extruded articles and accessories such as umbrella handles, toys, buckles, and fittings for household and automotive equipment, and in packaging. The statistics given in table 30 were compiled from the Tariff Commission's monthly reports on the production and sales of synthetic plastics and resin materials.

Production of cellulose plastics as a group in 1953 amounted to 129 million pounds--an increase of 31.4 percent from the output of 98 million pounds reported for 1952. Sales in 1953 were 125 million pounds, compared with the 97 million pounds reported for 1952. In terms of volume of production, cellulose acetate and mixed ester plastics continued in 1953 to be the most important group of cellulose plastics. Production of these resins in 1953 was 115 million pounds, compared with 85 million pounds in 1952. The output of cellulose nitrate plastics in 1953 was 7.6 million pounds, compared with 6.0 million pounds in 1952.

TABLE 30.--Cellulose plastics: United States production and sales, 1953

[In thousands of pounds]

Material	Production	Sales
Cellulose plastics, ¹ total-----	128,963	125,410
Cellulose acetate and mixed esters, total-----	115,094	112,434
Sheets, under 0.003 gage-----	17,472	17,165
Sheets, 0.003 gage and over-----	14,058	13,143
All other sheets, rods, and tubes-----	5,869	5,245
Molding and extrusion materials-----	77,695	76,881
Nitrocellulose sheets, rods, and tubes-----	7,597	6,549
All other cellulose plastics ² -----	6,272	6,427

¹ Includes weight of fillers, plasticizers, and extenders.

² Includes data for sheets, rods, and tubes, and molding and extrusion materials derived from ethyl cellulose and other cellulosic materials.



